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## Ergebnisse der Bhutan-Expedition 1972 des Naturhistorischen Museums in Basel \*

### Acari: Oribatida \* (Part I)

by B. M. Bayoumi and S. Mahunka

Abstract: Seven new species of oribatids, belonging to the following genera, are described from the northern part of the Indian Peninsula: *Hoplophthiracarus*, *Mesotritia*, *Oribotritia*, *Austrotritia*, *Rhysotritia* and *Indotritia*.

Dr. W. Wittmer, Natural History Museum, Basel, sent us a rich Oribatid material collected by him and his colleagues during the Expedition of the Natural History Museum, Basel to India. Since the material includes several interesting taxa, their descriptions will be published in a series of papers. In the present paper, however, we propose to submit the descriptions of 7 new species belonging in the Ptyctima group.

The holotype and a part of paratypes are deposited in the Natural History Museum, Basel (abbreviated: NHMB), some paratypes in the Hungarian Natural History Museum (HNHM), in the collection of the Zoological Department, Faculty of Science, Tanta, Egypt (ZDT), and in the acarological collection of the Department of Arthropoda, Muséum d'Histoire naturelle de Genève (MHNG).

The authors are deeply indebted to Dr. W. Wittmer for having made the material available to study and for all his endeavours to collect the material and to promote its elaboration.

#### **Hoplophthiracarus indicus** n. sp. Figs. 1–4

Measurements: Length of aspis: 208–405  $\mu$ , length of notogaster: 583–794  $\mu$ , width of notogaster: 340–510  $\mu$ .

Prodorsum: Aspis broadly rounded anteriorly. Rostral hairs relatively long, decumbent. Interlamellar hair long, erect, setiform, distally barbed. Lamellar hair minute and simple. Sensillus elbow-like, its distal end carries a slightly rough- end hyaline membrane.

: Surface roughly sculptured, coarsely foveolate. All notogastral hairs setiform, rigid and distally barbed.

Anogenital region: Two pairs of equally long anal hairs arranged in

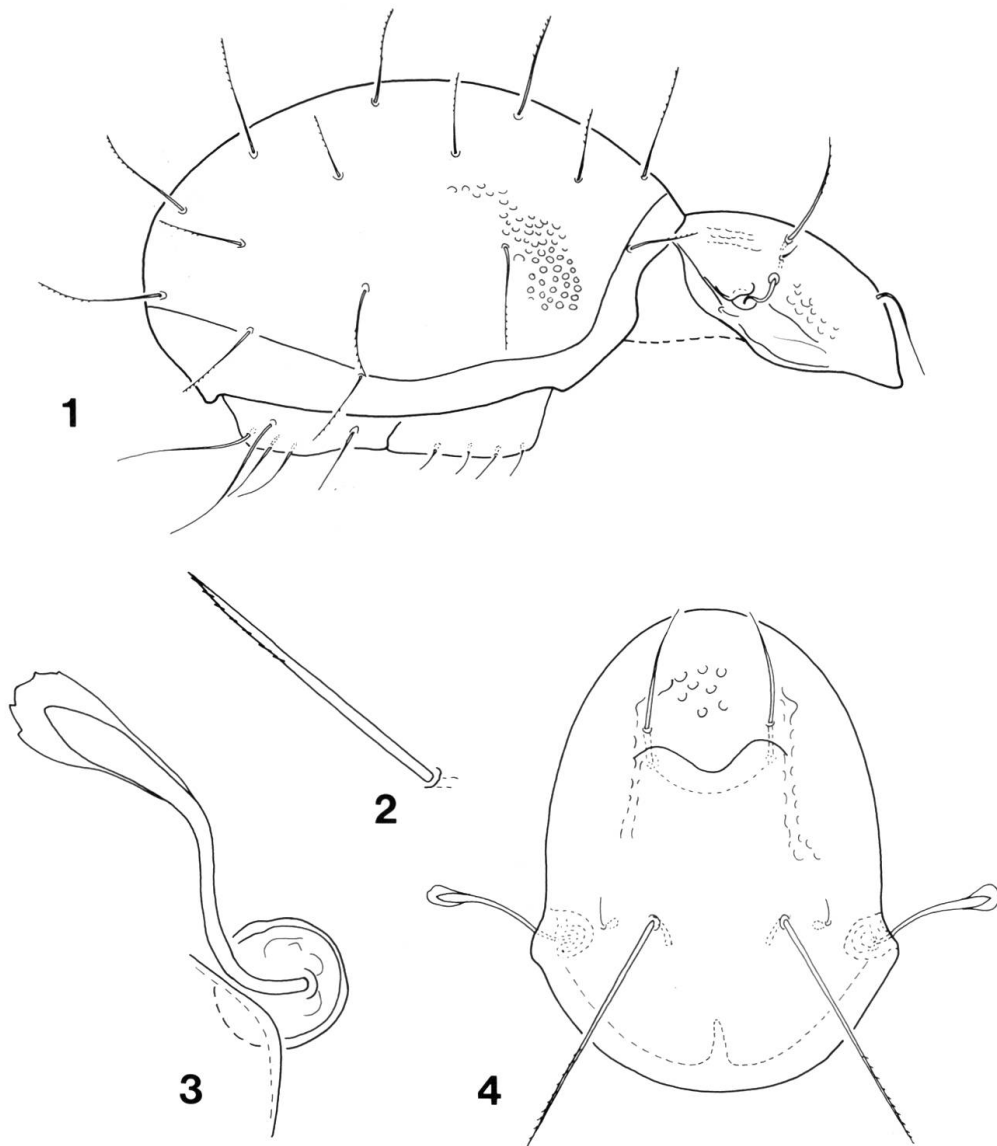
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\* A few other Himalayan species are described as a result from additional Museum's expeditions.

one row. Hairs  $ad_1$  and  $ad_2$  about two times as long as anal hairs; whereas hair  $ad_3$  as long as the latter. Hair  $ad_2$  inserted nearer to origin of  $anl$  than to  $ad_1$ .

Material examined: Holotype: Bhutan; Phuntsholing, 2/400 m, 21–28.9, W. Wittmer; 16 paratypes: from the same locality; 1 ex.: India; Maghalaya, Cerrapunjee, 1200 m, 16.5.76, W. Wittmer, Baroni, U. The holotype and 8 paratypes in NHMB, 6 ex. (376–PO–78) in HNHM, 2 ex. in ZDT, 1 ex. in MHNG.

Remarks: On the basis of shape of sensillus and notogastral hairs, it

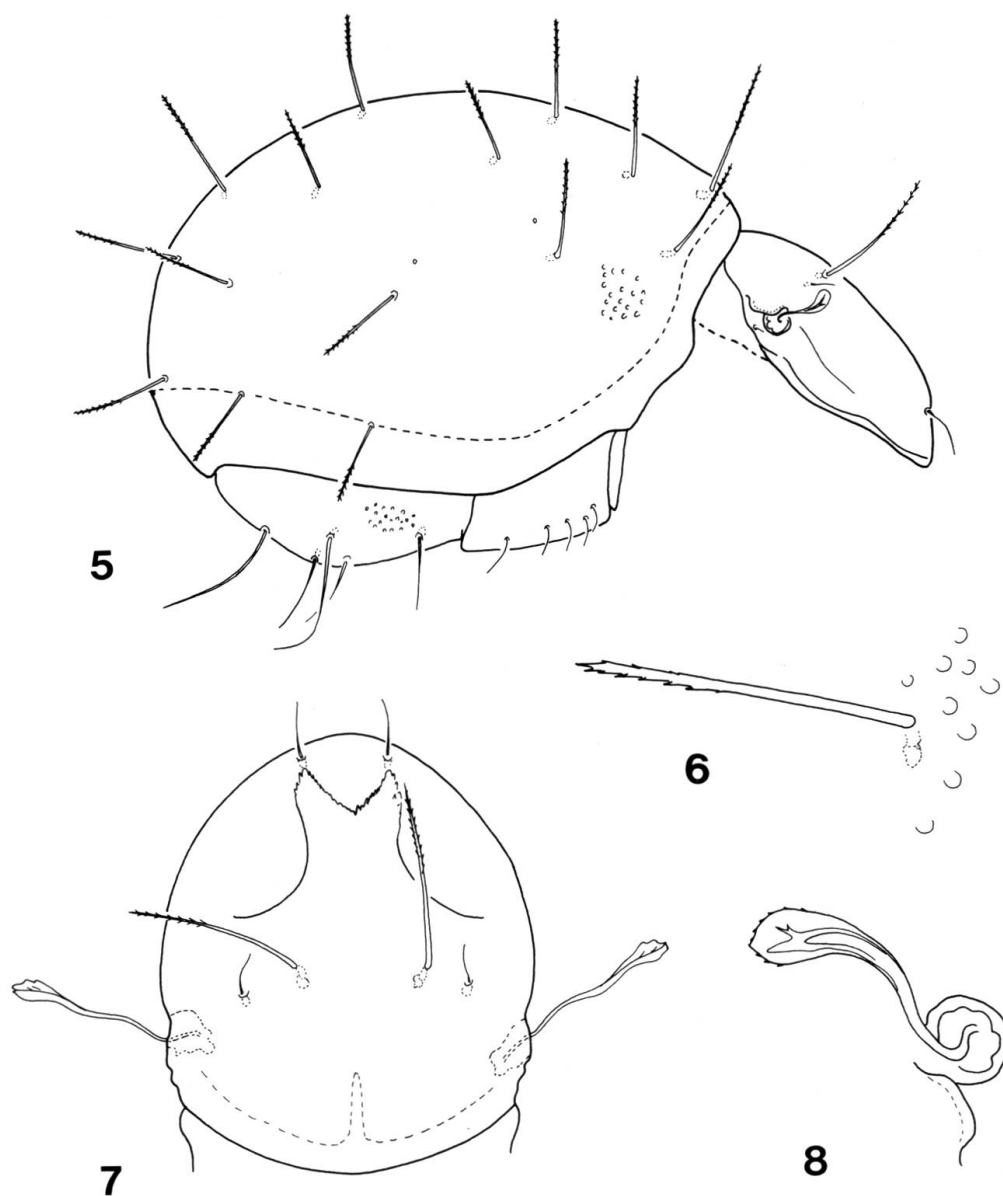


Figs. 1–4. *Hoplophthiracarus indicus* n. sp. 1: lateral side, 2: notogastral seta, 3: sensillus, 4: aspis.

seems that the new species stands very near to *H. siamensis* AOKI, 1965 and *H. regalis* MAHUNKA, 1978. However, the notogastral sculpture and arrangement of hairs on anal plate could be used as distinguishing characters for separating the three taxa.

**Hoplophthiracarus wittmeri** n.sp. Figs. 5–8

Measurements: Length of aspis: 258–300  $\mu$ , length of notogaster: 526–583  $\mu$ , width of notogaster: 332–405  $\mu$ .



Figs. 5–8. *Hoplophthiracarus wittmeri* n.sp. 5: lateral side, 6: notogastral seta, 7: aspis, 8: sensillus.

**Prodorsum:** Anterior margin of aspis rounded. Rostral hairs simple, relatively short, decumbent, Interlamellar hair long, robust, slightly curved backwards, barbed distally. Lamellar hair simple and short (about half length of rostral one). Sensillus with a bifurcated and relatively long stalk, sublanceolate in outline, its distal part covered with a transparent membrane. Surface of prodorsum finely pitted.

**Notogaster:** Integument coarsely pitted. All notogastral hairs strong, erect, bacilliform, their distal halves strongly roughened.

**Anogenital region:** Two pairs of simple anal setae arising on inner margin of anal plate. Seta *adl* considerably longer than *an*<sub>1</sub> and *an*<sub>2</sub>, arising at the same level of anal setae. Setae *ad*<sub>1</sub> and *ad*<sub>2</sub> longer than all setae inserted on anal plate.

**Material examined:** Holotype: Bhutan; BH4, 1972, W. Wittmer; 6 paratypes: from the same locality as the holotype. The holotype and 2 paratypes in NHMB, 2 ex. (377-PO-78) in HNHM, 1 ex. in ZDT 1 ex. in MHNG.

**Remarks:** This new species stands extremely near to the preceding new species and its relatives. However, it is distinguished by body size measurements, length of rostral hairs, shape of notogastral sculpture and by the relative lengths of adanal to anal setae.

We dedicate this new species to Dr. W. Wittmer, Director of the Entomological Department, Natural History Museum at Basel, for collecting this outstanding Oribatid material.

***Mesotritia flagellata* n. sp. Figs. 9–11.**

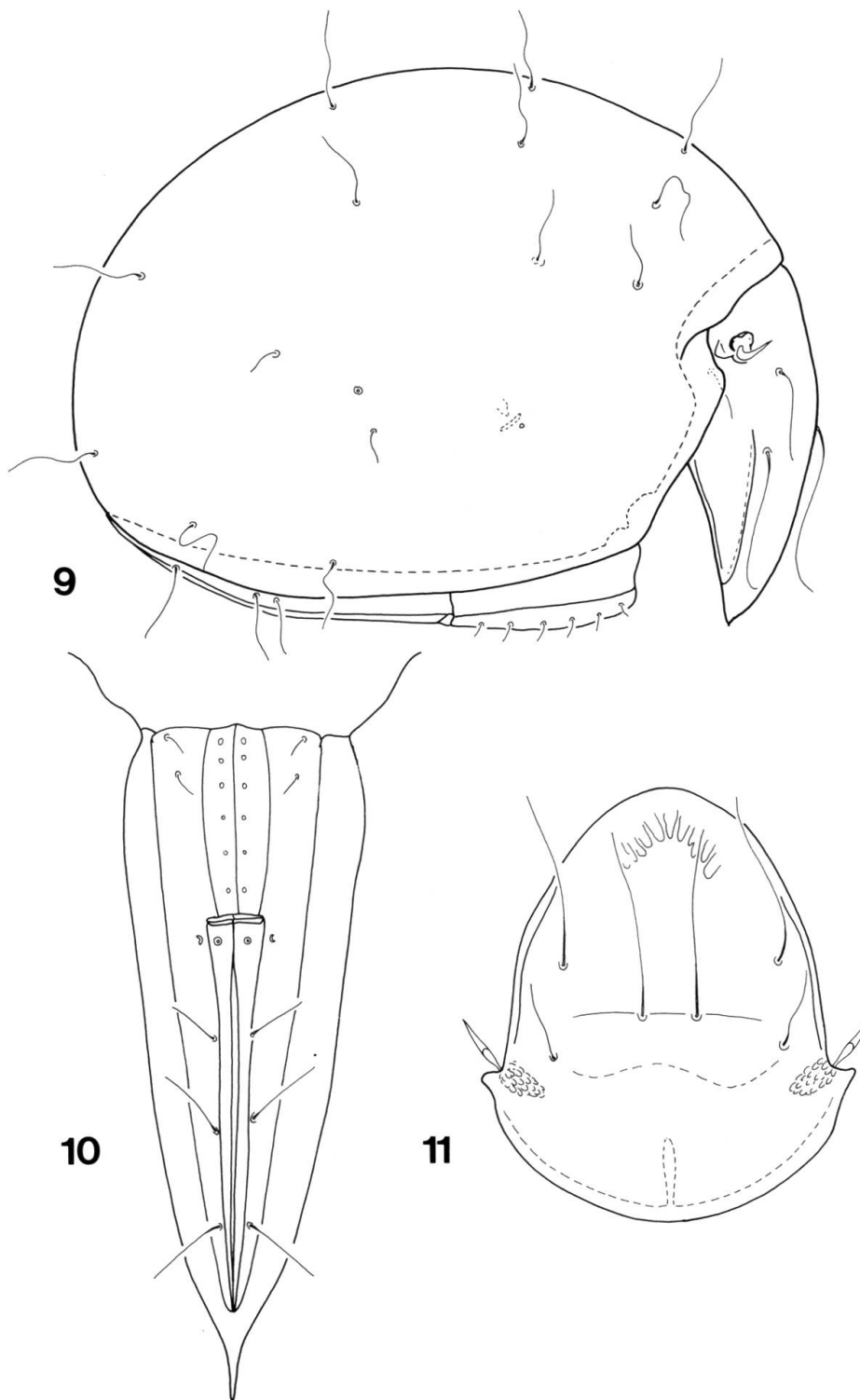
**Measurements:** Length of aspis: 373–405  $\mu$ , length of notogaster: 761–826  $\mu$ , width of notogaster: 535–575  $\mu$ .

**Prodorsum:** Rostral hairs long, simple, situated marginally near midline of prodorsum. Interlamellar hair setiform, smooth, as long as rostral one and inserted behind the latter. Lamellar hair also simple, about half length of interlamellar one. All prodorsal hairs thin and strongly decumbent. Sensillus short, sub-lanceolate, its distal half covered with a pointed hyaline membrane.

**Notogaster:** Laterally compressed. Fourteen pairs of notogastral hairs, approximately equal in lengths, erect, flagelliform and smooth.

**Anogenital region:** Six pairs of minute, smooth genital setae, 2 pairs of aggenital setae present. One pair of anal setae situated near anterior border of anal plate. Three pairs of relatively long, thin adanal setae present.

**Material examined:** Holotype: Bhutan; Phuntsholing, 87 km,



Figs. 9–11. *Mesotritia flagellata* n.sp. 9: lateral side, 10: anogenital region, 11: aspis.

22.5.72, W. Wittmer; 3 paratypes: from the same locality as the holotype. The holotype and 1 paratype in NHMB, 1 ex. (378-PO-78) in HNHM, 1 ex. in ZDT.

Remarks: The present new species could be related to *M. maerkeli* SHEALS, 1965 described from Nepal. It differs from the latter and other related species in shape of sensillus, relative lengths of rostral to interlamellar hairs, in addition to shape of notogastral hairs.

**Oribotritia gigas** n. sp. Figs. 12–14

Measurements: Length of aspis: 608–616  $\mu$ , length of notogaster: 1134–1150  $\mu$ , width of notogaster: 729–778  $\mu$ .

Prodorsum: Aspis broadly rounded anteriorly. Rostral hair long, erect, rigid and barbed. It is inserted far from margin of aspis. Interlamellar hair longest of all prodorsal ones, erect, robust and barbed. Lamellar hair thin, simple and directed anteriorad. Sensillus also setiform and barbed. Prodorsum provided with a lateral keel.

Notogaster: All notogastral hairs erect, setiform, barbed and of equal length.

Anogenital region: Eight pairs of genital, 2 pairs of aggenital, 2 pairs of anal and 3 pairs of adanal setae present. All anogenital setae minute, fine and simple.

Material examined: Holotype: Kashmir; Gulmarg, 2650/3000 m, 1.3.76, W. Wittmer; 33 paratypes: from the same locality as the holotype. Holotype and 16 paratypes in NHMB, 13 ex. (379-PO-78) in HNHM, 3 ex. in ZDT, 1 ex. in MHNG.

Remarks: The new species can be sharply distinguished by its size and the barbed notogastral hairs from all known congeners.

**Austrotritia gibba** n. sp. Figs. 15–17

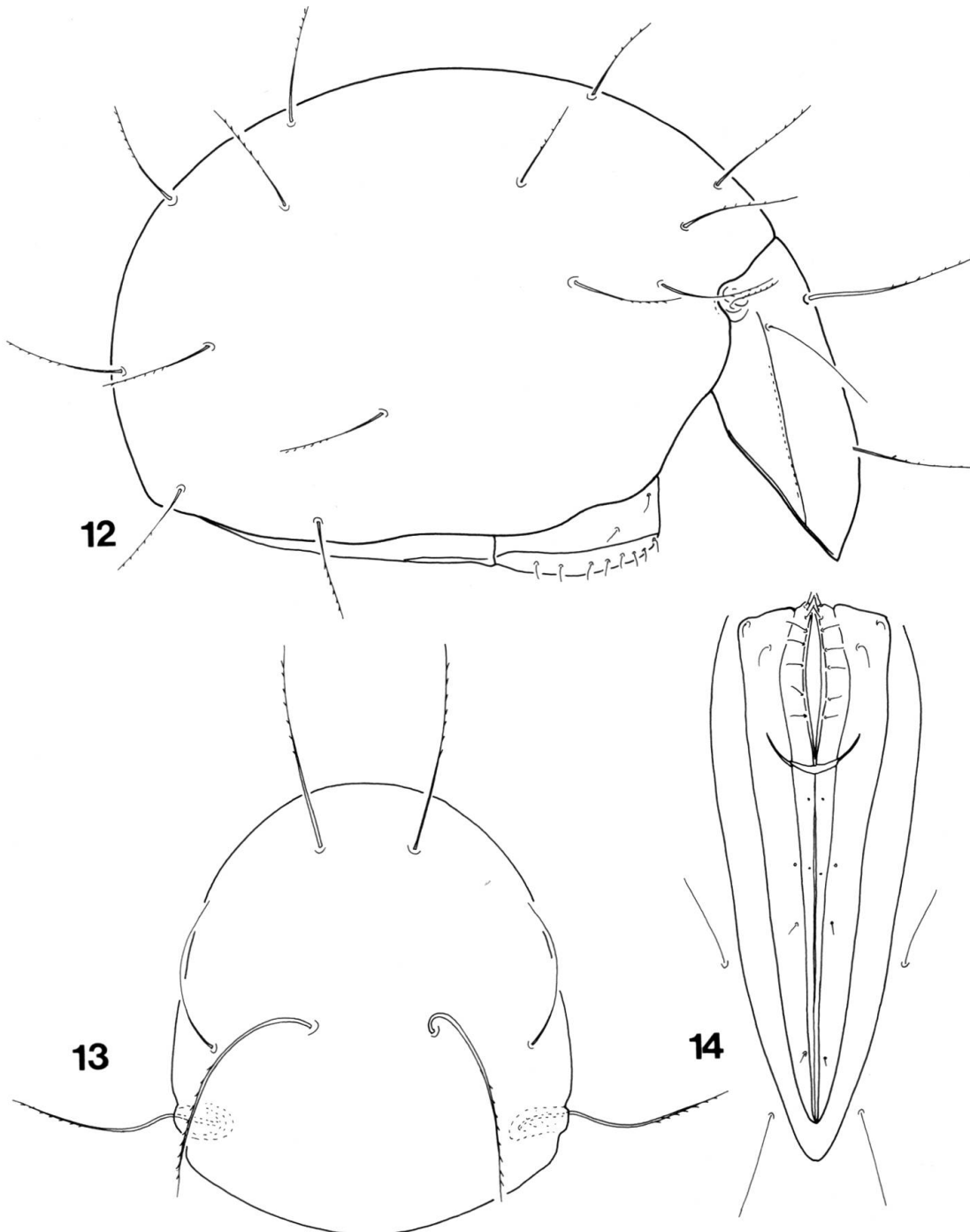
Measurements: Length of aspis: 486–535  $\mu$ , length of notogaster: 1013–1215  $\mu$ , width of notogaster: 842–883  $\mu$ .

Prodorsum: Broadly rounded anteriorly. Rostral hair thin, setiform, smooth and directed anteriorad. Interlamellar hair thin, simple and curved posteriorad. Lamellar hair also thin, setiform, smooth and about 1.5 times as long as rostral one. Sensillus comparatively long, setiform and smooth. Two lateral keels present.

Notogaster: Humped in outline, hence name of species. Fourteen pairs of erect, simple and long notogastral hairs present. Marginal pairs of notogastral hairs comparatively longer than the rest.

Anogenital region: Eight pairs of genital, 2 pairs of aggenital, 2 pairs of anal and 3 pairs of adanal hairs present.

Material examined: Holotype: Kashmir; Gulmarg, 2650/3000 m, 1.3.76, W. Wittmer; 5 paratypes: from the same locality. The holotype



Figs. 12–14. *Oribotritia gigas* n.sp. 12: lateral side, 13: aspis, 14: anogenital region.



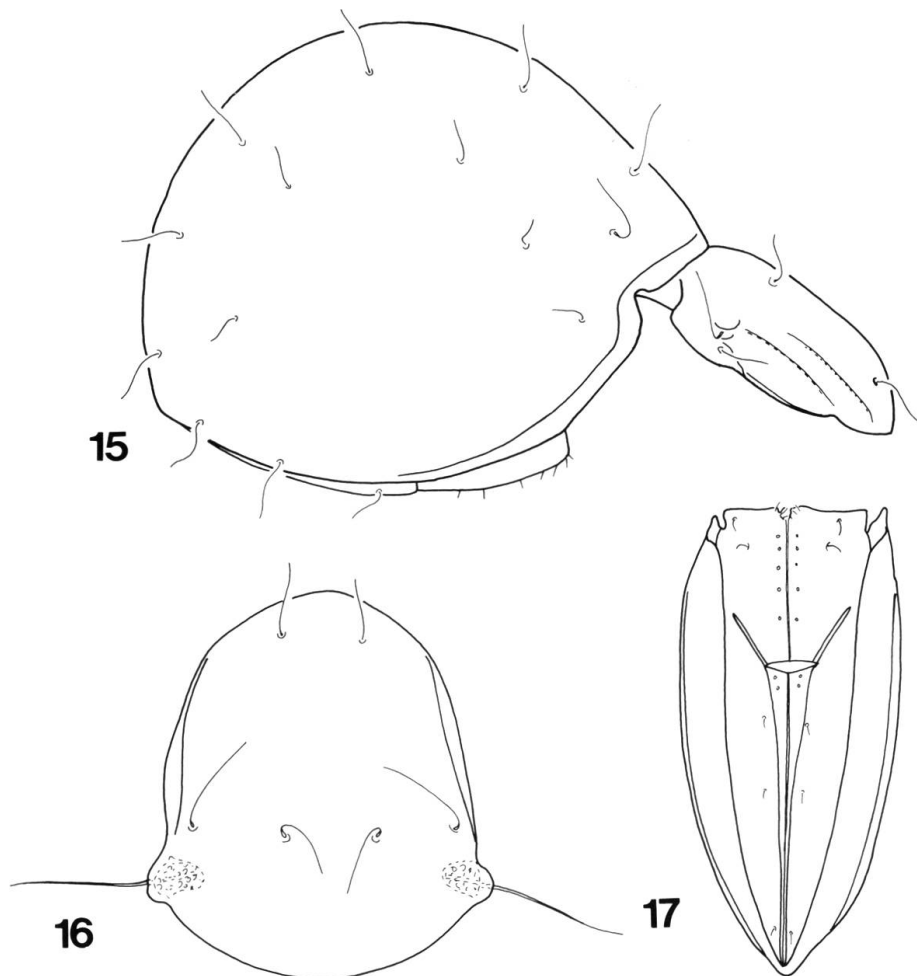
and 2 paratypes in NHMB, 1 ex. (380-PO-78) in HNHN, 1 ex. in ZDT, 1 ex. in MHNG.

Remarks: The present new species is closely related to *Austrotritia lebronneci* (JACOT, 1934). However, it considerably differs from it by the shape of notogaster, relative lengths of lamellar, interlamellar and notogastral hairs; in addition to the number of anal hairs (only one pair present in *A. lebronneci*).

***Rhysotritia furcata* n.sp. Figs. 18–20**

Measurements: Length of aspis: 227–259  $\mu$ , length of notogaster: 462–543  $\mu$ , width of notogaster: 346–389  $\mu$ .

Prodorsum: Integument foveolate. Rostral, interlamellar and lamellar hairs erect, robust, their distal halves strongly barbed. Interlamellar hair longest of all. Sensillus dilated distally into a flat head, set with coarse barbs on its surface. A bifurcated lateral keel present.

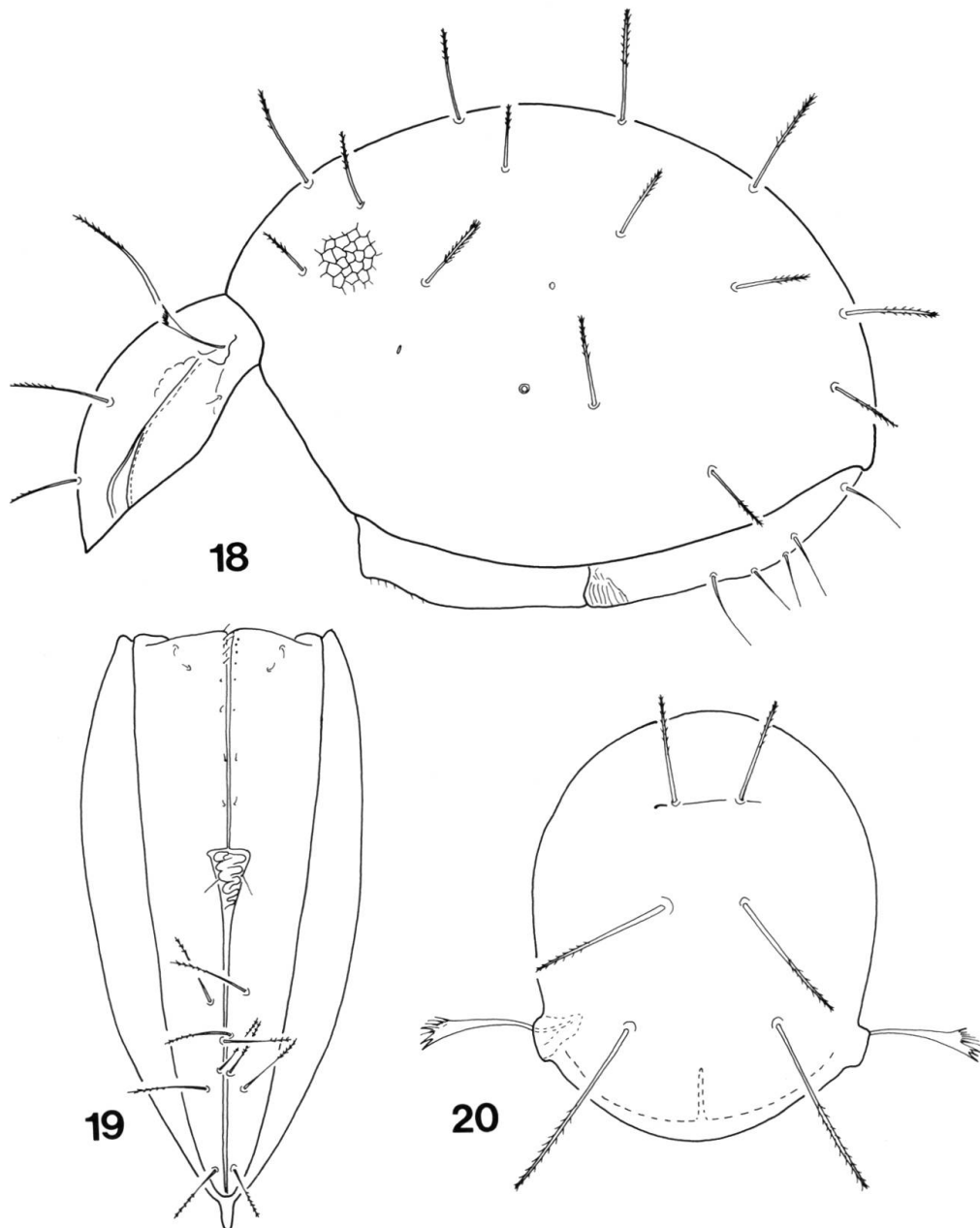


Figs. 15–17. *Austrotritia gibba* n.sp. 15: lateral side, 16: aspis, 17: anogenital region.

Notogaster: Ornamented with pits, which are arranged into a distinct network of polygonal sculpture. All notogastral hairs erect, robust and strongly barbed.

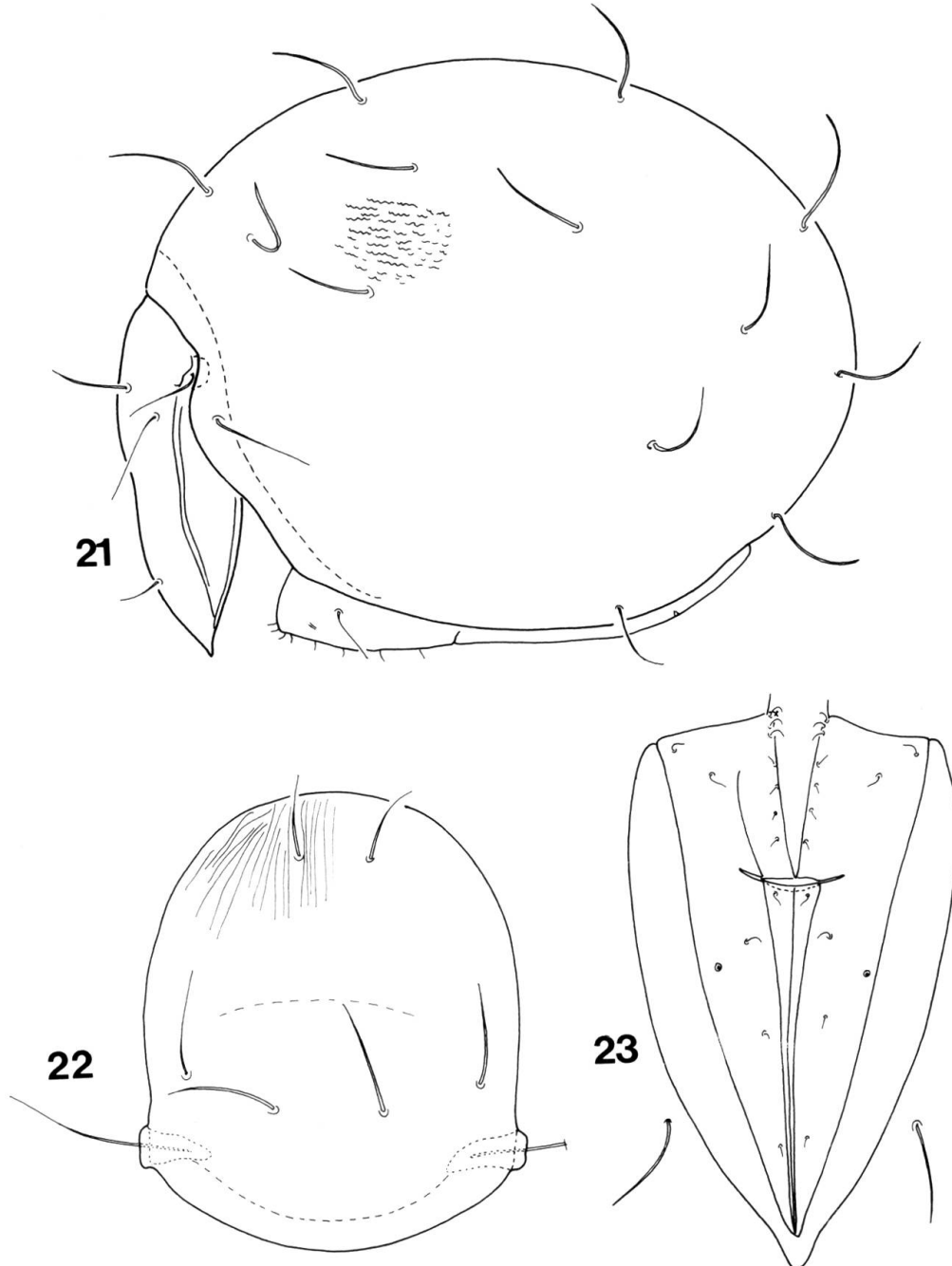
Anogenital region: Nine pairs of minute genital, 2 pairs of aggenital, 3 pairs of anal and 3 pairs of adanal setae present.

Material examined: Holotype: India, Darjeeling Distr., Chimkhona (Ghum), 2200 m, 4.6.75, W. Wittmer; 2 paratypes: from the



Figs. 18–20. *Rhysotritia furcata* n.sp. 18: lateral side, 19: anogenital region, 20: aspis.

same locality; 2 paratypes: Bhutan; Phuntshiling, 2/400 m, 15.7.72, W. Wittmer; 2 paratypes; Bhutan; 3100 m, 1.6.76, Dorjee Khandu; 1 paratype; Nepal; Godavari, 1450 m, 25.5.76, W. Wittmer, Baroni, U.; 1 paratype; Nepal: Phulchoki, 2600 m, 11–14.6.76, W. Wittmer, Baroni, U. The holotype and 3 paratypes in NHMB, 3 ex. (381–PO–78) in HNHM, 1 ex. in ZDT. 1 ex. in MHNG.



Figs. 21–23. *Indotritia undulata* n.sp. 21: lateral side, 22: aspis, 23: anogenital region.

Remarks: On the basis of shape of sensillus, prodorsal and notogastral hairs, the new species stands near to *R. ardua otahietensis* HAMMER, 1972 from Tahiti. However, the new taxon is characterized by having a bifurcated lateral keel on prodorsum and a polygonal notogastral sculpture.

**Indotritia undulata** n.sp. Figs. 21–23

Measurements: Length of aspis: 486–502  $\mu$ , length of notogaster: 834–940  $\mu$ , width of notogaster: 664–729  $\mu$ .

Prodorsum: Aspis with a snout at its tip when seen laterally. Rostral and interlamellar hairs smooth and slightly bent posteriorad. Interlamellar hair about two times as long as rostral one. Lamellar hair thin, setiform and directed anteriorad. Sensillus long, smooth and tapering distally. A lateral keel present. Integument of anterior third of prodorsum ornamented with longitudinal laths.

Notogaster: Surface of notogaster sculptured with discontinuous wavy, faint furrows. Fourteen pairs of notogastral hairs present. All erect, stiff, smooth and strongly curved anteriorad.

Anogenital region: Eight pairs of genital, 2 pairs of aggenital, 1 pair of anal and 3 pairs of adanal setae present. All setae thin and minute. Aggenital setae slightly longer than rest.

Material examined: Holotype: Nepal; Phulchoki, 2600 m, 11–14.6.76, W. Wittmer, Baroni, U.; 2 paratypes; from the same habitat; 14 paratypes; Bhutan; Chimakothi, 1900/2300 m, 22.5, W. Wittmer; 2 paratypes; Kashmir; Gulmarg, 2650/3000 m, 1.3.76, W. Wittmer. The holotype and 9 paratypes in NHMB, 16 ex. (382–PO–78) in HNHM, 3 ex. in ZDT, 1 ex. in MHNG.

Remarks: This new species stands very near to *I. acanthophora* MÄRKEL, 1964. They can be easily separated by relative length of prodorsal hairs, sculpture of notogaster and number of aggenital and adanal hairs (3 and 2 in *I. acanthophora*, respectively).

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## Ergebnisse der Bhutan-Expedition 1972 des Naturhistorischen Museums in Basel

### Acari: Oribatida (Part II)

By B.M. Bayoumi and S. Mahunka

**Abstract:** The Oribatid material from the northern part of the Indian Peninsula has been examined. Three species proved to be new for science and for one of them the erection of a new genus appears justifiable (*Neohermannia* gen. n.).

The present article is the second of a series in which the writers deal with Indian Oribatid mites. In the first contribution (BAYOUMI et MAHUNKA, 1979) the authors have described seven new species belonging in the Ptyctima group. In the present occasion, however, three interesting oribatid mites are dealt with, among them one required the establishment of a new genus.

The material has been collected by Dr. W. Wittmer, Natural History Museum, Basel and his colleagues during their expeditions to the Indian Peninsula.

The holotype and a part of paratypes are deposited in the Natural History Museum, Basel (NHMB), some paratypes in the Hungarian Natural History Museum (HNHM) at Budapest and others in the collection of the Zoological Department, Faculty of Science, Tanta, Egypt (ZDT); an in the Museum D'Histoire Naturelle, Genève (MHNG).

On this occasion the writers wish to thank most sincerely Dr. W. Wittmer for collecting the material and allowing to study it.

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\* A few other Himalayan species are described as a result from additional Museum's expeditions.