

# GROUND BEETLES ON COTTON FOLIAGE<sup>1</sup>

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The role of species of the carabid genus *Lebia* as predators of cotton insects has received little attention. Five species of the genus *Lebia* of the family Carabidae were found on cotton foliage in Arkansas during 1957, 1958, and 1959. They ranged over the entire plant, tending to concentrate in the terminals.

A number of species of these small ground beetles are active on the leaves and stems of various herbaceous plants. Several species have been found to be predaceous on both adult and immature stages of economic pests. Glover and Riley (Riley, 1871) observed that *Lebia grandis* Hentz. fed on both eggs and larvae of the Colorado potato beetle. Cushman and Isely (1916) reported *Lebia ornata* Say feeding on both larvae and adults of the cherry leaf beetle, *Galerucella cavicollis* (Lec.). *Lebia viridis* Say was observed by D. Isely (1920) to feed on eggs, larvae, and pupae of the grape flea beetle, *Altica chalybea* (Ill.). Silvestri (Clausen, 1940) found that *Lebia scapularis* Fourc. fed on all stages of an elm leaf beetle, *Galerucella luteola* Mull.

TABLE 1. NUMBER OF *Heliothis zea* EGGS CONSUMED BY ADULTS OF *Lebia analis*.

Specimen	No. of days	Total no. of eggs consumed	Av. no. of eggs consumed per day
1	18	71	4
2	21	128	6
3	21	138	6.5
4	8	30	3.7
5	18	131	7.3
6	18	130	7.2
7	13	82	6.3
8	14	83	6.0
9	18	128	7.1
10	13	81	6.2
Average consumed per day by all specimens			6.03

The 5 species found on cotton in Arkansas have been identified<sup>4</sup> as *Lebia marginicollis* Dej., *L. pumila* Dej., *L. abdominalis* (Chaud.), *L. viridis* Say, and *L. analis* Dej. *L. viridis*, *L. pumila*, *L. marginicollis*, and *L. ab-*

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<sup>4</sup> Specimens identified by H. Dietrich of Cornell University.

*dominalis* were taken near Morrilton, Conway County, in cotton. *L. analis* was taken near Morrilton, Warren, Hope, Kelso, Altheimer, and Atkins in cotton, indicating a state-wide distribution in that crop. *L. analis* was particularly abundant in cotton during 1959. As many as 17 beetles to 100 terminals was not uncommon. Except for *L. abdominalis* and *L. pumila*, these species were also found on corn, alfalfa, and soybeans. *L. abdominalis* was found only on cotton and soybeans. *L. pumila* was found only on cotton.


It is possible that *Lebia analis* is, at times, an important bollworm egg predator on cotton. Attempts at field observations of feeding habits were unsuccessful. In the laboratory, *L. analis* fed freely on eggs of *Heliothis zea* (Boddie) but rejected tarnished plant bugs and aphids. Over a 1 to 3 week period, 10 individuals consumed an average of 6 *H. zea* eggs per day. First instar *H. zea* larvae were also eaten. *L. viridis* consumed *H. zea* eggs somewhat less freely.

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