Acarologia is proudly non-profit, with no page charges and free open access

Please help us maintain this system by encouraging your institutes to subscribe to the print version of the journal and by sending us your high quality research on the Acari.

Subscriptions: Year 2019 (Volume 59): 450 €
http://www1.montpellier.inra.fr/CBGP/acarologia/subscribe.php
Previous volumes (2010-2017): 250 € / year (4 issues)
Acarologia, CBGP, CS 30016, 34988 MONTFERRIER-sur-LEZ Cedex, France

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)

Acarologia is under free license and distributed under the terms of the Creative Commons-BY-NC-ND which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original author and source are credited.
A NEW SPECIES OF THE GENUS *SPHAEROCHTHONIUS* (ACARI: ORIBATEI) FROM WEST BENGAL, INDIA

BY A. K. SANYAL ¹ and D. SENGUPTA ²

**ABSTRACT** : The paper contains the description of a new species *Sphaerochthonius bengalensis* from West Bengal, India.

**RÉSUMÉ** : *Sphaerochthonius bengalensis*, espèce nouvelle du Bengale Occidental en Inde, est décrite et comparée avec les autres espèces du genre.

**INTRODUCTION**

During surveys on soil oribatid mites in the gangetic plains of West Bengal, a new species, namely *Sphaerochthonius bengalensis*, was collected and is described in this paper. Mishra *et al.* (1980) first recorded the genus *Sphaerochthonius* from India (Orissa). Later Bhattacharyya *et al.* (1981) reported the genus for the second time from India (West Bengal, Birbhum). The type of the new species is deposited in the National Collection of the Zoological Survey of India, Calcutta.

*Sphaerochthonius bengalensis* spec. nov. (Figs. 1-2)

Dimensions are in microns (µm).

Colour of the body and legs light brown. Average body length 304 (range 262-330), average width 253 (range 250-259). The whole body on the dorsal and ventral surface covered with fine cerotegument consisting of a regular pattern of polygonal areolae, fine granulations and minute papillae. Sporadically deposited brown granular secretion exists on the head and around the margins of the body.

Propodosoma nearly one third as long as the total body length. Both propodosoma and hysterosoma strongly convex.

**PRODORSUM** : Average length of prodorsum 103. All prodorsal setae T-shaped, biramous, posterior ramus broad; rami flat, nearly phylliform and densely papillate. Rostral setae horizontally placed, almost touching each other. Lamellar setae directed towards mid-dorsal line, the anterior ramus longer than posterior one. A faint transverse ridge present between the lamellar setae. Interlamellar setae situated at the posterior part of the prodorsum and placed nearly horizontal to the dorsosejugal suture. Among the prodorsal setae lamellar setae longest (51-55) and the length of all other setae range between 25-45. Exobothridial setae exa and exb situated close together. Sensillus razor-blade shaped, uniramous, inner side papillate, outer side provided with a row of minute teeth; directed posteromedially, average length of sensillus 73. A charac-

---

¹ Zoological Survey of India, 14, Madan Street, Calcutta — 700072, India.
² Department of Zoology, Jhargram Raj College, Jhargram 721502, West Bengal, India.

Fig. 1: *Sphaerochthonius bengalensis* spec. nov., dorsum.
teristic elongated and irregular deposition of cerotegument present between interlamellar setae and another cerotegumental deposition in the form of a ring situated in the middle of the dorsossejugal suture.

**Notogaster** : Two dorsal ridges present, anterior one very faint. Notogaster with 16 pairs of setae, but full complements of setae are not seen in dorsal view. All notogastral setae except \( d_1, d_2, e_1 \) and \( e_3 \), T-shaped, biramous, densely papillate and leaf-shaped with irregular margin. Setae \( c_1, c_2, c_3, c_p \) and \( e_4 \) measuring 41-53. Setae \( c_1, c_2, c_3 \) and \( c_p \) present on anterior field. Setae \( d_1 \) and \( d_2 \) simple and minute, situated on the anterior ridge. Setae \( f_1, f_2, h_1, h_2, h_3, p_s, p_s_1, p_s_2 \) and \( p_s_3 \) all rather rounded and shorter than other notogastral setae. \( e_1 \) and \( e_2 \) leaflike, densely papillate and present on the posterior ridge. Setae \( e_1 \) differ radically from all other setae being leaflike at the base, its apex a strong, fine, setiform structure with deposition of cerotegument, pointed and projecting beyond posterior margin of the body. \( p_s_1 \) situated on the posterior field, and \( p_s_2 \) and \( p_s_3 \) on ventral plate.

**Ano-genital region** : Genital, anal and adanal plates with punctations. Both genito-anal and ano-adanal plates separated by complete suture. Preanal plate with straight anterior margin and convex posterior end, completely hidden beneath the posterior extension of genital plates. Each genital plate with 8 fine, simple setae. Genital and aggenital plates fused, aggenital setae absent. Adanal and anal plates separated by a fine suture. Anal plate with 12 pairs of minute, simple setae, the first five pairs directed anteromedially or medially, rest posteromedially. Each adanal plate with 4 flat, biramous, T-shaped, densely papillate setae with irregular margin.

**Legs** : All legs tridactylous with a strong median claw and a pair of slender lateral claws.

**Infracapitulum** : Mentum almost circular, carrying a pair of hypostomal setae near the posterior margin. Gena large, with one pair of median hairs and a pair of short, smooth anterior hairs situated close to the median hairs. Rutellum weakly toothed along antero-median margin. Lateral lip carries three pairs of hairs all of which are short and simple.


**Paratypes** : 2 ♀♀, same data as for holotype.

**Discussion**

The present species, *Sphaerochthonius bengalensis*, shows some degree of similarities with other congeneric species in respect to certain characters. But *bengalensis* is clearly distinguishable from other described species under the genus regarding following characters : presence of characteristic cerotegumental deposition between the interlamellar setae and in the middle of dorsossejugal suture; characteristic pattern of polygonal areolae on notogaster ; shape and texture of notogastral setae ; shape of setae \( e_1 \) and presence of a faint transverse ridge between lamellar setae.

The genus *Sphaerochthonius* still presents some unsolved problems (Mahunka, 1977). For this reason a need for detailed comparison of characters with regard to the new species and other described species is felt in order to clarify the position of the new species.

The new species shows similarities with *S. splendidus* (Berlese, 1904) in having two dorsal ridges on notogaster and in the shape, size and position of setae \( d_1 \) and \( d_2 \). But *splendidus* differs from *bengalensis* regarding all other morphological features including position or setae \( e_1 \) and \( e_2 \). The new species bears similarity with *S. gemma* (Oudemans, 1909) and also with *S. Wallworki* Lee, 1982 in having two transverse ridges on notogaster but *bengalensis* differs from both species in all other characters. The present species is related to *S. transversus* Wallwork, 1960 by the general body shape, polygonal areolae, fine granulation on the body, biramous setae and the shape of sensillus.
FIG. 2: *Sphaerochthonius bengalensis* spec. nov, venter.
But *bengalensis* can easily be separated from *transversus* in the shape of prodorsal and notogastral setae, number of adanal setae and short, smooth setae on maxillae-coxae. *S. bengalensis* is also related to *S. phyllophorus* Balogh and Mahunka, 1969 in having phylliform setae. But striking differences between these two species lie in the fact that in *phyllophorus* setae $e_1$, $e_2$, $f_1$, $f_2$, $h_1$, $h_2$, $h_3$ and $p$, are phylliform whereas in the present species only $e_1$ and $e_2$ are phylliform, $e_1$ having an elongated, setiform apex different from that of *phyllophorus*. The new species is also well in accord with *S. suzukii* Aoki, 1977 in general body shape, biramous setae and number of adanal setae. But *bengalensis* is discernible from *suzukii* by the nature of polygonal areolae, number of tranverse ridge on notogaster, shape of prodorsal and notogastral setae and sensillus, position of setae $d_1$ and $d_2$, number of anal setae and shape of $p$, $p_2$ and adanal setae. Lastly, *S. bengalensis* can favourably be compared with *S. longisetus* Mahunka, 1977 regarding T-shaped setae, shape of $d_1$, $d_2$, $e_1$ and $e_2$ and the "c"-group of setae. However, *longisetus* differs strikingly from the new species in having the following characters: $ro$ longer and wider than all other prodorsal setae, brushlike and not touching each other; in slender and more anterior in position and $ss$ having outerside papillate with rows of teeth on the inner side. In addition, nature of notogastral ornamentation and width and texture of notogastral setae differ in the two species. Finally, MAHUNKA's species differs *bengalensis* regarding number of anal setae and number and shape of adanal setae.

**Acknowledgements**

The authors are grateful to Dr B. K. Tikader, Director, Zoological Survey of India, Calcutta for facilities.

**References**


*Paru en Décembre 1990.*