A Wasp Parasitoid *Meteorus autographae* Muesebeck (Insecta: Hymenoptera: Braconidae)[1]

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Distribution

Meteorus autographae is found in Newfoundland south to Florida, and then west to Wisconsin and Louisiana.

Description

Egg

The egg is clear and thin-walled. Soon after oviposition, the folded-in-two larva can be observed inside.

Larva

The larva is translucent, long and slender, with a pronounced sclerotized head. Often more than one egg is laid, but the first larva to emerge kills its siblings.

Figure 1. Mature larva of *Meteorus autographae* Muesebeck, a parasitoid wasp.
Credits: Andrei Sourakov, USDA

Pupa

The brown-colored, 5 mm-long (3⁄16 in) cocoon usually is suspended from the edge of the leaf on a silk string.

Figure 2. Pre-pupation larva of *Meteorus autographae* Muesebeck, a parasitoid wasp.
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Adult

The adult wasp is orange, with black eyes and antennae. The body does not exceed 6 mm (¼ in). The female has a well-defined black ovipositor.

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Figure 3. Cocoon of *Meteorus autographae* Muesebeck, a parasitoid wasp.
Credits: Andrei Sourakov, USDA

Figure 4. Male *Meteorus autographae* Muesebeck, a parasitoid wasp.
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Life History

This parasitoid attacks most instars of noctuid larvae in Florida. It develops from egg to pupa in eight days at 27°C (80.6°F). Six days later, the adult hatches and lives on average 40 days. Wasps also develop and survive better at cooler temperatures. During its life span in the laboratory, a female lays on average 240 eggs, though sometimes the number of progeny can reach 350. Development from egg to pupa takes approximately eight days at 27°C (80.6°F). It takes six more days for the adult to develop. This time triples when the temperature drops to 16°C (60.8°F).

Figure 5. Female *Meteorus autographae* Muesebeck, a parasitoid wasp.
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Hosts

The hosts for this wasp include: *Acleris variana* (Fern.), the eastern blackheaded budworm; *Agrotis ipsilon* (Hufn.), the black cutworm; *Alsophila pometaria* (Harr.), the fall cankerworm; *Anticarsia gemmatalis* Hbn., the velvetbean caterpillar; *Autographa* sp.; *A. biloba* (Steph.); *Autoplusia egena* (Guen.), the bean leafskeltonizer; *Colias eurythema* Bdvl.; *Evergestis stramminalis* Hbn.; *Helicoverpa zea* (Boddie), the bollworm (also called corn earworm and tomato fruitworm); *Orgyia leucostigma* (Sm.), the whitemarked tussock moth; *Peridroma saucia* (Hbn.), the variegated cutworm; *Plathypena scabra* (F.); *Pseudaletia unipuncta* (Haw.), the armyworm; *Pseudoplusia includens* (Wlkr.), the soybean looper; *Spodoptera eridania* (Cram.), the southern armyworm; *S. exigua* (Hbn.), the beet armyworm; *S. frugiperda* (Sm.), the fall armyworm; *S. ornithogalli* (Guen.), the yellowstriped armyworm; *Trichoplusia ni* (Hbn.), the cabbage looper; and *Udea rubigalis* (Guen.), the celery leaftier (also called the greenhouse leaftier).

Importance

M. autographae was found to be an important control agent of soybean looper (up to 24% of this pest's larvae were found to be parasitized in South Carolina). In Florida, it was found emerging from cabbage looper larvae. Many other species of noctuids were found to be a suitable host, and, most importantly, all larval instars were parasitized. Many other cabbage looper control agents (e. g., *Cotesia marginiventris*) attack only young larvae, which limits their effectiveness in control of these pests.

Selected References

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