

run together by insensible gradations, not only in colour, but in the form of the last ventral segment of the female, and it would not be surprising if eventually they would have to be united, as suggested by their describer.

*Typhlocyba bifasciata*, Gill and Bak.—Temiskamingue and Barrier Lake.

PSYLLIDÆ.

*Psylla carpinii*, Fitch.—Not uncommon at various localities.

*Psylla*, sp.—Three examples of a smaller species were taken at Temiskamingue.

SOME COLEOPTERA AFFECTING THE HONEY LOCUST.

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EXPERIMENT STATION.

On a farm near Newcastle, Delaware, there is quite a strip of honey locust (*Gleditsia triacanthos*, Linn.), hedge, which I have visited two or three times during the past two years. This hedge appears to have been injured by fire at some time, and certain sections of it are now entirely dead. Other sections are very thrifty, while between the dead and living sections may be found parts that are partly dead and partly alive.

My first visit to the hedge was on June 12th, 1906, and my attention was drawn to it owing to the large number of specimens of *Agrilus fallax*, Say, which I found upon it. Whether or not they were feeding upon the leaves I did not determine, but it seems probable that they were. At any rate, they were present in large numbers, and several were seen pairing. About fifty specimens were taken in a short time—the first of this species that I had ever seen.

Owing to the presence of such large numbers of this species on the hedge that day, I thought it probable that these beetles were breeding in its dead or dying wood, and I resolved to return to the place the next spring to collect some of this and attempt to breed *A. fallax* therefrom.

A few branches which were broken off at that time and brought home were found to contain Buprestid larvæ. One of these which I examined measured 5 mm. in length by 1.75 mm. in breadth, at the greatest width; another 6.5 mm. by 1.75 mm. The brief notes which I made on the larvæ at that time are as follows: "White; mandibles brown, tipped with black."

May, 1908

To illustrate the biting power of these small larvæ, one which I allowed to seize the point of a dissecting needle held itself suspended therefrom, at an angle of about 45 degrees, for a period of nearly two minutes.

No attempt was made to rear these larvæ, but on June 10, 1907, I again visited the hedge and collected a suit-case full of the wood. This was principally dead, but I made it a point not to get that which was too old and brittle, as some of it which I examined on the ground did not appear to contain any wood-boring larvæ—nor did I find any in the living wood which I secured.

This material was brought home and examined, and it was found that there were apparently several kinds of living larvæ therein. It was, therefore, cut up into suitable lengths and placed in air-tight glass jars, or glass cylinders with cotton batting at top and bottom, and set away in my laboratory. The first beetle bred from these dead branches appeared June 11, and proved to be *Neoclytus erythrocephalus*, Fab. Other specimens of this species emerged later.

On June 20 a specimen of *Clerus quadriguttatus*, Oliv., was found alive in one of the jars, and several other specimens of this species appeared later. It is probable that their larvæ were feeding upon the larvæ of some of the wood-borers in the *Gleditschia*, as most of the Clerid larvæ appear to be carnivorous. On June 24 three specimens of *Liopus fascicularis*, Harr., all alive, were found in one of the jars; also a specimen of *Melanophthalma distinguenda*, Com., and one of *Liopus variegatus*, Hald. Another specimen of the latter species had emerged a few days earlier, but escaped.

A specimen of *Tropideres rectus*, Lec., emerged June 29 or 30. The pupal cell of this specimen had been opened when the branches were cut up. At this time it contained a larva. The pupa was observed several days before the adult emerged, but the exact length of time of the pupa stage was not determined.

On July 1 a specimen of *Ecyrus dasycerus*, Say, emerged, also one of *Phyton pallidum*, Say. Like *Clerus quadriguttatus*, this Clerid was (as a larva) doubtless feeding upon the larvæ of the wood-borers.

No specimens of *Agrilus fallax*, the species which I most expected to secure from the *Gleditschia*, emerged. However, when cutting up the branches from the jars, a living Buprestid larva similar to if not identical with the larvæ found in 1906, was found, which I thought was probably a

larva of that species. \* At that time it measured probably about 6 mm. in length, and I thought that possibly it might soon pupate. This it failed to do, however, but continued to work in the piece of branch all summer. Wishing to determine whether this larvæ was still alive at the end of the year I followed up its burrow on Dec. 30, 1907, and soon located it. It was apparently thriving, although it had been in the dry branch in a hot laboratory all summer, and had increased somewhat in size. I have made no search for it since, but have hopes that eventually I may find a specimen at *A. fallax* in the cylinder.

This species has been recorded as affecting the locust (*Robinia pseudacacia*), but I have seen no reference to its occurrence in *Gleditschia*. Chittenden states that the habits of *A. fallax* are similar to those of *A. egenus*, and of the latter species he says: "Infests locust (*Robinia pseudacacia*), mining under the bark and twigs of the smaller branches, the beetles eating the leaves." In further notes on *A. fallax* he says: "In the National collection is a series from Central Missouri, labelled by Dr. Lugger on locust, and another series from Iowa similarly labelled by the late Dr. C. V. Riley. Among Divisional notes is one of the occurrence of what is stated to be this species under the bark of cottonwood, in July.<sup>1</sup>

Hopkins<sup>2</sup> states that this species "infests bark and wood of dying branches on living and dying Hackberry," and that adults were taken May 2 in Wood Co., W. Va.

Packard,<sup>3</sup> in his "Forest Insects," does not mention any species of wood-boring beetles as affecting the honey locust, but gives a list of several species of insects that feed upon its leaves. With but three exceptions, these are all Lepidoptera, the exceptions being *Lytta* (*Epicauta*) *cinerea*, Forst., *Eburia 4-geminata*, Say, and *Spermophagus robiniae*, Sch. (The last in seeds.)

I have found the following beetles, which were presumably feeding to some extent upon the leaves, upon this plant: *Anomoa laticlavia*, Forst.; *Nodonota puncticollis*, Say; *Macrobasis unicolor*, Kirby. Other species that I have taken thereon, but whose presence was probably merely accidental, are the following: *Photuris Pennsylvanicus*, De Geer; *Chauliognathus marginatus*, Fabr.; *Statira gagatina*, Melsh.; *Mordellistena pustulata*, Melsh.

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1. Bul. No. 22, n. s. Div. of Ent., U. S. Dept. Agric., p. 67.

2. Bul. No. 32, W. Va. Agric. Expt. Sta., p. 184.

3. Fifth Report of the Entomological Commission, pp. 652-654.