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Subscriptions: Year 2022 (Volume 62): 450 €
http://www1.montpellier.inra.fr/CBGP/acarologia/subscribe.php
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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THE GENUS *EVIPHIS* IN INDIA

(ACARINA : MESOSTIGMATA : EVIPHIDIDAE)

BY

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The genus *Eviphis* Berlese, 1903, is a cosmopolitan group of mites. Many representatives of the genus inhabit soil and dung whilst others are found in association with certain insects (Coleoptera, Diptera) and bat (Chiroptera). A few species have been reported from the nests of insect (Hymenoptera, Isoptera), as well as pens of domestic fowl (Galliformes). These mites also show wide range of structural modifications. However, nothing is so far known about the biology of these mites.

The taxonomy of the Indian *Eviphis* have been investigated by Oudemans (1915) and Bhattacharyya (1966). In 1915, Oudemans described two new species from India. Of these two *E. mullani* was known from one deutonymph, two males, two females where as *E. rufus* from female only. While examining a slide from the Oudemans Collection (by courtesy of Dr. L. Van der Hammen) which is labelled *Eviphis mullani* Oudemans, Deuton. dors., *Heliocopris bucephalus*, Khetwady, Bombay, t. 9, 1909, Prof. J. P. Mullan, the author concur with Ryke and Meyer (1957) that the deutonymph of *E. mullani* Oudemans undoubtedly belongs *E. cultratellus* (Berlese, 1910). Ryke and Meyer (loc. cit.) consider that *E. rufus* is probably conspecific with *E. hastellus* (Berlese, 1910). Recently, Bhattacharyya (loc. cit.) recorded one more species from this region. In the present work a new species is described in addition to a new record and redescription of a known species. A key is given for the Indian species.

The types of the new species are in the author's collection.

**KEY TO SPECIES OF *Eviphis* IN INDIA.**

**Female.**

1. Metasternal setae spur-like. ................................................................. 2
   Metasternal setae not spur-like. .......................................................... 3
2. Marginal dorsal shield with very long setae. ........................................ 3 *
   Marginal dorsal shield with short setae. ............................................. 4 *
   3. Peritrematal shield broad, extending almost to posterior margin of genital shield. . . . *E. convergens*
   Peritrematal shield relatively slender, not extending as far as to posterior margin of genital shield. . . . 4
4. Sternal setae III and posterior setae of coxae II and III spur-like. ............. *E. rufus*
   Sternal setae III and posterior setae of coxae II and III not spur-like. . . *E. indicus* sp. nov.

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**Male.**

1. Marginal dorsal shield with very long setae. .............................................. \( E. \) *mullani*  
   Marginal dorsal shield with short setae. .................................................. 2  
2. Setae III-V of sterniti-genital shield and posterior setae of coxae II and III spur-like...
   \( E. \) *cultratellus*  
   Setae III-V of sterniti-genital shield and posterior setae of coxae II and III not spur-like...
   \( E. \) *indicus* sp. nov.

*Eviphis mullani* Oudemans, 1915.

The original descriptions are adequate for specific identity. By courtesy of Dr. L. Van der Hammen two males and two females from the Oudemans Collection have been re-examined. The specimens are in good condition and show a few minor differences in the original illustrations. In female the setae of the venter are slightly longer, the sternal and genital shields being granular and the presence of lesser number of setae on the ventral interscutal membrane. I am unable to examine whether the metasternal shield is fused with endopodal shield or not in the female and the chelicerae of both sexes due to permanent preparation of specimens.

*Eviphis rufus* Oudemans, 1915.

This species was based on female found on "Chiropteron", Khandala, Bombay. Dr. L. Van der Hammen kindly informed me that the specimen of Oudemans Collection could not be traced when I requested for the loan.

The key characters given above have been taken from Oudemans' original description and drawings.

*Eviphis convergens* Berlese, 1913.

The redescription of this species by Bhattacharyya (1966) are adequate for its identity. The metasternal shield is free from the endopodal and not fused with it as inadvertently illustrated in that work. The opportunity has been taken to present revised figure of the venter (fig. 1).

**Female** (figs. 2-6): Dorsal shield 0.84-0.88 mm. long, 0.72-0.74 mm. wide, arched, strongly sclerotized and bearing 30 pairs of setae (fig. 2).

Tritosternum with a basal part and a pair of pilose laciniae. Pre-sternal region striated Sternal shield distinctly granular and with 3 pairs of setae of which setae III modified. Metasternal shield fused with corresponding endopodal shield and bearing a seta. Epigynial shield strongly convex posteriorly, anteriorly with membraneous flaps, and with a pair of modified setae (fig. 3). Three pairs of small platelets situated just behind epigynial shield. Anal shield varying in shape and with a pair of par- and a post-anal setae. A pair of metapodal shields present. Stigma situated between coxae III and IV; peritreme extending to coxa I. Peritrematal shield stripe-like and its extension reaching beyond posterior margin of coxae IV.
Trochanter, femur and genu with 2, 5 and 6 setae respectively (fig. 4). Fixed digit of chelicera tetracentate but movable digit bidentate (fig. 5). Gnathosoma as in fig. 6.

Each of four pairs of legs with pulvillus and 2 claws. Coxae II and III with modified setae.

Male (figs. 7-8): Dorsal shield 0.78 mm. long, 0.63 mm. wide, apparently similar to female. Tritosternum present. Pre-ternal area striated. Sterni-genital shield with 5 pairs of setae and genital orifice situated medially on its anterior margin (fig. 7). A pair of metapodal plates, 3 pairs of platelets and 9 pairs setae lying on interscutal membrane. Anal shield bearing
a pair of par- and a post-anal setae. Peritreme and peritrematal shield similar to those in female.  
Pedipalp as in female. Chelicera delineated in fig. 8.  
Legs similar to female.

**Distribution and locality:** This species has previously been recorded from Java and Egypt (Berlese, 1910), India (Oudemans, 1915), and South Africa (Ryke and Meyer, 1957).

I have examined six females, two males and three deutonymphs from cow dung, Sitala, Sonarpur, 24 Parganas District, West Bengal, 6 November 1963, Dr. S. K. Bhattacharyya.

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**Eviphis indicus** sp. nov.

**Female** (figs. 9-12): Dorsal shield 0.477-0.486 mm. long, 0.351-0.360 mm. wide, sclerotized and bearing 30 pairs of setae of variable length (fig. 9).

Tritosternum with a basal part and a pair of pilose laciniae. A pair of pre-endopodal shields present. Sternal shield faintly granular, antero-medianly convex, posterior margin variable.
Figs. 9-12: *Eviphis indicus* sp. nov., female.


Figs. 13-14: *Eviphis indicus* sp. nov., male.

in shape, and carrying 3 pairs of setae (fig. 10). Metasternal shield not fused with endopodal shield and bearing a seta. Epignyal shield truncate posteriorly, with a pair of marginal setae. Besides a pair of metapodal plates, several pairs of platelets and 11 pairs of setae lying on interscutal membrane. Anal shield with a pair of par- and a post-anal setae. Stigma situated between coxae III and IV; peritreme extending beyond coxa I. Peritrematal shield stripe-like and extending posteriorly well beyond coxa IV.

Tectum as in fig. 11. Trochanter, femur and genu of pedipalp with 2, 5 and 6 setae respectively; apotele two-pronged. Fixed digit of chelicera bidentate and movable digit tridentate (fig. 12).

Each of four pairs of legs with 2 claws and a pulvillus. Coxae of legs without modified setae.

Male (figs. 13-14) : Dorsal shield 0.376 mm. long, 0.260 mm. wide, and chaetotaxy similar to female.


Pedipalp similar to female. Fixed digit of chelicera tridentate but movable digit edentate and bearing a distally free spermadactyl (fig. 14).

Legs similar to those in female.

Locality : Holotype female, allotype male, and one paratype female from cow dung, Sitala, Sonarpur, 24 Parganas District, West Bengal, 6 November 1963, Dr. S. K. BHATTACHARYYA.

Remarks : Dr. G. C. LOOTS, Institute for Zoological Research, Potchefstroom University, South Africa, examined tracings of E. indicus and expressed the opinion that this is a new species. He also informed that the new species is related to E. aster (Berlese, 1903) but differs from it by the presence of definite pre-endopodal shields and as well as a number of platelets posterior to the genital shield.

Acknowledgements.

I am grateful to Dr. G. C. LOOTS, Institute for Zoological Research, Potchefstroom University, South Africa, for determination and notes on Eviphis indicus sp. nov. and to Dr. L. VAN DER HAMMEN, Rijksmuseum van Natuurlijke Historie, Leiden, Netherlands, for loan of E. mullani from the Oudemans collection.

References