

**A new species of the mite genus *Androlaelaps* Berlese (Parasitiformes: Laelapidae) found in association with the spider *Macrothele calpeiana* (Walckenaer) (Mygalomorphae: Hexathelidae)**

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**Summary**

The new mite species *Androlaelaps pilosus*, found on the hexathelid spider *Macrothele calpeiana* (Walckenaer), is described. This is the first record of such an association, species of *Androlaelaps* being normally found in the nests of birds or mammals and on the bodies of small mammals, particularly rodents.

**Introduction**

During his study of the distribution and ecology of the hexathelid spider *Macrothele calpeiana* (Walckenaer), Snazell (1986; Snazell & Allison, 1989) observed a number of individuals with mites on their cephalothorax, particularly concentrated around the fovea. These mites represent the new species *Androlaelaps pilosus* which is described below.

There are numerous records of mites occurring on spiders (see Welbourn & Young (1988) for review). Most common are the phoretic deutonymphs of mites of the suborder Astigmata and the parasitic larvae of the prostigmatid families Trombidiidae and Erythraeidae. Some members of the mesostigmatid family Laelapidae (which includes *Androlaelaps*) have also been found on spiders.

The incidence of *A. pilosus* on *M. calpeiana* is the first record of a member of *Androlaelaps* forming an association with another arachnid. Since all active instars of the mites occur on the host, it is unlikely that this is an example of phoresy but the precise relationship between the two arachnids is not known. The tendency of the mites to gather around the fovea suggests that they are seeking shelter; this area is not disturbed during grooming, so the risk of being dislodged is reduced. Species of *Androlaelaps* are most frequently found in bird or mammal nests or on the bodies of small mammals, particularly rodents, where they prey on other small arthropods, nematodes and their eggs. It has been suggested, however, that some can pierce intact skin of young rodents and feed on blood. This raises the question of whether *A. pilosus* is able to penetrate membranous areas of arachnid cuticle in order to feed on the body fluids.

Mites taken from a cockroach and identified as a species of *Androlaelaps* (Schaefer & Peckham, 1968) were later described by Till (1969) as *Gromphadorholaelaps schaeferi*.

**Genus *Androlaelaps* Berlese**

Surveys of classification and external morphology are given in Till (1963) and Evans & Till (1966).

The terminology used in the description of *A. pilosus* follows that of Evans & Till (1979).

Measurements, in microns, are given as a mean followed by the range in brackets. In the sections on the male and nymphs, only those features which differ from the female are described.

All type specimens are deposited in the British Museum (Natural History).

***Androlaelaps pilosus* n.sp. (Figs. 1-9, Plates 1-4)**

**Diagnosis:** *A. pilosus* can be distinguished from all other species of the genus by the combination of long overlapping idiosomal setae, the genital shield almost meeting the anal shield, and the lack of enlarged setae on leg II of the female.

**Female** (holotype and 7 paratypes examined): Chelicera (Fig. 4): Dorsal seta rod-like, elbowed; movable digit bidentate; fixed digit unidentate, terminating in 3 small cusps; pilus dentilis narrows to point in distal third; arthroal filaments subequal. Hypostome (Fig. 3): Deutosternum with seven rows of teeth, proximal and distal rows comprise respectively 5-7 minute and 3-5 long teeth, number decreasing and size increasing anteriorly; internal posterior hypostomatic seta 62 (59-67), anterior seta 46 (43-50), external posterior seta 23 (21-26), palpcoxal seta 54 (51-59); corniculi entire, horn-like; internal malae fringed.

Dorsal shield (Fig. 1, Plates 1-2): Ovoid; integument completely ornamented, imbricate; length 563 (480-612), width at shoulder level 250 (218-276); with 40 pairs of weakly serrated setae plus one accessory seta, *Jx* (absent in one specimen), located in region between setae *J3*; apart from smooth *j1*, setae weakly serrated, long and overlap each other; marginal pore *ps4* enlarged.

Idiosoma - venter (Fig. 2, Plates 3-4): Sternal shield reticulated, median length 76 (72-84), anterior and posterior margins approximately parallel, latter extends to anterior limit of coxae III; three pairs of smooth sternal setae and two pairs of pores all located on shield, setae subequal - just longer than median length of shield; metasternal setae, *st4*, subequal to other sternal setae, without associated metasternal plates; pore *pst4* just anterior to *st4*; paired weakly serrated marginal and ventral setae located on lightly sclerotized cuticle. Genital shield: Mostly imbricate, striated on flap overlapping sternal shield; flask-shaped, long, nearly meeting anterior margin of anal shield, posterior margin broadly rounded; one pair smooth genital setae subequal to sternal setae, located on margin of shield just posterior to coxae IV. Anal shield: Reticulated apart from spiculated area at posterior angle; length 128 (118-146), width 97 (90-101), triangular, with broadly rounded angles, anterior margin straight; paranal setae and postanal seta weakly serrated. Metapodal plates: Two pairs, anteriormost small, ovoid; posterior pair bacilliform.

Legs: All of similar form; setae smooth or weakly serrated, typical arrangement for genus; leg II lacks spines, all setae slender.

**Male** (2 paratypes examined): Chelicera (Fig. 5): Spermadactyl as figured; fixed digit bearing slender

*pilus dentilis*.

Dorsal shield: Length 423 (420-426), width 195 (186-204).

Idiosoma - venter (Fig. 6): Holoventral shield reticulated, expands posterior to coxa IV, variously incised at anterior angles, then narrows irregularly to anal part with convex margins; four pairs of sternal setae, *st1* 43 (41-46) long, *c.* three-quarters length of *st2-4*; two pairs of pores; four pairs of weakly serrated additional setae on median part of shield.

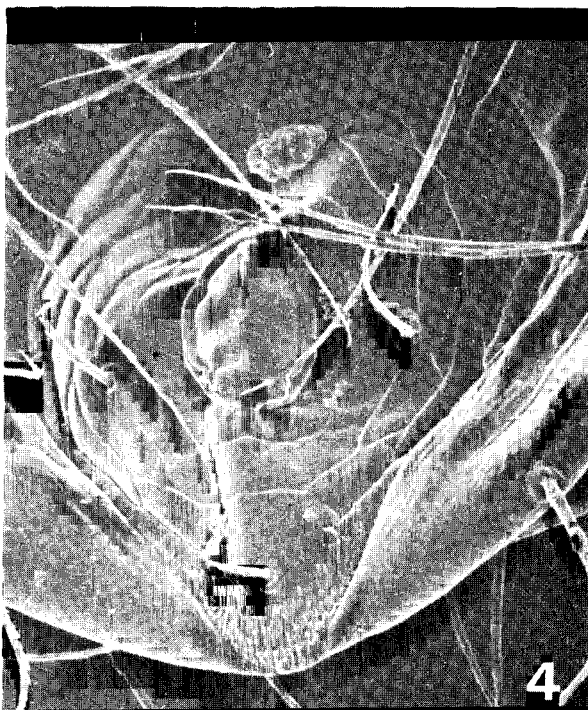
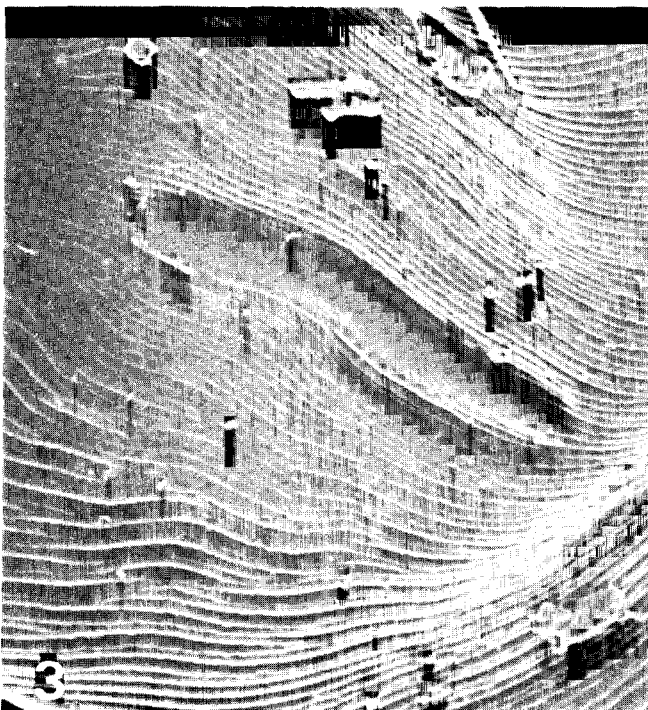
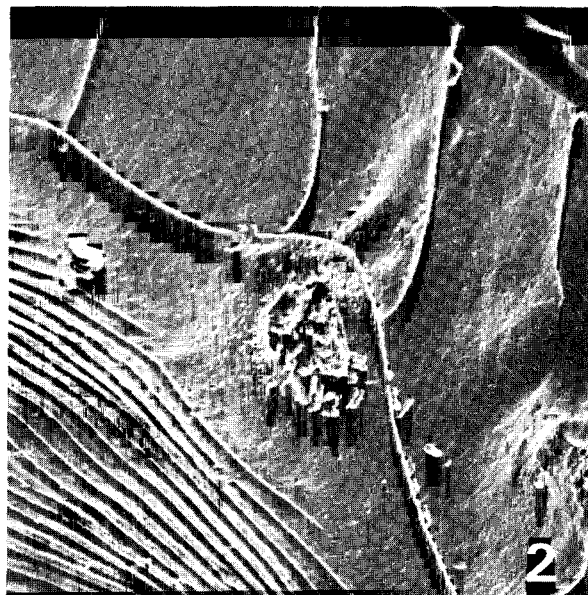
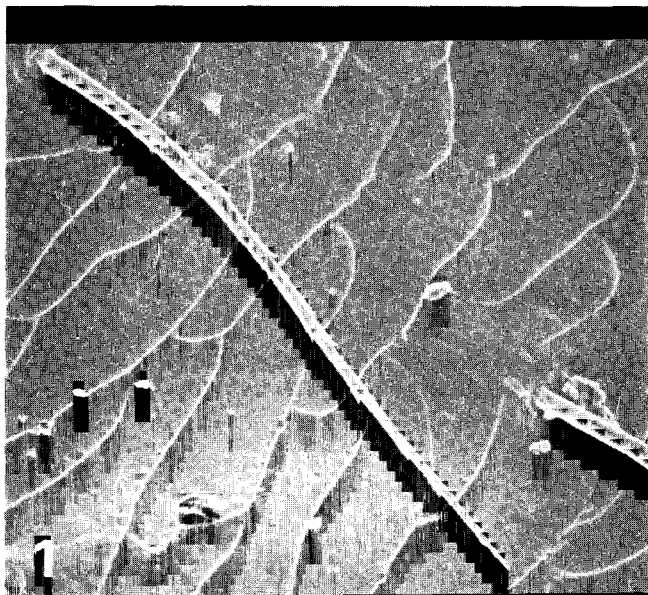
*Deutonymph* (1 paratype examined): Dorsal shield: Length 462, width 210; slight incision in lateral margin between setae *s6* and *S1*.

Idiosoma - venter (Fig. 7): Sternal shield extends just posterior to coxae IV, posterior margin broadly

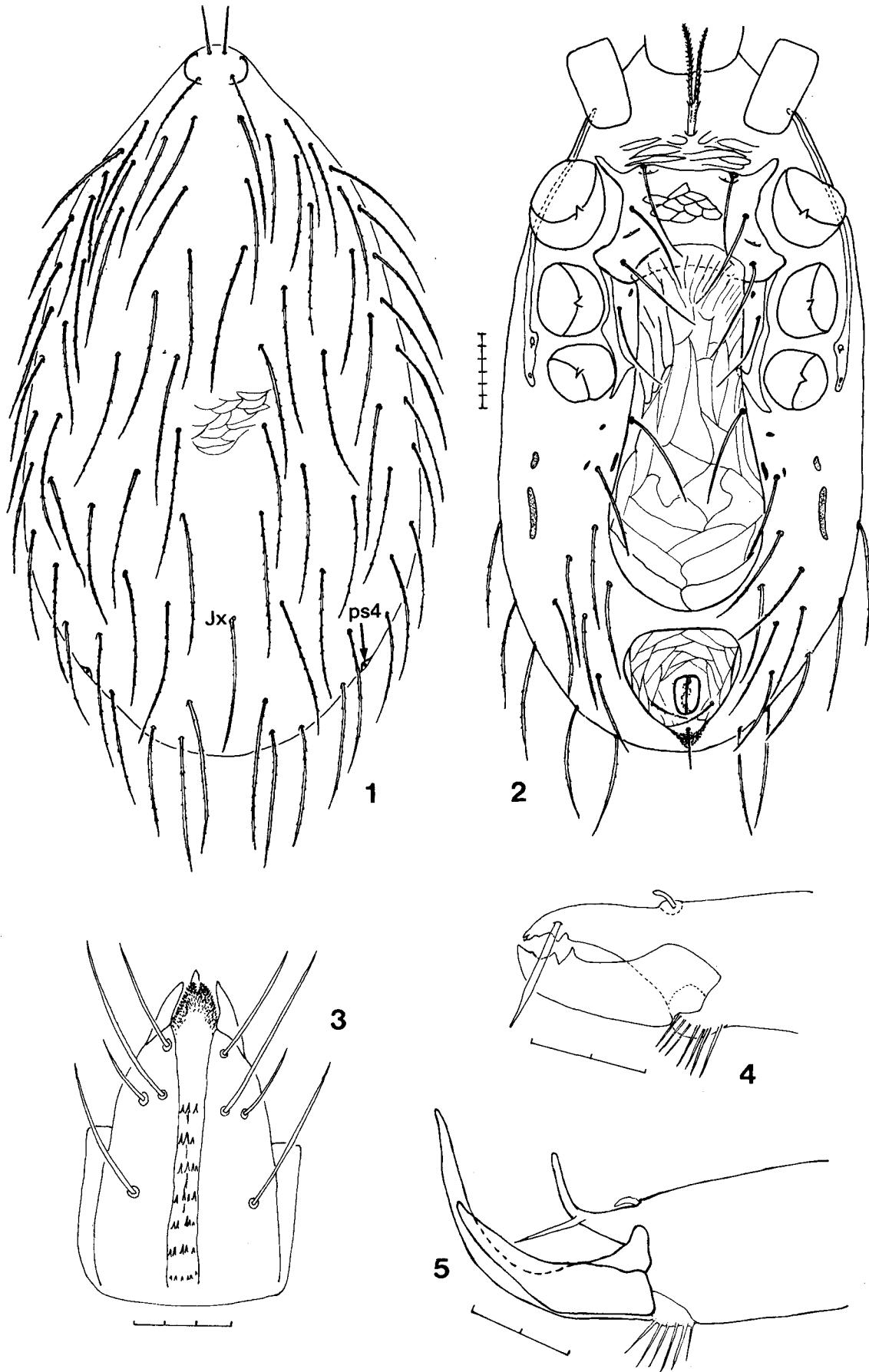
rounded, with four pairs of subequal sternal setae *c.* 62 long, and two pairs of pores.

*Protonymph* (1 paratype examined): Idiosoma - dorsum (Fig. 8): Total length 384, width 180; podonotal shield 217 long, posterior margin straight, with 11 pairs of setae; opisthonotal shield 77 long, anterior margin irregular, with 6 pairs of setae; anterior pair of mesonotal plates club-shaped, medians small, circular, posterior pair roughly ovoid.

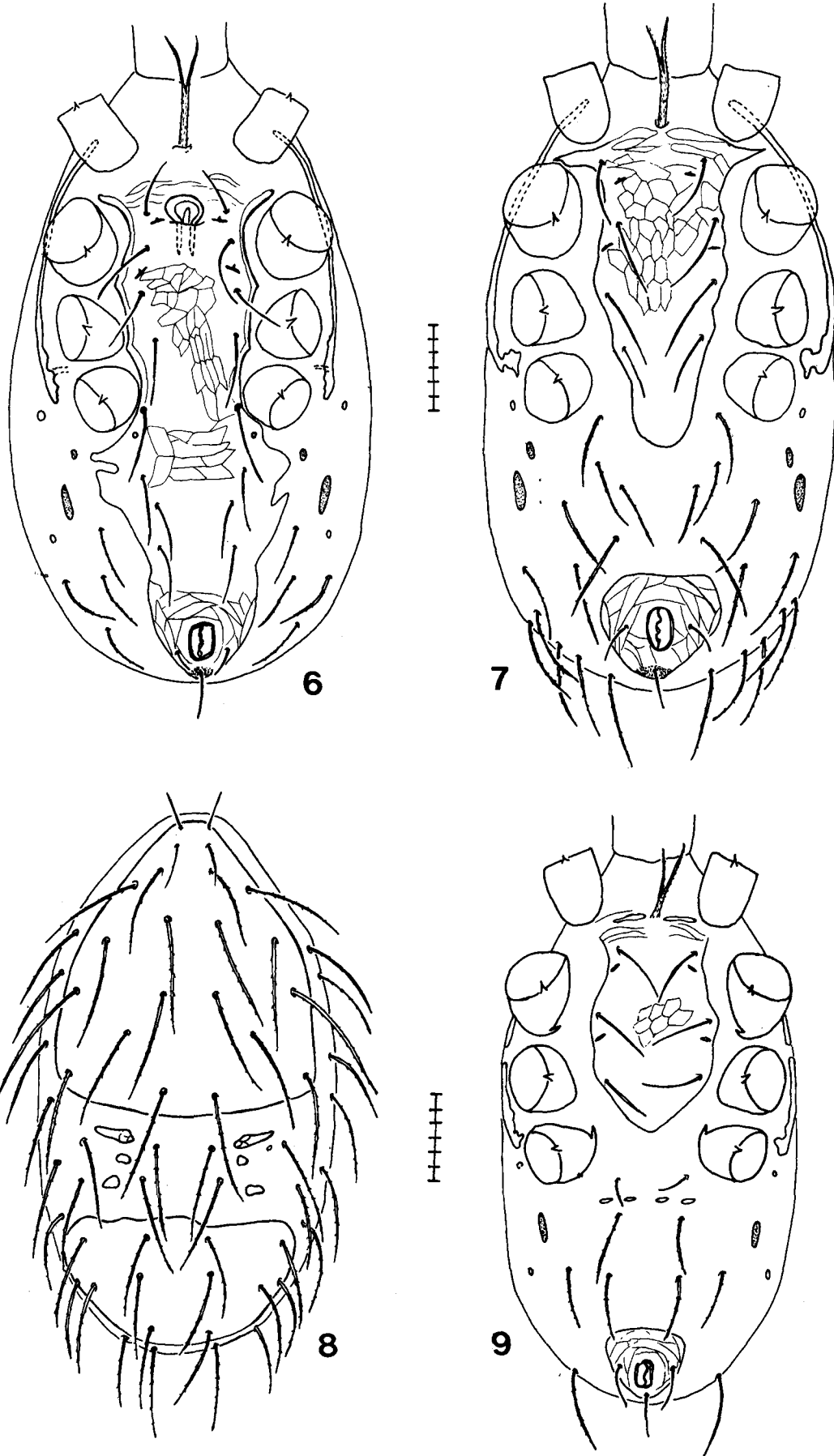
Idiosoma - venter (Fig. 9): Peritreme extends to anterior limit of coxa III, an area resembling a section of peritreme is located level with posterior half of coxa II; sternal shield extends to anterior limit of coxae IV, tapers to point posteriorly; three pairs of subequal sternal setae, *c.* 48 long; four additional platelets



Plates 1-4: *Androlaelaps pilosus*, n.sp. 1 Dorsal seta and integument ( $\times 1120$ ); 2 Dorsal pore, *ps4* ( $\times 2800$ ); 3 Metapodal plate ( $\times 1575$ ); 4 Female, anal shield ( $\times 730$ ).



Figs. 1-5: *Androlaelaps pilosus*, n.sp. 1-4 Female. 1 Dorsum; 2 Venter; 3 Hypostome, ventral view; 4 Chelicera. 5 Male, chelicera. Scale intervals = 10 $\mu$ m.



Figs. 6-9: *Androlaelaps pilosus*, n.sp. 6 Male, venter; 7 Deutonymph, venter; 8 Protonymph, dorsum; 9 Protonymph, venter. Scale intervals = 10 $\mu$ m.

arranged in a transverse row just posterior to coxae IV.

*Material examined:* Holotype female, SPAIN, Province of Cadiz, east of Facinas, El Pedregoso (grid ref. 30STF653036), from cephalothorax of female *Macrothele calpeiana*, coll. R. Snazell, 1985 (BMNH reg. no. 1989.10.11.1). Paratype females, males and immatures, same data as holotype (BMNH reg. nos. 1989.10.11.2-12).

*Etymology:* The specific name relates to the long and fine nature of the idiosomal setae.

*Distribution:* Known only from the type locality.

*Remarks:* *Androlaelaps pilosus* most closely resembles *A. setosus* Fox, 1946 in that both species possess long, overlapping idiosomal setae and a genital shield which almost meets the anal shield. *Androlaelaps pilosus*, however, differs by lacking spines on leg II in the female. *Androlaelaps setosus* is known only from the female, so it was not possible to compare males or immatures.

#### Acknowledgements

I would like to thank Mr R. Snazell, Institute of Terrestrial Ecology, Furzebrook, England for supplying the material of *A. pilosus*, Dr I. Fox, University of Puerto Rico, for the loan of the holotype of *Androlaelaps setosus*, and Mr D. Macfarlane,

Commonwealth Institute of Entomology, England for reviewing the manuscript.

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