

December 1984

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Recommended Citation

Mertins, James W. 1984. "Notes on *Microctonus* Spp. (Hymenoptera: Braconidae) Introduced to Iowa Against the Alfalfa Weevil, *Hypera Postica* (Coleoptera: Curculionidae)," *The Great Lakes Entomologist*, vol 17 (4)

Available at: <https://scholar.valpo.edu/tgle/vol17/iss4/10>

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**NOTES ON *MICROCTONUS* SPP. (HYMENOPTERA: BRACONIDAE)
INTRODUCED TO IOWA AGAINST THE ALFALFA WEEVIL,
HYPERA POSTICA (COLEOPTERA: CURCULIONIDAE)¹**

James W. Mertins²

ABSTRACT

The braconid parasitoid *Microctonus colesi* was released in Story and Boone counties, Iowa, but not recovered from collected alfalfa weevils, *Hypera postica*. Sampled adult weevils were parasitized at an overall seasonal rate of 41.5% by *Microctonus aethioides*, although it had not been released in the immediate vicinity.

On 24 September 1981, I released 503 living adult *Hypera postica* (Gyllenhal) that came to me from Ohio. These weevils had been exposed in the laboratory as larvae to attack by female *Microctonus colesi* Drea, and ca. 60% of them should have contained immature *M. colesi* (pers. comm., J. K. Flessel, Ohio Agricultural Research and Development Center, Wooster). The weevils were released in 17 alfalfa fields in Boone and Story counties, Iowa, at the recommended rate of 25–50 weevils per field.

The univoltine life cycle of thelytokous *M. colesi* includes emergence of the mature larva from the adult host in the spring, when weevils resume activity and reenter alfalfa fields. Therefore, the most appropriate time to attempt recovery of progeny from the released parasitoids was spring 1983 (Dysart and Day 1976). Between 12 May and 13 June 1983, I attempted to visit each release site once per week and to sweep-sample adult weevils for observation of parasitoid presence. Two of the original 17 fields had been converted to cornfields in the intervening year, and one additional field was treated with herbicide just before I attempted the sample in 1983. A fourth field was plowed after I took my first (and only) sample.

During the 4.5 weeks of sampling, I collected and held for observation a total of 1346 adult alfalfa weevils from the 14 alfalfa fields visited, taking a minimal sample of 30 and a maximum of 77 weevils/field/season. No *M. colesi* were reared. Fortunately, however, 528 individuals of another exotic parasitoid, *Microctonus aethioides* Loan, emerged from the collected weevils, a seasonal parasitization rate of 41.5%.

Microctonus aethioides occurred in every sampled field, although parasitized weevils were not present on every sampling date in every field. For example, no parasitoids emerged from the small number (51) of weevils collected from four fields before 23 May; similarly, a few weevils (19) collected from eight fields after 8 June produced only two parasitoids. The seasonal rates of parasitization by field ranged from 8.7% (in the field where only one early sample was possible) to 63.3% (in the field that produced only 30 adult weevils during the season). The earliest date of collection for parasitized weevils was 23 May (seven of seven fields positive); the latest date was 13 June. Samples taken between 31 May and 3 June seemed to include weevils most likely to produce parasitoids. A 31 May sample of eight weevils from field 5 was 100% parasitized; 19 weevils taken on the same day from field 1 were 85.3% parasitized, and 17 from field 14 on 1 June were 85.0% attacked.

¹Journal Paper No. J-11302 of the Iowa Agriculture and Home Economics Experiment Station, Ames, IA 50011. Project No. 2558.

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The omnipresence of and high rates of attack by *M. aethiopoulos* are all the more remarkable when one realizes that (to my knowledge) it had not been released in any of the study areas. The first Iowa release of *M. aethiopoulos* was in distant Lee County in 1975 (pers. comm., J. R. DeWitt, Department of Entomology, Iowa State University), but none was ever recovered there. The first Iowa specimens were collected in five other eastern counties in 1980 (USDA 1980). The nearest release (one of dozens in the current USDA parasitoid redistribution program) was in 1981 in Lafayette Township, northeast, but adjacent to the study areas.

Microctonus colesi (to my knowledge) was never released in Iowa before this effort, but it was collected from at least two southwestern counties as early as 1981 (unpublished report, USDA, APHIS, PPQ, Niles, MI). What has become of *M. colesi* in the release sites? I do not know. But *M. aethiopoulos* often has been associated in the past with suppression of alfalfa weevil populations (Dysart and Day 1976), and its great success in penetrating the central Iowa infestation is sufficient cause for optimism.

ACKNOWLEDGMENT

I appreciate the assistance of Dan Burden in the field and laboratory work reported here.

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