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A FEW COMMON WOOD-BORING BEETLES.

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Our Canadian wood-boring beetles, with the exception of a few somewhat minute species, belong to the two great families of Buprestidæ and Cerambycidæ. These include an immense number of different genera and species; in Crotch's List of the Coleoptera of North America (north of Mexico) there are enumerated the names of no less than 169 species of the former family and 552 of the latter; about one-third of these are found in this country. It is evident, then, that to give a bare list of all our Canadian species of wood-borers would occupy no little space, while a detailed description of them, if one were competent for the task, would fill many numbers of this journal. We propose, therefore, on the present occasion to merely give a brief account of the eight species depicted on the accompanying plate. These we have selected on account of their frequent occurrence in almost all parts of the country, and the consequent familiarity of their appearance even to non-Entomologists. Our readers will, we are sure, be pleased with the beauty of the figures, which have been admirably drawn upon stone by Mr. L. Trouvelot, of Cambridge, Massachusetts.

Taking the species in the order in which they are numbered on the plate, we come first to

I. *Monohammus scutellatus* Say—A Pine Borer.—This beetle, which derives its specific name from its conspicuously white scutellum, is of a shining black colour on both the upper and under surfaces, thickly punctured with irregular impressions; on the wing-cases there are, as shown in the figure, a number of scattered whitish spots of various shapes and sizes; these, on close inspection, are found to be composed of dense

short white hairs, which often become rubbed off and disappear; the thorax is armed on each side with a thick triangular spine; the antennæ are many-jointed, and about the same length as the body in the male, while in the female they are about twice that proportion. The size of the beetle varies from less than half an inch in the male to over three-quarters of an inch (exclusive of the antennæ) in the female. The larva is a large thick white grub, destitute of legs, divided into a number of well-marked segments; the head armed with a strong pair of jaws. The larva infests the Pine, after the timber has been cut or newly fallen, and often causes serious injury to it by boring large oval-shaped holes which extend for long distances through the interior of the log. The perfect insects appear in June, and are sometimes very abundant; we have occasionally found them swarming in great numbers on fallen pine trees. The insect is common throughout Canada and the neighbouring States.

2. *Clytus speciosus* Say (genus *Glycobius* Lec.)—The Maple Borer.—The colours of this remarkably handsome insect are deep velvety black and bright yellow. The figure represents its shape and markings so accurately that further description is unnecessary; the size depicted, however, is decidedly above the average. This wasp-like beetle is not very abundant, but may occasionally be found on Maple trees, which its larvæ infest both when growing in the forest and also when cut into cord-wood. The eggs are laid by the parent beetle on the trunk of the Sugar-maple during the middle of summer; when hatched the grubs penetrate through the bark and make long winding borings through the solid wood. Occasionally they are very destructive to young Maple trees, but on the whole they are not sufficiently numerous to be objects of dread.

3. *Orthosoma cylindricum* Fab.—A Pine Borer.—This large beetle is the commonest and best known of our wood-borers; its habit of flying through open windows into lighted rooms during the warm evenings of July, usually to the great alarm of the inmates, has caused its appearance to be very familiar to every one. It is one of our largest beetles, measuring oftentimes as much as an inch and a half in length by over a third of an inch in breadth. Its general colour is a chestnut brown, approaching black on the head and antennæ. The thorax is armed with three sharp spines on each side; each wing-case has three slightly elevated ridges running lengthwise for nearly the whole length; the eyes, which are

situated behind the antennæ, are enormously large and very conspicuous. The larva is a large fat white grub, with powerful jaws of a darker colour ; it feeds upon the wood of the Pine, and from its size often injures the timber very materially.

4. *Clytus robinia* Forst.—The Locust tree Borer. (The synonymy of this insect has been rather perplexing ; it is now included in the genus *Cyllene* Newm. ; for a long time we were accustomed to call it *Clytus flexuosus* Fab., but the specific name given above has the priority. It was also long considered to be identical with *C. pictus* Drury, that bores into the Hickory, but the late Mr. Walsh proved satisfactorily that the two species are distinct.)—The general colour of this insect is deep black with light yellow stripes ; on the head and thorax these stripes form narrow transverse bands, but on the wing-covers there is first of all a narrow yellow anterior edging (not shown in the figure), then a slightly flexuous stripe (not straight as in the figure) ; this is followed by a narrow zig-zag band forming a letter W across the wings, and three irregularly wavy and broken stripes ; there is also a yellow dot at the tip, and broader stripes on the sides of the abdomen of the same colour. The antennæ are long and many-jointed, and of a dark brown colour ; the legs are long and of a tawny hue. The larva is a whitish coloured grub, about an inch long and the thickness of an ordinary goose-quill, and is furnished with six very minute legs. When young it appears to bore chiefly into the sap-wood, but afterwards strikes off into the solid wood of the tree, perforating it in every direction. Its presence is early indicated by the little heaps of saw-dust extruded from the holes, and accumulated about the base of the tree.

The history of this insect is rather a curious one. For a little over a hundred years it has been known to inhabit the State of New York, its appearance and habits being recorded by some English Entomologists of the last century. About thirty years ago it was found as far west as Chicago, whence it spread throughout the State of Illinois, but it was not till 1863 that it reached Rock Island, about 200 miles further west, where—Mr. Walsh relates—it suddenly appeared in great swarms and utterly destroyed all the Locust trees. The first record we have found of its appearance in Canada is by Mr. Couper, who states (*Can. Journal*, 1855, p. 377) that he observed some Locust trees attacked by this insect in Montreal in September, 1855. In 1862 it began to be very destructive to the Locusts in Toronto, and for several years was excessively abundant

there. In 1873 Mr. Reed relates its appearance in enormous numbers at London, Ont. ; now it appears to be generally distributed throughout this province, and occasionally becomes very injurious to these ornamental trees. The perfect insect, in the localities it frequents, may usually be found in September on the flowers of the Golden-rod (*Solidago*), of which it eats the pollen, as well as upon the trunks of the trees it infests.

5. *Chrysobothris femorata* Fab.—An Apple tree Borer.—This insect belongs to the family Buprestidæ, while all the others on our plate pertain to the Cerambycidæ ; the difference in shape and structure, and especially in the length of the antennæ, is very noticeable in the figures. The beetle, which may be found basking on the tree-trunks in the hot sunshine in the end of June or during July, is very lively when danger threatens and will take wing instantly if an attempt is made to catch it. Its blackish colour above so much resembles the bark of the tree that it readily escapes the notice of an ordinary observer ; but beneath it is of a beautifully burnished dark copper colour, looking as if it were made of metal ; beneath the wing-covers it is bluish. While the figure gives the shape of the insect very correctly, it much exaggerates its size, which seldom exceeds three-eighths of an inch ; the light spots on the wing-cover are also erroneous in being very much too conspicuous. The larva is a long flattened grub, with an enormously large flat head in proportion to the rest of its body. When first hatched from the egg it eats the soft sapwood of the Apple tree, but afterwards it bores into the harder interior. As it especially attacks young trees, it is often terribly destructive to newly-planted orchards.

6. *Saperda candida* Fab.—An Apple tree Borer.—This insect, which rivals the foregoing species in the injuries it inflicts upon Apple trees, is a pale-brown beetle with two chalky-white longitudinal stripes running from the head to the apex of the wing-covers ; its under side, legs and face are also chalky-white, and its antennæ a little darker ; its length is about three-quarters of an inch. The larva is of a pale yellow or whitish colour, with a brownish polished head and black jaws ; it is destitute of legs, but like other larvæ of the same family, it is enabled to move in its burrows by the contraction and expansion of its well-defined segments ; when fully grown it is about an inch long. It may readily be distinguished from the preceding species by its cylindrical and more symmetrical shape.

Thus far this most injurious insect has only been found in certain portions of this country, being very abundant in the Niagara district, and in the neighbourhood of Montreal and Quebec, but happily rare, or entirely absent, from almost all other parts.

7. *Monohammus confusor* Kirby.—A Pine tree Borer.—This fine beetle, which is especially remarkable for the extraordinary length of its antennæ, is, in our Pine regions, one of the most common and destructive of our insect enemies. Its general colour is an ashen grey, mottled with variable darker spots; the scutellum is white; there are also patches of whitish colour on the head, thorax and abdomen. These variations of colour, being due to a covering of very fine short hairs, which oftentimes are rubbed off, are not to be depended upon in the determination of the species. As in *M. scutellatus* (fig. 1), each side of the thorax is armed with a short thick spine. The length of the insect varies from three-quarters of an inch to an inch and a half—the average size being over an inch; the antennæ of the males vary in length from one and a half to three inches; those of the female are somewhat shorter. The larva is a large, white, somewhat cylindrical grub, destitute of feet. During the summer the female lays her eggs in crevices of the bark of the white and red pine, selecting for the most part timber that has been scorched by fire, or felled by the wind or the lumberman's axe; the larva when hatched soon eats its way into the wood, and before this period of its existence is closed it often burrows immense galleries through and through the solid interior. As it lives a long time in the larval state, the perfect insect is frequently only developed after the timber has been built into a house, and then suddenly emerges from its concealment to the great consternation of the inhabitants of the dwelling. The larva, when burrowing in the wood, makes a loud noise like the boring of an auger, which on a still night may be heard for a considerable distance. The species is very generally distributed throughout Canada and the Northern States; in the pine-growing regions it is often excessively abundant. The late Mr. E. Billings relates that he once saw a pine tree near Lake Clear, in the county of Renfrew, on which he calculated that there were at least three hundred individuals of this species, while numbers more were flying about in all directions. As the insect attacks the cut timber when left over summer in the woods, it is a very serious injury to the operations of the lumbermen of this country.

8. *Oberea tripunctata* Fab.—The Raspberry Borer.—We now come to the last insect on our plate; the figure is a good deal exaggerated in size, the length of the beetle being under half an inch, and its width one-tenth of an inch. Its colour is deep black, with the exception of the thorax above and the front part of the breast beneath, which are rusty yellow; on the thorax there are three small elevated black dots arranged in a triangle (not two only, as in the figure), whence is derived the specific name of the insect. The antennæ are nearly, if not quite, as long as the body. The beetles are usually found in July and the beginning of August; they attack all the varieties of raspberry, and come into gardens from the fields and clearings, where we have often taken specimens and observed their work. The mode of attack is peculiar: the first appearance of injury is usually manifested by the withering and drooping of the ends of the young shoots. On inspection, it is found that at the base of the affected part there are two rows of punctures, half an inch apart, running completely round the canes, and so girdling them that the supply of sap is stopped and the tops necessarily soon wither and break off. The parent insect begins by cutting with its jaws a series of small punctures side by side around the cane, six or seven inches from the top. As soon as the first row is completed, it turns round, and facing the other way, cuts a second row measuring the length of its own body. These two girdles being completed, it makes a small hole a little way above the lower girdle and deposits in it its small yellow egg. The whole operation occupies an hour or more. From this egg there hatches out in a few days a small yellow footless grub, which proceeds to burrow downwards, eating the pith of the cane and eventually causing its destruction.

In order not to occupy too much space, we have forborne to make any mention of remedies which have been applied with more or less success to combat the ravages of these destroyers. Should any of our readers desire information upon this point, we beg to refer them to the Entomological Society's forthcoming Report to the Legislature, which will include many particulars regarding these insects which we have not given above.

AMERICAN ENTOMOLOGICAL SOCIETY—NOTICE OF REMOVAL.—The American Entomological Society has removed to the south-west corner of Nineteenth and Race Streets, Philadelphia, Pa., where all correspondence, &c., should be addressed. Chas. A. Blake is Corresponding Sec'y.