

TWO NEW SPECIES OF ORIBATID MITES (Acari) OF THE GENUS
HOPLOPHTHIRACARUS JACOT, FROM DARJEELING, INDIA

By

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INTRODUCTION

Two new species of the genus *Hoplophthiracarus* Jacot (Acari : Oribatei, Phthiracaridae), viz., *H. tropicus* and *H. punctatus* are described from the forest and tea fields of the district of Darjeeling, West Bengal, India.

The genus *Hoplophthiracarus* was established by Jacot (1933) with *Hoploderma histricinum* Berlese, 1908 as the type-species. Aoki (1980) revised the genus *Hoplophthiracarus* incorporating two more new species. Sixteen species have so far been described under the genus. All measurements are in microns.

Key to the species

- 1 (2) Aspis foveolated ; notogaster and anal plates with irregular unevenly rounded ornamentations ; rostral setae almost bent at right angle ; lamellar setae less than one third the length of interlamellar setae ; notogastral setae distinctly barbed at distal half to one third ; setae *ps*₂ and *ps*₃ inserted in deep tubes ; anal, adanal and genital setae smooth ; claws with two teeth at the inner margin ... *Hoplophthiracarus tropicus*
sp. nov.
- 2 (1) Aspis mainly punctate but anterodorsally foveolated, notogaster and anal plates with punctations ; rostral setae erect ; lamellar setae almost half the length of interlamellar setae ; notogastral setae faintly barbed at distal one third ; setae *ps*₂ and *ps*₃ not inserted in deep tubes ; anal, adanal and genital setae faintly barbed distally ; claws without any tooth at the inner margin ... *Hoplophthiracarus punctatus*
sp. nov.

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Hoplophthiracarus tropicus sp. nov.

(Figs. 1-2)

Female: Colour deep brown to brown; length of the aspis: 265-270; height of the aspis: 112-117; length of the notogaster: 517-531; height of the notogaster: 432-472.

Aspis longer than broad, coarsely foveolated, posterior part almost rounded, flat in the middle; lateral carinae distinct one fourth; rostral setae smooth, short, bent almost at right angle, the two halves

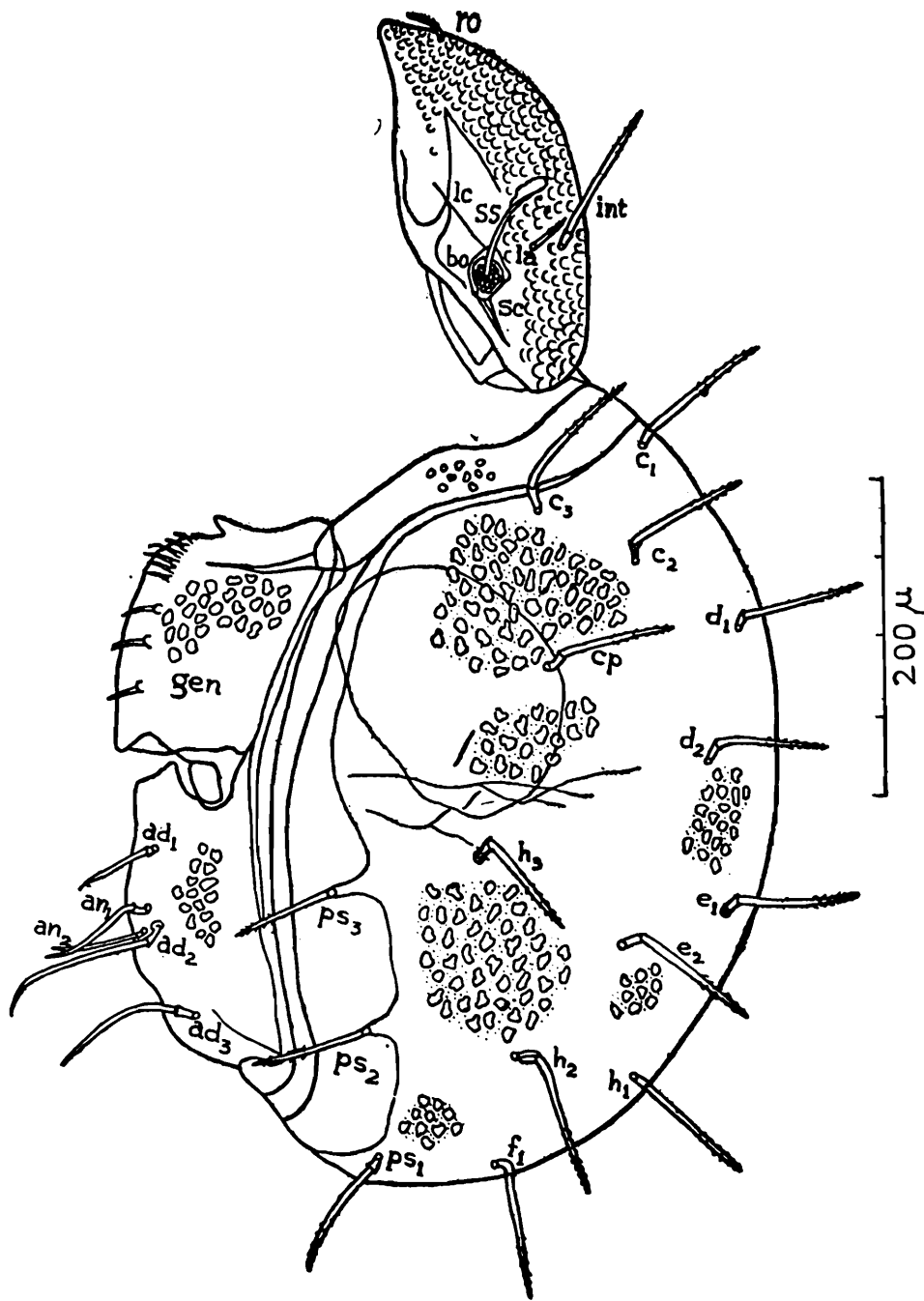


Fig.-1

Fig. 1. *Hoplophthiracarus tropicus* sp. nov. (Lateral view), ro=rostral seta, la=lamellar seta, int=interlamellar seta, ss=sensillus, bo=bothridium, sc=bothridial scale, lc=lateral carinae, c₁, c₂, c₃, cp, d₁, d₂, e₁, e₂, f₁, h₁, h₂, h₃, ps₁, ps₂, ps₃=notogastral setae.

of the setae being unequal, 23-27 long ; lamellar setae finely barbed distally, 22-25 long, less than one third the length of interlamellar setae ; interlamellar setae long, erect, stout, barbed at the distal one third, 103-121 long ; bothridium depressed cup-shaped, covered with scales ; sensillus slender, distal one third widening, surrounded anteriorly with uneven rounded brims, directed antero-laterad, 68-103 long.

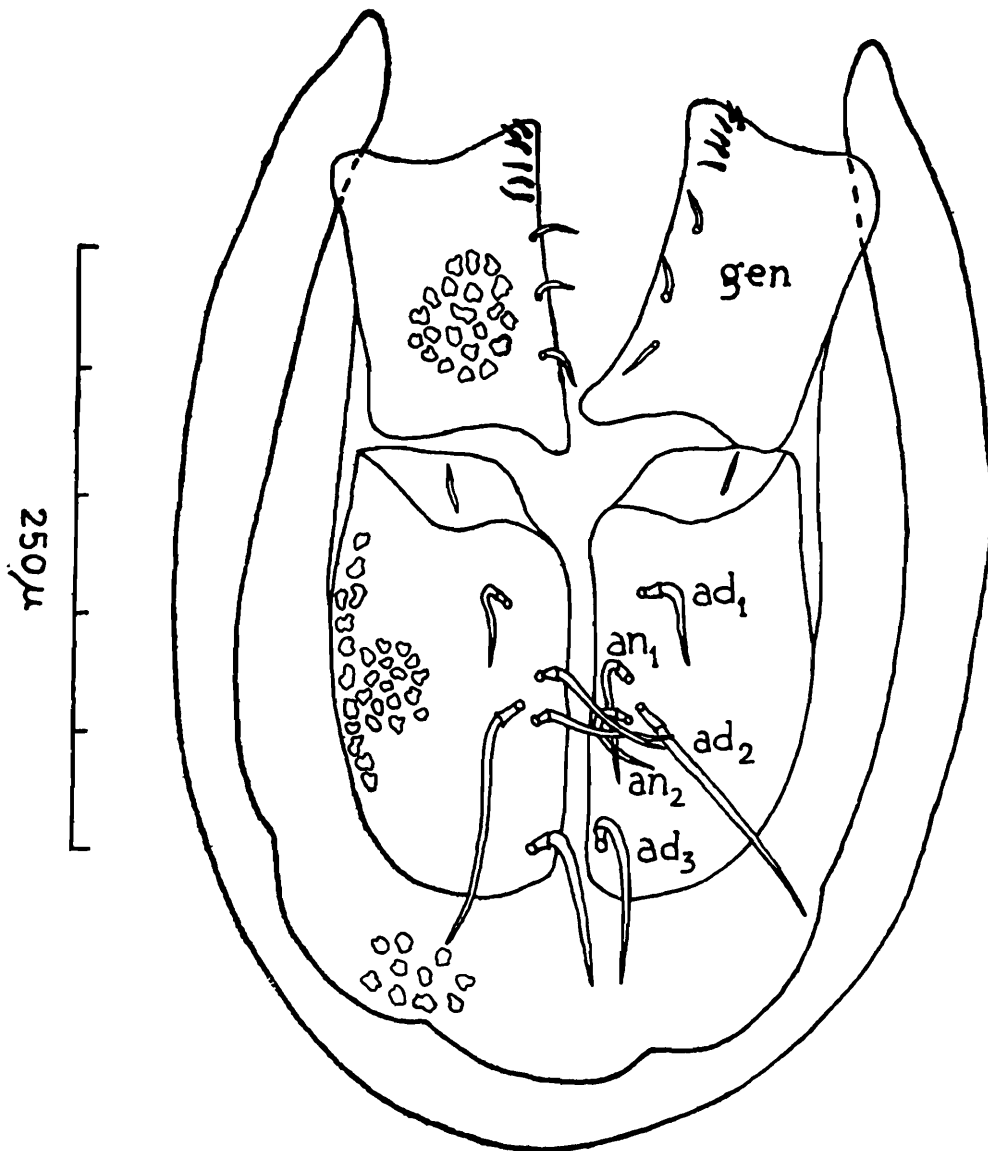


Fig. - 2

Fig. 2. *Hoplophthiracarus tropicus* sp. nov. (Ventral view), an_1, an_2 = anal setae, ad_1, ad_2, ad_3 = adanal setae, gen = genital plate.

Notogaster with broad collar, punctate, with irregular unevenly rounded ornamentations ; notogastral setae fifteen pairs, approximately equally long, erect, stiff, distal half to one third barbed, with blunt tips, 68-117 long ; setae c_1, c_2 antero-dorsal, c_3, cp antero-lateral, d_1, d_2, e_1 mid-dorsal, h_3, e_2 mid-lateral, h_1, f_1 postero-dorsal, h_2 postero-lateral, and ps_1, ps_2, ps_3 postero-marginal ; ps_2, ps_3 each situated in deep tubes.

Each anal plate almost twice as long as broad, with irregular unevenly rounded ornamentations ; anal setae two pairs, nearly equal, simple, with sharp pointed tips, closely approximated at the inner margin of the anal plates medially, 63-70 long ; adanal setae three pairs, unequal, smooth, with sub-pointed tips, 48-117 long ; setae $ad_2 > ad_3 > ad_1$, ad_3 postero-marginal, ad_2 in between an_2 and an_1 , slightly lateral to the both and ad_1 anterior, slightly lateral above an_1 , separated by a distance which is slightly shorter than the length of the setae ; setal base of an_1 , ad_2 and an_2 forms an imaginary obtuse angle triangle ; anterior part of the anal plates with a curve line directed backwards, terminating far above ad_1 , converging but not meeting medially ; genital plate rectangular of same microsculptures as that of anal plate, each plate with nine smooth, fine setae, arranged in an inner marginal row, 9-23 long, the posterior three setae longer, equal to each other, the anterior ones shorter and of variable lengths.

Legs monodactylous ; claws strongly curved, each with two teeth in the proximal inner margin.

Holotype : Adult ♀, INDIA : W. Bengal : Darjeeling, Darjeeling forest Div., Tonglu forest range, Palmajua forest bungalow area (from rotten leaves of *Cryptomeria japonica*), 2300 m., 16.viii.1977 (B. K. Mondal Coll.) ; paratypes : 7 adult ♀ ♀, same data as for holotype ; paratypes : 2 adult ♀ ♀, INDIA : W. Bengal : Darjeeling, Darjeeling forest Div., Singalila forest range, Sandakphu forest block (from loose soil with litter and humus under a Rhododendron plant, *R. arboreum*), 3000 m., 20.viii.1977 (B. K. Mondal Coll.) ; paratypes : 2 adult ♀ ♀, INDIA : W. Bengal : Darjeeling, Lohagarh Tea Estate (from soil under a tea plant, *Thea sinensis*), 350 m., 29.x.1978 (B. K. Mondal Coll.) ; deposited in the laboratory of the department of Zoology, Presidency College, Calcutta.

This species approaches close to *Hoplophthiracarus foveolatus* Aoki, 1980 in having clear, well visible foveolation on body surface, position of rostral, lamellar, interlamellar and notogastral setae, besides a few other characters. It can, however, be differentiated from *foveolatus* in possessing greatly bent rostral setae, thicker and barbed lamellar setae, sensillus with uneven rounded brims, notogastral setae with pointed tips.

Hoplophthiracarus punctatus sp. nov.

(Figs. 3-4)

Female : Colour light brown to brown ; length of the aspis : 347-360 ; height of the aspis : 144-162 ; length of the notogaster : 644-653 ; height of the notogaster : 545-635.

Aspis longer than broad, flat in the middle, almost rounded posteriorly, densely punctate, foveolated anterodorsally ; lateral carinae indistinct, short ; rostral setae smooth, simple, erect, 28-32 long ; lamellar setae finely barbed distally 53-58 long, less than half as long as the interlamellar setae ; interlamellar setae long, erect, stout, distal half finely barbed, 124-134 long ; bothridium depressed cup-shaped, covered with bothridial scales ; sensillus with slender stalk, anteriorly widening, distal one third surrounded with uneven rounded brims, 70-81 long, directed antero-laterad.

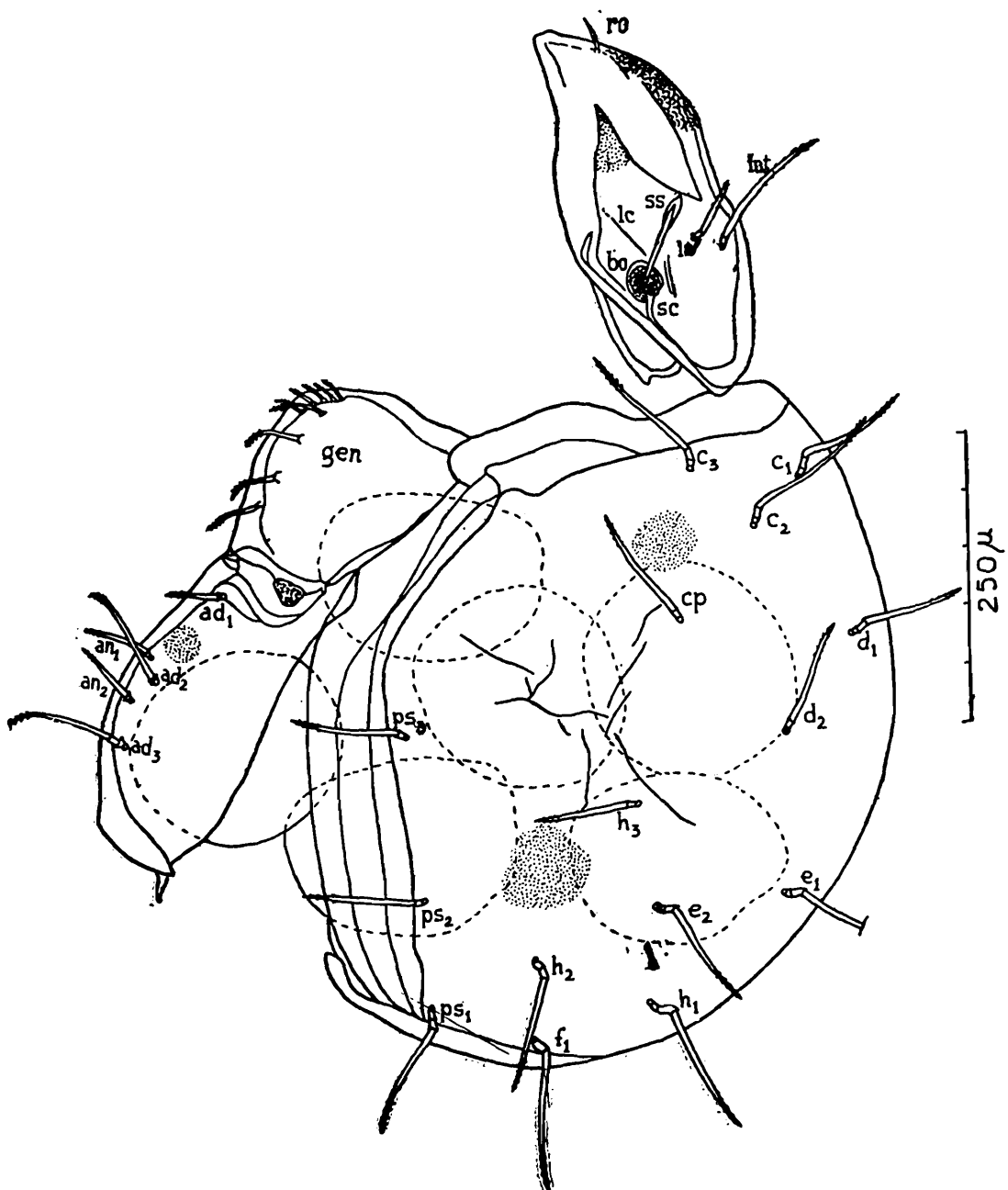


Fig.-3

Fig. 3. *Hoplophthiracarus punctatus* sp. nov. (Lateral view), ro=rostral seta, la=lamellar seta, int=interlamellar seta, ss=sensillus, bo=bothridium, sc=bothridial scale, lc=lateral carinae, c₁, c₂, c₃, cp, d₁, d₂, e₁, e₂, f₁, h₁, h₂, h₃, ps₁, ps₂, ps₃=notogastral setae.

Notogaster with broad collar, densely punctate ; notogastral setae fifteen pairs, almost equal, stiff, erect, distal one third faintly barbed, with blunt tips, 92-144 long ; setae c_1, c_2 antero-dorsal, c_3, cp antero-lateral, d_1, d_2, e_1 mid-dorsal, h_3, e_2 mid-lateral, h_1, f_1 postero-dorsal, h_2 postero-lateral and ps_1, ps_2, ps_3 postero-marginal.

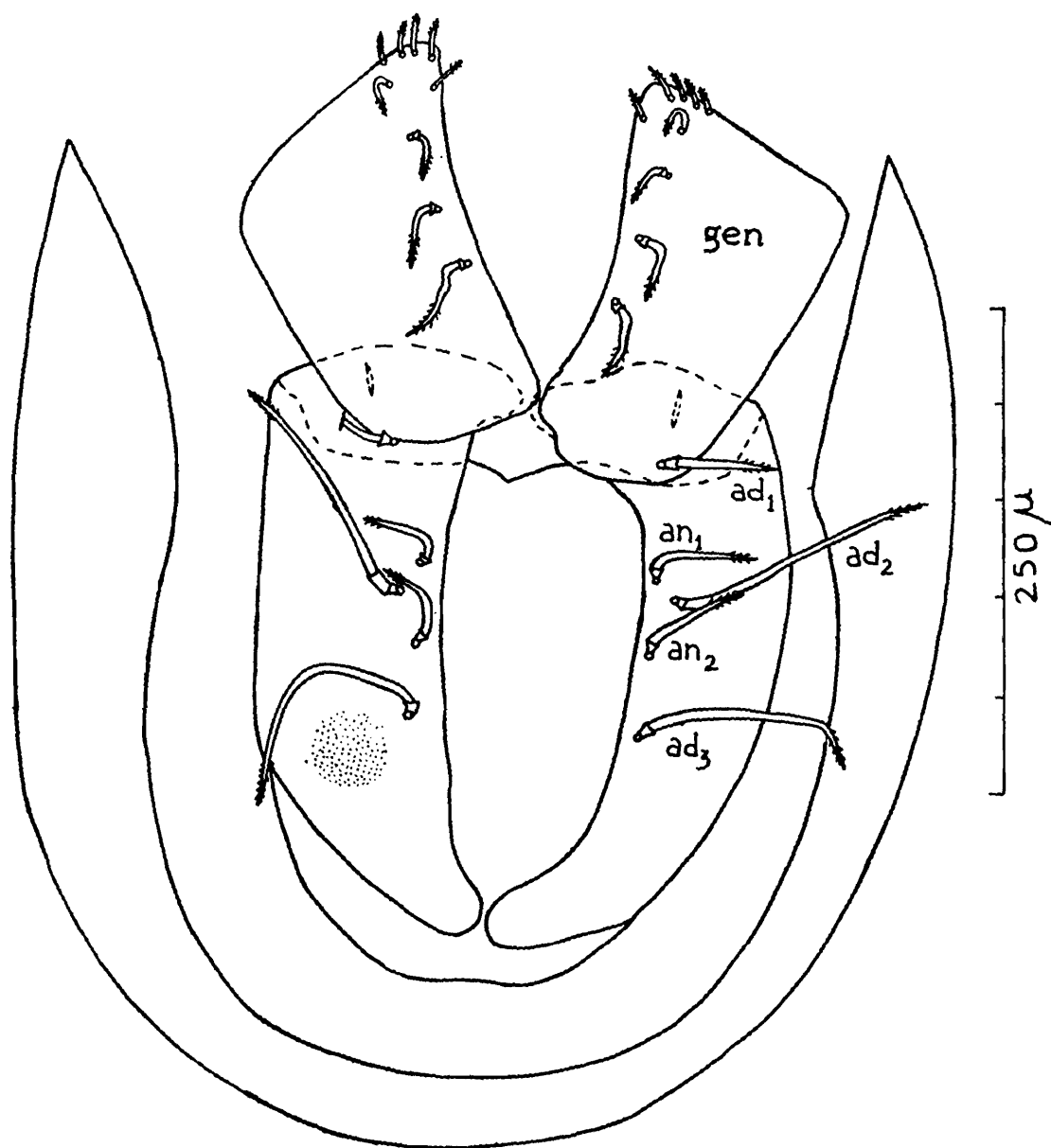


Fig.- 4

Fig. 4. *Hoplophthiracarus punctatus* sp. nov. (Ventral view), an_1, an_2 = anal setae, ad_1, ad_2, ad_3 = adanal setae, *gen* = genital plate.

Each anal plate about two times as long as broad ; anal setae two pairs, equal in length, distal one fourth faintly barbed, closely inserted at the inner margin of the anal plates medially, 45-68 long ; adanal setae three pairs, distal one third to one sixth faintly barbed, with sub-pointed tips, unequal, 50-113 long ; setae $ad_3 > ad_2 > ad_1$, ad_3 anterior to the posterior half at the inner margin, ad_2 slightly lateral to an_1 and an_2 and inserted in between them, ad_1 more anterior and slightly lateral above an_1 , setal base of an_1, ad_2 and an_2 forms an imaginary obtuse

angle triangle ; anterior part of the anal plates with a curve line directed backwards, converging and meeting medially ; each genital plate rectangular in shape ; genital setae nine pairs, distal half to one third faintly barbed, inserted on the inner margin, 23-54 long, the posterior three setae longer, nearly equal in length, the anterior ones shorter and of variable lengths.

Legs monodactylous, claws strongly curved and sickle-shaped, without any tooth.

Holotype : Adult ♀, INDIA : W. Bengal : Darjeeling, Darjeeling forest Div., Tonglu forest range, Palmajua forest bungalow area (from rotten leaves of *Cryptomeria japonica*), 2300 m., 16.viii.1977 (B. K. Mondal Coll.) ; paratypes : 2 adult ♀♀, data same as for holotype ; paratype : 1 adult ♀, INDIA : W. Bengal : Darjeeling, Darjeeling forest Div., Ghum-Simana forest range, Sukiapokhri forest block (from loose humus under *Quercus liniata*), 2100 m., 21.ix.1978 (B. K. Mondal Coll.) ; deposited in the laboratory of the Department of Zoology, Presidency College, Calcutta.

This species has the closest affinity with *Hoplophthiracarus kugohi siamensis* Aoki, 1959 (comb. n. Aoki, 1980) in the position of rostral, lamellar, interlamellar and notogastral setae, structure of bothridium and sensillus, nature of adanal and anal setae. It is, however, distinguishable from *H. k. siamensis* in having shorter carinae, erect rostral setae, longer and barbed lamellar setae, punctate aspis, notogaster and anal plates.

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SUMMARY

This paper deals with the description of two new species of the genus *Hoplophthiracarus* Jacot (Acari : Oribatei, Phthiracaridae), viz., *H. tropicus* and *H. punctatus* from the forest and tea fields of the district of Darjeeling, West Bengal, India.

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