

ous red eyes. Second stage, lighter color, more greenish and active, eyes brown. Third stage, greener body, yellowish head, nodes and distal segment antennae blackish. Fourth stage, more green, wing pads beginning to show, eyes blackish. Fifth stage, very green, eyes darker, wing buds reaching one-third the length of the abdomen.

The adult bugs are very active, especially during the warm, sunny part of the day. They can be seen flying over the plant, and even to some distance.

Control Measures.—As I have suggested previously, a pest of this kind should not be difficult to control. Any good contact spray ought to do the work. I tried “Penetrol” and Pyrethrum extract with success, spraying the plant at weekly intervals. Later, I tried out a spray of straight Deo-Base oil, with Pyrethrum added in the same strength as used in household sprays, i.e., one quart Pyrethrum 20 to five gallons of the oil. This gave splendid results in killing the bugs, and when applied in a very fine fog did not damage the foliage.

Observations on the Predaceous Habits of *Cyrtopeltis varians* (Dist.)¹ (Hemip.)

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While making a study of this tomato blossom blighter, I saw the bugs with their beaks inserted in plant lice. Following up this observation, I found that they eagerly sought out other forms of insect diet. As early as October 16, 1929, Rosewall and Smith,² of the Louisiana Experiment Station, discovered this habit.

Dr. Rosewall and Mr. Smith were making observations on corn earworms, *Heliothis* spp., when they discovered both adults and nymphs of these bugs with their beaks inserted in the eggs of the moths. They, also, found them feeding on the young larvae.

¹ Mr. Robert L. Usinger called my attention to a change of name; the species heretofore determined as *Engytatus geniculatus* Reuter, (Rev. Ap. Ent. Ser. A.22, 421).

² Rosewall, O. W., and Smith, C. E.—The predaceous habit of *Cyrtopeltis varians* (Dist.) Jour. Econ. Ent. XXIII, p. 464, Sc. notes. 1930.

Proc. Haw. Ent. Soc., IX, No. 3, September, 1937.

In my life history work I, at first, found difficulty in carrying the bugs through on shoots of tomato. They disappeared after two or three moults. I was never able to see them preying upon one another, though they were frequently observed chasing each other. They are decidedly wary and not at all gregarious. Several times I found dead nymphs on the blotter in the bottom of the cages.

Getting new material, I found that aphids on the tomato slips had been sucked dry, so that only their dead, empty skins remained. Following up this observation, I got some pineapple mealybugs, in all stages on beans, and put them into the cages. At once the young mealybugs migrated onto the tomato slips, where the mirids were soon observed probing them with their beaks. Even the second stage nymphs of the mirids were very active in their search for the very tiny mealybugs. After a few days most of this food supply had been used up. The mirid nymphs took on a different appearance. They were less green in color—the darker stomach contents showing conspicuously through the transparent wall. The mirids thrived on this diet, and I was able to carry them along successfully without any losses.

Eggs of cabbage butterfly on nasturtium leaves were equally relished by the mirid nymphs, and in a few instances they fed upon the newly-hatched caterpillars. They acted afraid of larger caterpillars, and left them alone.

All of this evidence shows that even our worst pests may sometimes be an important factor in Nature's balance.