

The Scientific Results of the Hungarian Soil Zoological Expedition to the Brazzaville-Congo\*

30. The Oribatid Mites (Acari) of Brazzaville-Congo, II.

By

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Between the 16th October, 1963 and 21st January, 1964 a Hungarian zoological expedition was collecting in Brazzaville-Congo. An earlier publication has dealt with the work of this expedition (BALOGH and MAHUNKA, 1966), thus, the authors do not wish to touch upon this question. Moreover, a brief description of collecting areas and a list of localities have also been issued in a separate report (BALOGH, ENDRÓDY-YOUNGA and ZICSI, 1965). The main object of the present study is to give descriptions of some oribatid mites new to science. This short paper and the others yet to come out are but preliminary trials to elaborate the collected material of our expedition from soil zoological point of view. For until recent years, oribatid mites have not been investigated in Congo, therefore as our first task we limit our work to descriptions and the assorting of oribatid fauna found so far in the collected areas. After having completed these tasks we can launch upon the full evaluation of the material collected from soil zoological point of view.

Fam.: Cymberemaeidae

*Scapheremaeus humeratus* n. sp.

(Figs. 1–2)

Body  $310 \times 167,5 \mu$ .

*Prodorsum*: Sensillus rather long, fusiform. Interlamellar setae represented only by alveoli; lamellar setae short, fusiform; rostral setae very fine visible only on the ventral side. Prodorsum with complicated wrinkles. Rostrum broadly rotundate. Rostral region covered with a thick cerotegument.

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*Pedotecta*: Pedotecta 1 weakly developed; pedotectae 2+3 well projecting; pedotecta 4 small.

*Notogaster*: Broadly oval, with a long, slightly dilated projection on the shoulders; the shoulders are connected with a concave line trough the anterior region of the notogaster. An elongated lenticular present. Notogaster with irregular foveolae. No marginal zone on notogaster. 11 pairs of visible, very short fusiform notogastral setae. Anogenital region: 2 pairs of anal, 3 pairs of adanal, 1 pair of aggenital, 6 pairs of genital setae. Adanal fissures (*iad*) long, aligned longitudinally. Adanal setae  $ad_1$  and  $ad_2$  short and spiniform, adanal setae  $ad_3$  and anal setae only with the alveoli signated; aggenital and genital setae fine and much longer than adanal setae  $ad_1$  and  $ad_2$ . Anogenital region with irregular foveolae, with lines and other type of sculpture. Legs monodactyle.

Material examined: 1 ex. (holotype), No. 272, Sibiti, brook near Zanzi, 28. XI. 1963; leg.: J. BALOGH & A. Zicsi. — Berlese-sample; moulder of bamboo-leaves from stem of big bamboo bush on roadside (material of 10 Berlese-funnels, 20×20 cm, dried 4 days).

*Remarks*: The species is clearly separable from the remaining members of the genus. The following combination of characters is particular to *Scapheremaeus humeratus* n. sp.: 1. the long projection on the shoulders; 2. no marginal zone on notogaster, 3. long, fusiform sensillus; 4. monodactyle legs.

#### Fam.: Oppiidae

#### *Stachyoppia processigera* n. sp.

(Figs. 3–4)

Body 250×125  $\mu$ .

*Prodorsum*: Sensillus rather short, fusiform, directed interiorad, strongly and distinctly barbed. Interlamellar, lamellar and rostral setae setiform, not dilated. From the lamellar setae to the interlamellar setae there are two parallel costulae, with very obscure horizontal connection, forming an H. Prodorsum punctulated.

*Notogaster*: Ten pairs of notogastral setae. Setae *ta* fine, smooth, the remaining notogastral setae dilated, unilaterally barbed; setae  $p_1$  thinner than the others. Outside of the setae *ta* on both sides there is a long, knife-shaped lateral notogaster condyle. Notogaster without chitinous lines or cerotegument.

*Anogenital region*: 2 pairs of anal, 3 pairs of adanal, 1 pair of aggenital, 6 pairs of genital setae. Setae  $ad_3$  in preanal position.

Material examined: 1 ex. (holotype), No. 280, Sibiti, IRHO, oilpalm plantation, 28. XI. 1963; leg.: J. BALOGH & A. Zicsi. — Berlese-sample; dried out oilpalm trunk covered with creepers on sunny soil of plantation, on surface 2–3 cm thick humus-like moulder (material of 2 Berlese funnels, 50×50 cm, dried 4 days).

*Remarks*: This species clearly separable from the other members of the genus. We give below a table showing the important comparative chetotaxic features of the species of *Striatoppia*-*Mystroppia*-*Stachyoppia*-group.

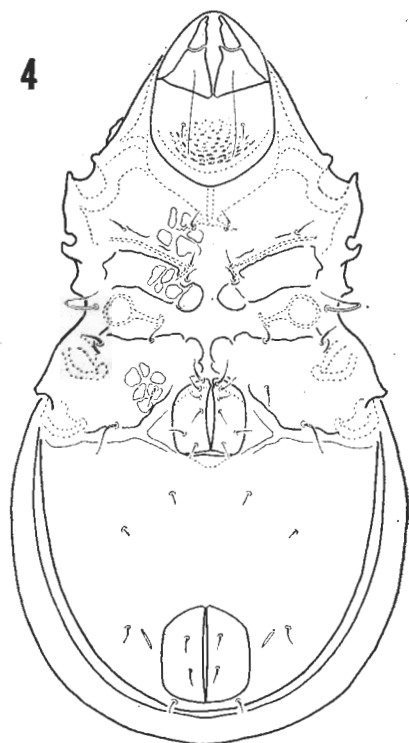
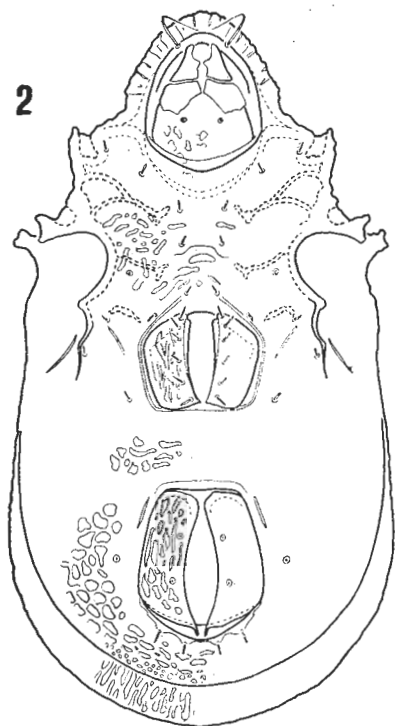
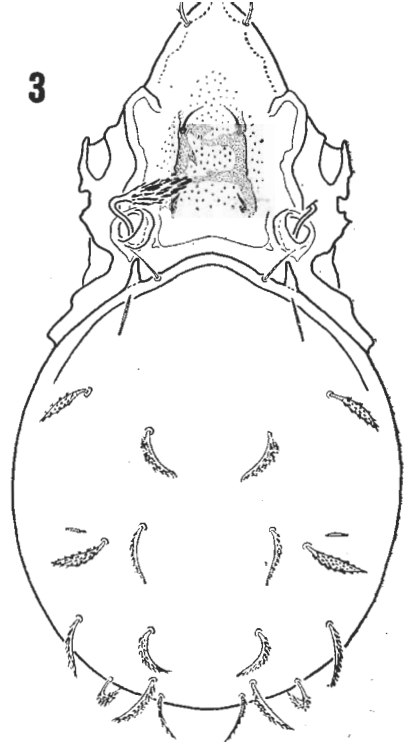


Fig. 1—4. 1—2: *Scapheremaeus humeratus* n. sp. 3—4: *Stachyoppia processigera* n. sp.

| Species  | Geogr. distr. | in | la | ro | ta | ad <sub>1</sub> | ad <sub>2</sub> | ad <sub>3</sub> | ag | ep | Nl | Nc |
|--|---------------|----|----|----|----|-----------------|-----------------|-----------------|----|----|----|----|
| <i>Mys. sellnicki</i> BAL., 1959               | Europe        | —  | +  | +  | ?  | +               | +               | —               | —  | —  | —  | +  |
| <i>Stach. muscicola</i> BAL., 1961             | W. Africa     | +  | +  | —  | —  | +               | +               | —               | —  | —  | —  | —  |
| <i>Stach. kosarovi</i> CSISZ., 1962            | S. Europe     | —  | +  | —  | —  | +               | —               | —               | —  | —  | —  | —  |
| <i>Stach. translamellata</i> BAL. & MAH., 1966 | W. Africa     | —  | —  | —  | —  | —               | —               | —               | —  | —  | —  | —  |
| <i>Stach. processigera</i> n. sp.              | W. Africa     | —  | —  | —  | —  | —               | —               | —               | —  | —  | —  | —  |
| <i>Stri. foliosa</i> (JACOT, 1937)             | N. America    | +  | +  | —  | +  | ?               | +               | —               | ?  | +  | +  | —  |
| <i>Stri. stipularis</i> (JACOT, 1937)          | N. America    | —  | —  | —  | —  | —               | —               | —               | —  | —  | +  | —  |
| <i>Stri. machadoi</i> BAL., 1958               | W. Africa     | —  | +  | —  | +  | +               | +               | —               | —  | +  | +  | —  |
| <i>Stri. madagascarensis</i> BAL., 1960        | Madagascar    | —  | —  | —  | +  | +               | +               | —               | —  | +  | +  | —  |
| <i>Stri. niliaca</i> (POP, 1960)               | N. Africa     | +  | +  | —  | +  | +               | —               | —               | —  | +  | +  | +  |
| <i>Stri. margaritifera</i> BAL. & MAH., 1966   | W. Africa     | —  | —  | —  | —  | +               | +               | +               | —  | +  | +  | +  |
| <i>Stri. papillata</i> BAL. & MAH., 1966       | W. Africa     | —  | +  | —  | +  | +               | +               | +               | +  | +  | +  | —  |

Notes: *in*, *la*, *ro*, *ad*<sub>1</sub>, *ad*<sub>2</sub>, *ad*<sub>3</sub>, *ag* = setae dilated: +, not dilated: —, *ep* = at least one pair of dilated epimeral setae: +, none: —; *Nl* = notogaster lineolated: +, not lineolated: —; *Nc* = notogaster with cerotegument: +, without that: —

## Fam.: Mochlozetidae

### *Podoribates longicuspis* n. sp.

(Figs. 5—6)

Body 450.8—487 × 343—362 μ.

*Prodorsum*: Sensillus directed at first anterolaterad, then posterolaterad, with short, clavate, strongly roughened head. Interlamellar setae very long, exceeding the rostrum; lamellar and rostral setae much shorter; all prodorsal setae weakly barbed. Lamellae strongly converging, broad, with short and broad translamella; cuspides long, slightly diverging.

*Notogaster*: Dorsosejugal suture interrupted. 10 pairs of short and fine notogastral setae; 5 pairs of areae porosae: 2 pairs at the adalar region. Pteromorphae immovable.

*Anogenital region*: 2 pairs of anal, 3 pairs of adanal, 1 pair of aggenital, 6 pairs of genital setae. Apodemata sejugal strongly developed. Legs tridactylous.

*Material examined*: 1 ex. (holotype), No. 233, Sibiti, IRHO, rain forest, 25. XI. 1963; leg.: J. BALOGH & A. ZICSI. — Berlese-sample; litter and rooty humus. — 5 ex. (paratypes), the same data as the holotype.

*Remarks*: There are only three species of *Podoribates* BERLESE, 1908 with translamella: *P. longipes* BERLESE, 1887 (Europe) (*Sphaerobates gratus* SELLNICK, 1928), *P. foveolatus* HAMMER, 1958 (South America); *P. cuspidatus* SAKAKIBARA & AOKI, 1966 (Japan). *Peloribates longicuspis* n. sp. differs from others with the length and form of sensillus and the number of areae porosae.

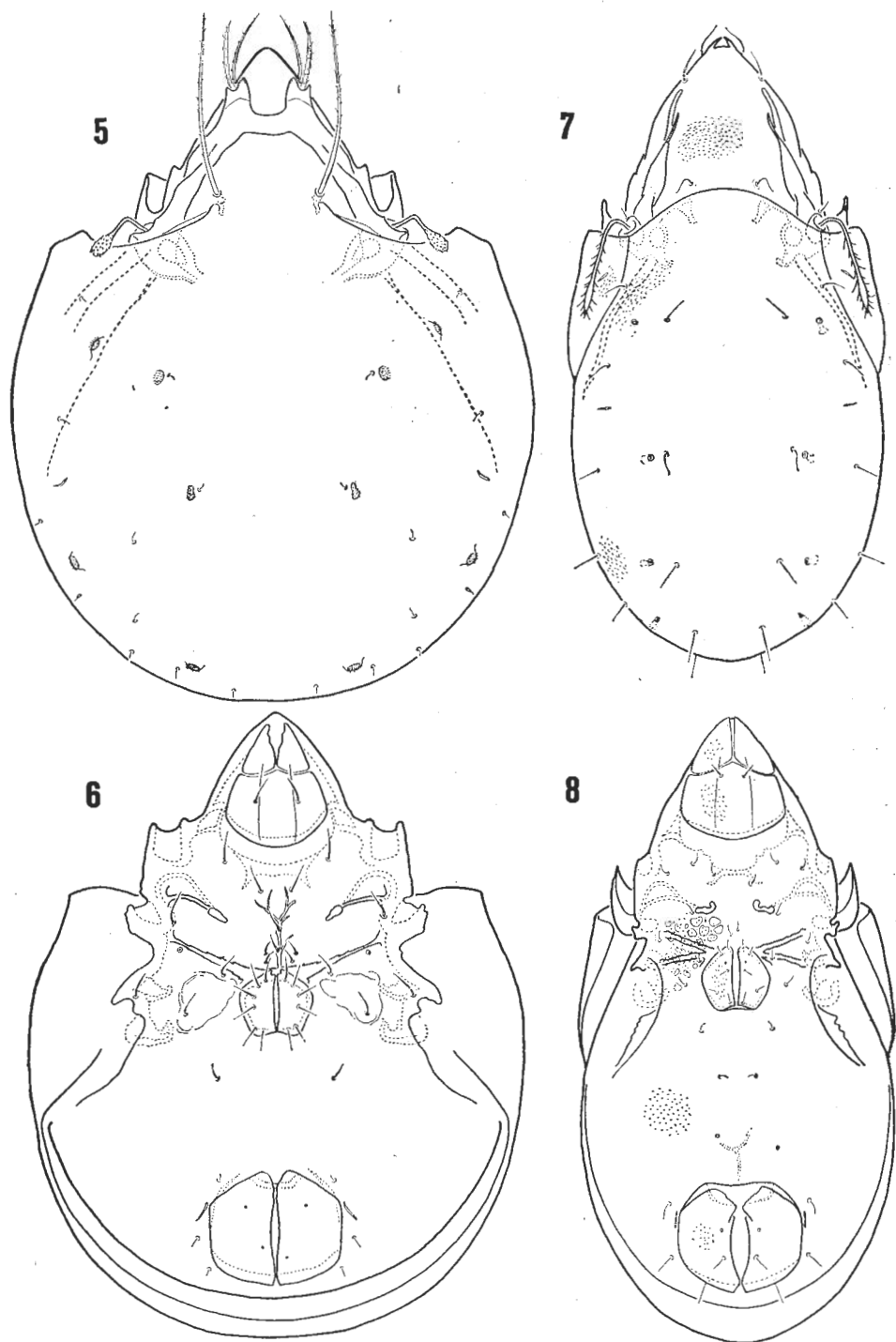


Fig. 5—8. 5—6: *Podoribates longicuspis* n. sp. 7—8: *Pilobatella punctulata* n. gen., n. sp.

Fam.: Haplozetidae

*Pilobatella* nov. gen.

Fam. Haplozetidae. Ten pairs of notogastral setae. 4 pairs of sacculi on the notogaster, 6 pairs of genital, 3 pairs of aggenital setae. Pteromorphae movable. Legs monodactyle.

Type species: *Pilobatella punctulata* n. sp.

*Remarks:* This combination of characteristics is unique in the superfamily of Oribatulidea. The general shape of the genus is similar to *Xylobates* JACOT, 1929 and *Pilobates* BALOGH, 1963. The main differences are given in a table below.

*Pilobatella punctulata* n. sp.

(Figs. 7-8)

Body 382-407.5×190-200  $\mu$ .

*Prodorsum:* Sensillus long, directed posteriad, with very weakly fusiform head and with weak barbulation. Interlamellar, lamellar and rostral setae small and fine. Lamellae converging; prodorsum finely punctulate.

*Notogaster:* Elongate; dorsosejugal suture very sharp, convex. Four pairs of fine and short notogastral setae. Pteromorphae movable. Notogaster finely punctulate.

*Anogenital region:* 3 pairs of adanal, 2 pairs of anal, 3 pairs of aggenital, 6 pairs of genital setae; all setae are fine and short. Anal plates larger than genital plates. Ventral side with fine punctulation.

*Material examined:* 1 ex. (holotype), No. 285, Sibiti, IRHO, rain forest, 28. XI. 1963; leg.: J. BALOGH & A. Zicsi. — Berlese-sample; litter, stuck on thick bushes, in lianes (material of 2 Berlese-funnels, 50×50 cm, dried 4 days). — 3 ex. (paratypes) the same data as the holotype.

*Tuberemaeus areolatus* n. sp.

(Figs. 9-10)

Body 307-350×187-217.5  $\mu$ .

*Prodorsum:* Sensillus slightly fusiform, directed posteriad, distinctly and densely barbed, with very sharp, pointed apex. Interlamellar setae dilated, densely barbed. Lamellar setae distinctly barbed; rostral setae thin. Lamellae converging, with a distinct curvature on the level of interlamellar setae. Prodorsum areolate.

*Notogaster:* Ten pairs of notogastral setae. Near to the setae  $p_1$  there are two tubercles on the posterior part of notogaster. Notogaster with irregular areolae. Sacculi not visible.

*Anogenital region:* 3 pairs of adanal, 2 pairs of anal, 1 pair of aggenital, 4 pairs of genital setae. Setae  $ad_3$  in preanal position. Ventral side with irregular areolae. There is an arched line behind the anal plates. Anal and genital plates punctulate.

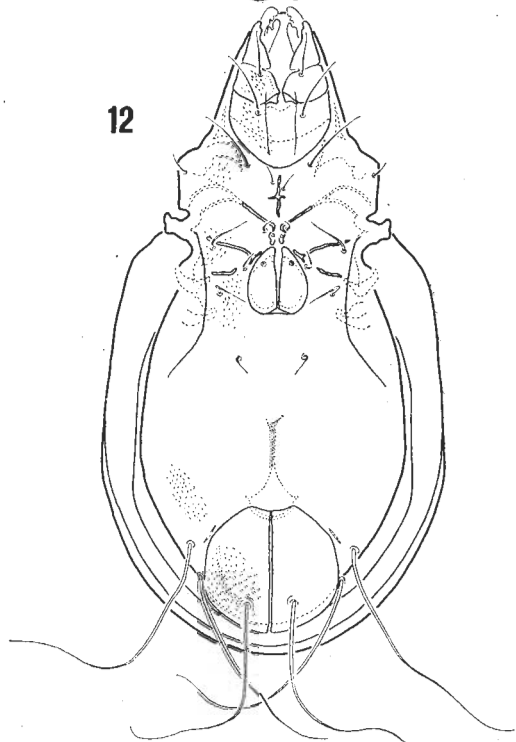
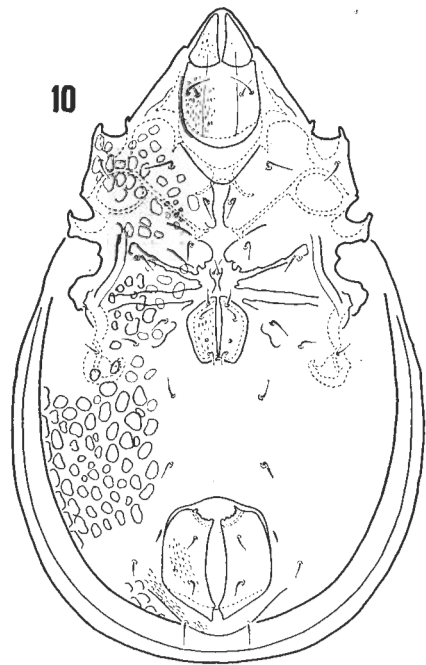
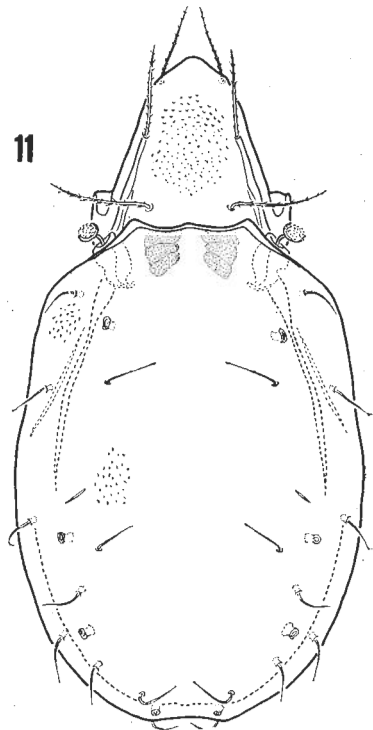
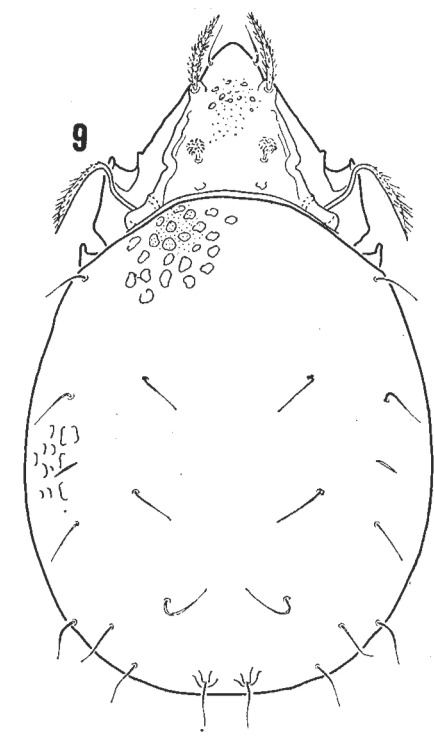


Fig. 9—12. 9—10: *Tuberemaeus areolatus* n. sp. 11—12: *Haptoripoda reducta* n. gen., n. sp.

| Genus                                  | Geogr. distr.  | Number of A or S | Number of N-setae | Number of G-setae | Number of claws | Dorsosel. suture contin. (+) interr. (-) |
|--|----------------|------------------|-------------------|-------------------|-----------------|--|
| <i>Reductobates</i> BAL. & MAH., 1966  | Australia      | A3               | 10                | 2                 | 1               | —  |
| <i>Tuxenia</i> HAMMER, 1958            | S. America     | A3               | 10                | 3                 | 1               | —  |
| <i>Totobates</i> HAMMER, 1961          | S. America     | A3               | 10                | 3                 | 1               | —  |
| <i>Xylobates</i> JACOT, 1929           | Orb. terr.     | A4               | 10                | 4                 | 1               | +  |
| <i>Setoxylobates</i> BAL. & MAH., 1967 | E. Asia        | A4               | 14                | 5                 | 1               | +  |
| <i>Vilhenabates</i> BALOGH, 1963       | W. Africa      | A3               | (10)              | 5                 | 1               | +  |
| <i>Phalacrozetes</i> AOKI, 1965        | Vietnam        | A4               | (10)              | 5                 | 3               | +  |
| <i>Uracrobates</i> BAL. & MAH., 1967   | E. Asia        | A4               | (10)              | 6                 | 3               | +  |
| <i>Baloghobates</i> HAMMER, 1967       | New Zealand    | A4               | (10)              | 6                 | 3               | +  |
| <i>Peloriobates</i> BERLESE, 1908      | Orb. terr.     | S4               | 14                | 5                 | 3               | +  |
| <i>Rostrozetes</i> SELLNICK, 1925      | Circumtrop.    | S4               | 10,14             | 5, 6              | 1               | +  |
| <i>Pilobates</i> BALOGH, 1960          | W. Africa      | S4               | 14                | 6                 | 1               | +  |
| <i>Pilobatella</i> nov. gen.           | W. Africa      | S4               | 10                | 6                 | 1               | +  |
| <i>Magyaria</i> BALOGH, 1963           | E. and W. Afr. | S4               | (10)              | 4, 5              | 1               | +  |
| <i>Haplozetes</i> WILLMANN, 1935       | Orb. terr.     | S4               | 10                | 4, 5              | 1, 3            | +  |
| <i>Mancoribates</i> HAMMER, 1961       | S. America     | S4               | (10)              | 4                 | 3               | +  |
| <i>Cosmobates</i> BALOGH, 1959         | W. Africa      | S4               | 10                | 4                 | 3               | +  |
| <i>Magnobates</i> HAMMER, 1967         | New Zealand    | S4               | 10                | 4                 | 3               | +  |
| <i>Zealandobates</i> HAMMER, 1967      | New Zealand    | ?                | 13                | 6                 | 3               | +  |

Material examined: 1 ex. (holotype), No. 271, Sibiti, brook near Zanzi, 28. XI. 1963; leg.: J. BALOGH & A. ZICSI. — Berlese-sample; thick forest litter and humus from gallery forest of brook (material of 10 Berlese-funnels, 20×20 cm, dried 4 days). — 4 ex. (paratypes), the same data as the holotype.

Remarks: The *Tuberemaeus* SELLNICK, 1930 genus until now has six valid species, they have been described in the following genera: *Anisochthodes* NEWELL 1957, *Tuberemaeus* SELLNICK, 1930 and *Liebstadia* OUDEMANS, 1906.

| Species                                      | Geogr. distr. | Sensillus        | Setae in         | Notogaster with    |
|--|---------------|------------------|------------------|--------------------|
| <i>Tuberemaeus singularis</i> SELLNICK, 1930 | Sumatra       | short, capitate  | dilated          | circular foveolae  |
| <i>Anisochthodes papillifer</i> NEWELL, 1957 | Hawaii        | short, capitate  | setiform, barbed | circular foveolae  |
| <i>Liebstadia thienemanni</i> WILLMANN 1931  | Sumatra       | longer, fusiform | setiform, smooth | punctulation       |
| <i>Liebstadia perforata</i> WILLMANN, 1931   | Java          | longer, fusiform | setiform, smooth | punctulation       |
| <i>Liebstadia foveolata</i> BALOGH, 1958     | E. Africa     | longer, fusiform | setiform, barbed | circular foveolae  |
| <i>Tuberemaeus areolatus</i> n. sp.          | W. Africa     | longer, fusiform | dilated          | irregular foveolae |



The six species may be differentiated by the combination of the following characteristics: 1. the shape of sensillus; 2. the shape of interlamellar setae; 3. the shape of notogaster foveolae. The above listed characteristics and their combination are to be found in the table.

Fam.: Oripodidae

**Haploripoda** nov. gen.

Fam. Oripodidae. 2 pairs of adanal, 1 pair of anal, 1 pair of aggenital, 1 pair of genital setae. 10 pairs of notogastral setae. 4 pairs of sacculi on the notogaster. Anal and adanal setae flabelliform. Interlamellar setae setiform. Legs tridactylous.

Type species: *Haploripoda reducta* n. sp.

Remarks: There are two genera with one pair of very long, flagelliform anal setae: *Exoribatula* JACOT, 1936 (*Benoribates* BALOGH, 1958) and *Exoripoda* WOOLLEY, 1961 but both have two pairs of genital setae.

**Haploripoda reducta** n. sp.

(Figs. 11–12)

Body 475–537 × 254–300 μ.

*Prodorsum*: Sensillus short, capitate, with narrow pedicel. Interlamellar, lamellar and rostral setae long, setiform, distinctly barbed. Lamellae thin, slightly converging, relatively short. Rostrum rotundate, prodorsum punctate.

*Notogaster*: elongate oviform, dorsosejugal suture slightly concave. Sensillus not covered. Notogastral setae smooth, thin, sacculi rather large. Notogaster punctate.

*Anogenital region*: 2 pairs of flagellate, very long adanal setae, 1 pairs of similar anal setae, 1 pair of aggenital and 1 pair of genital setae. Anal plates large. Ventral side punctate.

Material examined: 1 ex. (holotype), No. 285, Sibiti, IRHO rain forest, 28. XI. 1963; leg.: J. BALOGH & A. ZICSI. — Berlese-sample; litter, stuck on thick bushes, in lianes (material of Berlese-funnels, 50 × 50 cm, dried 4 days). — 3 ex. (paratypes), the same data as the holotype.

LITERATURE

1. BALOGH, J.: *A synopsis of the world oribatid (Acari) genera*. Acta Zool. Hung., 11, 1965, p. 5–99.
2. BALOGH, J., ENDRŐDY-YOUNGA, S. & ZICSI, A.: *The scientific results of the Hungarian Soil Zoological Expedition to the Brazzaville-Congo. I. A report on the collectings*. Fol. Entom. Hung., 18, 1965, p. 213–280.
3. BALOGH, J. & MAHUNKA, S.: *The scientific results of the Hungarian Soil Zoological Expedition to the Brazzaville-Congo. 3. The oribatid mites (Acari) of Brazzaville-Congo. I.* Acta Zool. Hung., 12, 1966, p. 25–40.
4. HAMMER, M.: *Investigations on the oribatid fauna of the Andes Mountains. I. The Argentine and Bolivia*. Biol. Skr. Dan. Vid. Selks., 10, 1958, p. 1–129.
5. HAMMER, M.: *Investigations on the oribatid fauna of the Andes Mountains. II. Peru*. Biol. Skr. Dan. Vid. Selks., 13, 1961, p. 1–157.
6. SAKAKIBARA, I. & AOKI, J.: *Podoribates cuspidatus, a new oribatid mite of the family Mochlozetidae (Acari: Cryptostigmata)*. Jap. Journ. Sanit. Zool., 17, 1966, p. 22–24.