

## Entomology.

### The Grape-vine Flea-beetle.

(*Haltica chalybea*, Illiger.)

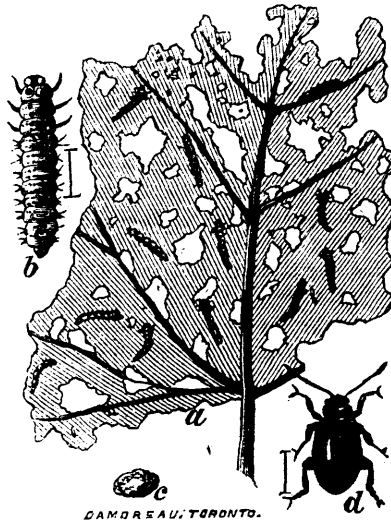
Is there a grape-grower in the United States who does not know, to his sorrow, what the Grape-vine Flea-beetle is? Hardly one! And yet how few ever connect it with its disgusting little shiny brown larvæ, which generally prove still more injurious than the beetle, by riddling the leaves in the middle of summer.

The Grape-vine Flea-beetle often goes by the cognomen of "Steel-blue Beetle," and is even dubbed "Thrips" by some vineyardists. The latter term, as most of our readers are well aware, is entirely inapplicable.\* The former name is not sufficiently characteristic, because the colour varies from steel-blue to metallic-green and purple, and because there are many other flea-beetles to which it would equally apply.

The Grape-vine Flea-beetle is found in all parts of the United States and in the Canadas, and it habitually feeds on the Alder (*Alnus serrulata*), as well as upon the wild and cultivated Grape-vine. Its depredations seem first to have been noticed in 1831, by Judge Darling, of Connecticut, and in 1834 Mr. David Thomas, of New York, published an account of it in the 26th volume of Silliman's *American Journal of Science*. Its transformations were, however, unknown till some time after Dr. Harris wrote his excellent work on Injurious Insects, and no figure of the larvæ has been hitherto published.

The beetles hibernate in a torpid state under any shelter which is afforded them in the vineyard, such as the loose bark and crevices of stakes, etc., etc., and they are roused to activity quite early in the spring. The greatest damage is done by them at this early season, for they often bore into and scoop out the unopened bud, and thus blight the grape-grower's bright expectations. As the leaves expand, the little jumping rascals feed on the leaves, and soon pair and deposit their small orange eggs in clusters, very much as in the case of the Colorado potato beetle. These eggs soon hatch into dark-coloured larvæ, which may be found of all sizes during the latter part of May and early part of June. They are generally found on the upper surface of the leaf, which they riddle and devour. When very numerous they devour all but the very largest leaf-ribs, and we have seen the wild vines throughout whole strips of country rendered most unsightly by the utter denudation which these insects had

wrought. The larvæ feed for nearly a month. They then descend from the vine and bury themselves a short distance in the earth, where, after each forming a little earthen cell, they change to pupæ of a deep dull yellow colour, and in about three weeks more issue as beetles. These beetles leave the ground from the middle of June to the middle of July, and, so far as we are aware, do not breed again till the following spring—there being but one brood each year. They subsist on the leaves during the fall, but the damage they inflict is trifling compared to that which they cause in spring.



The accompanying illustration represents this beetle in its various stages, and also the riddled and jagged appearance (a) of the leaf on which they feed. b is a magnified view of the full-grown larva, the natural size being indicated by the hair-line at the side. c represents the small earthen cell of the pupa, and d the mature beetle magnified, the true size shown by the hair-line.

Like all other flea-beetles, this species has very stout, swollen hind thighs. By means of these strong thighs they are enabled to jump about very energetically, and are consequently very difficult to manage during the summer months. In the winter time, however, they can be destroyed in great numbers while hidden in a torpid state in their retreats. Clean culture and general cleanliness in the vineyard will, to a great extent, prevent this insect's increase. Dr. Hull, of Alton, Ills., tells us that they were once so numerous in a small vineyard of his, that in the spring of 1867 he burnt them out by surrounding them with fire, and letting the fire run through the dry grass in the vineyard. "It was a rough remedy, but as his crop was destroyed, he let the beetles follow suit."

The larvæ can be more easily destroyed by an application of dry lime, used with a common sand-blower or bellows. This has been found to be more effectual than either lye or soap-suds, and is withal the safest, as lye, if used too strong, will injure the leaves.

This insect, like so many others, will one year swarm prodigiously, and then again be scarcely noticed; and such changes in numbers depend mainly on conditions of the weather, as we know of no parasite which attacks it. In the spring of 1868, though they were at first out in full force, yet after some subsequent severe and cold weather, they had mostly disappeared. They are apt to be most troublesome where alder abounds in the woods.—*American Entomologist*.

### The Poisonous (?) Tomato Worm.

To the Editor.

SIR,—In your issue of 15th October, which a friend has just placed in my hand, I have read your article under the above heading.

No doubt a fair criticism of such a subject falls within the scope of your duties. But I ask, have you a right as a gentleman, however retired within the Editorial *Sanctum Sanctorum*, to make such reflections upon any inhabitant of Dundas as your article contains—without at least first learning either the facts of the case or his habits of life? And this too, after my name had been so freely mentioned in the recent paragraph in the newspapers you refer to. I assure you the paragraph or any newspaper mention of the matter was not of my seeking, or to my liking; nor was it strictly according to the truth of the singular occurrence.

Why your mind revels in pouring "spirits down to keep spirits up" I cannot imagine, because there is no such statement in the paragraph in question, as it only states the application of tobacco steeped in whiskey as a poultice to the wounded parts; and you do not hesitate to add, for sensational writing, another circumstance to such paragraph, namely, "He sent a swift messenger for the doctor," which, however cleverly written, is purely your own invention.

Now, although not so heroic as to thrust the "poisonous spines" of any insect into my fingers, as you say you have done in order to try its powers, yet all my neighbours will inform you—if you care to know—that I am about one of the healthiest and hardest subjects to be affected by poisonous matter, and am in no way inclined to "erysipelas," or to "get my arm into a sling," like your acquaintance you mention. I can assure you I have gone among cholera subjects and mosquitoes, without suffering more than you appear to have done from your experimental exploits in spiny science.

I can also assure you that no one acquainted with me will give you my character as a man accustomed to imbibe too freely; no, not even upon the excuse of the "Venomous beast," as you call the tomato worm.

Now, sir, if you think because you mention no name, that your article is a fair one, you must have forgotten that this tomato worm case has singularly become one of most annoying notoriety, owing to that

\* The term *Thrips* is confined to an anomalous group of insects—mostly cannibal, but exceptionally vegetable feeding—of which Halliday made a separate Order (*Trypanoptera*), but which are to-day included in the *Homoptera*, or Whole-winged Bugs, by most authors, though they seem to have close affinities to the *Orthoptera*, and to the *Pseudoneuroptera*.