

Beneficial Insects.

MARY TREAT.

We need all the helps we can get in destroying noxious insects, and only those who have studied insect life are aware of the important part the carnivorous insects take in keeping the vegetable feeding ones in check. And if with the aid of illustrations and descriptions we can make the more common ones plain enough to be recognized by the observing farmer and gardener, they will soon

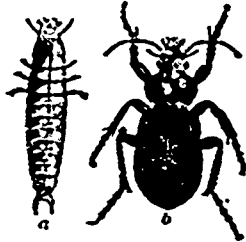


Fig. 1.—LION-BEETLE—*a*, LARVA, *b*, BEETLE.

learn to know all friends from foes, so that they may protect and encourage these helpers in the work of destroying the pests of the farm and garden.

BEETLES.

The Cut-worms are among the most grievous annoyances that the gardener has to contend with, and from their habit of burrowing in the ground during the day they often escape the parasitic *Hymanoptera* that fly in the day-time. But they cannot escape the ferocious Lion-beetle (*Coleosoma collicidum*), whose main business in life is to hunt and devour them; *a*, in figure 1, shows the larva; *b*, the perfect beetle. This beautiful beetle is about an inch in length, and glossy black, with three rows of gold-colored indented dots running along the entire length of the wing-cases. These beetles hunt mostly in the night when the Cut-worms have come forth to feed on the tender vegetation, so we most often see our gold-spangled Lion on damp, cloudy days or just at twilight. The larva is a dark-colored, nearly black, ferocious-looking creature, and when full grown nearly two inches in length. When she is not gorged with food she runs rapidly over the ground, but I have often found her in such a condition that she could scarcely move from the excess of her gluttony. Her favorite food is cut-worms, and, like her parents, she hunts mostly at night, hiding away from the direct rays of the sun under rubbish, and sometimes burrowing in the earth. Her mode of attacking a Cut-worm is always by seizing the throat, and she never lets go her hold until she has extracted the juices of her writhing victim, when she leaves its limp, dead body and goes in pursuit of another.

Coleosoma strigatoides (figure 2) is another Lion-beetle which is more noticeable and fiercer looking than the

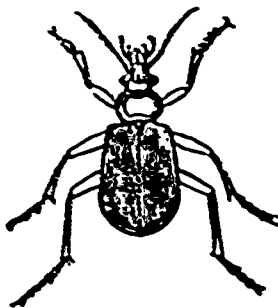


Fig. 2.—LION-BEETLE.

first mentioned. The wing-cases are a bright golden-red, and the rest of the body is marked with gold, violet-blue and green. He is somewhat larger and has longer legs than his darker relative. He does not shun the light, but seems to enjoy the bright sunshine, so, if aware that his respondent

colors were shown with dazzling effect by the sun's rays. He kills and eats all soft-bodied larvae apparently with equal relish. In New Jersey he has learned that he can find good prey by hunting in the corn-fields. He mounts a stalk of corn and runs over the ear, now and then standing perfectly still as if listening. If a worm is in the ear he soon finds it, pulls it out and devours it. The larva of this fine beetle looks much like the other; it is equally rapacious and will ascend trees in pursuit of prey, or burrow in the earth after Cut-worms.

The Elongated Ground-beetle, *Pezomachus elongatus*, (figure 3) is another of our handsome carnivorous beetles. Its color is shining black, bordered with deep blue. It is often met with in our gardens, and preys indiscriminately upon all soft-bodied larvae—especially upon the larvae of the Colorado Potato-beetle.

Several other large predaceous beetles are common in gardens and cultivated grounds, but most of them are plain black or dark brown, and can be easily recognized by their powerful sickle-shaped jaws, and by their quick, active movements.

Cicindellide is a family of beetles whose popular name—Tiger-beetles—is very appropriate and significant. They are somewhat less in size than the above mentioned, and their haunts are mostly confined to sandy soils. These beetles are very alert and swift on the wing, and they pounce down upon an unsuspecting victim with lightning-like rapidity. Under a magnifying lens their colors are indescribably beautiful; the eyes fairly dazzled with their brilliant hues of metallic luster. But the young Tigers are the oddest looking creatures imaginable—as ugly as their parents are beautiful. They are of a dusky whitish color, with broad, flat heads, and strong curved jaws. They live in burrows or tunnels from eighteen to twenty inches in depth, and their bodies are furnished with a pair of hooks, by which they can latch themselves up and rest at the top of their burrows while waiting for prey. When an unsuspecting insect comes within reach of this ferocious creature it seizes and escapes, for the concealed watcher springs upon it and takes it to the bottom of his tunnel, where he can enjoy his meal at his leisure.



Fig. 3.—ELONGATED GROUND-BEETLE.

The most widely known and justly appreciated beneficial beetles are the pretty little Lady-birds. Their shining, rounded elytra, or wing-cases, and bright colors make them conspicuous objects. The ones most commonly noticed are red, spotted with black, but there are others of a black color spotted with red, one especially—a great benefactor—with two light red spots on the shoulders, called the Twice-stabbed Lady-bird. And still others that are yellow, spotted and barred with black, but these colors are not always the same in different individuals of the same species—we can scarcely find any two marked precisely alike—but the general resemblances are the same.

We do not know, nor can we scarcely comprehend, the great value of these Lady-birds to the agriculturist. Quietly and stealthily they perform the work of extermination before our eyes, often unheeded, their worth and value entirely unnoticed or ignored. Last summer the leaves of a fine plum tree were almost covered with Plant-lice (*Aphide*). We gave it up as lost for that year, saying no fruit would ripen, but shortly afterwards we rejoiced to see myriads of Lady-birds on the tree, some of the twigs were fairly red with the little creatures, their numbers were almost past belief, and in a few days the *Aphide* disappeared, and the tree yielded a good crop of plums. This species was the Nine-spotted Lady-bird (*Coccinella 9-notata*). The young Ladies were more voracious than their parents, and they were not at all shy or ashamed of their immense capacity for eating, but devoured victims after victims before our eyes with the utmost gusto.

They did not at all resemble their mothers, but looked more like bright-colored little lizards than they did like their respected parents. They were dressed in blended colors of red, yellow and black, and after they had eaten untold numbers of *Aphide*, and had come to their full growth, they hung themselves fast to the under side of twigs and leaves, where they assumed the pupa state within their old, cast-off dresses, all wrinkled as they were.



Fig. 4.—TIGER-BEETLE AND LARVA.

and split open in the backs; but we suppose they served as a sort of protection to the little chrysalids.

While the Lady-birds were clearing the plum tree we noticed a small shrub of English Hawthorn with curled leaves, and beneath each leaf were immense numbers of *Aphide* doing their best to pump out all of the sap. So we transferred a dozen or more of the young Ladies, together with their parents, from the plum tree to the Hawthorn, and in less than twenty-four hours they cleared the shrub. These Lady-birds are not only enemies to Plant-lice, but they devour several other kinds of noxious insects. Five or six species are known to prey upon the Colorado Potato-beetle. The eggs of the Lady-bird very much resemble those of the Potato-beetle, the clusters are less in size, but the eggs are of the same color, and only a little smaller; so if we would preserve one of our benefactors, it is necessary to look close when destroying eggs of the Potato-beetle, and not mistake a friend for an enemy.

Early Vegetables.

If one has any means for forwarding his vegetable plants, he can do much to hasten his crops. Not many farm-gardeners make use of hot-beds or cold frames, yet these, by starting their plants in window boxes, can gain some weeks earliness over those who sow their seeds in the open air. Vegetable seeds are hardy and tender. Those of the hardy class may be sown this month, while the tender kinds cannot be safely sown until the time to plant Indian corn. The vegetables belonging to the hardy class, usually cultivated in family gardens, are: beet, carrot, cabbage, lettuce, onions, parsley, parsnip, peas, radish, turnip and spinach. The seeds of any of these may be sown in the open garden as soon as the soil is dry enough to be worked. Of course some of these, especially cab-



Fig. 5.—*a*, LADY-BIRD; *b*, LARVA; *c*, PUPA.

bage and lettuce, are had much earlier by raising the plants under glass and setting out the young plants at the time that seeds are sown in the open ground. By the use of window boxes, we can raise all the plants usually needed in the family garden. Such plants may be purchased, but raising them is cheaper. One who takes pride in his garden will avail himself of whatever means that will allow him to be a little ahead of his neighbors.

