

## Entomology.

### The Plum Curculio.

(*Gnorotrachelus nenuphar*, Herbst.)

THE havoc committed by this terribly destructive little insect among the fruit of not only the finest varieties of Plums, but also of Cherries, Peaches, and even Apricots and Apples, must be only too well known by the majority of our readers; the origin of the evil, however, is not so often seen as the widespread ravages that he commits would lead one to expect. We purpose, therefore, to give a short account of the "Little Turk," as he is often styled from the crescent-shaped mark he makes on fruit.

The Curculios, or Snout-beetles, differ from almost all other beetles in the peculiar prolongation of their heads in the form of a snout; sometimes this appendage is as fine as a hair, at others as broad as the rest of the head; sometimes again it is as long as the whole body, at others it is quite short and inconspicuous; in some species it has the appearance of an elephant's trunk. On this snout, which is really a part of the head, and not a separate organ like the beak or sucker of a bug, or the proboscis of a house-fly, are situated the antennae, and at the top of it the eyes, the end terminating in the organs of the mouth. Our foe, the Plum Curculio, differs from all other Canadian Curculios in having a narrow, black, shining hump on the middle of each wing-cover, and behind these humps a yellowish spot, which is sometimes enlarged into a band across the wing-covers. It is about one-fifth of an inch long, exclusive of the snout, which is about a quarter the length of the body. Its general color is ashen black.

As soon as the young fruit becomes fairly developed, the Curculio begins its work. Our seasons, of course, vary considerably from year to year, but we may as a rule begin to look out for this insect about the first week in June, when it commences to infest the trees, and deserts its winter hiding-places. This year we found some specimens under rhubarb-leaves that had been left a few days on the ground near the plants from which they had been taken, on the 26th of May; some years ago we found one in an old gall on a hickory tree as early as April 20th. Various American writers relate their having found them in November and March, and Dr. Trimble says that he found some specimens under the shingles of a roof late in the fall, and in the chinks of stone walls and under a scale of bark in early spring. Hence we may infer that they pass the winter in their perfect state, remaining torpid like a large number of other insects, until the warm weather bids them wake up and perform their allotted work. The female it is that makes the crescent mark on the fruit, an operation which is thus described by Dr. Trimble in his elaborate work on the Curculio and Apple Codling Moth:—"The semi-circle or crescent-shaped mark is made by the end of the proboscis, and merely goes through the skin. This part of the process, while the fruit is young and tender, is soon finished, sometimes not taking more than two or three minutes. From the centre of the concave part of the crescent, the proboscis is next introduced under this cut skin, and there it slowly works, cutting its way until it can reach no further. The end of this cell or cavity is now dug out or enlarged, to make it a suitable receptacle for the destined egg. The insect has an instinct which teaches her that the surroundings of this cavity must be so deadened that no subsequent growth of the fruit at this part shall press upon that delicate egg and crush it. The preparation of this cell is much the most tedious part of the process, usually taking about fifteen minutes, though sometimes half-an-hour. During most of this time, the Curculio will be found in a pitching position, and with her proboscis entirely buried; looking as the

woodcock does when boring for food in the soft ground. This cavity finished, she turns round and deposits an egg at its orifice; then assuming the former position, very quietly pushes that egg with her proboscis to its destined place. Next the crescent-shaped cut is plastered up with a gummy substance that holds the cut edges together for the time being; probably an instinctive precaution against the weather or insect enemies, that might endanger the safety of the egg." This process is repeated on one plum after another till the whole stock of eggs is exhausted. After a few days, the egg hatches out and produces a little white grub without legs, that bores into the flesh of the fruit, and causes its final destruction. After some weeks the injured fruit falls to the ground, and then the grub, being full-grown, works its way out, and enters the ground, there to complete its changes into the pupa and perfect states. The beetles emerge from the ground in August and September, sometimes even a little earlier. The only fruit that does not fall to the ground when thus attacked appears to be the cherry.

Such is a short life-history of this very destructive insect; and now let us consider what remedy there is for it. We need not dwell long upon this, as a correspondent, "Fruit-Grower," in our last issue, gave an account of the very best remedy there is, viz., jarring the trees and destroying all that fall. For full particulars we refer our readers to his excellent and timely letter. We may add that all fallen fruit should be gathered regularly, and not left for any length of time on the ground, and then be either burnt or fed to pigs. By employing these two methods, and persevering in them, a very large proportion of one's fruit can be saved, even though one's neighbours do not look after theirs, but cultivate fresh crops of Curculios for the annoyance of the more thrifty. If all fruit-growers would only unite in employing these simple methods, the Curculio would speedily be banished from our midst, or at any rate be reduced to very insignificant numbers. May we beg that all our readers will this year give the plan a fair trial, save their fruit, and let us know the result?

### A Strawberry Bug.

For an entomologist to lay claim to infallibility would be absurd in the extreme, since he has to deal with a race of animals which is said to embrace many times as many species as all the rest of the animal creation put together. While, then, we endeavor to be as accurate and correct in our statements as possible, we, of course, do make mistakes sometimes; one of these has lately been very kindly pointed out to us by Mr. Riley, the State Entomologist of Missouri, whom we have the pleasure of numbering among our correspondents.

In the CANADA FARMER for Aug. 1, 1867, (vol. iv, page 238), we gave an account of what we took to be a small beetle infesting Mr. Arnold's strawberry plants at Paris, Ont.; this insect turns out not to be a beetle, but a bug, though it is uncommonly like a beetle. What we took to be the connate wing-cases, covering, to our surprise, wings for flight, turn out, on more minute inspection, to be the immensely developed scutellum (the triangular piece that separates the wings on the back) of a singular family of bugs, called from this peculiarity *Scutelleridae*. We have never devoted ourselves to the study of the order *Hemiptera* (true bugs) so much as to that of some of the other orders of insects, and therefore have but little acquaintance with its classification; nor do we know of any work which treats upon the American species of the order in particular; we are unable, then, to say whether our species is the same as that sent to Mr. Riley by his correspondent, viz., *Crimelana lateralis*, Fabr., though we have little doubt that it belongs to the same genus. If Mr. Arnold should find any more of these insects upon his strawberry-plants this year, we beg that he will favor us with a good supply of specimens, that we may be able to send some to our correspondents and have the matter set at rest.

## Insects on Plum Trees.

"J. J., Campbellford, Ont.," writes as follows:—"Please inform me what it is that causes the fruit of the common wild plum to swell up almost immediately after blossoming, while the tame ones invariably escape? The first time I noticed this disease was about four years ago. I enclose a few specimens of the injured fruit. You will also confer a favour by giving a description of the Curculio; it has not made its appearance here as yet, to my knowledge, unless these curious-looking little creatures which I enclose are specimens of it,—I took them off a plum tree to-day. Please let me know what they are."

We have frequently noticed the disease referred to in wild plums, but do not know its nature or origin. Whether it is the work of an insect or not we cannot say, but we shall endeavor to find out this season. The request for information about the Curculio has been anticipated by the foregoing article, which we prepared as appropriate to the season. The insects enclosed, together with the plums, were crushed "as flat as a pancake" in their transit through the mail-bags. We must again impress upon our correspondents the necessity of enclosing specimens sent by mail in something that will resist a good deal of pressure—stiff pasteboard or tin boxes, for instance—else they are apt to reach us in a perfectly unrecognizable condition. "J. J.'s" specimens, however, are old friends, whom we should think it unpardonable not to recognize; we speak advisedly, they are our friends, but deadly foes to plant-lice. They belong to the family of Ladybirds (*Ladybugs* some people call them—a combination of names that ought to be abhorrent to everyone possessing a spark of gallantry), and are of a deep shining black colour, with a roundish blood-red spot on each wing-cover, whence they derive their name, the Twice-wounded Lady-bird (*Chilocorus biulnerus*, Muls.). These little insects, as well as all the other Lady-birds, should never be killed, for we owe to them in a great measure that all vegetation is not destroyed by plant-lice.

THE GRAPE-VINE FLEA BEETLE: (*Grapholera chalybea*).—Now is the time for grape-growers to be on the look-out for this very destructive insect; it is quite abundant in some localities at the present moment. The best remedies for it are hand-picking, which we consider the most effectual, and syringing with strong soap-suds. For a description and figure of the insect, see the CANADA FARMER for 1867, vol. iv, page 327.

CURRENT-BUSH INSECTS.—The numerous foes of the currant-bush are now hard at work at leaf and stem. We have already found nearly full-grown larvae of the Saw-fly, and small specimens of those of the well-known Moth. A highly recommended remedy for these insects is a mixture of White Hellebore and Alum in water; it is affirmed to be effectual by many persons in Toronto upon whose statements we can rely. We are about to give the receipt a thorough trial ourselves, and shall acquaint our readers with the result. The larva of the moth that bores into the stalks is now causing much injury also; all dead or dying stalks should be cut off and burnt at once.

FLEAS IN SOUTHERN INDIA.—Observing in the "Zoologist" a note remarking on the decrease of fleas of late years, it may interest the writer and others to hear that in this neighborhood, on the contrary, they were never, to my knowledge, so numerous as at the period referred to; I remember to have heard great complaints. I am not aware whether fleas breed and multiply on our shores, though in the South of India I have found them among the sand-hillocks skirting the sea in countless numbers; for instance, on one occasion, when passing a few days (in the year 1832) at a bungalow on the shores of the Gulf of Manar, I could not stroll on the beach of an evening without being covered with fleas from head to foot, so that my white dress was completely dotted and spotted with them. Fortunately, being of a sluggish kind, they could be brushed off by hundreds; however, I was eventually driven back to my head-quarters at Ramnad, finding the flea-plague even worse than the plague of mosquitoes, on the scorching sandy plains around the fort.—Henry Haddfield, Vennor, Isle of White, in the Zoologist.