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Previous volumes (2010-2020): 250 € / year (4 issues)
Acarologia, CBGP, CS 30016, 34988 MONTFERRIER-sur-LEZ Cedex, France
ISSN 0044-586X (print), ISSN 2107-7207 (electronic)

The digitalization of Acarologia papers prior to 2000 was supported by Agropolis Fondation under the reference ID 1500-024 through the « Investissements d’avenir » programme (Labex Agro: ANR-10-LABX-0001-01)

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FIVE NEW SPECIES OF SCUTACARID MITES (ACARI: TARSONEMINA) FROM EGYPT

BY F. M. MOMEN and M. E. EL-BAGOURY

ABSTRACT: Five new species of the genera Scutacarus and Heterodispus are described and illustrated. These species were named Scutacarus subfimetarius, Scutacarus salami, Scutacarus paracurtus, Heterodispus evansi and Heterodispus aegyptensis. All were found in soil associated with roots of chamomille, basil and artichoke, medicinal and aromatic plants.

INTRODUCTION

During our survey on acarine fauna associated with medicinal and aromatic plants, several new species of the family Scutacaridae were recorded. This paper contains descriptions of five new species of the genus Scutacarus and Heterodispus, while two new species of the genus Scutacarus are described in a separate paper (Momen and El-Bagoury, 1987). The Scutacaridae constitute a large and ubiquitous family represented in humus, compost and soil (Karafiat, 1959; Momen and Curry, 1987 & 1988). Many species are associated with insects, being found either on the insects themselves or in nesting cells of their primary associates-bees and wasps (Batra, 1965; Mahunka, 1969; Delfinado and Baker, 1976; Delfinado et al. 1976). Scutacarid also are found on beetles (Mahunka 1965a, Kurosa 1976). Although the associations are generally considered harmless to the insects (hosts), but beneficial to the mites, information on the true relationship (other than phoresy, see Norton and Ide, 1974) between mites and insects is lacking. The descriptive terminology follows Lindquist (1986). The holotypes and paratypes of the new species are deposited in the Collection of N.R.C.

METHODS

The soil samples were taken from immediately below the plants to a depth of 10 cm with a stainless steel core sampler. The samples contained...
soil associated with plant roots. The Acari were extracted by Tullgren funnel method. Specimens mounted in lactic acid, vitizthum's fluid were drawn with the aid of a Leitz drawing tube attached to a Laborlux interference phase microscop.

Genus Scutacarus Gros 1845

Type-species, Scutacarus femoris Gros 1845, by monotypy = Acarus acarorum Goeze, 1780.

The genus Scutacarus is distinguished in having 4-segmented leg IV, usually with short tibiotarsus bearing 5-7 setae and without pretarsus, claw and empodium. Leg 1 is also 4-segmented, claws 1 may lack.

The three species presently described in Scutacarus belong to subgenus Scutacarus Gros characterized by a claw on tibiotarsus 1.

Scutacarus (Scutacarus) subfimetarius sp. nov.

- Length 257-262 μm, width 244-247 μm, body broadly elliptical, its surface punctate.

Dorsum (Fig. 1, A) : Clypeus large with free margin wide. Setae Cl of clypeus strong, smooth, posterior to C2 and of equal length, d smooth, shorter than C1 ; f barbed, as long as h2 ; e barbed, shorter than f ; h1 the strongest and longest of dorsal setae, barbed.

Trichobothrium (Fig. 1, B) : Sensillus capitate, smooth ; prodorsal setae spikelike, pd2 about 1/3 as long as pd1.

Venter (Fig. 1, C) : Apodeme 2 poorly developed, a thin line extending to acetabula of leg II. Apodeme 4 incomplete, free ; sternal apodemes (apsa, apsp) strong, the posterior end of apsp extending to acetabula of leg IV. Epimeral setae 1a large, thickly barbed ; 1b and 2a similar to 1a but sparsely barbed and not so large ; 2b robust, saberlike, smooth ; 3a barbed, slightly shorter than 3b and 3c ; 4c barbed, longer than 3c ; 4a barbed, short, about ½ h2 and inserted anteriorly ; 4b barbed, long but not reaching bases of caudal setae. Three pairs of caudal setae, ps1 barbed, slightly longer than ps2 ; ps3 strong, barbed, distant.

Legs : Tibiotarsi of leg I (Fig. 1, D) with solenidia ω2 and α1 very long, slender ; ω1 stout ; a 2 small, club-shaped. Leg IV (Fig. 1, E) with long, slender tibiotarsus, bearing 7 setae. seta s short, about ¼ r and strongly serrate at distal half.

- Male : Unknown.


Paratype : 1 female collected with the holotype.

Remarks : On the basis of leg IV, the new species is relegateable to the longitarsus-group and is most closely related to Scutacarus fimetarius Delfinado, Baker and Abbatiello 1976 described from New York. It can be readily distinguished from fimetarius by setae d short, e shorter than f, e and f barbed, a smooth sensillus and setae 3b not reaching insertion of 4b.

Scutacarus (Scutacarus) salami sp. nov.

- Female : Length 179-183 μm, width 145-149 μm, body elliptical, its surface punctate.

Dorsum (Fig. 2, A) : Setae Cl of clypeus smooth, posterior to C2 and slightly longer ; d smooth, as long as C2 ; e simple, as long as h2 ; f barbed ; h1 the strongest and longest of the dorsal setae.

Trichobothrium (Fig. 2, B) : Sensillus capitate, smooth ; prodorsal setae spinelike, pd2 about ½ pd1.

Venter (Fig. 2, C) : Apodeme 2 poorly developed, a thin line extending to acetabula of leg II. Sternal apodeme (apsp) strong, with posterior end extending to acetabula of leg IV. Epimeral setae 1a densely barbed, stronger than 1b and 2a ; 2b saberlike, smooth ; 3a barbed, slightly shorter than 3b ; 4a barbed, short, about 2/3 4b and inserted anteriorly ; 4b barbed, long, not reaching the posterior margin of body. Caudal setae ps1 and ps2 feathered ; ps3 barbed, distant. Legs : Tibiotarsi of leg I (Fig. 2, D) with solenidia ω2 and α1 long, slender ; ω1 stout ; a 2 club-shaped. Leg IV (Fig. 2, E), with long tibiotarsus bearing 7 setae. Seta s about ¼ r, both serrate.

Male : Unknown.

Holotype : Female collected from soil associated with roots of Matricaria chamomilla, Giza Co., Cairo, February 1988.
Fig 1: *Scutacarus* (*Scutacarus*) *subfimetarius* sp. nov., female
FIG 2: Scutacarus (Scutacarus) salami sp. nov., female
Paratypes: 8 females collected with the holotype.

Remarks: This new species belongs to the longitarsus group and is most closely related to Scutacarus mahunkai Delfinado, Baker and Abbatiello 1976 described from New York. It can be distinguished from mahunkai by prodorsal setae pd1 long, setae d smooth, setae f barbed and longer than h2, setae 3a and 3b not reaching insertion of 4b and setae 4b not extending beyond the posterior margin of the hysterosoma.

Scutacarus (Scutacarus) paracurtus sp. nov.

Female: Length 192-196 μm; width 163-167 μm, elliptical.

Dorsum: (Fig. 3, A): All dorsal setae stout with 2-3 barbs, except e which are smooth. Setae C1 of clypeus anterior to C2 and of equal length; d as long as f, longer than h2; h1 slightly longer than f.

Trichobothrium (Fig. 3, B): Sensillus capitate, smooth; Prodorsal setae pd1 slightly longer and stouter than pd2.

Venter (Fig. 3, C): Apodeme 2 poorly developed. Apodeme 4 incomplete, free. Posterior sternal apodeme (aspt) strong, with free end reaching posteriorly the level of bases of setae 4a. All epimeral setae barbed except 2b; la similar to 1b, stronger than 2a; 2b slender, smooth; 3a sparsely barbed, in transverse line with 3b; 3c as long as 4c, sparsely barbed; 4a smooth, short, about 1/4 4b and in a transverse line with 4b; 4b barbed, very long but not reaching the bases of caudal setae. Caudal setae ps1 and ps2 strong, barbed, the last shorter; ps3 very small, spinelike, simple, distant.

Legs: Tibiotarsus I with claw (Fig. 3, D), Solenidia w1 stout; w2 small. Leg IV (Fig. 3, E) with tibiotarsus bearing 6 setae. Seta r short, s shorter than p.

Male: Unknown.


Paratypes: 3 females collected with the holotype.

Remarks: Among the species bearing only 6 setae on tibiotarsus IV, the new species is closely related to Scutacarus curtus Delfinado, Baker and Abbatiello 1976 and Scutacarus imitans Delfinado and Baker 1976 described from New York. It can be readily distinguished from curtus by the dorsal setae with 2-3 barbs, setae C1 anterior to C2, epimeral setae 2b not dagger like and setae 4a smooth and in a transverse line with 4b. It can be distinguished from imitans by the dorsal setae with 2-3 barbs, setae e smooth, setae 3a in a transverse line with 3b and setae 4b long and reaching the vulva.

Genus Heterodispus Paoli, 1911

Type species, Heterodispus elongatus Trägårdh, 1905.

The genus Heterodispus is distinguished by the following characters: both pairs of humeral setae (C1 and C2) arising on the outer, free margin of clypeus, anterior portion of posterior sternal plate strongly widened, covering basis of leg III; the inner margin of trochanter IV deeply excised (in a U-shape). Mahunka (1977) divided the genus in two subgenera based on characters of tarsus IV. The two presently described species belong to subgenus Heterodispus Paoli characterized by: tarsus IV normal and developed, pretarsus and ambulacrum are developed and separated; if the latter are absent, the proximal end of the tarsus extended to a recognizable distant.

Heterodispus (Heterodispus) evansi sp. nov.

Female: Length 258-261 μm, width 169-172 μm, body oval to elongate, its surface strongly punctate.

Dorsum (Fig. 4, A): Clypeus large with free margin wide. Setae C1 of clypeus anterior to C2 and slightly longer, both sparsely barbed; d sparsely barbed, shorter than C1; f strong, barbed, longer than e; h1 barbed, shorter than h2; h1 and h2 considerably incrassate.

Trichobothrium (Fig. 4, B): The spines are relatively long, sensillus smooth, circular.

Venter (Fig. 4, C): All apodemes well discernible. Anterior corners of posterior sternal plate strongly widening laterally. Epimeral setae 1a and 1b of equal length, strong, densely barbed; 2a shorter; 2b long, strong, and blunt apically; 3b strong, barbed, slightly posterior to 3a, strong, 3c and 4c
Fig 3: *Scutacarus* (Scutacarus) *paracurtus* sp. nov., female
Fig 4: *Heterodispus* (*Heterodispus*) *evansi* sp. nov., female
Fig 5: *Heterodispus* (*Heterodispus*) aegyptiensis sp. nov., female

considerably incrassate, apically blunt; 4a sparsely barbed as long as 4b and arising posteriorly. Caudal setae ps1 and ps2 barbed, the last shorter; ps3 small, simple, distant.

Legs: Tibiotarsi of leg I (Fig. 4, D) with a well-developed claw. Trochanter of leg IV (Fig. 4, E) deeply and arcuately excised, conforming to type species of the genus; tarsus longer than pretarsus, with 4 setae.

Male: Unknown.

Holotype: Female collected from soil associated with roots of artichoke, Cynara scolymus, Giza, Co., Cairo, January 1988.

Paratype: 1 female collected with the holotype.

Remarks: The new species is close to Heterodispus topali Mahunka 1971 described from India, but it can be distinguished by setae d short, setae h2 longer than h1, setae 3a slightly anterior to 3b and tarsus IV bearing four setae.

Heterodispus (Heterodispus) aegyptensis sp. nov.

Female: Length 216-220 μm, width 150-154 μm, elliptical.

Dorsum (Fig. 5, A): Setae C1 as long as C2 and d, all sparsely barbed; f densely barbed, as long as h2; h1 densely barbed, as long as e; setae e, h1, h2 incrassate.

Trichobothrium (Fig. 5, B): The spines are relatively long, sensillus pear-shaped, smooth.

Venter (Fig. 5, C): Apodemes I and II strong, complete; III and IV vestigial. Epimeral setae 1a large, densely barbed, similar to 1b; 2a thin, sparsely barbed; 2b strickingly long, barbed and blunt apically; 3a barbed, longer than 3b and inserted slightly anteriorly; both 3c and 4c considerably incrassate and blunt apically; 4a barbed, posterior to 4b. Caudal setae ps1 feathered; ps2 barbed; ps3 simple, as long as ps2, distant.

Legs: Tibiotarsi of leg I (Fig. 5, D) with a well-developed claw; tarsus IV longer than pretarsus, with 4 setae (Fig. 5, E).

Male: Unknown.


Paratypes: 5 females collected with holotype.

Remarks: The new species is closely related to Heterodispus elongatus Trägårdh, 1905 and Heterodispus mongolicus Mahunka, 1969. It can be distinguished from elongatus by setae d short, setae 2b strong and blunt apically; setae 3a long and reaching insertion of 4a; ps1 and ps2 barbed. It can be distinguished from mongolicus by setae d short, setae 3b not reaching insertions of 4a, setae ps1 and ps2 barbed and 4b not reaching the vulva.

REFERENCES


Delfinado (M. D.), and Baker (E. W.), 1976. — New species of Scutacaridae (Acari) associated with insects. — Acarologia 18 (2) : 264-301.

Delfinado (M. D.), Baker (E. W.), and Abbatielo (M. J.), 1976. — Terrestrial mites of New York III. The family Scutacaridae. — J. New York Ent. Soc. 84 (2) : 106-145.


Mahunka (S.), 1977. — Beitrag zur Kenntnis der

Momen (F. M.), and Curry (J.-P.), 1988. — New species of mites of the family Scutacaridae (Acarina: Tarsonomina) collected from grassland in Ireland. — Acarologia, 29 (2), 137-142.


Paru en Mars 1989.