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TWO HEMIPTEROUS ENEMIES OF THE MEXICAN BEAN BEETLE IN OHIO¹

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Since the World War the Mexican bean beetle, *Epilachna corrupta* Muls., has been a serious pest of beans in Eastern United States. A number of native parasites and predators of the beetle have been reported by Howard and English ('24) and Howard ('30). Quantitative data are not given for any of the predators and parasites. It may be of interest to record a little quantitative data regarding two predators, one of which has not been recorded as a predator of the bean beetle previously.

On July 21, 1933, the senior author found a female of the pentatomid bug, *Perillus circumcinctus* Stål, feeding on an adult Mexican bean beetle. The pentatomid was placed in a cage with a bean plant and each morning ten adult bean beetles not over two days old were placed in the cage. All beetles were removed from the cage each day and the numbers killed by the pentatomid recorded. For the first week a control cage with the same number of beetles was observed. In eight days only one dead beetle was found so the control was discontinued since it was evident that the natural death rate among the young beetles was very low.

The maximum number of beetles killed on any one day was five and the minimum number one. A total of 85 bean beetles were fed upon in 27 days of observation. This is an average of 3.15 beetles per day. *Perillus circumcinctus* Stål has not previously been recorded as a predator on Mexican bean beetle.

On July 7, 1935, the junior author (W. F.) found a nymph of the reduviid, *Arilus cristatus* (Linn.) feeding on Mexican bean beetles. This nymph was placed in a cage with a bean plant and both adult and large larval bean beetles were introduced daily. The full data for this nymph are given since they show so clearly the influence of moulting on the feeding habits of this reduviid.

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Reduction of feeding began on July 9 and 10, and on July 11 and 12 no food was taken. On July 13 the last nymphal moult occurred. On the day following no food was taken and on the next three days only larvae were attacked. On July 18 the adult beetles were again attacked and formed the bulk of the food until August 1. On August 2 no food was taken and on August 3 the insect moulted again and became an adult. During 28 days it had consumed 69 adult beetles and 22 large larvae, thus accounting for 91 beetles altogether. This is an average of 3.25 beetles per day.

TABLE I

Mexican Bean Beetle Adults and Larvae Fed upon by *Arilus cristatus* (Linn.)
During Period of Observation

| DATE | FOOD | | DATE | FOOD | | DATE | FOOD | |
|---------|--------------|--------|---------|--------|--------|---------------------------|--------|--------|
| | Adults | Larvae | | Adults | Larvae | | Adults | Larvae |
| July 7 | 5 | 4 | July 17 | 0 | 1 | July 27 | 2 | 2 |
| July 8 | 4 | 2 | July 18 | 3 | 2 | July 28 | 3 | 0 |
| July 9 | 3 | 0 | July 19 | 2 | 2 | July 29 | 4 | 0 |
| July 10 | 2 | 0 | July 20 | 3 | 1 | July 30 | 3 | 1 |
| July 11 | 0 | 0 | July 21 | 4 | 0 | July 31 | 2 | 1 |
| July 12 | 0 | 0 | July 22 | 2 | 0 | Aug. 1 | 4 | 0 |
| July 13 | 0 | 0 | July 23 | 5 | 0 | Aug. 2 | 0 | 0 |
| Moult | Last Nymphal | | July 24 | 6 | 2 | Aug. 3 | 0 | 0 |
| July 14 | 0 | 0 | July 25 | 8 | 0 | Moult, to adult | | |
| July 15 | 0 | 2 | July 26 | 4 | 0 | Observation discontinued. | | |
| July 16 | 0 | 2 | | | | | | |

Arilus cristatus is more common in Southeastern Ohio than *Perillus circumcinctus*, but neither is present in large enough numbers to be effective as a natural control. This is in accord with previous reports of natural enemies of the Mexican bean beetle in Eastern United States. From the standpoint of the biology of these species it is of interest, however, to record their capabilities.

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