

BEE BOTANY AND ENTOMOLOGY.

ANOTHER DESTROYER OF HONEY COMB.

ALMOST every bee keeper knows the wax worm, or honey-comb caterpillar, larva of the *Galleria cereana*; but few have seen the one under consideration, so I introduce to the bee-keeping public, *Dermestes lardarius*, Linn., or the museum pest. I have been fighting this pest for years, and so am well prepared to describe him to those unacquainted with his person and character. He has been so much more of a pest in our several college cabinets of stuffed birds, fish, mammals, and insects, under my care, than at the bee-house where I have often seen his work, that I have never thought to acquaint my bee-keeping friends with his *personnel* and habits, and am only led to do so now from the following letter.

Prof. A. J. Cook:—I send you, this morning, a small box of worms and bugs which I find are damaging my honey combs very materially, when not exposed to the fumes of sulphur. They do not spin a web as do the moth worms, but seem to work in the cells and consume the wax septum. The worms are of all sizes, and seem, eventually, to change into the small bug enclosed. I have shown them to several bee-keepers, and they fail to give any information in regard to them. I put up a package for you a couple of weeks ago, but they cut through the cork, and I could not find any bugs until to-day, though there were plenty of worms. Please inform me, at your earliest convenience, through the journals if you prefer, if they are commonly known to bee-keepers, as injurious to honey combs.

Toledo, O., July 28, '79. JOHN Y. DETWILER.

This is a beetle, *Dermestes lardarius*. The generic name, *Dermestes*, comes from the Greek, and means skin-devourer. Every zoological collector knows that this name is exceedingly appropriate. The specific name refers to the fact that the larvae of these beetles are very free in the larder, and not slow to show their appreciation of good lard and bacon. This beetle, like our bee-moth, is an imported insect. This makes the case all the worse, as our most formidable insect enemies are the imported ones.

This beetle (Fig. 1, magnified $\frac{1}{2}$) is black, with a buff border at the base of the wing covers, on each side of which are three dots. This yellowish color is owing to short hairs of that color. There are a few yellowish hairs on the under side of the thorax. The free ends of the antennae are enlarged, and brownish. The remainder of the antennae—all but the last three joints—are black. Fig. 1, as are also the legs; though on these latter, as on other parts of the body, there may be found a few scattering yellow hairs.

These beetles, though they themselves eat little if anything at all, seem to know that their baby grubs will have good appetites, and so lay their eggs upon such substances as will serve the prospective larvae for nourishment. Thus the eggs are laid upon almost any animal substance, especially decaying or dried animal tissues. Wax is an animal secretion, and so it is not strange that comb is also subject to attack.

The newly hatched larvae are quite light colored, but they soon become plainly ringed with brown and white. These colors keep deepening with each moult, or change of the skin. After the last moult (Fig. 2, magnified $\frac{1}{2}$), the colors are very dark, and light brown. There are thirteen rings or segments of the body back of the head. The dark brown occupies the centre of each segment, while the space between the rings is lighter. To the first three rings, are attached the usual three pair of jointed legs; while, terminating the last ring, are two small anal prop legs, a not infrequent peculiarity of grubs or beetle larvae. Each segment is decked with a ring of quite long, brownish hairs, while a more dense row of stiff, short hairs extends back from each of the segments. These, with the two short, prominent spines on the next to the last segment, probably serve to hold the grubs, as they push their way through the tunnels which their own eating has formed. The head is not only armed with strong jaws, but there are also antennae, which are rarely found in larval insects, though always present in the mature forms. The full grown larva are one half inch long. These are



what the editor of the "Exchange," Aug. No., page 123, calls "little hairy striped moths." He should have said grubs.

I have found these pests quite useful in one respect, that of preparing skeletons of our smaller animals. I now have, bleaching in the sun, the remains of a fine massasauga, all of which, except the bones and rattles, has gone to nourish the *Dermestes*. The ligaments still hold the bones together, and the whole is really very beautiful. I also have skeletons of a bat, a mole, &c., prepared in the same way.

The above suggests a remedy. Place some dried flesh or insects about the bee house. These will attract the beetles, when the latter may be crushed. In large boxes, the combs may be quickly rid of these destroyers by fumigation with sulphur, just as we would destroy the moth caterpillars.

Another museum pest, *Anthrenus varius*, belongs to the same family, *Dermestidae*—and, though much smaller, is quite as worthy to be dreaded. The famous carpet beetle is of the same genus. It is *Anthrenus scrophulariae* and is doing no little mischief in New York and east.

A. J. Cook.

INSECTS ON THE BASSWOOD BLOOM.

Inclosed, find those little insects that visited our basswood bloom, last year and this. This season, bloom was in abundance, commencing the 4th of July and lasting 22 days. The first 3 days, the bees worked well. Then began to appear those little creatures, in great numbers, and immediately there was plainly seen a check to the ambition of the bees, for they became touchy and cross, and I, too, somewhat, for they stung my visitors, and much disappointed me, as I have every advantage of a long yield, the bloom being late on the high hills. Perhaps it is because of those insects that basswood can not be depended upon. Who will tell?

Mombacuss, N. Y., Aug. 5, '79. W. MOREHOUSE.

The little beetle sent by Mr. Morehouse is a species of *Photinus*. Most of these beetles are phosphorescent. Our fire-beetle *alias* fire-fly, *alias* lightning-bug, belongs to the genus *Photinus*. Nearly all of the beetles of this family, *Lampyridae*, feed on the pollen of flowers, where they will be found during the day. The beetles were after the pollen, the bees in quest of the nectar. The drouth dried up the nectar fountains, but did not stop the growth and development of pollen. So the bees, like Othello, found their occupation gone, and were cross about it. The beetles, on the other hand, continued to find pollen, and, presumably, were still joyous. Our friend, then, like many others of us, owes his ill fortune to drouth, not to the little beetles which meant and did him no harm.

A. J. Cook.

Agricultural College, Lansing, Mich., Aug. 11, '79.

SYMPHORICARPUS.

A. I. Root.—Enclosed find specimens of a shrub which grows in profusion here, in clearings, pastures, and waste places, where the land remains uncultivated for some time. It is very hardy, and grows from 2 to 4 ft. high, according to the soil. It is known as the buck berry bush; I suppose, from the fact that deer and sheep subsist largely upon the berries, which it yields in large quantities, and which hang on till late in spring. They are of a bright red color, of the size of grains of pop corn. Every twig is clustered with the crimson fruit, its entire length, and presents a very ornamental appearance, at a season when nature generally wears a sadder aspect. By the casual observer, the flowers, which are very small and unattractive, would be passed unnoticed, but for the swarm of bees which cover them from sunrise till nearly dark, making merry music all day long. To me, there is no sweeter sound than the song of bees as they joyously flit from flower to flower, or wing their way to and from the hive. These homely little blossoms furnish but little pollen; it must be nectar for which the bees continually visit them. Right here is an example of the beautiful compensating laws of nature. A humble bloom, by the sweets which its hidden nectaries secrete, attracts a myriad of gaily colored insects, and bees of every tribe, from the great bumble bee to tiny, green and golden insects, the golden-banded Italians appearing like so many pendant jewels as they swing upon the flowers, and make vocal the air with chimes of insect melody; and thus a grotto of loveliness is disclosed to view, which otherwise might appear tame and dull.

The shrub has furnished a constant succession of

bloom for over 6 weeks, and will bloom for several weeks yet. The amount of honey in each flower is small, but, as in the white clover, the supply is constant and the quality good. Here, uninvented and without coaxing, it has taken its stand with our best honey producing plants. The only cultivation I give it is, to clear away other shrubs and timber; it takes possession, and holds it ever after. I believe it will pay for cultivation. I have never heard it mentioned as a honey plant, or seen it outside of this state. If you do not have it in Ohio, I will send you a few plants, by mail, this autumn, for your honey garden, or more by express, if you say so. The plant is very ornamental in winter, on account of its profusion of crimson berries. I prize it for its honey, and the forage it furnishes in winter for stock. Plants can be produced from seed, but plants that will bloom the first season are better. W. C. SMITH.

Warsaw, Mo., Aug. 9, 1879.

Answer by Prof. W. J. Beal of Michigan Agricultural College.

This is *Symphoricarpos vulgaris* (Indian currant, or coral-berry). I received it, a few days ago, from another source in the southwest. The sender said it was a fine bee plant. It is a plant of the honeysuckle family.

Editor of Gleanings:—It appears to this correspondent that you are making a big noise about that "Simpson Honey Plant," but I tell you, and you can tell "all the world and"—the people of Australia, that if you had stood within ear-shot of the "Thompson Honey Shrub," yesterday, after the rain (Sunday though it was), it would have humbled your ideas of your plant. I have visited a pretty large apiary with the "Simpson" contiguous, and the "blessed bees" did not make half as much noise about it as my one-horse concern makes over the *Symphoricarpos*. Then, too, once planted, it will take care of itself, being about as self asserting as the Canada thistle, a little more useful, and a great deal more beautiful. After the bees are done with it, its gorgeous racemes of crimson berries are not excelled by any shrub of the Northern states, and at a season, too (up to the holidays), when decorative plants are wanted.

I have the *Clethra alnifolia* on the place, but will not extend its culture for bee forage. To the *Symphoricarpos* I shall give the freedom of the ranch, as long as I keep bees. I suppose, being the first to notice it, after the "Blessed Bees," as a honey plant, I have the usual privilege of naming it the "Thompson Honey Shrub," or "Honey Shrub" without the Thompson, if you will, this being a little more expressive, from a bee-keeper's stand point, than its specific name, *Symphoricarpos vulgaris*, which would perhaps be a jaw-breaker to some good bee man or bee woman. G. W. THOMPSON.

Stelton, N. J., Aug. 1879.

A NEW SPECIES OF MILKWEED.

Enclosed are the leaves and flowers of a plant, a single specimen of which I found several years ago, growing wild on rolling and rather dry ground. I transplanted it to my dooryard, where it has continued to thrive and blossom every year, and is very much frequented by bees. It grows about 2½ ft. high and branches out into an umbrella shaped top, which, from July 1st to about the 10th of Aug., is covered with bloom, of a dark orange color. It has a straight, spindle shaped root, snow white, 3 in. in diameter at the surface of the ground, and 2½ in. at a depth of 2-12 feet. J. S. PIERCE.

Granger, Medina Co., O., Aug. 1879.

We sent the specimen to Prof. Beal who kindly replies as follows:

This is a species of *Asclepias* (milkweed) which is everywhere well known as good for bees, though this species I have never met before.

Ag. Col., Lansing, Mich.

W. J. BEAL.

GERMANDER.

I send you a honey plant which blooms from 3 to 4 weeks. Please send me the name of it.

East Mo., Aug. 11, '79.

W. F. STEWART.

Answer by Prof. W. J. Beal.

This is *Teucrium Canadense* (Germander), and comes to me several times a year, as a good plant for honey. It thrives along river bottoms, and is freely visited by bees. The plant is quite common

at Lansing, Michigan. It belongs to the mint family, a large one, all or nearly all of which are good bee plants; as, catmint, peppermint, spearmint, pycnanthemum, thyme, sage, bergamot, skull cap, hoarhound, motherwort, and others. Wherever they grow in quantity, as all of them do in places, there bees thrive.

DO PURE QUEENS EVER CHANGE TO HYBRIDS?

A VEXED QUESTION.

I SEE J. H. Pierce, on page 315, of GLEANINGS, speaks of having bought of you a tested queen that was not pure; and you say that you can not account for her producing hybrids, unless it was after she was shipped and that you are not sure that this is possible. This is something that has puzzled me for the last month; and I do not see how such a thing could be, yet I know it is sometimes the case, as I have just had such a queen. I commenced this spring to Italianize what black bees I had, and my plan was to get my queens fertilized before there were any black drones flying. I had drones flying the 28th of March, and my first queen was hatched the 11th of April, and her brood was as pure as any I have (I clipped one of her wings after she was tested, as I do all my queens). Well, she proved to be a very prolific queen, and her brood was pure till about the middle of July, when I noticed quite a number of hybrids in the hive. I looked up the queen and found her all right, with the same old clipped wing.

I kept her till the 10th of Aug., when nearly all her hatching brood were hybrids. So that proves, to my mind, that the queen you sold to Pierce was pure when you tested her. I confess, I would have been very slow to take up with the idea of her becoming hybrid after shipping, if I had not had such a case myself. Do you think she could have met a drone the second time, and that without being able to fly?

I have 19 colonies of bees, all Italians, and I will venture the assertion that I have as fine a lot of queens as there is in the state. I have saved no queen, unless she was very large and prolific, and the consequence is that all my hives are very strong, and in the best condition for the fall bloom, in which I ever saw bees. When I take a frame out of the hive, it is so full of bees I have to drive them from one place to see if all is right and if there are any queen cells; and I often find them, even at this time of the summer.

L. R. JACKSON.

Fairland, Ind., Aug. 16, 1879.

I do not believe, friend J., that the queen was fertilized after she had been laying and her wing had been clipped, but I think she was fertilized the second time when she first took her flight, as it has been proved by many testimonies that such is often the case. She probably met a black drone at one trip, and an Italian at another. The spermatozoa received from the Italian drone was used first, and, when that was exhausted, the queen was, virtually, a hybrid queen, and no more. This will explain why we have queens that produce bees the greater part of which are beautifully marked, while, once in a great while, there will be one almost black; also queens that produce both pure blacks and pure Italians. I admit this is somewhat of a conjecture, but I offer it until we can have some better explanation of these well known facts.