

A NEW CRYPTOSTIGMATID MITE (ACARI : ORIBATEI)  
FROM DARJEELING DISTRICT, WEST BENGAL,  
INDIA

*By*

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(With 2 Text-figures)

INTRODUCTION

There is a few account of soil oribatid fauna that lives in close association with forest soils of Darjeeling district. A survey was therefore, made to explore the oribatid fauna from the forest floors of Darjeeling district since 1977. A new species, *Phyllhermannia berlesei* was found. *Phyllhermannia* was erected as a subgenus with *Hermannia phyllophora* Michael, 1908 as the type from New Zealand under the genus *Hermannia* by Berlese in 1916. Berlese (1916) however, did not give any diagnosis for his newly erected subgenus. van der Hammen (1959) while revising Berlese's primitive oribatid mites has expressed doubt regarding the systematic position of the type-species.

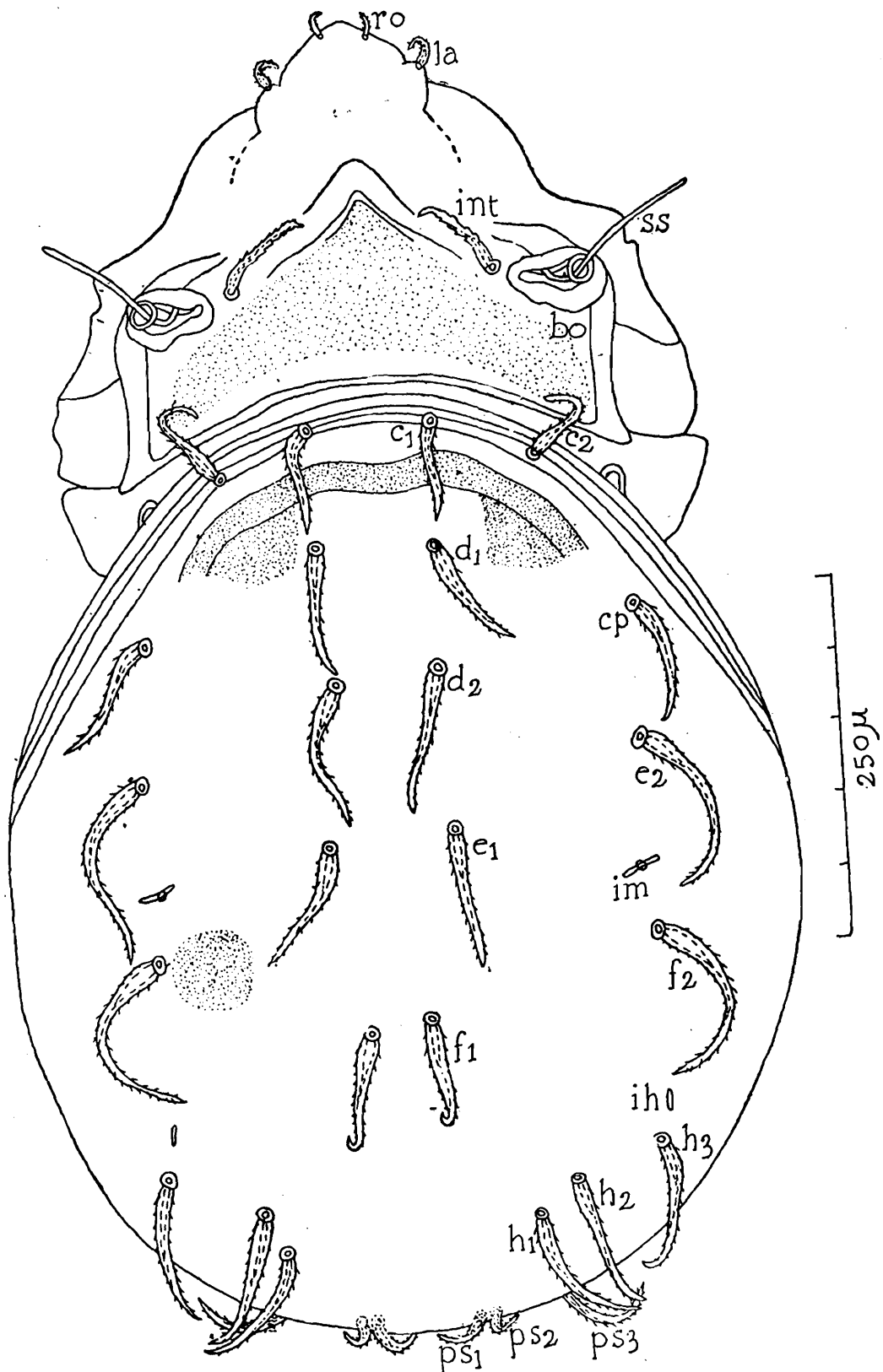
Trägårdh (1931) recognised *Phyllhermannia* as a distinct genus. All later workers accepted *Phyllhermannia* as a separate genus. The genus *Phyllhermannia* is being recorded here for the first time from India. All measurements are in microns.

***Phyllhermannia berlesei* sp. nov.**

(Text-figs. 1-2)

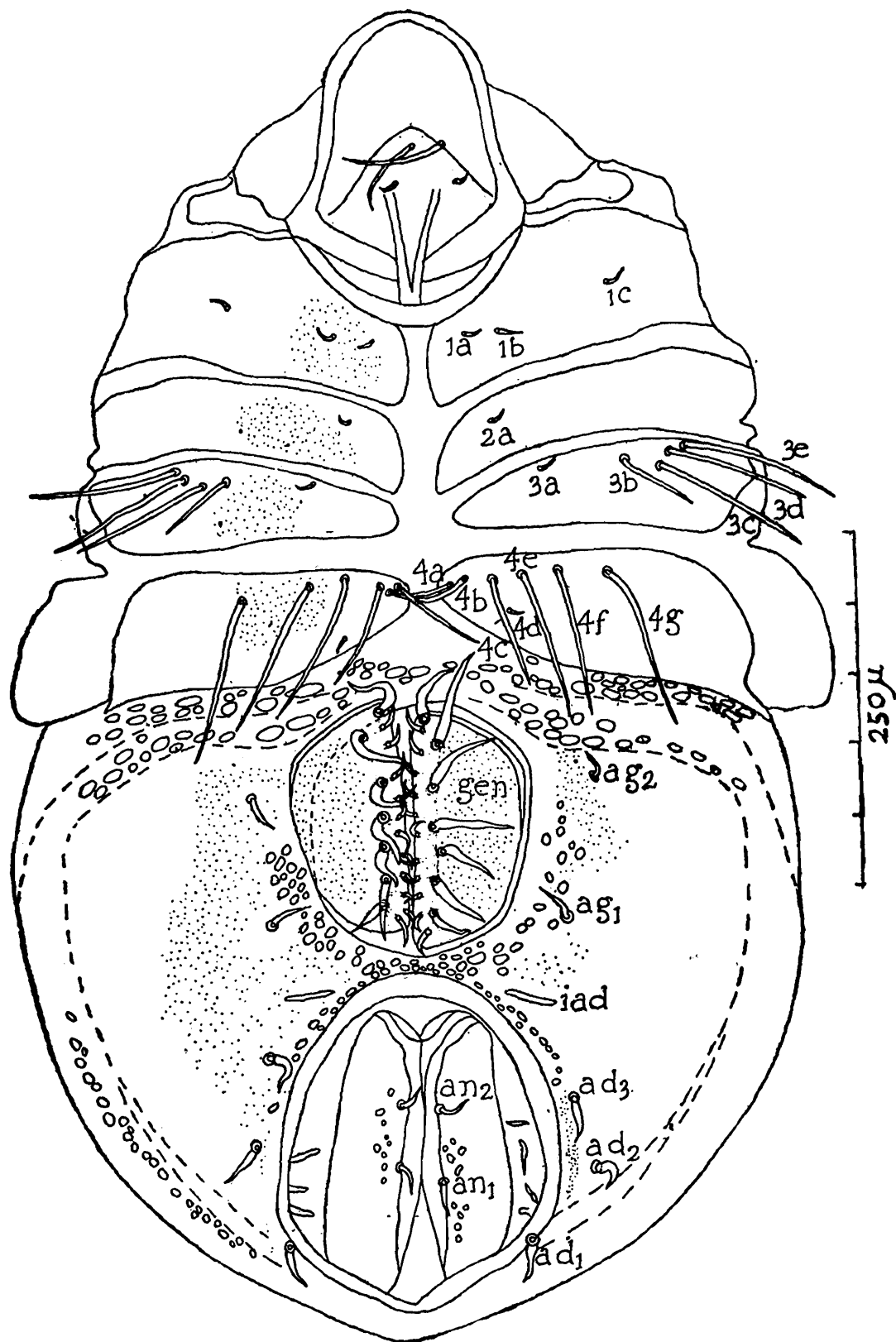
*Female* : Colour reddish to light brown ; length of the body : 828-914 ; width of the body : 473-545.

Prodorsum nearly  $1\frac{1}{2}$  times broader than long ; a prominent, blunt in the middle, arch present between the pseudostigmata ; the posterior part of the prodorsum behind the arch densely punctate, the dots disappearing towards the posterior border of the prodorsum ; a strong ridge extends on either side laterally to the pseudostigmata, almost parallel to the lateral sides of prodorsum, connected by a thin transverse ridge, slightly arched, a blunt tooth posteriorly corresponding to a similar one on the anterior margin of the notogaster ; rostrum broadly rounded in the middle ; rostral setae incurved, short, thick, faintly barbed, with blunt tips, 11-14 long, situated a little below the tip of rostrum, nearly equal to their mutual distance ; lamellar setae



Text-fig. 1. *Phyllhermannia berlessei* sp. nov. (Dorsal view), *ro* = rostral seta, *la* = lamellar seta, *int* = interlamellar seta, *ss* = sensillus, *bo* = bothridium, *c*<sub>1</sub>, *c*<sub>2</sub>, *d*<sub>1</sub>, *d*<sub>2</sub>, *cp*, *e*<sub>1</sub>, *e*<sub>2</sub>, *f*<sub>1</sub>, *f*<sub>2</sub>, *h*<sub>1</sub>, *h*<sub>2</sub>, *h*<sub>3</sub>, *ps*<sub>1</sub>, *ps*<sub>2</sub>, *ps*<sub>3</sub> = notogastral setae, *im*, *ih* = dorsal fissures.

strongly curved inwards, weakly barbed, thicker than rostral setae, with blunt tips, 27-30 long, originate from laterally elevated margin on the anterior part of prodorsum, their mutual distance about 4 times longer than that of rostral setae; interlamellar setae elongated, directed



Text-fig. 2. *Phyllhermannia berlesei* sp. nov. (Ventral view),  $an_1$ ,  $an_2$  = anal setae,  $ad_1$ ,  $ad_2$ ,  $ad_3$  = adanal setae,  $iad$  = adanal fissure,  $gen$  = genital plate,  $ag_1$ ,  $ag_2$ ,  $ag_3$  = aggenital setae,  $1a$ ,  $1b$ ,  $1c$ ,  $2a$ ,  $3a$ ,  $3b$ ,  $3c$ ,  $3d$ ,  $3e$ ,  $4a$ ,  $4b$ ,  $4c$ ,  $4d$ ,  $4e$ ,  $4f$ ,  $4g$  = epimeral setae.

antero-dorsad, distinctly barbed with rounded follicles, broadest proximally, gradually attenuating, distally with indistinct longitudinal ribs, 63-68 long, situated just below the starting point of the prodorsal arch, nearly  $2\frac{1}{2}$  times as long as their mutual distance; bothridium

flattened, cup-shaped, with a round rim anteriorly, directed dorso-laterad, longer than broad; sensillus rod-shaped, stalk and head uniformly thick throughout, smooth, 117-120 long, directed antero-laterad.

Notogaster oval in outline, coarsely punctate, with an anterior undulating, transverse, broad ridge, about  $2\frac{1}{2}$  times as long as the prodorsum; notogastral setae 15 pairs, elongated, distinctly barbed bilaterally, with prominent rounded follicles, broadest proximally, gradually attenuating distally, with indistinct longitudinal ribs, tips pointed, curled ventrad (so in dorsal aspect for majority of the setae it seems to be not so), 20-148 long; setae  $c_2$  antero-lateral,  $c_1$ ,  $d_1$ ,  $d_2$ ,  $e_1$  and  $f_1$  mid-dorsal,  $cp$ ,  $e_2$  and  $f_2$  medio-lateral,  $h_1$ ,  $h_2$  and  $h_3$  postero-lateral,  $ps_1$ ,  $ps_2$  and  $ps_3$  postero-marginal; setae  $ps_2$  smallest, mutual distance  $f_1 - f_1$  half as long as  $d_2 - d_2$ ; distance  $c_2 - c_2$  about 3 times as long as  $c_1 - c_1$ ; distance  $c_1 - c_1 = e_1 - e_1 > d_1 - d_1 > d_2 - d_2 > f_1 - f_1$ ; distance  $cp - cp$ ,  $e_2 - e_2$  and  $f_2 - f_2$  nearly equal to each other; distance  $h_2 - h_3$  about twice or slightly more than twice the distance  $h_1 - h_2$ ; notogastral fissures 2 pairs, *im* oblique, situated between  $e_2$  and  $f_2$ , *ih* longitudinal, situated between  $f_2$  and  $h_3$ .

Each anal plate irregularly foveolated, about 3 times as long as wide, with 2 short, simple and smooth setae, 14-18 long, situated at the inner margin of the anal plate medially; adanal setae 3 pairs, smooth, simple, thicker than anal setae, 22-34 long, placed very close to the medio-lateral and postero-lateral field of the anal opening; distance  $ad_1 - ad_2 > ad_2 - ad_3$ ; *iad* a moderately long slit, as long as adanal setae, aligned nearly transversely close to the anterior margin of anal opening; genital and anal opening separated by a very short distance; each genital plate punctate, about twice as long as wide, with 18 smooth setae, stout, 10-59 long, arranged in 2 lines, 12 setae in the inner line and 6 in the outer, all setae of the inner row except the distal one simple, the remaining setae long and elongated, the distal setae of the outer row longer than the rest of genital setae; aggenital setae 2 pairs, simple, smooth, 14-27 long, situated at either end of the genital field, their mutual distance more than 2 times as long as the maximum width of a genital plate; distance  $ag_1 - ag_1 < ag_2 - ag_2$ ; ventral plate punctate, medio-anterior and medio-posterior part surrounding the anogenital region foveolate, larger foveoles arranged in transverse undulating rows above the genital aperture.

Epimeral region punctate; epimera I, II, III and IV distinctly separated; epimeral setae two types, short and long, 5-113 in length; setae *1a*, *1b*, *1c*, *2a*, *3a* and *4d* short, smooth, simple; the remaining

setae long, smooth with pointed tips, setal formula of epimerata 3-1-5-7.

Claws monodactylous, strongly curved.

*Holotype* : ♀, INDIA : W. Bengal : Darjeeling, Darjeeling forest Div., Ghum-Simana forest range, Sukiapokhri forest block (from decaying leaves of *Cryptomeria japonica*), 2100m., 21.ix.1978 (*B. K. Mondal* Coll.); paratypes : 10 ♀ ♀, same data as for holotype ; paratypes : 3 ♀ ♀, INDIA : W. Bengal : Darjeeling, Darjeeling forest Div., Ghum-Simana forest range, Lepchajagat forest block (from humus under *Quercus lamellosa*), 2000 m., 13. viii. 1977 (*B. K. Mondal* Coll.) ; paratypes : 3 ♀ ♀, INDIA : W. Bengal : Darjeeling, Darjeeling forest Div., Ghum-Simana forest range, Manibhanjang forest block (from rotten leaves of *Quercus liniata*), 2200 m., 15. viii. 1977 (*B. K. Mondal* Coll.) ; deposited in the laboratory of the Department of Zoology, Presidency College, Calcutta.

Of all the described species under the genus *Phyllhermannia*, this new species bears the closest resemblance with *Phyllhermannia gladiata* Aoki, 1965 in a number of convincing characters. It can, however, be contrasted with Aoki's species by possessing a prodorsal arch, shorter rostral setae, elevated anterior part of prodorsum, punctate posterior portion of prodorsum, transverse, undulating, notogastral ridge, tooth like projection on anterior part of notogaster, 15 pairs of elongated, distinctly barbed notogastral setae, 18 pairs of genital setae besides a few other characters.

#### SUMMARY

The paper deals with the description of a new species of oribatid fauna, viz., *Phyllhermannia berleseii* from forest soils in the district of Darjeeling, India. The genus *Phyllhermannia* is recorded here for the first time from India.

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