

# **New Oribatids (Acari) from Ceylon**

## **The Scientific Results of the Hungarian Soil Zoological Expeditions\***

By

**J. BALOGH\*\***

*To Professor Endre Dudich, Ph. D.  
on His 75<sup>th</sup> Birthday*

The Hungarian Soil Zoological Expeditions worked in 1968 also in Ceylon (16 June–6 July), on the invitation of Dr. P. CANAGARATNAM (Secretary of Foreign Relations, Ceylon Association for the Advancement of Science) and C. R. PANABOKKE (Head of the Soil Survey of Ceylon), also sponsoring and organizing our researches. Transport facilities for the various collecting trips, the help of several research workers, accommodations during field work have also been freely given and for all this and their friendly and cordial cooperation it is my pleasant duty to express my gratitude also in this place. I am also indebted to G. HETTIGE, H. DISSANAYAKE, and N. JAYANARDENA for their excessive help during the field work in Ceylon.

The Agency in Colombo of the Hungarian Ministry of Foreign Trade also helped in all possible ways, having been the host of the two participants (Dr. I. LOKSA, Assistant Professor of the University, and myself) of the expeditions and ceding one of the rooms of the Agency for our research work. I wish to express my thanks to L. (LÁSZLÓ) SZEBENI, Trade Counsellor, the Head of the Agency, and to my friend J. (JÁNOS) MÁRKUS, trade expert, and Miss E. (ELISABETH) VARGA, secretary. L. SZEBENI permitted the use of the room in his absence, while J. MÁRKUS and Miss E. VARGA have readily and enthusiastically promoted our work in every respect.

It is to be thanked to the excellent organizational work that we have been able to obtain, during a comparatively short time, a rich material of soil fauna, deriving from a great number of localities. The present paper discusses but a part of the Oribatid mites, extracted from the samples, mainly new taxa. The complete evaluation and identification of the collected material still re-

\* Present article is of the material of the expedition to Ceylon, Australia and New Guinea (1968). Leader of the expedition: Prof. Dr. J. BALOGH; other participant: Dr. I. LOKSA.

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quires a great amount of work and time. The Oribatid fauna of Ceylon is entirely unknown, except for C. OUDEMANS's few data referring chiefly to specimens collected chiefly from *Nepenthes* flowers. Thus the data submitted below are the first ones published from the island.

The list of localities and an explanation of the abbreviations used in the paper are given below.

### Localities

**Waaga**, 18 June, 1968. Disturbed primary rain forest. Reddish yellow podsol soil with well developed laterite.

*CMB.-1.* Wet litter below shrubs on shore of creek.

*CMB.-2.* Litter from virgin forest above creek, southern exposition.

*CMB.-3.* Rooty humus below CMB 2.

*CMB.-4.* Moist detritus between decayed aerial roots of palm tree.

*CMB.-5.* Greyish-green moss hanging on tree trunk.

*CMB.-6.* Litter from virgin forest above creek, northern exposition.

*CMB.-7.* Yellowish, rooty humus below CMB. 6.

*CMB.-8.* Decaying material of stump in virgin forest.

*CMB.-10.* Mixture of CMB. 2. and CMB. 3. extracted by insect sieve and then placed in Berlese funnel.

**Kalutara**, 19 June, 1968. Swampy area with grassy clearings and shrubs, on the higher parts with rubber plantations. Marshy areas with acidic swamp soil.

*CMB.-B. 15.* Rooty humus below shrubs around swamp.

*CMB.-B. 16.* Preceding material sifted by insect sieves and placed in Berlese funnels.

**Kandy**, 22 June, 1968. Virgin forest of Udawattakele Sanctuary.

*CMB.-B. 19.* Litter of virgin forest.

*CMB.-B. 20.* Humus beneath preceding horizon.

*CMB.-B. 21.* Litter of Araceae cover on steep roadside.

**Nuwara Eliya**, 23—24 June, 1968. Cloud forest with low trees, extremely dense shrub horizon, bamboo scrub, the plants covered with thick moss.

*CMB.-B. 23.* Litter of virgin forest.

*CMB.-B. 24.* Humus beneath preceding horizon.

*CMB.-B. 25.* Thick, wet moss cover on tree trunks.

*CMB.-B. 26.* Moss cover on lying trunks.

*CMB.-B. 27.* Wet moss hanging from branches.

**Nuwara Eliya**, 23—24 June, 1968. Middle virgin forest zone in Ambawela area; a forest patch.

*CMB.-B. 31.* Litter of virgin forest.

*CMB.-B. 33.* Moss hanging from trunks and branches.

*CMB.-B. 35.* Litter and humus of planted Coniferous wood.

*CMB.-B. 37.* Litter and humus from Monocotyledonous border of roadside Coniferous wood.

**Nuwara Eliya**, 23—24 June, 1968. Lower, dry zone.

*CMB.-B. 42.* Secondary forest with rather thin litter horizon in valley. Litter nearly dry. Litter and humus.

**Environs of Galkulama**, 27 June, 1968. Reddish brown earth from side of dry streamcourse in dry forest.

*CMB.-B. 44.* Dry litter.

*CMB.-B. 47.* Litter and humus of dry forest in same site.

**Environs of Mankulam**, 28 June, 1968. Near shallow reservoir.

*CMB.-B. 49.* Wet aquatic plants secured from water.

**Environs of Madhu**, 28 June, 1968. Alkaline and saline soil.

*CMB.-B. 50.* Litter and soil of dry forest.

**Environs of Nochchiyagama**, 29 June, 1968. Alkali and saline soil.

*CMB.-B. 53.* Dry litter and soil.

**Environs of Kelinkanda, 1 July, 1968.**

CMB.-B. 62. Sparse, dripping moss on steep bank of road.

CMB.-B. 63. Litter from steep side of watercourse in virgin forest.

CMB.-B. 64. Humus horizon of preceding sample.

CMB.-B. 66. Sparse, dry moss growing on tree trunk.

**Environs of Kataragama, 2 July, 1968. Reddish brown earth.**

CMB.-B. 67. Very dry litter and soil of dry forest.

**Environs of Akuressa, 3 July, 1968. Virgin forest.**

CMB.-B. 71. Litter and humus from bamboo border of virgin forest.

CMB.-B. 72. Litter and soil in virgin forest.

CMB.-B. 74. Litter and soil of forest without bamboos.

CMB.-B. 76. Well kept rubber plantation; no shrub horizon. Litter and soil.

The type-material of the described taxa is deposited in the collection of the Zoological Department of the Hungarian Natural History Museum, Budapest.

**Acknowledgement:** My thanks are due to Mrs. ÉVA KOVÁCS, rendering me valuable help in both the scientific working up of the material and the preparation of the figures.

*Microtegeus ceylonicus* sp. n.

(Fig. 3)

Length: 257.5  $\mu$ , breadth: 185.0  $\mu$ .

Prodorsum: Sensillus apically widening, aciculate. Interlamellar and lamellar setae rather long, introrsely arcuate; rostral setae well discernible. Prodorsum with rough, polygonal sculpture.

Notogaster: Nine pairs of arcuate, rather long and thin notogastral setae. Dorsosejugal suture flatly arcuate, nearly straight. Notogaster with polygonal sculpture, obsolescent on 3 pairs of symmetrically arranged round spots.

Ventral side: Five pair of genital, 1 pairs of aggenital, 2 pairs of anal, and 2 pairs of adanal, setae present. Ventral plate granulate; an obsolescent polygonal structure below granulation.

Remarks: Related to *Microtegeus reticulatus* AOKI, 1965, described from Thailand, the new species differs by the shape of the sensillus and the 3 smooth pairs of spots on the notogaster.

Material examined: Holotype: CMB.-B.-5.; Paratypes: 1 ex.: CMB.-B.-5.; — 1 ex.: CMB.-B.-3.; — 1 ex.: CMB.-B.-63.

*Microtegeus cornutus* sp. n.

(Fig. 4)

Length: 235.0  $\mu$ , breadth: 145.0  $\mu$ .

Prodorsum: Sensillus rather long, apically densely ciliate. Interlamellar setae minute, fine, situated on lamella. Lamellar setae longer, arcuate. Rostral setae short, indiscernible from above. Lamellae punctate, external projection of cuspis attenuating into a mucronate apex.

Notogaster: Dorsosejugal suture straight. Nine pairs of minute notogastral setae present. Notogaster smooth, with merely a fine punctation.

Ventral side: Five pairs of genital, 1 pair of aggenital, 2 pairs of anal, and 2 pairs of adanal, setae present. All setae minute or represented merely by their alveoli.

Remarks: The new species is sharply distinguished by the mucronate apex of the lamellae, the sculptureless notogaster, and the short prodorsal and notogastral setae, thereby differing from all heretofore described congeners.

Material examined: Holotype: CMB.-B.-5.; — Paratypes: 2 ex.: CMB.-B.-5.

### *Dudichella* gen. n.

Family Eutegaeidae. Extremely elongate, anteriorly extending humeral appendages, with their external margins arcuate introrsely and reaching to height of rostrum in a superior view. Lamellae large, rather wide, standing obliquely on their interior margins, medially confluent and thus X-shaped. Lamellar setae situated below on basis of cuspides. No discernible interlamellar setae. Rostral setae in ventral position, fine, rather short. Chelicerae minute, pelotoides, similar to those of *Microtegeus*. Legs monodactyle. Six pairs of genital, 1 pair of aggenital, 2 pairs of anal, and 3 pairs of adanal, setae present.

Epimeral region laterally widening into a membrane, extending anteriorly almost to rostrum, its external edge parallel with inner margin of humeral appendages, thus constituting a longitudinal cavity harbouring legs.

Type-species: *Dudichella membranigera* sp. n.

Remarks: An extremely specialized Eutegaeid satisfactorily distinct, by the conspicuous features outlined above, from all hitherto known genera of the family.

### *Dudichella membranigera* sp. n.

(Fig. 1—2)

Length: 583.1  $\mu$ , breadth: 392  $\mu$ .

Prodorsum: Sensillus ex- and reclinate, straight, smooth, dagger-shaped, acute, apically with some minute cilia. Lamellae and prodorsal setae as given in generic diagnosis.

Notogaster: Dorsosejugal suture straight. Extremely long, introrsely arcuate humeral appendages. Nine pairs of minute notogastral setae.

Ventral side: Epimeral region with peculiar membrane described in generic diagnosis; minute epimeral setae present. Ventral region constructed as characteristic of the family Eutegaeidae.

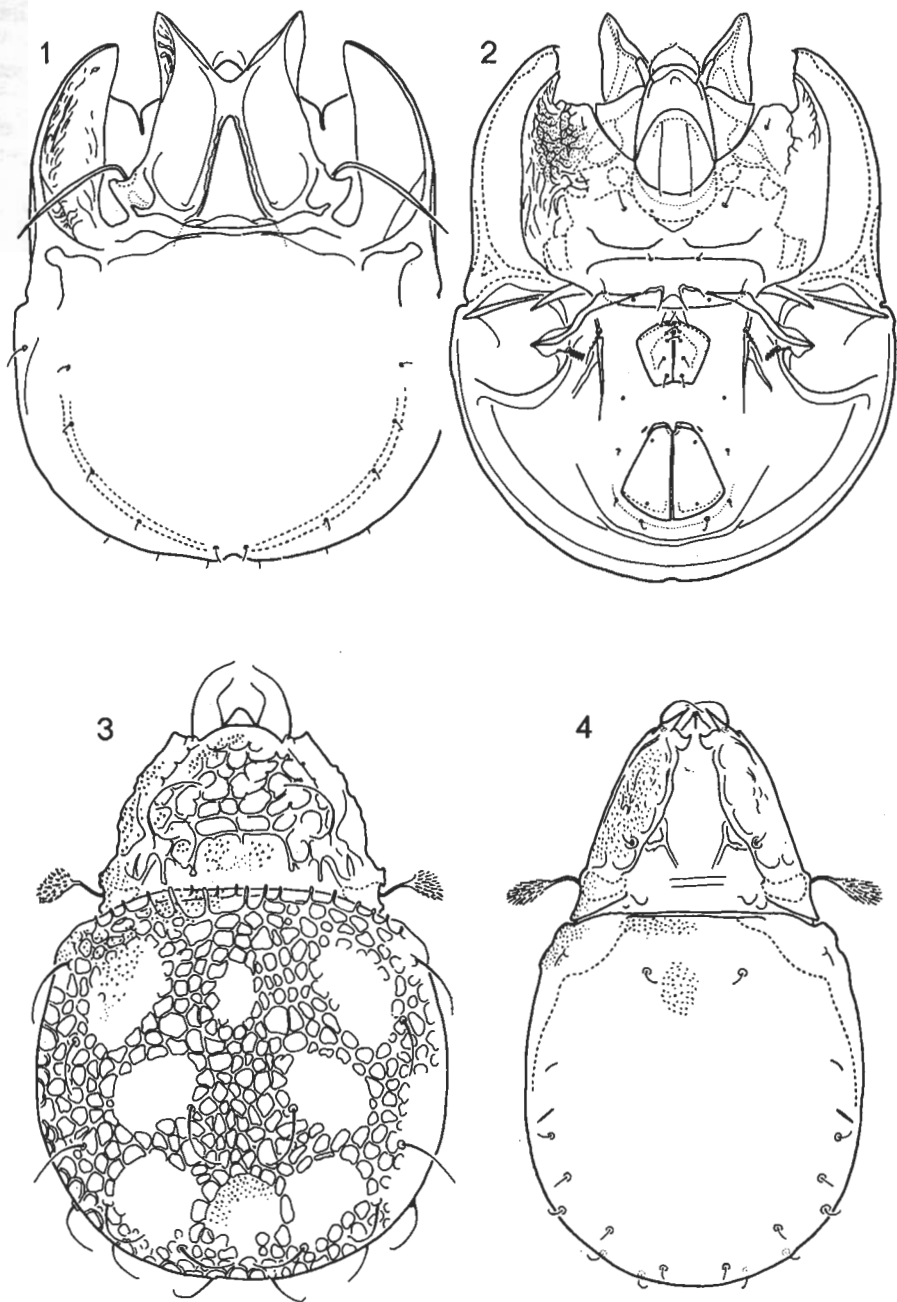
Material examined: Holotype: CMB.-B.-37; — Paratypes: 2 ex.: CMB.-B.-37.

### *Rhopalozetes canagaratnami* sp. n.

(Fig. 5)

Length: 362.6  $\mu$ , breadth: 264.6  $\mu$ .

Prodorsum: Interlamellar setae arising on lamellae, minute. Lamellae convergent, elongately concurring in median line, extending beyond rostrum. Cuspis obliquely truncate, with short, incrassate, ciliate lamellar setae. Sen-



Figs. 1—4. 1—2: *Dudichella membranigera* gen. n., sp. n. — 3: *Microtegaeus ceylonicus* sp. n.  
4: *Microtegaeus cornutus* sp. n.

sillus ex- and proclinate, rather long, apically slightly fusiform and finely ciliate.

Notogaster: Dorsosejugal suture absent. Nine pairs of notogastral setae present, all very short. Pteromorphae deeply decumbent.

Ventral side: Agreeing in all features with uniform type of family. Six pairs of genital, 1 pair of aggenital, 2 pairs of anal, and 3 pairs of adanal, setae present.

Material examined: Holotype: CMB.-B.-31; — Paratype: 1 ex.: CMB.-B.-31.

*Rhopalozetes panabokkei* sp.n.

(Fig. 6)

Length: 255  $\mu$ , breadth: 180  $\mu$ .

Prodorsum: Entirely similar to preceding species, except for considerably more acute and narrow cuspides.

Notogaster: Dorsosejugal suture absent. Notogastral setae longer. Pteromorphae in a superior view shorter than those of preceding species.

Ventral side: Agreeing in every feature with uniform type of family.

Material examined: Holotype: CMB.-B.-7.

Remarks: The two new species differ from each other mainly in their dimensions and the shape of the cuspis. The single hitherto known species of the genus, *Rh. millioti* BALOGH, 1962, lives in Madagascar, and it is easily distinguishable from the new taxa.

*Carabodes globiger* sp. n.

(Fig. 7)

Length: 357.7  $\mu$ , breadth: 196  $\mu$ .

Prodorsum: Sensillus long, exclinate, wholly smooth, with a sphaerical apex. Interlamellar setae short, plumose: lamellar and rostral hairs setiform, inclinate. Lamellae narrow, marginal.

Notogaster: Ten pairs of phylliform but densely ciliate, nearly plumose notogastral setae present; their number and position as in most of the ten-haired European species. Notogaster tuberculate.

Ventral side: Four pairs of genital, 1 pair of aggenital, 2 pairs of anal, and 3 pairs of adanal, setae present. Anal setae short, situated on posterior half of anal plates.

Remarks: The true, ten-haired *Carabodes* species are rather rare in the subtropical and tropical zones. The new species differs by its sensillus and chaetotaxy from all heretofore described ten-haired *Carabodes* species.

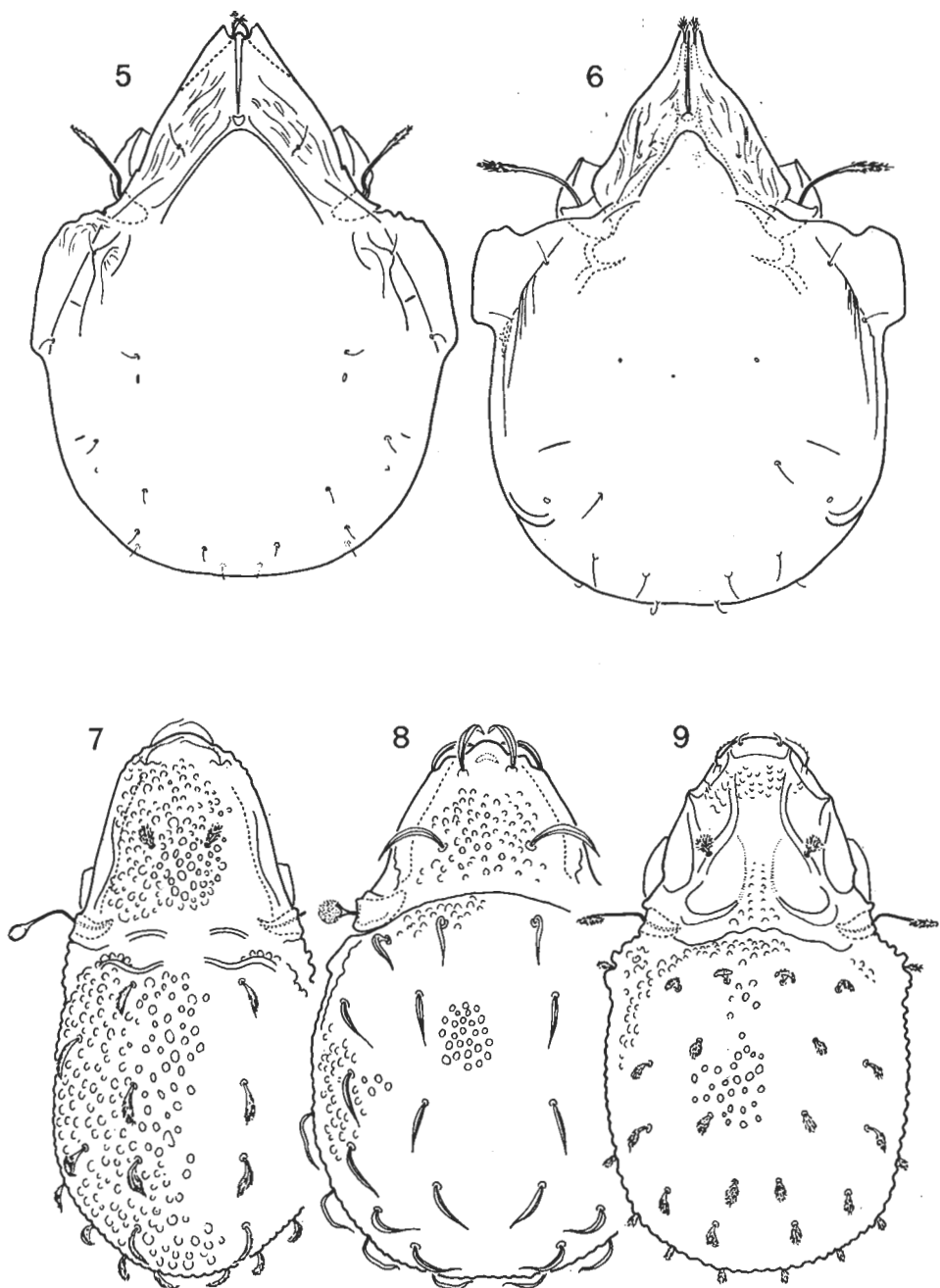
Material examined: Holotype: CMB.-B.-1.; — Paratype: 1 ex.: CMB.-B.-1.

*Austrocarabodes sphaerula* sp. n.

(Fig. 8)

Length: 612.5  $\mu$ , breadth: 392  $\mu$

Prodorsum: Sensillus short, sphaerical, finely ciliate. Prodorsal hairs willow-leaf-shaped, arcuate, in the generically characteristic position.



Figs. 5—9. 5: *Rhopalozetes canagaratnami* sp. n. — 6: *Rhopalozetes panabokkei* sp. n. — 7: *Cara-bodes globiger* sp. n. — 8: *Austrocarabodes sphaerula* sp. n. — 9: *Austrocarabodes plumosus* sp. n.

Notogaster: Dorsosejugal suture arcuate. Notogaster wide, nearly circular, with scattered tubercles. Fourteen pairs of brachial or willow-leaf-shaped, arcuate, acute notogastral setae in the generically characteristic position.

Ventral side: Four pairs of genital, 1 pair of aggenital, 2 pairs of anal, and 3 pairs of adanal, setae present. Adanal setae similar in form to notogastral ones.

Remarks: The new species can be distinguished from the similar *Austrocarabodes* species by the wide and rounded notogaster, as well as the characteristic shape (rare in the genus) of the sensillus.

Material examined: Holotype: CMB.-B.-50.

*Austrocarabodes plumosus* sp. n.

(Fig. 9)

Length: 333.2–352.8  $\mu$ , breadth: 191.1–200.9  $\mu$ .

Prodorsum: Sensillus filiform, apically recurving, ciliate, of the characteristic *Austrocarabodes* type. Interlamellar setae situated on margins of lamellae, short, plumose; lamellar and rostral setae almost smooth, minute. Prodorsum with scattered foveolae and tuberculi.

Notogaster: A characteristic, obliquely projecting shoulder, roughly tuberculated, bearing a short, plumose hair. Fourteen pairs of plumose notogastral setae present. Notogaster with sparse tubercles.

Ventral side: Four pairs of genital, 1 pair of aggenital, 2 pairs of anal, and 3 pairs of adanal, setae present. Adanal setae weakly plumose.

Remarks: The new species differs by its characteristically shaped shoulder, and the form and position of the notogastral setae from all hitherto described congeners.

Material examined: Holotype: CMB.-B.-5.; — Paratypes: 1 ex.: CMB.-B.-5.; — 1 ex.: CMB.-B.-21.; — 3 ex.: CMB.-B.-47.; — 5 ex.: CMB.-B.-66.

*Austrocarabodes plumosulus* sp. n.

(Fig. 10)

Length: 362.6  $\mu$ , breadth: 196  $\mu$ .

Prodorsum: Sensillus of the *Austrocarabodes* type: first **exclinate** then erect to inclinate, setiform, apically densely ciliate. Interlamellar setae small and plumose, arising on lamellae at about their half length. Lamellar and rostral setae very short, setiform. Prodorsum with obscure tubercles.

Notogaster: Divided into an evenly elevated median section, ornamented with rather robust tubercles, and a narrow, well differentiated marginal zone. Shoulder with an obtuse projection bearing a notogastral hair. Fourteen pairs of minute, hardly discernible, plumose notogastral setae present.

Ventral side: Four pairs of genital alveoli, 1 pair of aggenital, 2 pairs of anal, and 3 pairs of adanal, setae present, all extremely short, almost indiscernible.

Remarks: The new species can be distinguished from its congeners by the extremely short, plumose notogastral setae.

Material examined: Holotype: CMB.-B.-31.



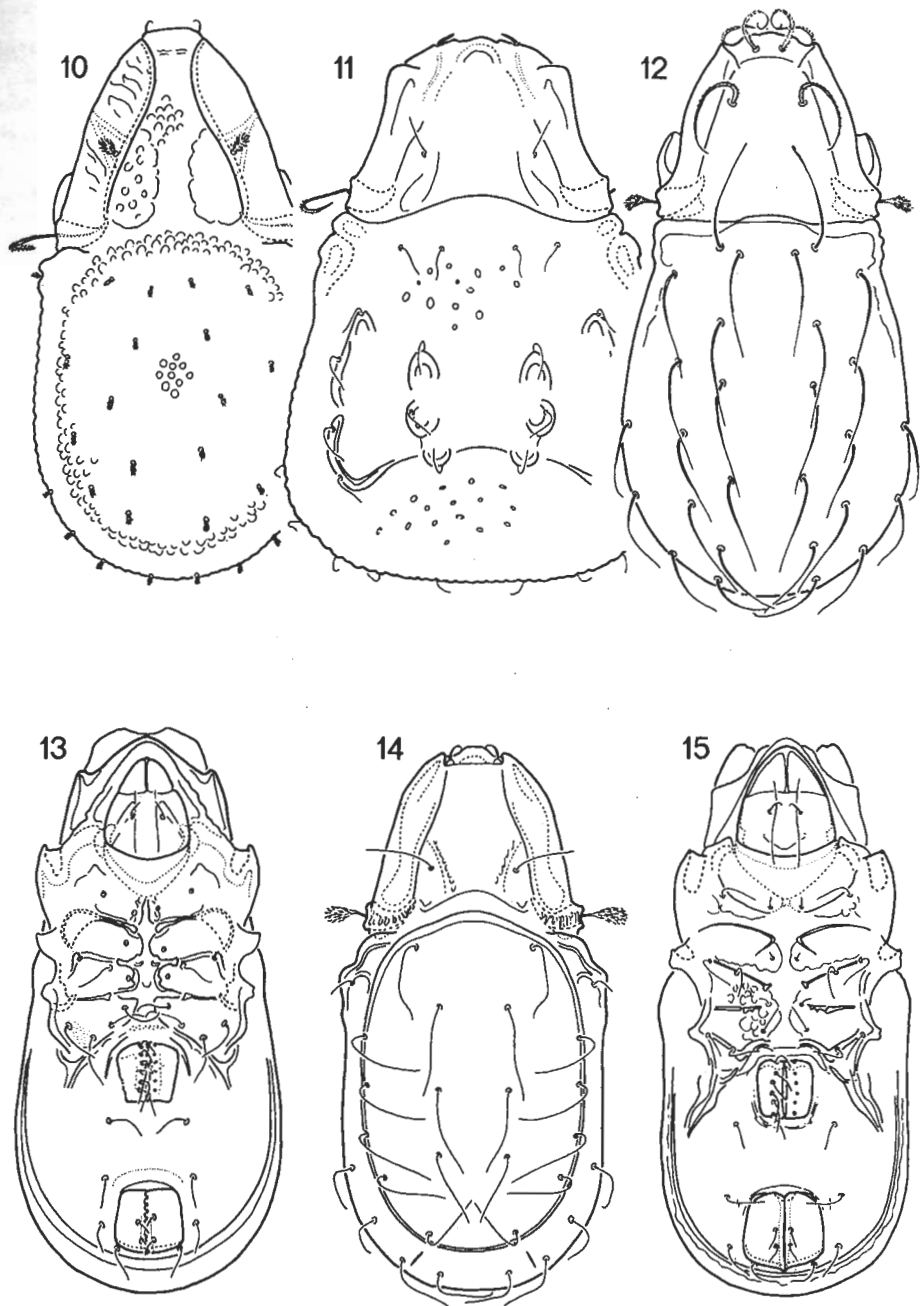


Fig. 10—15. 10: *Austrocarabodes plumosulus* sp. n. — 11: *Machadocephus taprobanicus* sp. n. — 12—13: *Trichocarabodes hettigei* sp. n. — 14—15: *Trichocarabodes capillatus* sp. n.

*Machadocephus taprobanicus* sp. n.

(Fig. 11)

Length: 714–860  $\mu$ , breadth: 418–541  $\mu$ .

Prodorsum: Sensillus exclinate to erect, filiform, apically finely ciliate, of a shape characteristic of the family. Interlamellar hairs setiform, arising in interlamellar region; lamellar setae short, bacilliform; rostral setae visible only from ventral view.

Notogaster: Dorsejugal suture slightly arcuate. Position of notogastral setae rather peculiar: two pairs originating adjacent to each other on anterior, slightly flattened position of notogaster; seven pairs arising on 6–7 tubercles arranged in 4 longitudinal rows in median region; and five (!) pairs in postero-marginal situation. Notogaster with rather scattered foveolae.

Ventral side: Four pairs of genital, 1 pair of aggenital, 2 pairs of anal, and 3 pairs of adanal, setae present. Among adanal setae,  $ad_1$  and  $ad_2$  in postanal position; setae  $ad_3$  in preanal position near an introrsely arcuate crest; aggenital setae arising near a similar crest, but aligned with posterior margin of genital plates.

Remarks: The tubercles of the notogaster and the position of the notogastral setae distinguish the new species from all congeners.

Material: examined Holotype: CMB.-B.-44.; — Paratype: 1 ex.: CMB.-B.-44.

*Trichocarabodes hettigei* sp. n.

(Fig. 12–13)

Length: 465.5  $\mu$ , breadth: 230.3  $\mu$ .

Prodorsum: Sensillus short, exclinate, apically dilating, densely ciliate. Interlamellar hairs setiform, ciliate, reclinate, originating anteriorly on rostral half of prodorsum. Lamellar and rostral setae inclinate, rather long, ciliate.

Notogaster: Dorsejugal suture straight, medially with a flatly convex arch. Shoulder with rectangular appendage. Fourteen pairs of long, setiform notogastral hairs; hair  $c_2$  proclinate anteriorly.

Ventral side: Six pairs of genital, 1 pair of aggenital, 2 pairs of anal, and 3 pairs of adanal, hairs present, all setiform.

Material examined: Holotype: CMB.-B.-31.

*Trichocarabodes capillatus* sp. n.

(Fig. 14–15)

Length: 524.3  $\mu$ , breadth: 240.1  $\mu$ .

Prodorsum: Sensillus exclinate, short, dilating, densely ciliate. Interlamellar hairs setiform, exclinate, straight, arising on basal half of prodorsum. Rostral setae indiscernible from above; lamellar setae short, inclinate.

Notogaster: Dorsejugal suture arcuate anteriorad, shoulder with two obtuse arches. Fourteen pairs of notogastral hairs, all setiform, thin, rather long, except on shoulder: this pair short, setiform. Notogaster with well discernible margins.

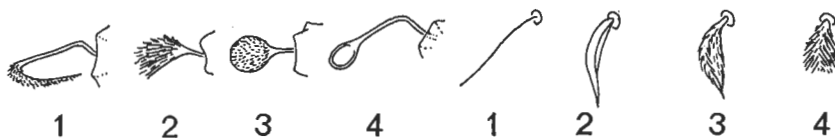
Ventral side: Six pairs of genital, 1 pair of aggenital, 2 pairs of anal, and 3 pairs of adanal, setae present.

Remarks: It was not without doubts that I relegated the two new species to the genus *Trichocarabodes*. The sole known species of the genus, *T. celisi* BALOGH, is African, and as to habits a typically 14-haired Carabodid; that is, it has 14 pairs of normally situated notogastral setae and neither tubercles or crests on the notogaster. The number of genital setae is eight. The two new Ceylonese species possess the same features, but only 6 pairs of genital setae. A further difference is that *T. celisi* has a filiform, apically erect sensillus, whereas that of the two Ceylonese taxa is short and expanding.

Other solutions would be to establish a new genus for the two above species or, in view of merely the numerical chaetotaxy (14 notogastral hairs and 6 genital setae), to assign them to the genus *Neocarabodes* BALOGH & MAHUNKA, 1969. I believe, however, that until the entire Carabodid complex is not critically revised, it were better to connect them with *Trichocarabodes*.

Material examined: Holotype: CMB.-B.-31.; — Paratype: 1 ex.: CMB.-B.-31.

Species	Number of setae					Type of	
	N	G	Ag	An	Ad	sensillus	notogastral setae
<i>Carabodes globiger</i> sp. n.	10	4	1	2	3	4	3
<i>Austrocarabodes sphaerula</i> sp. n.	14	4	1	2	3	3	2
<i>Austrocarabodes plumosus</i> sp. n.	14	4	1	2	3	1	4
<i>Austrocarabodes plumosulus</i> sp. n.	14	4	1	2	3	1	4
<i>Machadocephus taprobanicus</i> sp. n.	14	4	1	2	3	1	1
<i>Trichocarabodes hettigei</i> sp. n.	14	6	1	2	3	2	1
<i>Trichocarabodes capillatus</i> sp. n.	14	6	1	2	3	2	1



Carabodidae: 1—4 (left): types of sensillus; 1—4 (right): types of notogastral setae

*Dolicheremaeus markusi* sp. n.

(Fig. 16)

Length: 661.5  $\mu$ , breadth: 343.0  $\mu$ .

Prodorsum: Sensillus sigmoid, apically fusiform, slightly mucronate. Interlamellar setae not longer than sensillus.

Notogaster: Fourteen pairs of short, smooth, notogastral setae. Notogaster wide, nearly ovoid, with irregularly spaced foveolae and a fine punctation.

Ventral side: Four pairs of genital, 1 pair of aggenital, 2 pairs of anal, and 3 pairs of adanal, setae present.

Legs: Type of ultimate setae: L-L-L-L.

Remarks: The differentiating characters of the new species and those of the following new Otocephheid taxa are tabulated subsequent to the respective descriptions. The members of the family can namely so well be characterized by numerically expressed features and a single illustration that the usual, long descriptions appear to be superfluous.

Material examined: Holotype: CMB.-B.-31.

*Dolicheremaeus furcula* sp. n.

(Fig. 17)

Length: 499.9  $\mu$ , breadth: 249.9  $\mu$ .

Prodorsum: Sensillus apically fusiform, apex of expanded portion with 4-6 minute, partly bifurcating hairs. Interlamellar setae much shorter than sensillus. Interlamellar area obscurely foveolated or striated and finally punctate.

Notogaster: Ten pairs of rather short notogastral setae. Notogaster with irregularly arranged, and only partly longitudinally situated, tubercles and a fine punctation.

Ventral side: Four pairs of genital, 1 pair of aggenital, 2 pairs of anal, and 3 pairs of adanal, setae present. Genital plates with longitudinal striation.

Legs: Type of ultimate setae: L-L-L-L.

Material examined: Holotype: CMB.-B.-1.

*Dolicheremaeus ceylonicus* sp. n.

(Fig. 18)

Length: 735  $\mu$ , breadth: 294  $\mu$ .

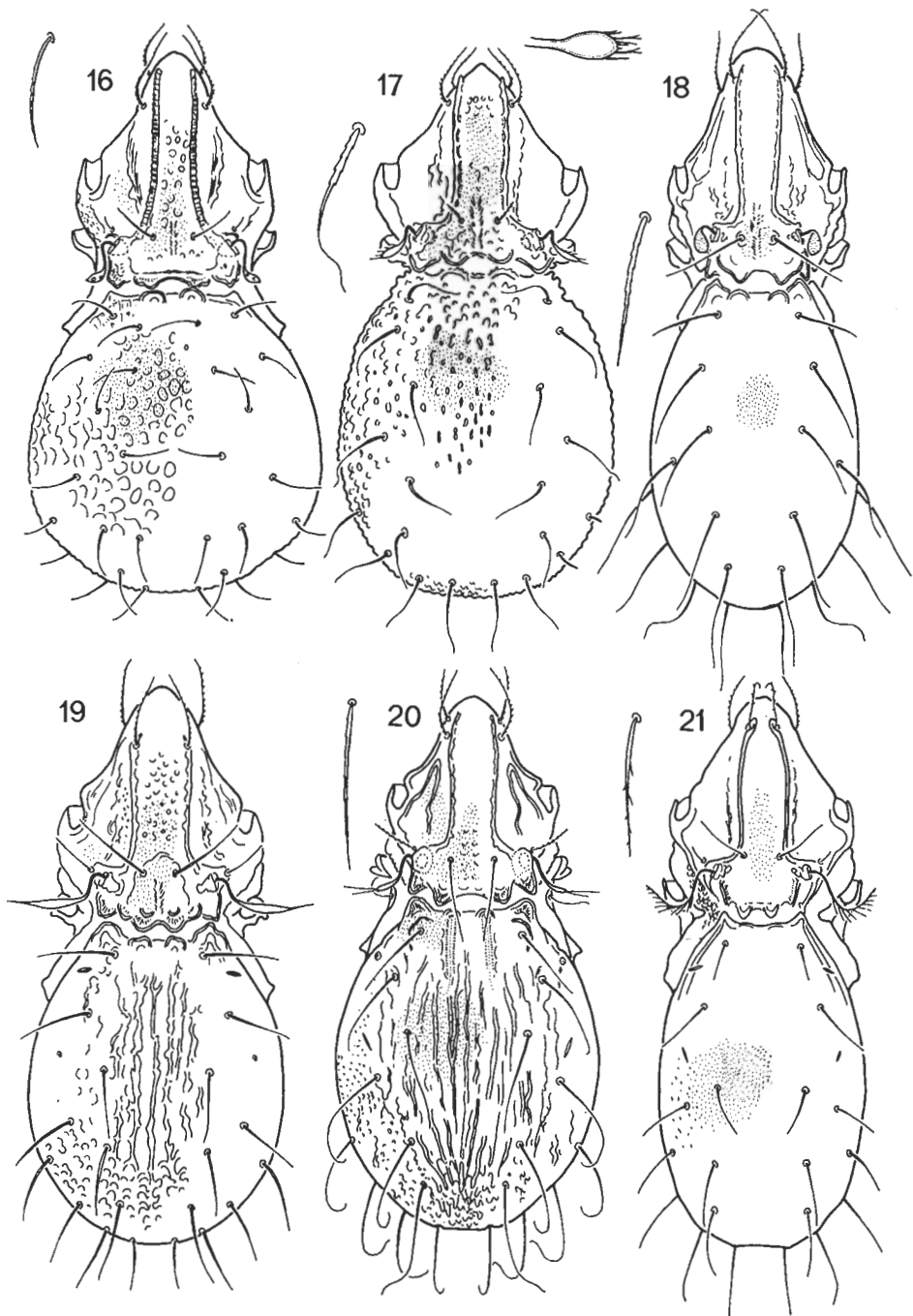
Prodorsum: Sensillus very short, widely fusiform, nearly sphaerical. Interlamellar setae long, straight, considerably longer than sensillus, rostral, and lamellar setae.

Notogaster: Elongately oval, finely punctate. Ten pairs of notogastral setae; hairs *ta*, *te*, *ti* straight, the other 7 pairs slightly longer, apically weakly flagellate.

Ventral side: Four pairs of genital, 1 pair of aggenital, 2 pairs of anal, and 3 pairs of adanal, setae present. Hairs *ad*<sub>2</sub> flagellate, longer than the other ones.

Legs: Type of ultimate setae: L-L-L-L.

Material examined: Holotype: CMB.-B.-23.; — Paratypes: 2 ex.: CMB.-B.-23.; — 1 ex.: CMB.-B.-25.; — 1 ex.: CMB.-B.-27.



Figs. 16—21. 16: *Dolicheremaeus markusi* sp. n. — 17: *Dolicheremaeus furcula* sp. n. — 18: *Dolicheremaeus ceylonicus* sp. n. — 19: *Dolicheremaeus lineatus* sp. n. — 20: *Dolicheremaeus elisabethae* sp. n. — 21: *Dolicheremaeus pectinatus* sp. n.

*Dolicheremaeus lineatus* sp. n.

(Fig. 19)

Length: 509.6  $\mu$ , breadth: 249.9  $\mu$ .

Prodorsum: Sensillus expanding apicad, fusiform, apex elongately acute (as in *D. vitraeus* BALOGH, 1958). Interlamellar setae straight, pointed, longer than lamellar and rostral setae.

Notogaster: Ten pairs of rather short, straight, setiform notogastral hairs present. Median section of notogaster with irregularly arranged, rough longitudinal rugulosity; laterally with irregular foveolae and granules.

Ventral side: Four pairs of genital, 1 pair of aggenital, 2 pairs of anal, and 3 pairs of adanal, setae present.

Legs: Type of ultimate setae: L-S-S-S.

Material examined: Holotype: CMB.-B.-8.; — Paratypes: 1 ex.: CM-B.-B. 6.; — 2 ex.: CMB.-B.-8., — 4 ex.: CMB.-B.-10.

*Dolicheremaeus elisabethae* sp. n.

(Fig. 20)

Length: 700.7  $\mu$ , breadth: 343  $\mu$ .

Prodorsum: Sensillus apically fusiform, with two rather long apical setae. Interlamellar setae longer than rostral and lamellar hairs.

Notogaster: Ten pairs of notogastral setae; hairs *ta* setiform, apically straight, setae *te* and *ti* somewhat longer, apically slightly curved, the other 7 pairs apically flagellate and longer than the preceding ones. Median section of notogaster with longitudinal lines, lateral portions with an irregular, foveolatorugulose sculpture.

Ventral side: Four pairs of genital, 1 pair of aggenital, 2 pairs of anal, and 3 pairs of adanal, setae present.

Legs: Type of ultimate setae: L-S-S-S.

Material examined: Holotype: CMB.-B.-4.; — Paratypes: 1 ex.: CMB.-B.-6.; — 10 ex.: CMB.-B.-19.; — 2 ex.: CMB.-B.-20.

*Dolicheremaeus pectinatus* sp. n.

(Fig. 21)

Length: 612.5  $\mu$ , breadth: 240.1  $\mu$ .

Prodorsum: Sensillus setiform, sigmoid, pectinate, with 9–10 reclinate branches. Interlamellar hairs setiform, shorter than sensillus.

Notogaster: Ten pairs of notogastral setae: 5 anterior pairs shorter than 5 posterior ones. Notogaster rather elongate, finely punctate, without sculpture.

Ventral side: Four pairs of genital, 1 pair of aggenital, 2 pairs of anal, and 3 pairs of adanal, setae present.

Legs: Type of ultimate setae: L-S-S-S.

Material examined: Holotype: CMB.-B.-6.

*Acrotocepheus bucephalus* sp. n.

(Fig. 22)

Length: 759.5  $\mu$ , breadth: 279.3  $\mu$ .

Prodorsum: Sensillus rather short, apically expanding, fusiform. Prodorsal condyles situated near each other, nearly touching, semicircular. Pedotecta 1, 2+3, 4 comparatively large. As related to notogaster, prodorsum large: long and wide.

Notogaster: Only lateral notogastral condyles present: large and adjacent to each other, hence notogaster constricted anteriorly. Ten pairs of short, straight notogastral setae present.

Ventral side: Four pairs of genital, 1 pair of aggenital, 2 pairs of anal, and 3 pairs of adanal, setae present; all in normal position.

Legs: Type of ultimate setae: L-S-S-S.

Material examined: Holotype: CMB.-B.-63.

*Acrotocepheus consimilis* sp. n.

(Fig. 23—24)

Length: 867  $\mu$ , breadth: 357  $\mu$ .

Prodorsum: Sensillus short, apically fusiform, apex acute. Interlamellar setae very long, straight. Pedotecta 2+3 relatively very large.

Notogaster: Lateral notogastral condyles double: exterior cuspis considerably larger than interior one. Notogastral hairs long, setiform. Notogaster finely punctate, without any other sculpture.

Ventral side: Four pairs of genital, 1 pair of aggenital, 2 pairs of anal, and 3 pairs of adanal, setae present. Adanal setae arising on, and parallel with, external margin of ventral plate.

Legs: Type of ultimate setae: L-S-S-S.

Material examined: Holotype: CMB.-B.-35.

*Megalotocepheus loksai* sp. n.

(Fig. 25)

Length: 808.5  $\mu$ , breadth: 333.2  $\mu$ .

Prodorsum: Sensillus rather short, apically fusiform, somewhat pointed. Interlamellar setae short, not longer than sensillus. Pedotecta 2+3 with rather symmetrical two branches. The four prodorsal condyles about equal in size and removed at equal distances from one another.

Notogaster: Four notogastral condyles: the two median condyles hardly more removed from each other than median condyles from lateral condyles. Fourteen pairs of rather short, bacilliform notogastral setae. Notogaster elongately ovoid, with scattered foveolae and punctation.

Ventral side: Four pairs of genital, 1 pair of aggenital, 2 pairs of anal, and 3 pairs of adanal, setae present, all in normal position.

Legs: Type of ultimate setae: L-S-S-S.

Material examined: Holotype: CMB.-B.-6.; — Paratype: 1 ex.: CMB.-B.-6.

*Megalotocepheus ceylonicus* sp. n.

(Fig. 26—27)

Length: 958.8  $\mu$ , breadth: 408  $\mu$ .

Prodorsum: Sensillus short, apically fusiform. Interlamellar setae medium long, ciliate, shorter than notogastral setae. Four prodorsal condyles: two median ones removed further from each other than lateral ones from median condyles.

Notogaster: Ten pairs of rather long notogastral setae: all rather bacilliform, throughout equally thick. Four notogastral condyles: two median ones very far from each other but adjacent to, and meeting with, lateral condyles.

Ventral side: Four pairs of genital, 1 pair of aggenital, 2 pairs of anal, and 3 pairs of adanal, setae present. Adanal setae arising immediately on, and parallel with, exterior margin of ventral plate. Hair  $ad_1$  situated adanally, hair  $ad_2$  considerably more anteriorad, hair  $ad_3$  slightly below extension of posterior margin of anal plate.

Legs: Type of ultimate setae: L-S-S-S.

Remarks: The *Megalotocepheus* species described above differ considerably from all hitherto known congeners. The main difference lies in the number of notogastral condyles: the two new species possess both the lateral and median notogastral condyles, whereas the known species bear but lateral notogastral condyles. I believe that they represent at least a well differentiated species group among the other taxa of the genus.

Material examined: Holotype: CMB.-B.-23.; -- Paratype: 1 ex. : CMB.-B.-24.

*Eurostocepheus trisetosus* sp. n.

(Fig. 28)

Length: 1,162.8  $\mu$ , breadth: 550.8  $\mu$ .

Prodorsum: Sensillus ex- and reclinate, slightly fusiform, with an elongated and setiform apex. Interlamellar hairs short, setiform. Pedotecta 2+3 extraordinarily large, asymmetrical, posterior process considerably longer than anterior one. Lateral prodorsal condyles essentially larger than median ones.

Notogaster: Ten pairs of notogastral setae, all very short. One pair of very large notogastral condyles present. Notogaster margined.

Ventral side: Three pairs of genital, 1 pair of aggenital, 2 pairs of anal, and 3 pairs of adanal, setae present.

Legs: Type of ultimate setae: L-S-S-S.

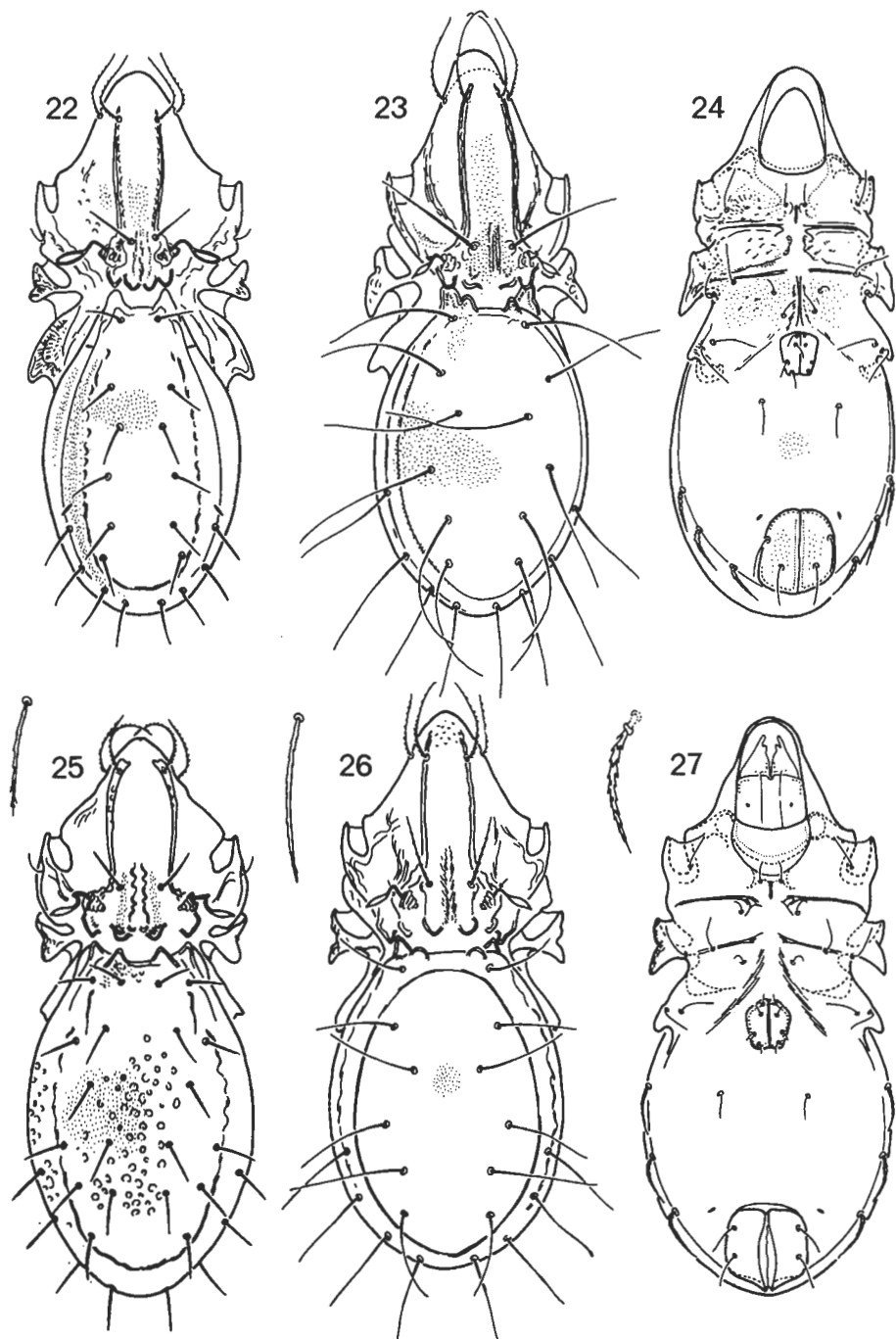
Remarks: By pedotecta 2+3 and its general habit, the new species resembles *Eurostocepheus aquilinus* AOKI (Thailand), but it is also well distinguishable specifically. The presence of three genital setae is exceptional in the family Otocephidae, occurring only in the subgenus *Papuacepheus* BALOGH, 1968.

Material examined: Holotype: CMB.-B.-19.

*Heteroppia* gen. n.

Family Oppiidae. Sensillus sphaerical, on a short pedicel. Prodorsum without costula. Seven pairs of notogastral setae: hair  $p_1$  incrassate, similar to hairs  $p$  of *Aeroppia*; hairs  $p_2$  and  $p_3$  minute. Besides these, notogaster with 4 pairs of





Figs. 22—27. 22: *Acrotocepeus bucephalus* sp. n. — 23—24: *Acrotocepeus consimilis* sp. n. — 25: *Megalotocepeus loksai* sp. n. — 26—27: *Megalotocepeus ceylonivus* sp. n.

very long hairs, rather difficult to identify. (Insertion of hair  $ta$  probably discernible, but that of the two notogastral hairs could not be established). Six pairs of genital setae: hair  $ad_3$  in adanal position.

Type-species: *Heteroppia globigera* sp. n.

Remarks: The above combination of characters is most singular and unlike that of any other known genus.

### *Heteroppia globigera* sp. n.

(Fig. 29—30)

Length: 455.7  $\mu$ , breadth: 249.9  $\mu$ .

Prodorsum: Sensillus sphaerical, its pedicel short. Exostigmatal setae well visible, long. Interlamellar setae arising far anteriorad, on rostral half of prodorsum, long and setiform; rostral setae similarly construed. Rostrum pointed. Prodorsum without any costula.

Notogaster: Round, nearly circular. Dorsosejugal suture without carinula or tubercle. Seven pairs of discernible notogastral setae, their length and position as given in the generic diagnosis.

Ventral side: Six pairs of genital, 1 pair of aggenital, 2 pairs of anal, and 3 pairs of adanal, setae present. Adanal setae comparatively far removed posteriorad; also hair  $ad_2$  in adanal position.

Material examined: Holotype: CMB.-B.-5.; — Paratype: 1 ex.: CMB.-B.-74.

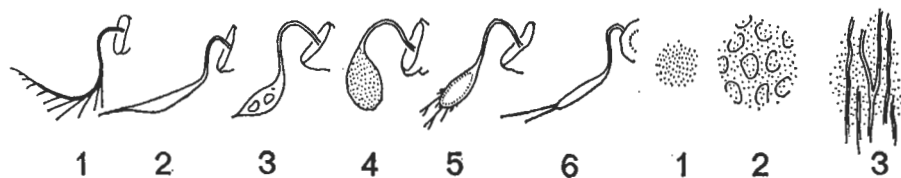
### *Porrhoppia* gen. n.

Family Oppiidae. Six pairs of genital, 1 pair of aggenital, 2 pairs of anal, and 3 pairs of adanal setae. Ten pairs of notogastral setae. Epimeres 3+4 very long, hence genital plates shifted posteriorad and situated rather near anal plates. Chelicerae not peloptoide, rostrum not pointed. Sensillus pectinate, with 2 very long and 1 considerably shorter branches. Costula absent. Lamellar setae originating in rostral half of prodorsum.

Type-species: *Porrhoppia crux* sp. n.

Remarks: At the first glance, the new species seems to belong, mainly on the basis of its elongated epimeres 3+4, to the genus *Trizetes* BERLESE, 1904. A more thorough analysis, however, precludes this relegation. The essential difference is that the chelicerae of *Trizetes* is peloptoide, those of *Porrhoppia* normal. According to SELLNICK's figure, published in 1937, the rostrum of *Trizetes* is much elongated, the lamellar setae originate nearer to the interlamellar than to the rostral setae, and the sensillus is slightly fusiform with four branches. On the other hand, the rostrum of *Porrhoppia* is not strikingly elongated, the lamellar setae originate essentially nearer to the rostral than to the interlamellar setae, the sensillus is not fusiform and has two very long and a much shorter branch. On this ground one has to assume that the elongated epimeres 3+4 came into being owing to convergence in these two groups of forms, rather far removed from each other as to actual relationship.

Species	Number of setae					Type of		
	N	G	Ag	An	Ad	sensillus	notogastral sculpture	ultimate setae
<i>Dolicheremaeus markusi</i> sp. n.	14	4	1	2	3	3	2	LLLL
<i>Dolicheremaeus furcula</i> sp. n.	10	4	1	2	3	5	2	LLLL
<i>Dolicheremaeus ceylonicus</i> sp. n.	10	4	1	2	3	4	1	LLLS
<i>Dolicheremaeus lineatus</i> sp. n.	10	4	1	2	3	2	3	LSSS
<i>Dolicheremaeus elisabethae</i> sp. n.	10	4	1	2	3	6	3	LSSS
<i>Dolicheremaeus pectinatus</i> sp. n.	10	4	1	2	3	1	1	LSSS
<i>Eurostocephus trisetosus</i> sp. n.	10	3	1	2	3	2	1	LSSS
<i>Acrotocephus bucephalus</i> sp. n.	10	4	1	2	3	3	1	LSSS
<i>Acrotocephus consimilis</i> sp. n.	10	4	1	2	3	2	1	LSSS
<i>Megalotocephus loksai</i> sp. n.	14	4	1	2	3	3	2	LSSS
<i>Megalotocephus ceylonicus</i> sp. n.	10	4	1	2	3	3	1	LSSS



Otocephidae: 1—4 (left): types of sensillus; 1—3 (right): type of notogastral sculpture

*Porrhoppia crux* sp. n.

(Fig. 31—32)

Length: 436.1  $\mu$ , breadth: 205.8  $\mu$ .

Prodorsum: Sensillus rather long, pectinate, with 2 very long and 1 short branches. Interlamellar setae long, lamellar setae considerably shorter and originating near rostral region. Rostral setae arising adjacent to each other. Rostrum rounded. Costula absent. Lateral region of prodorsum densely granulated exteriorly from bothrydium and exostigmatal setae.

Notogaster: Ten pairs of rather short notogastral setae; hairs *ta* much shorter than all other hairs.

Ventral side: An extremely striking feature, mentioned also in the generic diagnosis, is the extraordinarily elongated epimeres 3+4, causing the posterior shifting of the genital plates on the ventral plate. Six pairs of genital, 1 pair of aggenital, 2 pairs of anal, and 3 pairs of adanal, setae present. Hair *ad*<sub>3</sub> arising aligned with anterior margin of anal plate.

Material examined: Holotype: CMB.-B.-6.

*Brachyoppia pendula* sp. n.

(Fig. 33—34)

Length: 500—510  $\mu$ , breadth: 250—255  $\mu$ .

Prodorsum: Sensillus pectinate, with 4 branches: first one longest of all, the others gradually shortening apicad. Interlamellar setae rather long. Lamellar setae originating near interlamellar setae but considerably removed from rostral ones. No costula present, merely a fine line decurrent exteriorly to interlamellar and lamellar setae and parabolically convergent in front of lamellar setae. Prodorsum strikingly long.

Notogaster: Ten pairs of notogastral setae. Hairs *ta* very short, the other 9 pairs essentially longer, with some short cilia preapically.

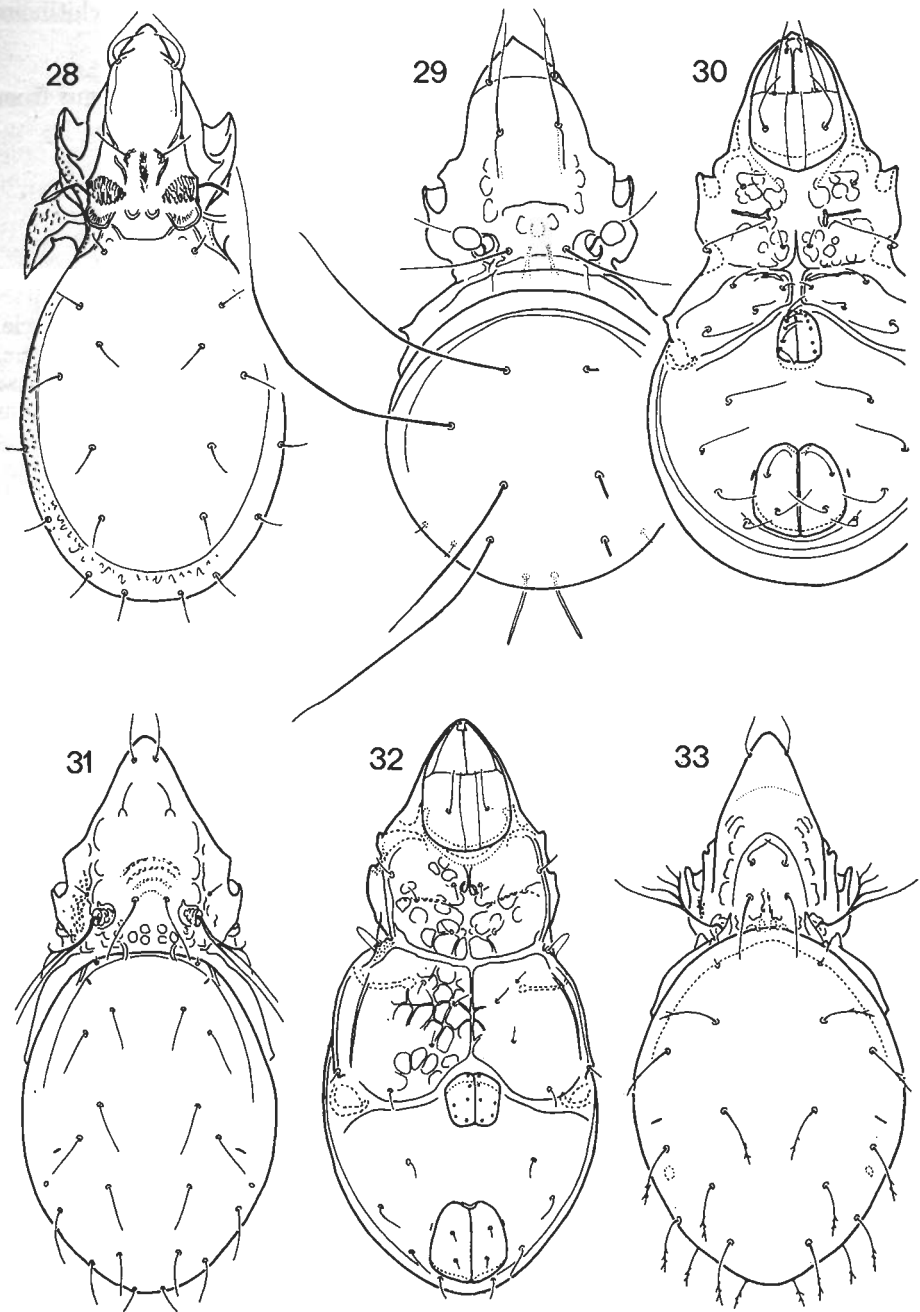
Ventral side: Five pairs of genital, 1 pair of aggenital, 2 pairs of anal, and 3 pairs of adanal, setae present. Apodemata 4 absent; genital plate, set in a chitinous ring, as if freely hanging.

Remarks: The genus *Brachyoppia* comprises at present some Oppiids possessing a pectinate sensillus. The new species differs from its congeners mainly by the entire absence of apodemata 4.

Material examined: Holotype: CMB.-B.-15.; —Paratypes: 4 ex.: CMB.-B.-15.; — 6 ex.: CMB.-B.-16.

*Fenestobelba* gen. n.

Family Suctobelbidae. Chelicerae of the *Suctobelba* type. Prodorsum without the two hollows characteristic of *Suctobelba*. Surface of prodorsum attenuating behind rostrum, displaying an opening of an inverted V-shape. Prodorsal sides emitting below and rostrad a chitinous appendage each, hence rostrum seemingly tricuspidate. Rostral setae of the *Suctobelba* type. Interlamellar setae represented only by their alveoli, adjacent to bothrydia. Dorsosejugal suture with a pair of biapical process.



Figs. 28—33. 28: *Eurostocepeus trisetosus* sp. n. — 29—30: *Heteroppia globigera* gen. n., sp. n. — 31—32: *Porrhoppia crux* gen. n., sp. n. — 33: *Brachyoppia pendula* sp. n. dorsal

Six pairs of genital setae present: posterior pair situated in a wide chitinous ring. Nine pairs of notogastral setae. Legs monodactyle.

Type species: *Fenestrobelba annulata* sp. n.

Remarks: The structure of the prodorsum distinguishes the new genus from all other generic taxa of the family.

*Fenestrobelba annulata* sp. n.

(Fig. 35—36)

Length: 285  $\mu$ , breadth: 150  $\mu$ .

Prodorsum: Apex of sensillus dilating, nearly sphaerical, on a long peduncle. Interlamellar setae represented by merely their alveoli, adjacent to bothrydia. Lamellar setae arising far posteriorad, near interlamellar alveoli. Rostral setae of the *Suctobelba* type. Anteriorad from bothrydia, a slightly arcuate chitinous costula decurrent in an inverted S-shape. The two hollows, characteristic of *Suctobelba*, absent. Behind rostrum, an invertedly V-shaped opening present, as described in generic diagnosis. Rostrum seemingly tricuspidate.

Notogaster: Dorsosejugal suture with two biapical processes, comparatively near each other. Nine pairs of notogastral setae present; third pair (hairs *ti*) essentially longer than the other ones.

Ventral side: Epimeral setal formula: 3-1-3-3. Six pairs of genital, 1 pair of aggenital, 2 pairs of anal, and 3 pairs of adanal, setae present. Genital setae very long, posterior pair emitted from wide chitinous rings.

Material examined: Holotype: CMB.-B.-71; — Paratype: 1 ex.: CMB.-B.-71.

*Rhynchoribates orientalis* sp. n.

(Fig. 37)

Length: 764.4  $\mu$ , breadth: 539  $\mu$ .

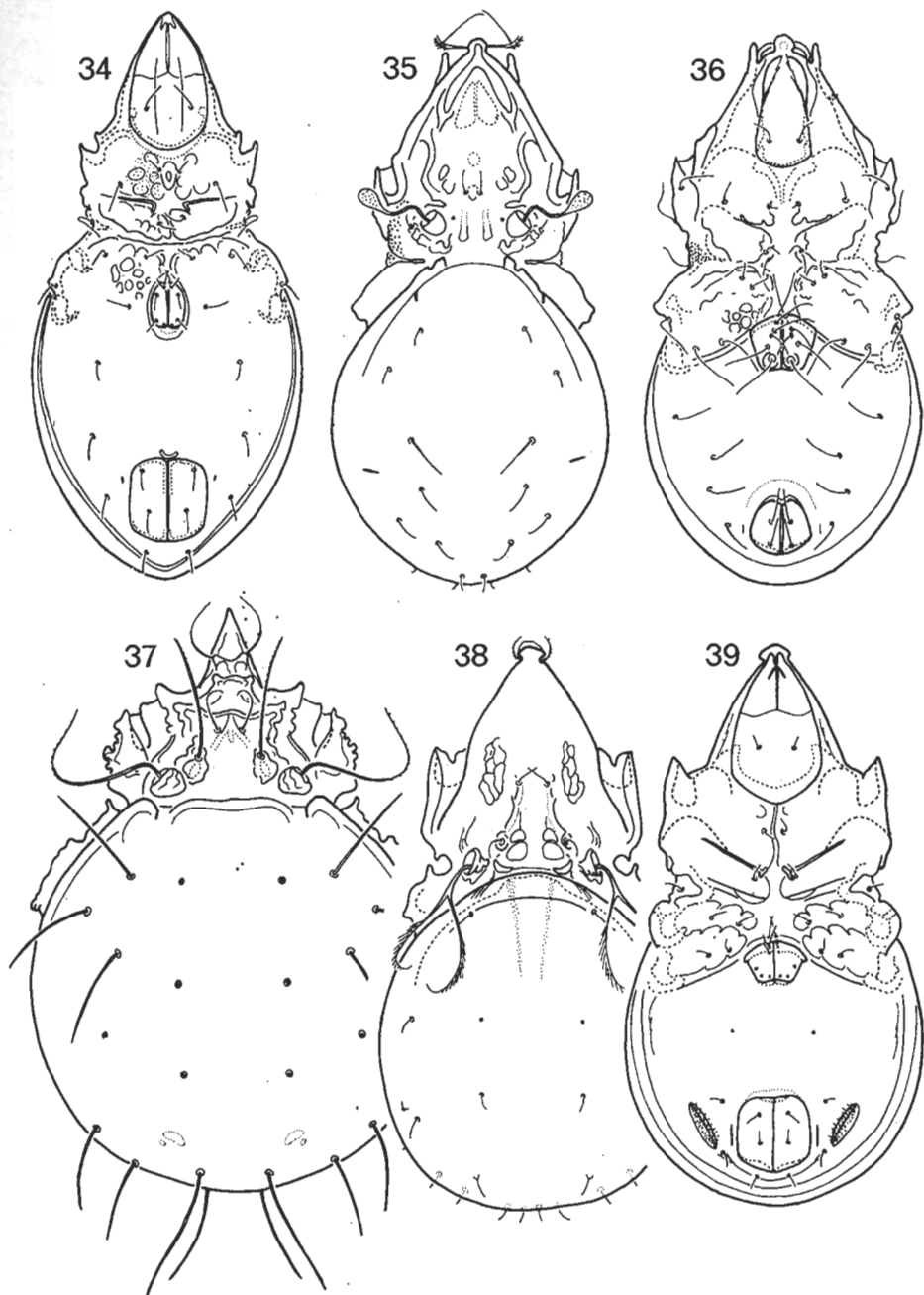
Prodorsum: Sensillus of the generically characteristic shape. Interlamellar setae long, slightly bacilliform, apically ciliate. Lamellar and rostral setae introrsely arcuate. Prodorsum without tubercles and with chitinous crests. Rostrum without lateral teeth.

Notogaster: Twelve pairs of medium long, bacilliform notogastral setae.

Ventral side: Six pairs of genital, 1 pair of aggenital, 2 pairs of anal, and 3 pairs of adanal, setae present. Hair *ad*<sub>1</sub> incrassate, in postanal position, hairs *ad*<sub>2</sub> and *ad*<sub>3</sub> in adanal position, all setiform. Anal setae situated, characteristically of genus, in anterior half of genital plates.

Remarks: Until now, the genus was known from South America and Africa, but apparently it occurs in also other regions. The Ceylonese species belongs to the group containing *Rh. edentatus* BALOGH & MAHUNKA, 1969 (South America). This group is characterized by the absence of dense tubercles on the prodorsum and the lack of lateral teeth on the rostrum. It is noteworthy that the new species appears to be closer related to the South American than to the African taxa.

Material examined: Holotype: CMB.-B.-72.



Figs. 34—39. 34: *Brachyoppia pendula* sp. n. ventral — 35—36: *Fenestrobelda annulata* gen. n., sp. n. — 37: *Rhynchoribates orientalis* sp. n. — 38—39: *Machadobelba ceylonica* sp. n.

*Machadobelba ceylonica* sp. n.

(Fig. 38—39)

Length: 367.5  $\mu$ , breadth: 196  $\mu$ .

Prodorsum: Sensillus bifurcate, with two equally long ciliate branches. Sculpture of prodorsum in general similar to that of *Machadobelba symmetrica* BALOGH, 1958 (Africa), but its lemallae shorter than those of the new species.

Notogaster: Chitinous crests anteriorly of notogaster essentially more weakly developed than in *M. symmetrica*. Position of ten notogastral setae identical, but the hairs shorter.

Ventral side: Six pairs of genital, 1 pair of aggenital, 2 pairs of anal, and 3 pairs of adanal, setae present. A large area porosa on each side of anal plates. Hair  $ad_3$  arising within this area, between area porosa and anal plate. An arcuate tectum behind anal plates.

Remarks: Rather similar to *M. symmetrica* BALOGH, 1958 (Africa), differing, however, in the following points: 1. the lamellae are shorter in the new species, 2. the chitinous crest is weakly developed on the notogaster, 3. the notogastral setae are shorter, 4. hair  $ad_3$  arises within the area porosa adanal, 5. the area porosa adanal is narrow (rounded in *M. symmetrica*!).

Material examined: Holotype: CMB.-B.-7.

*Micreremus* (?) *granulatus* sp. n.

(Fig. 40—41)

Length: 294  $\mu$ , breadth: 156.8  $\mu$ .

Prodorsum: Sensillus short, fusiform, with a rounded apex. Interlamellar setae short, arising near dorsosejugal suture. Lamellar setae short, originating beyond half length of prodorsum. Rostral setae slightly longer than preceding ones. Prodorsum smooth.

Notogaster: Dorsosejugal suture arcuate anteriorad, medially concave and nearly obsolescent. Fourteen pairs of short, bacilliform notogastral setae present. Notogaster with sparse tubercles.

Ventral side: 4 pairs of genital (no aggenital), 2 pairs of anal, and 3 pairs of adanal, hairs present. Anal setae arising on anterior half of anal plate. Anal plates surrounded laterally and posteriorly by a tectum. Pori *iad* situated preanally, rather near each other and in a longitudinal direction.

Legs: Tridactylous, with three strong claws.

Remarks: On the basis of the habit, and the number of genital and notogastral setae, the new species is relegable to the genus *Micreremus*. Its congeners possess, however, a sharply defined polygonal chitinous sculpture on the notogaster.

Material examined: Holotype: CMB.-B.-23.; — Paratypes 5 ex.: CMB.-B.-25.; — 1 ex.: CMB.-B.-49.



*Protoripoda insularis* sp. n.

(Fig. 42—43)

Length: 352.8  $\mu$ , breadth: 186.2  $\mu$ .

Prodorsum: Sensillus fusiform, its apex rounded, largely covered. Prodorsal setae medium long, setiform. Rostrum rounded, projecting. Prodorsal surface with small, scattered foveolae.

Notogaster: Dorsejugal suture medially straight, but arcuately excised above sensillus, concave, apex of sensillus exposed in excision. Ten pairs of setiform notogastral hairs. Notogaster with rather large, scattered punctation.

Ventral side: Four (on one side 3!) pairs of genital, 1 pair of aggenital, 2 pairs of anal, and 3 pairs of adanal, setae present. Adanal and anal setae flagellate. Ventral side with sparse punctation.

Remarks: The sole known species of the genus derives from New Guinea. The new species differs from it by the shape of the rostrum, the sparsely punctate-foveolate notogaster, the number of adanal hairs, and the flagellate anal-adanal setae.

Material examined: Holotype: CMB.-B.-33.; — Paratype: 1 ex.: CMB.-B.-76.

*Truncopes canagaratnami* sp. n.

(Fig. 44)

Length: 524.3  $\mu$ , breadth: 235.2  $\mu$ .

Prodorsum: Sensillus fusiform, with an elongately rounded apex. Interlamellar setae very long, extending nearly to rostrum. Lamellar and rostral setae gradually shorter. Rostrum wide, almost straightly truncate.

Notogaster: Dorsejugal suture straight, then (above sensillus) obliquely truncate. Except for basal section, sensillus entirely free. Ten pairs of rather short, setiform notogastral hairs. Notogaster nearly twice as long as wide, smooth.

Ventral side: Two pairs of genital, 1 pair of aggenital, 2 pairs of anal, and 3 pairs of adanal, setae present. Adanal and anal setae flagellate.

Remarks: The new species resembles *Truncopes anguinus* BALOGH & MAHUNKA, 1969 (South America), but it is considerably larger and less elongated. All other species of the genus are wider and of a wholly different shape.

Material examined: Holotype: CMB.-B.-42.; — Paratype: 1 ex.: CMB.-B.-42.

*Brachyoripoda* gen. n.

Family Oripodidae. Ten pairs of notogastral, 4 pairs of genital (no aggenital), 1 pair of anal, and 3 pairs of adanal, setae present. Four pairs of sacculi. Dorsejugal suture absent. Rostrum laterally with an incisure each.

Type-species: *Brachyoripoda foveolata* sp. n.

Remarks: The above combination of features distinguishes the new taxon from all hitherto described genus of the family Oripodidae.

*Brachyoripoda foveolata* sp. n.

(Fig. 45—46)

Length: 332.5  $\mu$ , breadth: 202.5  $\mu$ .

Prodorsum: Sensillus disciform, granulate, on a very short peduncle, together with bothrydium completely free. Interlamellar hairs short, setiform, smooth. Lamellar and rostral setae longer, proclinate. Rostrum laterally with two incisions. Prodorsum with minute foveolae.

Notogaster: Dorsosejugal suture medially widely absent. Ten pairs of setiform, rather robust notogastral hairs present. Four pairs of sacculi. Notogaster brown, rather densely foveolate. Hairs *p* situated on tubercles.

Ventral side: Four pairs of genital (no aggenital), 1 pair of anal, and 3 pairs of adanal, setae present. Anal setae arising somewhat beyond half length (posteriorly) of anal plate. Hair *ad*<sub>3</sub> hardly in preanal position. Ventral side foveolate. Legs monodactyle, with a large claw.

Material examined: Holotype: CMB.-B.-33.

*Tuberemaeus similis* sp. n.

(Fig. 47)

Length: 475.3  $\mu$ , breadth: 284.2  $\mu$ .

Prodorsum: Sensillus fusiform, apically pointed and finely ciliate. Interlamellar hairs rather long, setiform, ciliate; lamellar and rostral setae considerably shorter, also ciliate. Prodorsum with scattered foveolae.

Notogaster: Ten pairs of short, smooth, notogastral setae. Two pairs of minute sacculi discernible (probably all 4 pairs present). Notogaster with short, longitudinal fissures.

Ventral side: Four pairs of genital, 1 pair of aggenital, 2 pairs of anal, and 3 pairs of adanal, setae present. Sculpture as on notogastral side. Legs monodactyle.

Remarks: As regards the sculpture, the new species can be compared only with *Tuberemaeus fissuratus* BALOGH, 1970 (New Guinea), but the sensillus of this latter is essentially more dilating, the fissures are sharper and larger, the lamellae more converging, and the notogastral hairs longer.

Material examined: Holotype: CMB.-B.-26.

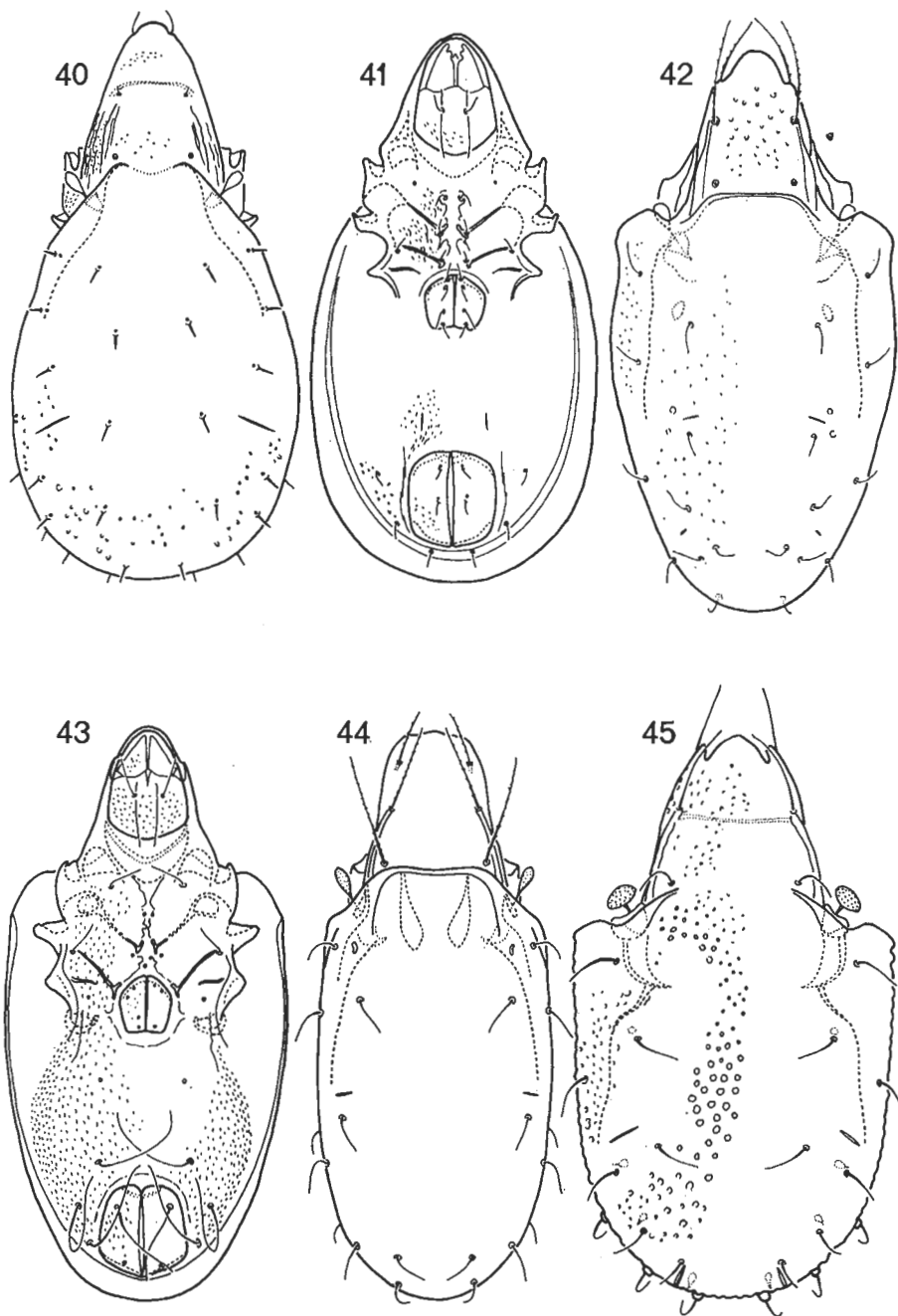
*Tuberemaeus multisetosus* sp. n.

(Fig. 48)

Length: 382—456  $\mu$ , breadth: 206—260  $\mu$ .

Prodorsum: Sensillus rather long, terminally fusiform, apex pointed, the expanding section finely ciliate. Prodorsal hairs rather short. Lamellae with a sigmoid curvature at height of interlamellar setae. Prodorsum sparsely punctate. At cuspides of lamellae and posteriorly of lamellar setae, a transversally decurrent chitinous line each, directed introrsely but not meeting medially.

Notogaster: Fourteen pairs of notogastral setae, medium long, setiform. Four pairs of sacculi. Notogaster finely punctulate. Legs tridactylous, heterodactylous.



Figs. 40—45. 40—41: *Micreremus granulatus* sp. n. — 42—43: *Protoripoda insularis* sp. n. —  
 44: *Truncopes canagaratnami* sp. n. — 45: *Brachyoripoda foveolata* gen. n., sp. n., dorsal

Remarks: The new species belongs to the group possessing a punctate notogaster, but the presence of the fourteen pairs of notogastral setae distinguishes it satisfactorily from all known congeners.

Material examined: Holotype: CMB.-B.-44.; — Paratypes: 1 ex.: CMB.-B.-8.; — 16 ex.: CMB.-B.-44.; — 1 ex.: CMB.-B.-62.

### *Crirozetes* gen. n.

Family Haplozetidae. Pteromorphae movable. Fourteen-eighteen pairs of scattered areae porosae, more or less grouped in the sites corresponding to the normally situated areae porosae. Ten pairs of notogastral setae indicated by their alveoli. Five (four?) pairs of genital, 1 pair of aggenital, 2 pairs of anal, and 3 pairs of adanal, setae present. Legs tridactylous.

Type species: *Crirozetes multiareolatus* sp. n.

Remarks: This great number of areae porosae, grouped in the places corresponding to those of the original number of areae porosae, appears only in the genus *Rykella* BALOGH, 1962 (Africa). This taxon is, however, a Mochlozetid, with immovable pteromorphae and six pairs of genital setae. On the basis of also the configuration of the ventral side and the prodorsum, the new genus is assignable to the family Haplozetidae.

### *Crirozetes multiareolatus* sp. n.

(Fig. 49—50)

Length: 602.7  $\mu$ , breadth: 367.1  $\mu$ .

Prodorsum: Sensillus setiform, ciliate. Interlamellar hairs medium long, setiform. Lamellae marginal, attenuating apicad. Lamellar and rostral setae finely ciliate. Rostrum rounded.

Notogaster: Dorsosejugal suture arcuate anteriorad. Pteromorphae movable. Fourteen-eighteen pairs of areae porosae, largely aggregated into four groups. Aerae porosae of diverse size, smallest ones punctiform. Notogastral setae reduced.

Ventral side: Five (on one side four) pairs of genital, 1 pair of aggenital, 2 pairs of anal, and 3 pairs of adanal, setae present. An arcuate tectum behind anus. Hairs  $ad_1$  and  $ad_2$  originating anteriorly to tectum, hair  $ad_3$  in preanal position.

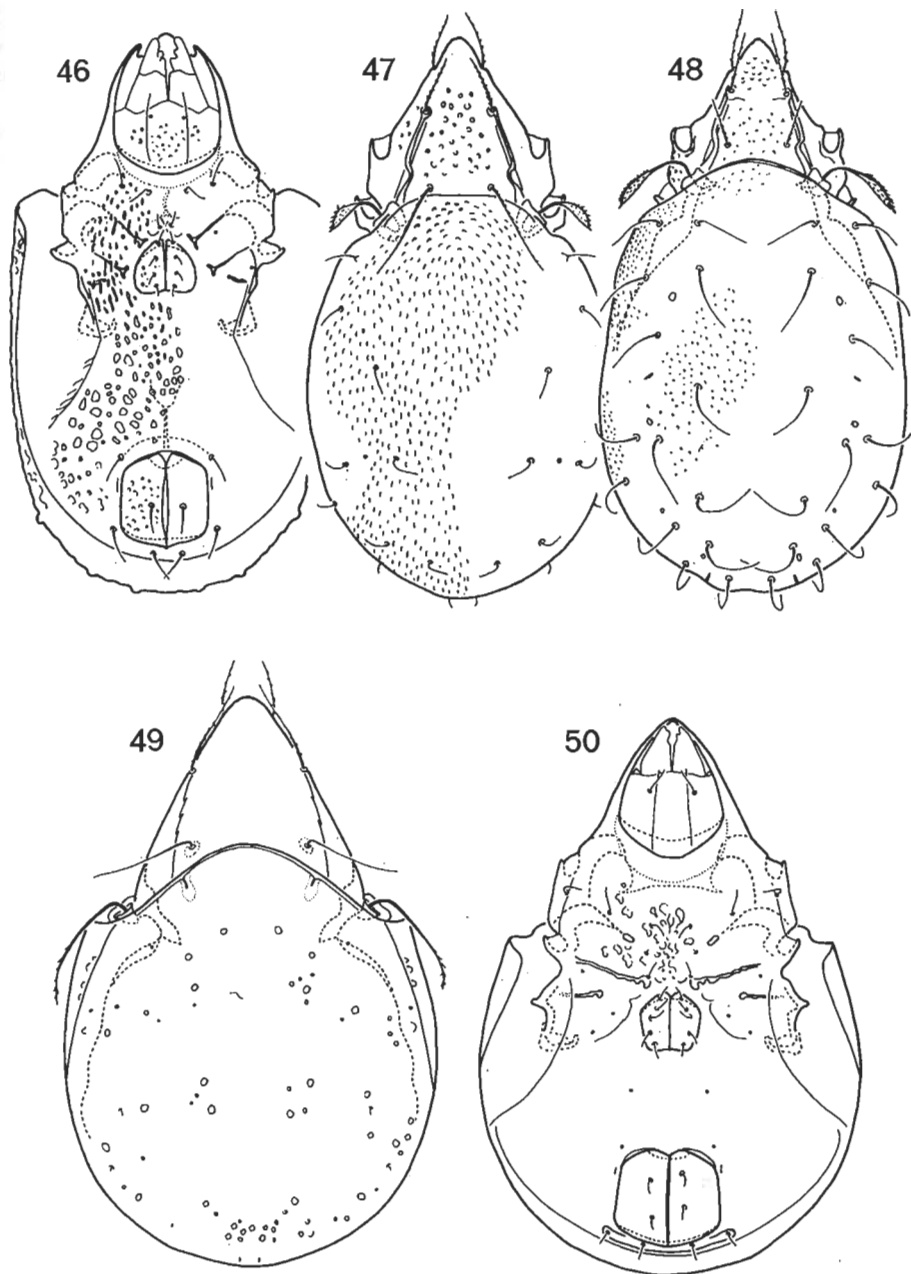
Material examined: Holotype: CMB.-B.-64.

### *Areozetes* (?) *incertus* sp. n.

(Fig. 51—52)

Length: 784  $\mu$ , breadth: 578.2  $\mu$ .

Prodorsum: Sensillus very long, exclinate, terminally slightly fusiform then pointed, with some cilia. Interlamellar setae long. Lamellae marginal, gradually attenuating; lamellar and rostral setae arising near one another. Rostral setae connected by a transverse line. Rostrum rather pointed.



Figs. 46—50. 46: *Brachyoripoda foveolata* gen. n., sp. n., ventral — 47: *Tuberemaeus similis* sp. n. — 48: *Tuberemaeus multisetosus* sp. n. — 49—50: *Cribozetes multiareolatus* gen. n., sp. n.

Notogaster: Dorsosejugal suture well discernible. Pteromorphae seemingly separated by a suture from notogaster, but though rather long, in a lateral view apparently not movable. Four pairs of rounded, relatively small areae porosae. Then pairs of alveoli. Notogaster almost rounded.

Ventral side: Four pairs of genital, 1 pair of aggenital, 2 pairs of anal, and 3 pairs of adanal, setae present. All hairs rather long. Hair  $ad_3$  in a slightly preanal position.

Remarks: It is only provisionally that I assign this species to the genus *Areozetes*. The 4 pairs of areae porosae, the apparently immovable pteromorphae, the 4 pairs of genital setae, and the tridactylous legs are common characters, but the shape of the sensillus and the lamellae, as well as the reduction of the notogastral setae, represent separating features. However, it seemed advisable to avoid the establishment of further monotypical genera in this rather confused group.

Material examined: Holotype: CMB.-B.-1.

### *Vilhenabates simplex* sp. n.

(Fig. 53)

Length: 299  $\mu$ , breadth: 221  $\mu$ .

Prodorsum: Sensillus long, reclinate, terminally slightly fusiform, ending in a slightly ciliate fine hair. Interlamellar setae minute. Well discernible but minute areae porosae dorsosejugales in vicinity of bothrydia. Lamellae long, lamellar and rostral hairs short, setiform.

Notogaster: Dorsosejugal suture slightly arcuate. Pteromorphae pointed. Four pairs of small areae porosae. Ten pairs of notogastral alveoli. Notogaster without sculpture.

Ventral side: Four pairs of genital, 1 pair of aggenital, 2 pairs of anal, and 3 pairs of adanal, setae present. Legs monodactyle.

Remarks: The new species resembles *Vilhenabates minutus* (BALOGH, 1948) (Africa) to some extent, but the foveolate pteromorphae and the finely punctate sculpture of the notogaster distinguish this latter from the new species.

Material examined: Holotype: CMB.-B.-3.

### *Magyaria pulcherrima* sp. n.

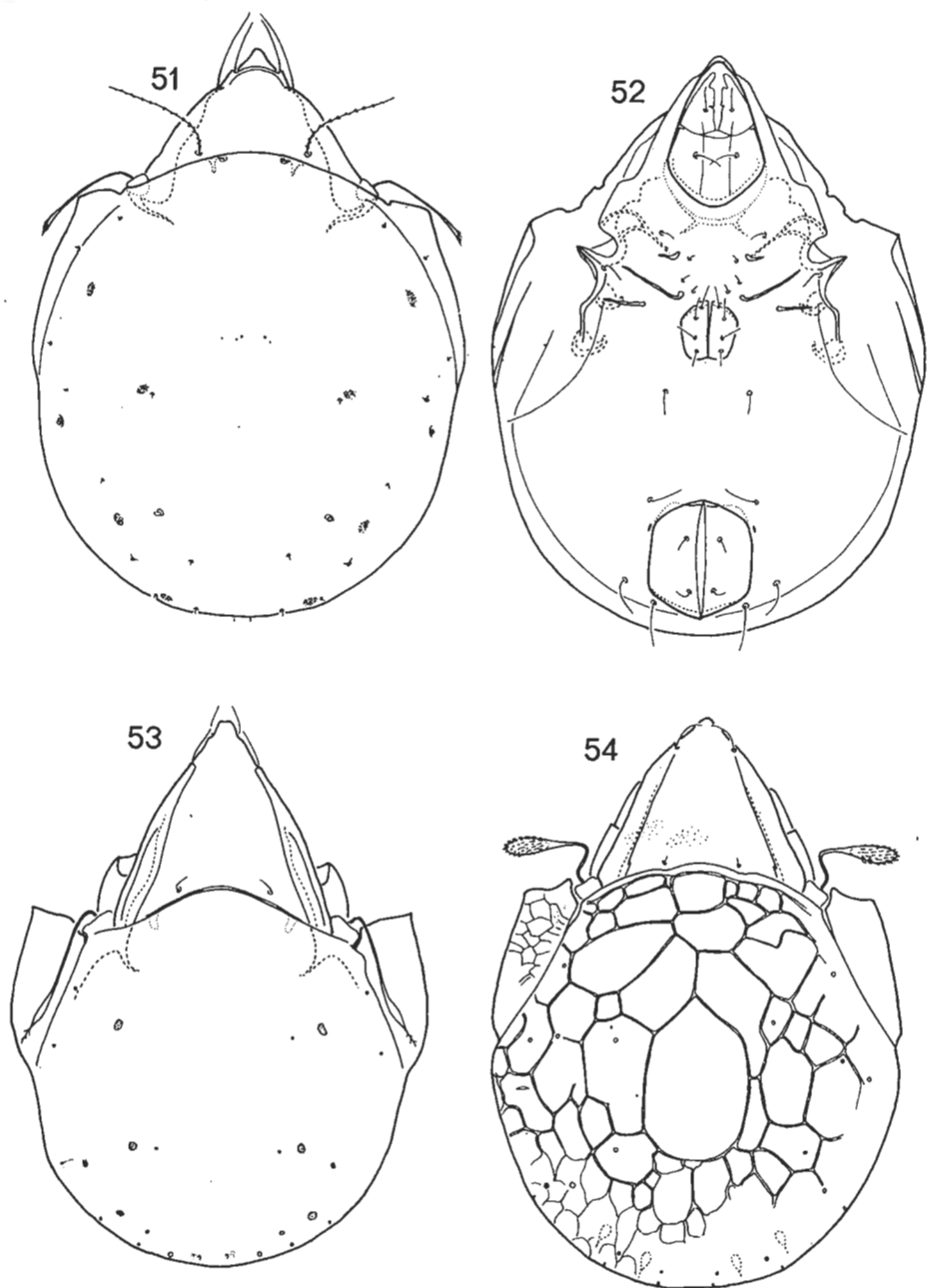
(Fig. 54)

Length: 195–223  $\mu$ , breadth: 143–158  $\mu$ .

Prodorsum: Sensillus rather long, pro- and exclinate, terminally fusiform, ciliate. Interlamellar setae minute, hardly discernible. Lamellae long, lamellar setae situated almost on rostrum. Prodorsum punctate.

Notogaster: Four pairs of sacculi, 10 pairs of notogastral alveoli present. Dorsosejugal suture weakly arcuate. Pteromorphae with obscure, striated sculpture. Notogaster with a cellular sculpture, enlarging towards middle. Legs monodactyle.

Ventral side: Five pairs of genital, 1 pair of aggenital (on one side 2 pairs of aggenital!), 2 pairs of anal (on one side 1 pair of anal!), and 2 pairs of adanal, setae present. Anal and genital plates with longitudinal striation.



Figs. 51—54. 51—52: *Areozetes incertus* sp. n. — 53: *Vilhenabates simplex* sp. n. — 54: *Magyaria pulcherrima* sp. n.

Remarks: The characteristically cellular sculpture and several of the described characters distinguish the new species from all known congeners.

Material examined: Holotype: CMB.-B.-1.; — Paratype: 1 ex.: CMB.-B.-1.

*Rostrozetes florens* sp. n.

(Fig. 55)

Length: 367.5  $\mu$ , breadth: 259.7  $\mu$ .

Prodorsum: Sensillus ex- and reclinate, of the generically characteristic shape. Interlamellar setae rather short. Prodorsal surface with irregularly rugulose sculpture. Lamellar and rostral setae rather short, inclinate.

Notogaster: Dorsosejugal suture with the generically characteristic three arches. Median portion of notogaster elevated in a largely 6-7-gonal area. Notogastral foveolae irregularly margined, the single foveolae resembling opened flowers. Ten pairs of notogastral setae present. Legs monodactyle.

Ventral side: Chaetotaxy as characteristic of genus. Ventral plate with regular, rounded foveolae.

Remarks: By the notogastral sculpture, the new species resembles *Rostrozetes irregularis* BALOGH & MAHUNKA, 1969 (South America), but several other features distinguish it satisfactorily.

Material examined: Holotype: CMB.-B.-2.

*Cosmobates panabokkei* sp. n.

(Fig. 56)

Length: 514.5 $\mu$ , breadth: 372.4  $\mu$ .

The new species is rather similar to *Cosmobates longisetus* BALOGH, 1970 (New Guinea), thus the picture of the ventral side and the differentiating characters suffice to separate it from the latter taxon:

1. Hair  $c_3$  of epimeral region setiform, long, ciliate, 2. notogaster with minute dots arranged into groups, without any sharply delimited foveolae.

The notogaster of the two New Guinean and the one African species is foveolate and the shape of hair  $c_3$  is entirely different.

Material examined: Holotype: CMB.-B.-50.; — Paratypes: 2 ex.: CMB.-B.-50.; — 1 ex.: CMB.-B.-53.

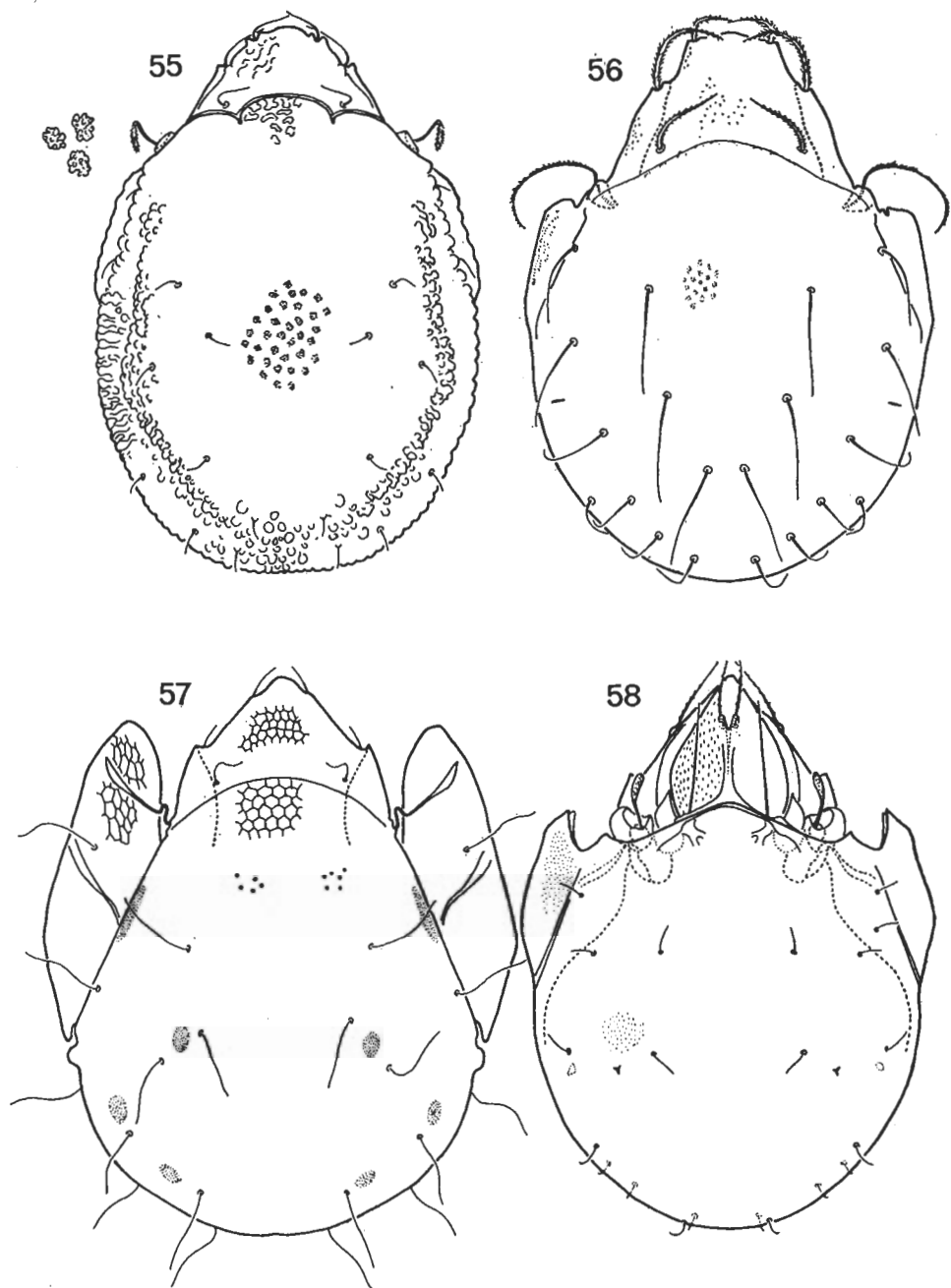
*Flagollezetes* gen. n.

Family Galumnidae. Ten pairs of rather long, flagellate notogastral setae. Four pairs of large, well developed areae porosae. Area porosa adalaris considerably longer—ribbon-shaped—than all other ones. Six pairs of genital setae. Notogaster with a regular, hexagonal chitinous sculpture.

Type species: *Flagollezetes porosus* sp. n.

Remarks: The new genus is nearly related to the African genus *Pilizetes*, but the presence of the areae porosae distinguishes it from this latter one. If the areae porosae represent a notogastral organ more primordial in character than the sacculus, the genus *Flagollezetes* might be considered a more earlier ally of the genus *Pilizetes* SELLNICK, 1937.





Figs. 55—58. 55: *Rostrozetes florens* sp. n. — 56: *Cosmobates panabokkei* sp. n. — 57: *Flagellozetes porosus* gen. n., sp. n. — 58: *Plakoribates confluens* sp. n.

*Flagellozetes porosus* sp. n.

(Fig. 57)

Length: 529.2  $\mu$ , breadth: 392  $\mu$ .

Prodorsum: Sensillus of the Galumnid type, terminally expanding, smooth. Interlamellar setae rather short, flagellate. Lamellar and rostral hairs short, setiform, smooth. Linea I elevated (protruding). Prodorsum with a regularly hexagonal sculpture.

Notogaster: Dorsosejugal suture arcuate. Ten pairs of thin, flagellate, notogastral setae. Hair of pteromorpha as long as, and similar in shape to, all other notogastral setae. Four pairs of areae porosae, their surface minutely punctate and also with larger, rougher granules. Area porosae adalares long, ribbon-shaped; the other 3 pairs of areae porosae smaller, rounded. Pteromorphae and notogaster with a regularly hexagonal, chitinous sculpture. Legs tridactylous, slightly heterodactylous.

Ventral side: Six pairs of genital, 1 pair of aggenital, 2 pairs of anal, and 3 pairs of adanal, setae present. Three pairs of genital hairs arranged in a transversal row on anterior margin of genital plate.

Material examined: Holotype: CMB.-B.-25.; — Paratypes: 1 ex.: CMB.-B.-25.; — 5 ex.: CMB.-B.-26.; — 14 ex.: CMB.-B.-27.; 2 ex.: — CMB.-B.-36.

*Plakoribates confluens* sp. n.

(Fig. 58)

Length: 347.9  $\mu$ , breadth: 249.9  $\mu$ .

Prodorsum: Sensillus fusiform, apically rounded. Interlamellar setae rather long, extending nearly to rostrum. Lamellar setae originating near each other, on fused surface of lamellae. Rostral setae removed far from each other. Lamellae fused into a single squamiform structure, displaying a longitudinal punctation arranged into lines. A small, nearly triangular, distinct plate each between bothrydium and lamellar base.

Notogaster: Dorsosejugal suture medially obtusely pointed. Pteromorphae anteriorly acute, movable. Ten pairs of notogastral setae. Neither areae porosae nor sacculi discernible. Legs tridactylous, heterodactylous.

Ventral side: Six pairs of genital, 1 pair of aggenital, 2 pairs of anal, and 2 pairs of adanal, setae present. Ventral plate with polygonal sculpture between anal and genital plates.

Remarks: There were only two species known of the genus *Plakoribates* POPP, 1960, namely *P. multicuspidus* POPP, 1960 (Egypt), and *P. africanus* (BALOGH, 1959) (Africa). The lamellae of both taxa are separated at their cuspides, whereas those of the new species are completely fused and thus sharply differing from the preceding taxa.

Material examined: Holotype: CMB.-B.-44.

## ZUSAMMENFASSUNG

### Neue Oribatiden (Acari) aus Ceylon

Der Verfasser beschreibt aus dem in Ceylon gesammelten Material der Ungarischen Bodenzologischen Expedition des Jahres 1968 einen Teil der für die Wissenschaft neuen Oribatiden. In dem in englischer Sprache verfaßten Text ist die Beschreibung von 7 neuen Genera und 43 neuen Arten zu finden. Aufgrund des Materials können bezüglich der Oribatidenfauna Ceylons allgemeine Schlüsse noch nicht gezogen werden. Anderen Tiergruppen ähnlich, kommen in der Zusammensetzung der Fauna sowohl orientalische als auch äthiopische Elemente zur Geltung. Ferner ist auch eine starke Tendenz zur Entstehung von endemischen Arten wahrzunehmen, wie bei anderen insularen Faunen.