

Scientific Note

**New host record for *Caenocholax fenyesei sensu lato*
(Strepsiptera: Myrmecolacidae) from Costa Rica**

The family Myrmecolacidae (Strepsiptera), containing 110 species, is unique in that males only parasitize Formicidae (ants) and females parasitize Orthoptera and Mantodea (grasshoppers, crickets and mantids) (Ogloblin 1939, Kathirithamby 1991, Kathirithamby 2009, Kathirithamby & Hamilton 1992). Most described species are free-living males been collected from traps and thus lack host data. Wandering stylopized ants are seldom found, as hypothesized that when stylopized ants remain in the nest (Kathirithamby 2005, 2009), unlike stylopized wasps which abandon the nest (Hughes et al. 2004).

In Costa Rica (Puntarenas Province: Wilson Botanical Gardens: 4 km S San Vito, elevation 1200 m: 8°47' N, 82°58' W: 30 Jun 1995; Coll. J. Longino, #3699) the ant *Myrmelachista zeledoni* Emery, 1896, was collected from a small fallen tree, *Hampea appendiculata* (Donn. Sm.) Standl. (Malvaceae), at the trail edge where worker ants were scattered over the treefall, and ant nests found scattered in chambers in live tree stems. Two alate male ants collected inside nest chambers were found to be parasitized by a male *Caenocholax fenyesei* Pierce, 1909, *sensu lato* (Fig. 1). This strepsipteran species complex is widespread throughout the southern U.S.A., Central and South America and has been recorded from Costa Rica (Hayward et al. 2008, Kathirithamby 2009, Kathirithamby & Hughes 2002). This is the first record of the ant genus *Myrmelachista* being parasitized by a strepsipteran. Two voucher specimens of the ant *Myrmelachista zeledoni* Emery parasitized by strepsipteran *Caenocholax fenyesei sensu lato* male pupae are deposited in the Hope Entomological Collections, University Museum, Oxford.

The male *C. fenyesei sensu lato* previously recorded from Costa Rica (Kathirithamby & Hughes 2002) were free-living adults from trap material, hence the host was unknown. Ogloblin (1939) stated that stylopized ants "change their nocturnal habits, acquiring positive phototropism, but evidently lose their social instincts, abandoning their nests and rambling singly, often climbing high on grass and bushes". He reasoned that this change in behavior was why stylopized ants were never found, since myrmecologists often collected whole nests in order to obtain the various castes within the colony. Although ants form the largest number of invertebrates in many habitats, single stylopized ants have seldom been encountered or collected, unlike stylopized bees, wasps, and leafhoppers. Although Ogloblin (1939) stated that ants wander away from the nest it was speculated that stylopized ants remain in the nest until the emergence of the male strepsipteran in order to avoid predation (Kathirithamby & Johnston 2004), and that this might a strepsipteran adaptation. In recent collection and whole nest dissections of ants, a large proportion of ants with extruded cephalotheca were found within the nest (Kathirithamby 1991; Kathirithamby & Hughes 2002; Kathirithamby & Johnston 1992, 2004; Hughes et al. 2003). Myrmecologists do collect whole nests, but Ogloblin speculated that the stylopized ants went unnoticed because the extruded male cephalotheca is cryptic, laying hidden between the tergites or sternites of the abdomen, and often is the same color as the host cuticle. If a stylopized

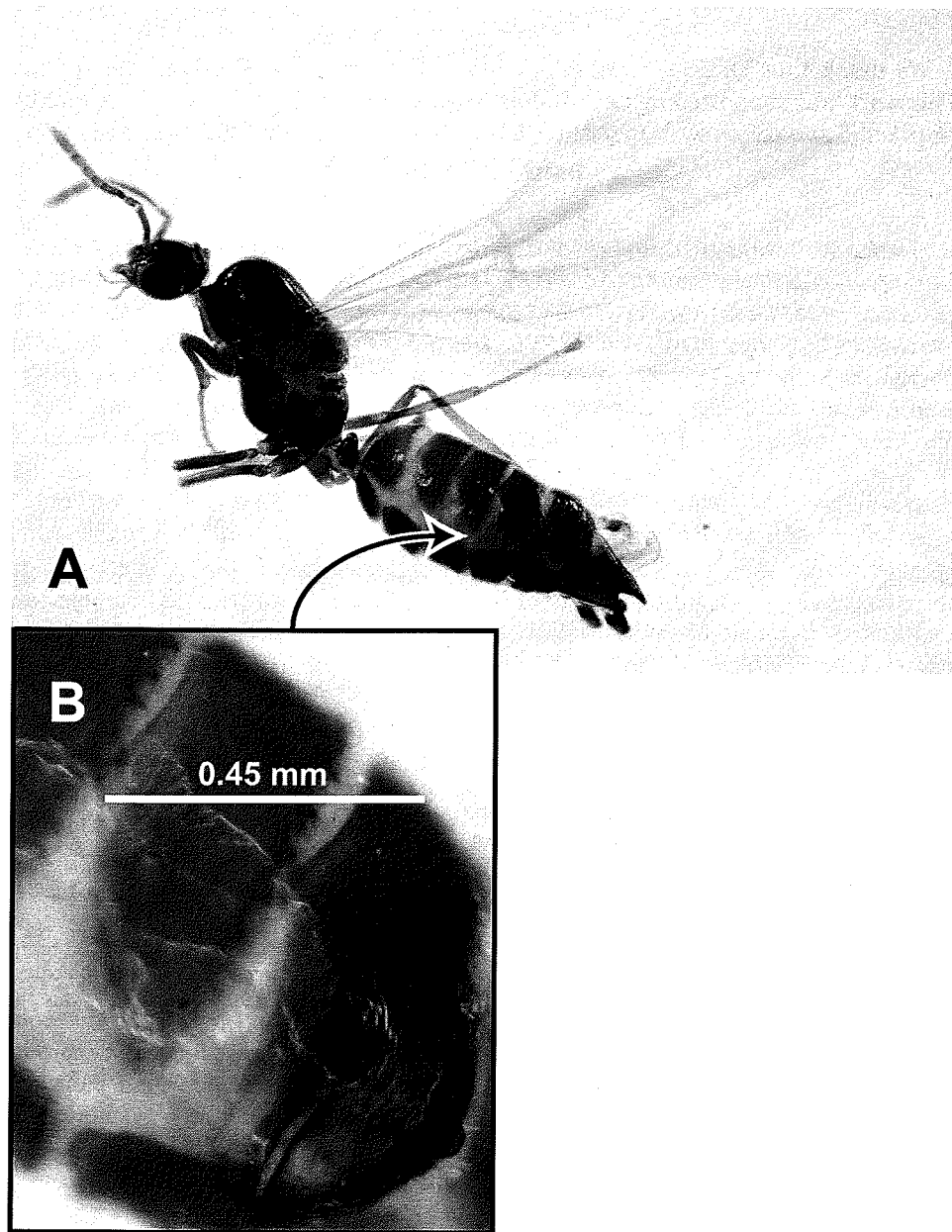


Figure 1. A. Alate, stylopized male *Myrmelachista zeledoni* (Formicidae). B. Male *Caenocholax fenyesi* sensu lato (Strepsiptera: Myrmecolacidae) in puparium in the abdomen of the host ant.

ant deserts a nest soon after the extrusion of the cephalothecae, it has to wander around for a long while until the male myrmecolacid completes development within the puparium. During this period the host ant will be more vulnerable to predation. Therefore, stylopized ants are thought to remain in the nest until just before emergence of the male parasite, at which time ants leave the nest (Kathirithamby 2005). Thus wandering, stylopized ants are seldom found.

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