

A NEW SPECIES OF THE GENUS *SPHAEROCOTHONIUS* (ACARI : ORIBATEI) FROM WEST BENGAL, INDIA

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

ORIBATEI RÉSUMÉ : *Sphaerochthonius bengalensis*, espèce nouvelle du Bengale Occidental en
INDE 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 postero-medially, average length of sensillus 73. A charac-

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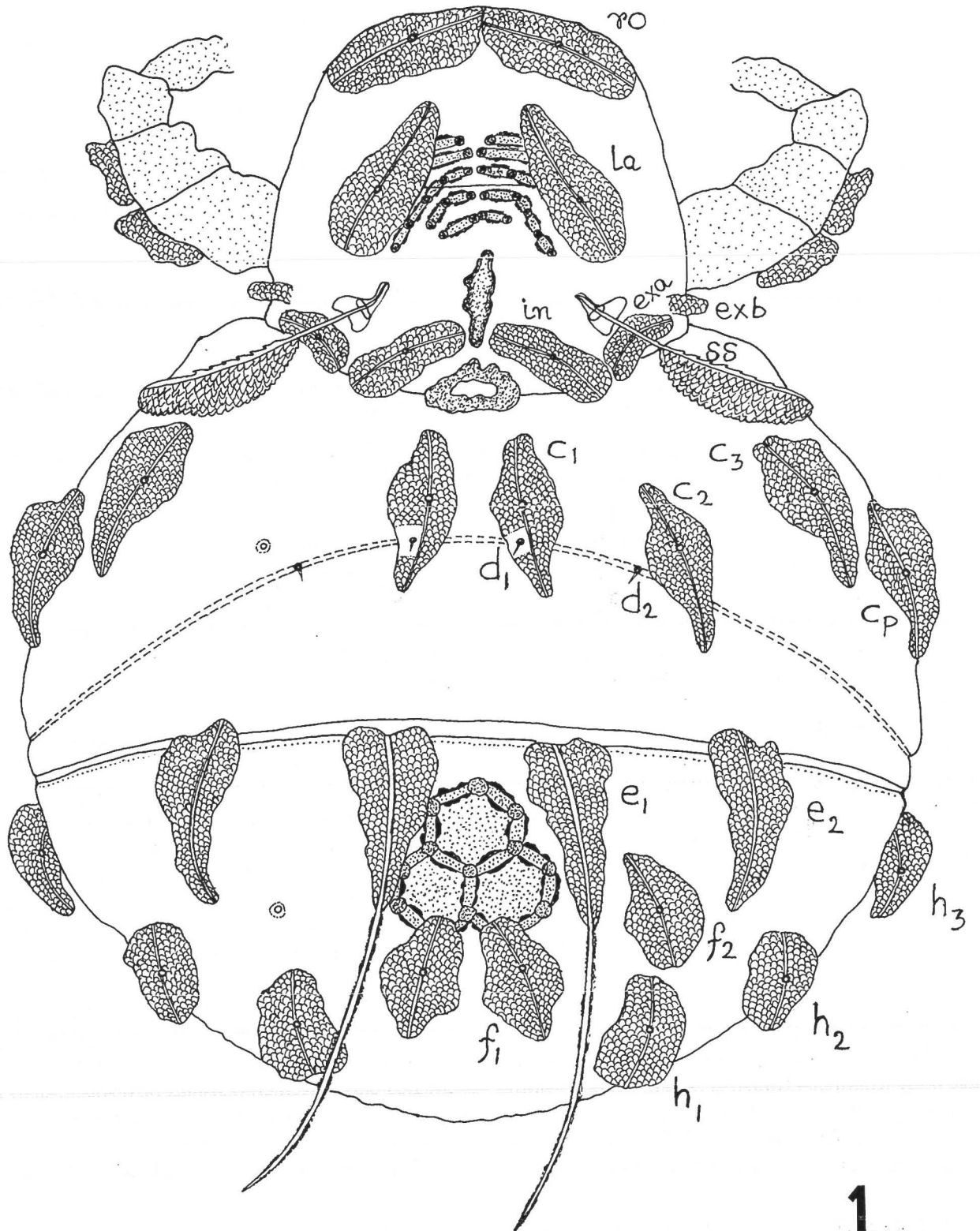


FIG. 1 : *Sphaerochthonius bengalensis* spec. nov, dorsum.

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 dorsosejugal 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_2 , T-shaped, biramous, densely papillate and leaf-shaped with irregular margin. Setae c_1 , c_2 , c_3 , c_p and e_2 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 , ps_1 , ps_2 and ps_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 leaf like at the base, its apex a strong, fine, setiform structure with deposition of cerotegument, pointed and projecting beyond posterior margin of the body. ps_1 situated on the posterior field, and ps_2 and ps_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.

MATERIAL STUDIED CHOLATYPE : Adult ♀, India : West Bengal : Lalgola, Murshidabad, 4.XII.1983, from soil with decomposed leaves, A. K. SANYAL coll.

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 dorsosejugal 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 of 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.

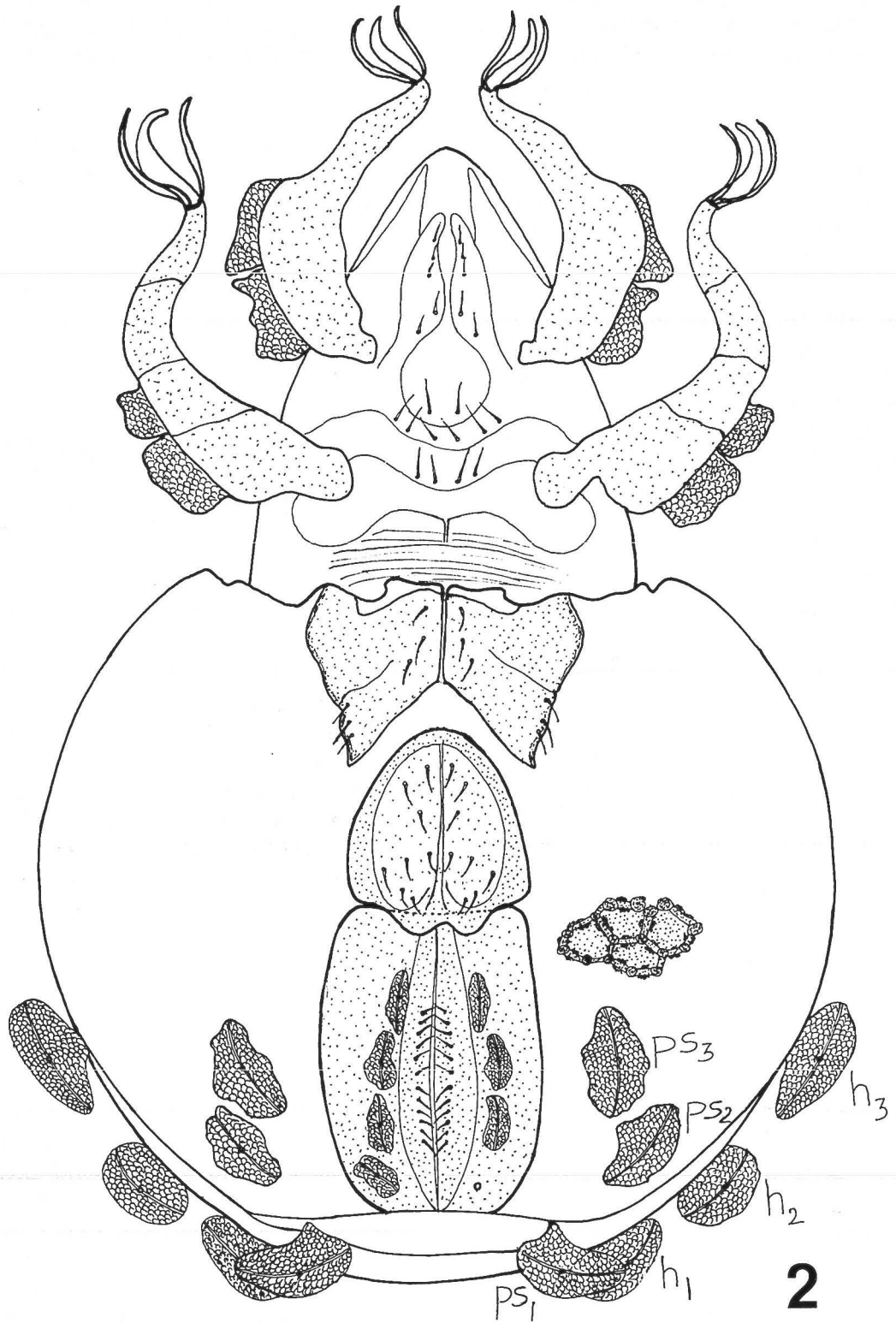


FIG. 2 : *Sphaerochthonius bengalensis* spec. nov, venter.

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 ps_1 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 *suzuki* by the nature of polygonal areolae, number of transverse 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 ps_1 , ps_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 outside 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.

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