

THE ANT CRICKET,
MYRMECOPHILA MANNI SCHIMMER (ORTHOPTERA: GRILLIDAE),
FIRST RECORDED FOR IDAHO WITH NEW ANT HOSTS

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ABSTRACT -- We report the ant cricket, Myrmecophila manni Schimmer (Orthoptera: Gryllidae), from Idaho for the first time. Three collections (11 individuals) were taken from ant nests in Owyhee and Canyon Counties. A single museum specimen was found that documents the occurrence of the cricket in northern Idaho (Nez Perce County). The ants Crematogaster mormonus Emery and Formica neoclara Emery (Hymenoptera: Formicidae) are reported as new hosts of M. manni.

On 29 May 1978, two collections of the ant cricket, Myrmecophila manni Schimmer, were made by William H. and Mary H. Clark at the following locations: (1) USA, Idaho, Owyhee County, T2N R4W S19, elevation 747 m, 6.5 km SW Marsing along U.S. Highway 95 and adjacent to South Canal in a rural area, four male and four female M. manni were exposed in the tunnels and chambers of a Formica neoclara Emery (WHC #7021) nest when the covering board was removed, ant larvae and pupae were also present in the nest; (2) USA, Idaho, Canyon County, T3N R4W S2, elevation 767 m, 8 km SW Caldwell, just north of Houston in an agricultural area adjacent to irrigated grain fields, one male and one female M. manni were collected in nest chambers of F. neoclara (WHC #7026) exposed by moving a piece of concrete pipe.

On 30 May 1982 we collected a single female M. manni from a nest of Crematogaster mormonus Emery (WHC #7620) from Owyhee County, Idaho, T7S R2E S36, elevation 1120 m, near the mouth of Perje Canyon. This area is range land that gently slopes towards the northeast and consists of sandy-clay loam soil with scattered basalt rocks. The vegetation consists of the shrubs Grayia spinosa (Hook.) Moq., Atriplex confertifolia (Torr. & Frem.) S. Wats., Artemisia tridentata Nutt., Artemisia spinescens D. C. Eaton, and Tetradymia canescens D. C.; the cactus Opuntia polyacantha Haw.; and the annuals Bromus tectorum L., and Sphaeralcea sp. The ant cricket was found beneath a small rock in the ant nest about 10 cm below the ground surface at the base of and among the roots of a Tetradymia canescens. Ant larvae were common in the nest.

The University of Idaho collection contains a single specimen of M. manni collected 15 April 1936 by R. E. Miller from Lewiston, Nez Perce County, Idaho, at an elevation of about 225 m.

Specimens were deposited in the collections of the authors, the Orma J. Smith Museum of Natural History, College of Idaho, Caldwell, and the University of Idaho, Moscow.

Myrmecophila manni is a small, wingless, subspherical cricket with large antennal pits, no ocelli, small eyes, and much enlarged hind femora; the tibia contain four spines on their inner margins. It is lighter in color than the other species of the genus, varying from

white to pale yellow, and averages 2 to 3 mm in length.

Formica neoclara and Crematogaster mormonum are ants belonging to the subfamilies Formicinae and Myrmicinae, respectively. The former varies in size, the workers ranging in length from 3 to 6 mm; the head is yellowish red to brown, the thorax reddish yellow to reddish brown, and the gaster is brown and has a silky luster due to pubescence. C. mormonum is easily recognized because the postpetiole is attached to the dorsal surface of the base of the gaster and the gaster is flattened and has an acute tip; the workers average 3.5 to 4 mm long; the head is a dark shiny red, the thorax is dull red, and the gaster is shiny black.

We have found no literature records of M. manni from Idaho. Hebard (1920), in his revision of the genus, reported the species from Washington, Nevada, California, and Arizona. Helfer (1963) did not add any states to the distribution of the species and, like Hebard, noted that it occurs in arid and semiarid country. Graves et al. (1976) reported M. manni from Mexico (Baja California) for the first time. It is not surprising that such an extensive distribution should include Idaho.

We found no reports of this ant cricket from nests of C. mormonum although it has been recorded from nests of C. lineolata Say (Hebard 1920). Gregg (1963) reported M. nebrascensis Luggar in one nest out of 66 of F. neoclara he examined in Colorado. Therefore, this is the first report of M. manni from nests of either C. mormonum or F. neoclara.

Species of Myrmecophila act as ectosymbionts and appear to subsist mainly by licking secretions from the host ants (Wheeler 1900, 1910; Beall 1929; Wilson 1971). Wheeler (1900) also reported that Myrmecophila obtain the ants' oily secretions from nest walls. Apparently the hosts gain nothing from their association with the ant crickets.

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