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THE GENUS *MYRMONYSSUS* WITH DESCRIPTIONS
OF TWO NEW SPECIES
(ACARINA : LAELAPTIDAE)

BY

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Species of the genus *Myrmonyssus* Berl. 1903, have been collected from widely scattered areas of the world, and future collecting will probably show the genus to be world wide in distribution. The species of this genus appear to be predominantly associated with ants, and many have been taken clinging to the ant's body. A literature survey has shown 11 known and one questionable species described in this genus. With the wide geographical distribution of the known species, it would seem likely that many species remain to be described. The purpose of the present paper is to bring together all the species of *Myrmonyssus* listed, giving literature references and habitat data, and to describe two new species from the United States.

*Myrmonyssus diplogenius* Berlese.

*Myrmonyssus diplogenius* Berlese, 1904, Redia 1 : 438.

Type species for the genus. The species was originally collected in Italy from an ant, *Camponotus aethiops*. No illustration was given with the original description, but Berlese (1904) later redescribed and illustrated the species.

*Myrmonyssus brachiatus* Berlese.

*Myrmonyssus brachiatus* Berlese, 1904, Redia 1 : 441.

Collected in Italy from an ant, *Messor barbarus capitatus*. The species was illustrated with the redescription given by Berlese (1904).

1. Journal Paper No. 259 of the College Experiment Station of the University of Georgia College of Agriculture Experiment Stations.
2. Department of Entomology, University of Georgia, Athens.

Myrmonyssus acuminatus Berlese.

Myrmonyssus acuminatus Berlese, 1904, Redia 1 : 441.

Taken from an ant, Messor barbarus capitatus, from Italy. Berlese (1904) in his later work illustrated and redescribed the species.

Myrmonyssus antennophoroides Berlese.

Myrmonyssus antennophoroides Berlese, 1904, Redia 1 : 439.

Berlese described and illustrated this species taken from the nest of the ant, Camponotus aethiops, from Italy.

Myrmonyssus titan Berlese.

Myrmonyssus titan Berlese, 1916, Redia 12 : 171

Collected in East Africa; no host association was given for the species.

Myrmonyssus equalis Banks.


Associated with the ant, Iridomyrmex gracilis, from Tasmania. This species is rather poorly described and illustrated, making recognition of the species from the description difficult.

Myrmonyssus scutellatus Hull.


Taken with the ant, Iridomyrmex innocens, from Western Australia. The description and illustration of this species are also inadequate for species recognition.

Myrmonyssus liguricus Vitzthum.

Myrmonyssus liguricus Vitzthum, 1931, Mitt. deuts. ent. Ges. 6 : 90.

Collected from the nest of the ant, Crematogaster scutellaris, from Germany. Both sexes were figured and illustrated.

Myrmonyssus eidmanni Sellnick.


From the nest of the ant, Crematogaster impressa, from the Fernando Poo Island. Sellnick found a large larva in the hysterosoma of one female and, based on size comparisons, believed this species of Myrmonyssus to be viviparous.
Myrmonyssus minor Sellnick.


Taken with M. eidmanni from the nest of Crematogaster impressa from the Fernando Poo Island. Both sexes were described but only the female illustrated.

Myrmonyssus chapmani Baker and Strandtmann.

Myrmonyssus chapmani Baker and Strandtmann, 1948, J. Parasit. 32: 386.

The only specimen was taken from an orchid plant intercepted from Mexico at Laredo, Texas.

Myrmonyssus ? flexuosa (Michael).


Berlese (1903, p. 440) lists this species as a questionable Myrmonyssus. Michael's description and illustrations of the species show characteristics, especially the dorsal plate and chelicerae, typical of the Myrmonyssus. The presence of claws on all tarsi would raise some question of placing the species in this genus according to Berlese's generic description. The species was collected by Michael in the nest of the ant, Camponotus herculeanus, in England.

Two new species of Myrmonyssus are described below.

Myrmonyssus spinosus n. sp.

Known only from the female which is separable from other Myrmonyssus females in having the sternal, metasternal, and endopodal plates fused, and in having all dorsal plate setae, except the vertical and one adjacent pair, bearing 2-4 minute spines. A pair of pectinate setae, which are the longest of all dorsal setae, arise from the integument behind the dorsal plate.

Female. — Body ovate, 570 μ long, 390 μ wide. Dorsum. Dorsal plate 505 μ long, truncate posteriorly, without sculpturing, 6 pairs of pores and 35 pairs of setae on dorsal plate; vertical setae 22 μ long, simple, one adjacent pair also simple, remaining dorsal plate setae with 2-4 minute spines on each seta (Fig. 1 A); median dorsal plate setae 30 μ long, those on posterior median area of plate 40 μ long, posterior marginal plate setae up to 50 μ in length. Three pairs of setae on integument behind dorsal plate; median pair longest, 70 μ, strongly spined. Ventrum. Sternal and metasternal plates fused into a single horseshoe-shaped plate extending posterior of coxae IV; endopodal plates attached to posterior corners of this plate; sternal-metasternal plates bearing three pairs of setae (the sternal) and three pairs of pores (Fig. 1 B), metasternal setae absent; lateral margins of plate thickened, no sculpturing on plate; median posterior margin with irregular posterior projec-
tions; plate measures 200 μ wide at greatest width between coxae II and III. Tritosternal base covered by sternal plate, lacinae moderately feathered. Genitoventral plate pointed posteriorly, ending short of anal plate; striations on plate as shown; at the level of the genital setae the plate measures 120 μ wide; length on midline of combined sternal and genitoventral plate 375 μ; (although not shown in the illustration, the membranous anterior margin of the plate overlaps the posterior medial and lateral margins of the sternal-metasternal plate). Metapodal plates well developed, elongate with open, semicircular structure on posterior end (Fig. 1 C). Peritremal plates narrow, fingerlike projection behind stigmata and on anterior end of plate; peritremes end at level of coxae II. Ventral body setae of two types: four pair nearest genitoventral plate smooth, eight pair on posterior and margins of body with minute spines, longest setae measure 40 μ. Anal plate triangular, greatest width 120 μ; shape as illustrated, posterior tip of plate is visible from above; paired setae 30 μ long, unpaired seta 18 μ in length. Integument with ridge-like reticulations. Gnathosoma. Ventral in position; cornicule soft; palpal setae strong, spinelike, especially so on femur and genu; tarsus with a flagellum-like terminal ventral seta; claw two-tined. Chelicerae weakly developed; fixed digit present but reduced, movable digit with a terminal and subterminal tooth (Fig. 1 E). Legs. Short, setae fine; those on ventral

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![Image of a mite](image_url)

**Fig. 1.** — *Myrmonyssus spinosus* n. sp., female. A, dorsal view; B, ventral view; C, metapodal plate; D, caruncle of tarsus I; E, chelicera.
surface of femur and trochanter flagellumlike on all legs; tarsi of all legs appear to be divided into two segments; claws absent, caruncle membranous, large, general structure as shown (Fig. 1 D). Legs, including caruncles but not coxae, measured as follows: leg I, 320 μ; II, 250 μ; III, 240 μ; and IV, 300 μ in length.

This species was described from six female specimens, all with the following data: Lawrence, Kansas; May 7, 1958; from nest of ant, *Crematogaster* sp.; colr. C. W. and M. E. Rettenmeyer. The holotype and one paratype will be deposited in the U. S. National Museum, Washington, D. C. One paratype will be deposited with the Institute of Acarology, Agricultural Experiment Station, Wooster, Ohio. The remaining paratypes will be retained in the Department of Entomology Collection, University of Georgia, Athens, Georgia.

*Myrmonyssus clarus* n. sp.

Male unknown. The female is distinct in having 6 pairs of spiny setae on the posterior margin of the dorsal plate with all other dorsal plate setae simple, and in having the sternal and metasternal plates fused. All ventral body setae are simple. This species is very similar to *M. spinosus* described above.

**FEMALE.** — Body oval, evenly rounded on each end, 560 μ long, 360 μ wide. **Dorsum.** Dorsal plate truncate posteriorly, 540 μ long, covering all of dorsum except small area on posterior margin of body; dorsal plate with 38 pairs of setae; setae short, simple except for six spined pair on posterior of plate (Fig. 2 A), of these six pair the two lateral pairs have 2 spines, the other pairs 4 spines/seta; length of median dorsal setae 15 μ, posterior dorsal setae 20 μ long. **Ventrum.** Sternal and metasternal plates fused into a single plate with lateral extensions reaching to middle of coxae IV; medial posterior margin of plate with uneven posterior projections at level of coxae II (Fig. 2 B); plate 210 μ wide at greatest width between coxae II and III; plate bears three pairs of setae (sternal) and three pairs of pores, metasternal setae absent. Long, slender endopodal plates attached to the posterior corners of sternal-metasternal plate; parapodal plates absent. Genitoventral plate slightly widened behind coxae IV; 130 μ wide at level of genital setae, the only setae on the plate; pointed posteriorly; striations and shape of plate as figured; combined length on midline of sternal and genitoventral plates 375 μ. Anal plate 120 μ at greatest width, 60 μ long; concave anterior margin (Fig. 2 B); paired setae 10 μ long. Metapodal plate slender, with semicircular projections on posterior end (Fig. 2 C). Two small platelets on each side between metapodal and genitoventral plate. Peritremal plate narrow, with slender fingerlike projection behind stigmata; ends anteriorly at level of coxa II. Tritosternum with base covered by sternal plate; laciniae with a few small setules. Ventral body setae short, fine, all simple; number and position as shown (Fig. 2 B). **Gnathosoma.** Ventral in position; cornicule not sclerotized; deutosternal groove with at least 5 rows of teeth, several teeth/row; capitular and rostral setae small. 

pal setae small, those on genu and femur heaviest. Chelicerae with fixed digit $\frac{1}{2}$ length of movable, without teeth; movable digit with one small subterminal tooth and one stronger terminal tooth (Fig. 2 E). Legs. All legs short, well developed caruncle (Fig. 2 D), all tarsi without claws; leg setae short. Tarsi II, III, and IV appear to be divided into two segments. Legs, including caruncles but not coxae, measure as follows: Leg I, 200 $\mu$; II, 180 $\mu$; III, 170 $\mu$; and IV, 190 $\mu$ long.

Described from five specimens all taken with ants, *Crematogaster clara* Mayr 1, collected from under the bark of a pine log by the senior author, Athens, Georgia. The holotype and one paratype will be deposited with the U. S. National Museum, Washington, D. C., and one paratype with the Institute of Acarology, Agricultural Experiment Station, Wooster, Ohio. Remaining paratypes will be retained in the Department of Entomology, University of Georgia Collection, Athens, Georgia.

Remarks.
The general characteristics of the genus *Myrmonyssus* have been summarized by Baker and Strandtmann (1948). Berlese (1903, p. 16) originally erected the genus with *M. diplogenius* Berl. as the type species to accommodate three new species of myrmecophilous mites from Italy. Later (1904) he redescribed the genus and divided it into two subgenera characterized as follows:

1. We would like to thank Dr. Marion R. Smith, U. S. National Museum, for the determination of this ant species.
Body obovate, pointed posteriorly; female genitoventral plate large, almost touching anal plate; peritremes long. subgenus *Laelaspulus*, type *M. brachiatus*.

Body oval, angulated or rounded posteriorly; genitoventral plate of female ending well short of anal; peritremes short. subgenus *Myrmonyssus* s. str., type *M. diplogenius*.

The horseshoe shaped fused sternal-metasternal plate of the new species described above is also found in *M. liguricus*, *eidmanni*, and *minor* all of which have been taken in association with *Crematogaster* ants. These mites appear to form a rather distinct group from the other species of *Myrmonyssus*, and do not fit well into either of the subgenera set up by Berlese, showing characteristics of both. Morphologically and biologically these species are quite closely related, and future collections and studies may show them to be a separate genus.

REFERENCES


