

Forcipomyia (Microhelea) Eriophora (Williston) (Diptera: Ceratopogonidae) an Ectoparasite of Larval *Anaea troglodyta floridalis* (Nymphalidae)

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FORCIPOMYIA (MICROHELEA) ERIOPHORA (WILLISTON) (DIPTERA: CERATOPOGONIDAE) AN
ECTOPARASITE OF LARVAL *ANAEA TROGLODYTA FLORIDALIS* (NYMPHALIDAE)

Additional key words: Florida Keys, Florida leafwing, threatened species.

The Florida leafwing, *Anaea troglodyta floridalis* F. Johnson and Comstock (Nymphalidae), occurs locally within the pine rocklands of southern Florida and the lower Florida Keys (Minno & Emmel 1993; Smith et al. 1994). Hennessey and Habeck (1991) and Worth et al. (1996) described many aspects of *A. t. floridalis* natural history. Salvato and Hennessey (2003) and Salvato and Salvato (2010) also discussed *A. t. floridalis* ecology and provided a review of known parasites and predators for the species.

On 11 December 2010 MHS and HLS observed a female biting midge (Diptera: Ceratopogonidae) attached to the cuticle of a late instar *A. t. floridalis* larva in the Long Pine Key region of the Everglades National Park (Miami-Dade County, Florida). The midge was collected at approximately 0930 h, shortly after the initial observation. The larva, which was first encountered on 27 November 2010, remained in the field for additional monitoring.

The midge was preserved in 100% ethanol and sent to WLG who cleared it in phenol-alcohol, dissected and mounted it onto a microscope slide in Canada balsam and identified it as *Forcipomyia (Microhelea) eriophora* (Williston). *Forcipomyia (M.) eriophora* is an ectoparasite known to occur in Maryland and Florida, the West Indies and Mexico, Central America south to Bahia, Brazil (Wirth 1972; Wilkening et al. 1985; Hribar & Grogan 2005; Borkent & Spinelli 2000, 2007; Borkent & Grogan 2009; Grogan et al. 2010). This observation represents the first known report of *F. (M.) eriophora* parasitism on *A. t. floridalis*. Larvae of *Manduca sexta jamaicensis* Butler (Sphingidae) (Wirth 1972), *Corula geometroides* Walker (Geometridae) (Wirth 1956), and more recently *Papilio demoleus* L. (Papilionidae) (WLG, pers. obs.) have also been previously identified as hosts of *F. (M.) eriophora*. The slide-mounted *F. (M.) eriophora* will be deposited in the South Florida Collection Management Center at Everglades National Park.

On 17 December 2010 the host *A. t. floridalis* larva was encountered moribund possibly as a result of unseasonably cold temperatures within the Everglades over the preceding days. Therefore it could not be determined if *F. (M.) eriophora* parasitism influenced

A. t. floridalis larval development. Salvato et al. (2008) reported that an early instar *A. t. floridalis* died following parasitism from *F. (M.) fuliginosa* (Meigen), perhaps the result of the midge vectoring microbes during feeding (Wirth 1972). Conversely, MHS and HLS (unpublished data) have reared late instar *A. t. floridalis* larvae (n = 2) to the adult stage following instances of *F. (M.) fuliginosa* parasitism. Similar instances of sub-lethal *Forcipomyia* ectoparasitism on lepidopteran larvae have been noted by Sevastopulo (1973) and Young (1983).

The distribution of *F. (M.) eriophora* in Florida and other southeastern states, as well as the role of this ectoparasitic biting midge on the natural history of *A. t. floridalis* and other Lepidoptera requires further examination.

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