

The Eastern Ant Cricket, *Myrmecophilus Pergandei* Bruner (Orthoptera: Myrmecophilidae), Reported From Mississippi, U. S. A.

Joe A. MacGown and JoVonn G. Hill

Mississippi Entomological Museum, Mississippi State University, Box 9775,
Mississippi State, MS 39762

Joe MacGown corresponding author: jmacgown@entomology.msstate.edu

Four species of *Myrmecophilus* (Orthoptera: Myrmecophilidae) occur in the United States: *Myrmecophilus manni* Schimmer and *M. oregonensis* Bruner, both found west of the Rocky Mountains; *M. nebrascensis* Lugger, with a midwestern to southwestern distribution including Oklahoma and Texas; and *M. pergandei* Bruner, found in eastern United States (Capinera *et al.*, 2004). The known range of *M. pergandei* is given as eastern North American north to Illinois and Maryland (Blatchley, 1920; Capinera *et al.*, 2004) and in a range map provided by Capinera *et al.* (2004), much of eastern North America is shaded. However, this distribution is

somewhat misleading, as *M. pergandei* has not been reported previously from Alabama, Louisiana, or Mississippi.

Females in the genus *Myrmecophilus* can be recognized by their extremely small size (usually < 4.7 mm in overall length), convex and ovate body, lack of wings, and their greatly expanded hind femora. Males are similar to females but are more slender and smaller (Bruner, 1884). *Myrmecophilus pergandei* (Figure 1) can be separated from *M. nebrascensis*, its geographical neighbor, by the number of spines on the dorso-internal margin of the hind tibia, with *M. pergandei* having four and *M. nebrascensis* having only three (Hebard, 1920).

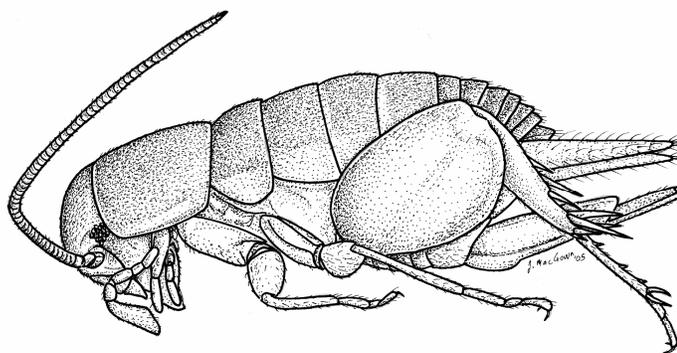


Figure 1. The Eastern ant cricket, *Myrmecophilus pergandei* Bruner, lateral view of a female. Scale bar = 3.0 mm.

North American *Myrmecophilus* species are inquilines that inhabit the nests of many ant species (Henderson and Akre, 1986). *Myrmecophilus pergandei* has been reported to be associated with various ant species including *Lasius umbratus* (Nylander), *Camponotus castaneus* (Latreille), *C. chromaiodes* Bolton, *C. herculeanus* L., *C. novoborocensis* Fitch, *Formica obscuriventris* Mayr, *F. pallidefulva* Latreille, *F. subsericea* Say, *Aphaenogaster treatae* Forel, and *Crematogaster lineolata* (Say) (Hebard, 1920), many of which occur in Mississippi. *Myrmecophilus* species are known to strigilate their hosts, supposedly to gain nourishment from oily secretions of the body (Wheeler, 1900), and also to engage their hosts in trophallaxis (Henderson and Akre, 1986). Henderson and Akre (1986), who reported on the biology of *M. manni* from the western United States, stated that the host ants were always aggressive toward the crickets, unless they were more than 4 mm away. However, when crickets were attacked they could usually escape by means of their speed and jumping ability. Despite the truculent nature of the ants, the crickets could approach an ant, usually from the rear, while the ant was engaged in grooming or trophallaxis with another conspecific ant. While the ant was busy in one of these activities, the cricket used its antennae to contact the ant, mimicking mutual grooming and trophallaxis behavior. If the ant did not act aggressively, the cricket typically moved closer to strigilate or take part in trophallaxis with the ant (Henderson and Akre, 1986).

Four specimens of *M. pergandei* have been collected in Mississippi. A single adult female was collected in Oktibbeha County at Noxubee National Wildlife Refuge on 17 July 1981 by R. L. Brown. No habitat or biological information is available for this specimen. Another single adult female was collected in Marshall County at Wall Doxey

State Park, 34°39'54"N 89°27'58"W, on 23 June 2005 by J. A. MacGown. This specimen was collected in a Berlese litter sample from the base of a large *Pinus taeda* L. (Pinaceae). It is not known what ants were used as hosts, but only one species of ant, *Solenopsis* sp. cf. *molesta* (Say), was found in the sample with the cricket. One specimen of *M. pergandei*, a nymph, was collected in Wilkinson County at Clark Creek Natural Area, 31°04'17"N 91°30'41"W, on 7 July 2005 by J. G. Hill and J. A. MacGown. This specimen was collected in leaf litter in a mixed forest. One additional adult female was collected by Lucas Majure in Newton County 2 miles southeast of Dacatur at 32°26'05"N 89°04'29"W on 4 February 2006 in a rotting *Pinus taeda* L. log in a mixed pine-deciduous forest. A colony of an undetermined species of ant was present in the log, but no specimens were collected. These are the first reported collections of Myrmecophilidae in Mississippi.

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