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Some basic oppiid-like taxa (Acari, Oribatei) from Amazonia

Abstract

In the present paper a description of four new species of basic oppiid-like taxa, *Suctoribates crassisetosus* n. sp., *Tecteremaeus cachoeirensis* n. sp., *Sternoppia brasiliensis* n. sp., and *Striatoppia silvicola* n. sp. is given, including a discussion on their systematical position. Furthermore an attempt is made to characterize the basic group of higher Oribatei, to which these taxa have to be incorporated.

Kurzfassung

Einige basale oppiiden-ähnliche Taxa (Acari: Oribatei) aus Amazonien.

In der vorliegenden Arbeit werden vier neue Arten basaler oppiiden-ähnlicher Taxa, *Suctoribates crassisetosus* n. sp., *Tecteremaeus cachoeirensis* n. sp., *Sternoppia brasiliensis* n. sp. und *Striatoppia silvicola* n. sp. beschrieben und ihre systematische Position wird diskutiert. Desweiteren wird der Versuch unternommen, die basale Gruppe zu charakterisieren, in welche diese Taxa eingeordnet werden müssen.

Resumo

Alguns taxa basilares do tipo oppiide (Acari: Oribatei) da Amazônia

No presente trabalho faz-se a descrição de quatro espécies novas do tipo oppiide: *Suctoribates crassisetosus* n.s p., *Tecteremaeus cachoeirensis* n. sp., *Sternoppia brasiliensis* n. sp., and *Striatoppia silvicola* n. sp., incluindo-se uma discussão sobre a posição sistemática. Em adição, procurou-se caracterizar o grupo basilar de oribatídeos superiores, aos quais estes taxa devem ser incorporados.

Autoren

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1. Introduction

Opiid-like higher Oribatei, from which the Oppioidea certainly will have to be derived, belong to basic systematical surroundings, dominated by a very low synorganization of characters. Therefore, even closely related species of one monophyletic taxon may differ very much in their morphological appearance. Furthermore, the characters show a mosaic distribution pattern, changing its composition from group to group. A good example for the mosaic distribution pattern of characters is given by the Carabodidae and by the genus-group *Mystroppia/Striatoppia*.

Within the Carabodidae, characterized by trichobothrial regression during ontogeny (GRANDJEAN, 1953; TRAVÉ, 1978), a morphotype more dominated by cepheid characters (like in *Carabodes*) exists beneath a morphotype more dominated by oppiellid characters (like in *Dolicheremaeus*). Both morphotypes are linked by the intermediate type of *Tokunocephus mizusawai* Aoki, 1966. In addition, even peloptulid or suctobelbid conditions may be foreshadowed within the Carabodidae, as shown by the mouth parts of the genus *Beckiella*. In the genus-group *Mystroppia/Striatoppia* the morphotype may be dominated by characters of lower oribatid mites, as by characters of the genera *Oppiella* and *Scutovertex* or *Passalozetes* as well.

The mosaic distribution pattern of characters, therefore, certainly combines the transformation of the ancient type of lower oribatid mites with the foreshadowing of new types (i.e. the oppiellid or even the pterogasterinid type) of higher oribatei and, at the same time, shows special characters, restricted to this basic evolutionary areae. Though very different in their appearance, many of this basic species may have conserved special and more ancient demands to their ecological surroundings. This may be the reason why, in contrast to the more

periphere species, basic species often seem to be more specialized, showing either a more restricted geographical or a more restricted ecological distribution. Therefore, especially from the ecological point of view, the definition of more basic higher taxa has become an important task to do. For this purpose detailed descriptions and drawings of species, belonging to such basic higher taxa, are urgently needed.

2. The basic group of higher Oribatei

According to the high variability in the morphological appearance of the species in the basic group, into which e. g. such families like the Eremaeidae and the Carabodidae have to be incorporated, most of the characters show a mosaic distribution pattern. These characters may be described as follows:

Diagnosis

Prodorsum: Rostrum sometimes without lamellar seta and relatively often with a rostral groove (cuvette rostrale), a rostral scale, a "naso" and, more seldom, with a dorsal swelling in the central part. Prodorsum with ability to form tutoria, protruding or blade-like lamellae, funnel-shaped bothridia and enantiophysa in the lamellar region. Prodorsal setae (excluding sensillus) sometimes clavate and in special cases with Y-shaped axis. Sensillus sometimes deficient, very often darkened or opaque, peduncle of sensilla sometimes with ring-like ornamentation at its base.

Notogaster: Cuticle sometimes with a parallel striation, especially in the dorsosejugal region. Notogaster with ability to form a lenticule, a carina alaris, pteromorpha or shoulder pieces. Sacculi, hypertrophic humeral organs, "stigmata" and "tracheal organs" relatively often present. Some species with areae porosae, but with low ability to form an octotaxic system. Notogaster of very different appearance, often flattened or even incavated and with a circumpleural running furrow or cuticle ridge. Dorsosejugal line sometimes with tendencies to become totally reduced. Hind portion often with a colulus of different size and shape. Caudal tectum sometimes with an overlap, a suture, slit or gap, the gap sometimes filled by a sclerite.

Acetabular and epimeral region: With ability to form a carina circumpedalis and custodia. Pedotectum II very often developed. Region between acetabula II and III sometimes with parastigmatic sclerites or "bridges" Pedotectum I with ability to be "reduced". Epimera 3 and 4 often narrow and therefore discoidal region not protruding the border of the ventral plate. Epimera with ability to form minitecta, minitactal roofs, or minitactal structures, especially in the sternal region and, more seldom, with setae-bearing sclerites directly on their surface. Region of apodema 1 sometimes with a median sclerite or processus of different size and shape,

protruding the area of the mentum or the camerostom. Epimera 3 and 4 often distinctly separated. Rear part of the epimeral region with ability to form a deep sternal groove or "aprofondissement brusque" All epimera sometimes with ability to show neotrichy as reduction of setae as well. Epimeral setae and the seta h on the mentum sometimes heavily barbed, with long side branchings or of star-like appearance. The setae sometimes at least partially pointing forward, especially directly in front of the genital opening.

Anogenital region: Sometimes macropylin or nearly macropylin. Region relatively often with ability to form a sometimes very distinct carina circumventralis and, more seldom, a carina circumpedalis and to show minitecta or sclerites U in front of, or beneath the genital opening. Cuticle sometimes striated. Relatively often the front edge of the anal opening with a tubular preanal organ, caudal region behind the anal opening sometimes with a strong protruding colulus. Anogenital region, including anal flaps, relatively often with neotrichy, the aggenital setae sometimes not well separated from the adanal setae. Setae of the anogenital region sometimes incrassate, smooth or heavily barbed, star-like or with long side-branchings.

Legs: The different articles sometimes with protrude setae-bearing cuticular ridges. In some cases pori, sacculi or brachytracheae at least partially developed. Sometimes articles at least partially with sockets. Tibiotarsal articulation area of tarsus I in several species more remoted to the ventral position. Tarsi relatively often at least partially fused to the following tibiae or forming a relatively rigid tibiotarsal complex. All tarsi (including claws) very often shorter than the following tibiae and the ambulacra of the tarsi inserting on a pistillum. Tibia I often with a larger or smaller free ending forward protruding horn. Tibiae and femora of very different appearance and mostly deviating from the butt-shaped or clavate type. Tibiae, femora and especially trochanter IV relatively often with blade- or spine-like apophysa or spurs in the dorsal or in the ventral position. Trochantera sometimes broader than the femora. Tarsus I (including solenidia) often with less than 19 setae. Tibia IV often with less or more than 4 setae, solenidium sometimes missing or at least very short or partially reduced. Genu I (including the sometimes missing solenidium) in some cases with less or more than three setae and genu IV sometimes with more than two setae. Femora sometimes with extensive neotrichy. Tectoral setae in some species present. Tarsi occasionally tri- or biactyl. Claws sometimes more hook-shaped, unguinal und proral setae relatively often strongly thickened at its base or spine-like. In many species claws and at least some of the setae on the legs darkened. Position of solenidium $\phi 1$ on tibia I often in front of the articulation region between tibia and tarsus. Solenidium $\phi 2$ on tibia I sometimes inserting behind solenidium $\phi 1$. Solenidium σ on genu I often very small

or at least not distinctly longer than the remaining setae, the solenidium occasionally totally reduced. In some species the solenidia at least partially blunt ending or microcephal.

Infracapitulum: Camerostom sometimes totally covered by the mentum. Chelicera often with "area porosa" and extremely seldom with "tracheal organs" Pedipalpi sometimes with at least partially developed "corne double"

Ontogeny: Tarsus IV of protonympha, as far as known, with 7 or more setae

***Sternoppia brasiliensis* n. sp.**

Diagnosis

Colour yellowish brown. Length 290 µm, width 120 µm. Cuticle not striated. Sensillus with dichotomous distal branches. Epimeral region with a horseshoe-like space in front of the genital opening, bordered by minitactal ridges.

Description

Cuticle (fig. 1, 3): Generally smooth. Exobothridial and acetabular region above the acetabula I-III with small rounded nodules. Femora of pedipalpi with a very faint transversal running plication. Interlamellar region with two fields of very indistinct maculae.

Prodorsum (fig. 1, 3): Nearly as long as the notogaster and with two distinct parallel running, costula-like lamellae. Prodorsal setae setiform. Rostral and lamellar setae faintly feathered, interlamellar seta smooth. Rostral, lamellar and interlamellar setae almost of the same length. Sensillus of dendroid shape with dichotomous distal branches. Prodorsum with one pair of smooth exobothridial setae.

Notogaster (fig. 1): Convex and with 9 pairs of smooth setae, the dorsal setae of medium length. Notogaster with area porosa-like maculae in the middle and with one pair of gastronomic "tracheae" at some distance from the dorsosejugal line. Lyrifissure ia with a distinct canal, protruding into the cuticle.

Podosoma (fig. 1): Position of the acetabula III and IV above the acetabula I and II. Acetabulum II situated behind a pouch-like infolding of pedotectum. Acetabulum III totally protected within a deep pouch.

Epimeral region with a distinct apodema 4, covered by a minitactal ridge, stretching from behind the acetabulum IV into the epimeral region, bordering a horseshoe-like space in front of the genital opening. Epimera 1 and 2 fully covered by a roof-like, large minitactal structure. Epimeral setae relatively long with distinct side branchings. The inner setae of epimera 4 inserting directly in front of the genital opening and pointing forwards. Formula of epimeral setae: 3-1-2-3.

Anogenital region (fig. 1): Genital opening much smaller than the anal opening and slightly broadening to the front. Genital flaps with 6 pairs of setae, the last two pairs inserting at some distance from the rest of the setae.

The genital setae with distinct side branchings. Anal flaps with two pairs of setae. The adanal region with the setae ad1-3, the seta ad3 displaced near to the lateral border of the anogenital region. The seta of the anogenital plate and of the anal flaps with distinct side branchings. Lyrifissure iad running parallel to the border of the anal opening.

Legs (fig. 2): Articles normal shaped and with normal articulation. Tarsi with one claw. Setation formula of legs (including solenidia):

leg I 5-3-6-(17-22)-1

leg IV 1-2-2-4-10-1

Infracapitulum (fig. 3): Diarthric, atelebasic. Rutella with a smooth and transparent plate covering the distal denticles.

Chelicera (fig. 3): Chelicera from the normal type but with a separate small tooth-like processus on the digitus fixus. Setae cha and chb faintly feathered.

Pedipalpus (fig. 3): Femur of the pedipalpus very short and slightly incrassate. Tarsus slightly elongated. Setation formula (including solenidium): 2-1-3-10.

Brazil, Amazonas: Rio Tarumã Mirim, about 20 km upstream from Manaus (03° 02' S, 60° 17' W), secondary forest, terra-firme. 6. 10. 82, J. M. G. RODRIGUES & J. ADIS leg.; holotype and 11 paratypes at INPA, Manaus and 10 paratypes at Staatliches Museum für Naturkunde Karlsruhe, Germany, LNK A 0421.

Discussion

This species differs very much in the type of notogastral setation and in the shape of the epimeral region from *Sternoppia reticulata* BALOGH & MAHUNKA, 1969, another species being found in the surroundings of Manaus. Furthermore, the type of minitactal arch in front of the genital opening seems to be unique among the species of this genus, hitherto described. On the other hand, there might be a close relationship between the South American species of this genus and the African genus *Ramuloppia*. Though described very uncompletely, it seems obvious that *Ramuloppia ramiseta* (BALOGH, 1959) stands relatively close to the species of the genus *Sternoppia*. This species shows the same type of incised rostrum (incision bordered by two tiny denticles), like *Oxyoppioides decipiens* (PAOLI, 1908). *O. decipiens*, like the species of the genus *Sternoppia*, show minitactal plates, covering the epimeral region. It seems, therefore, that *R. ramiseta* possesses at least minitactal structures or ridges on the epimeral region, which perhaps have been overseen by the author of this species. A strong argument into this direction is given by the type of setae on the ventral plate (especially on the epimera and on the mentum) of *R. ramiseta*, which show very distinct side branchings. Such type of setae on the ventral plate, at least partially shown by *Sternoppia brasiliensis*, is not only common to species of the genus *Epimerella* but to species of genera like *Staurobates* and *Stauroma* too. Especially from the

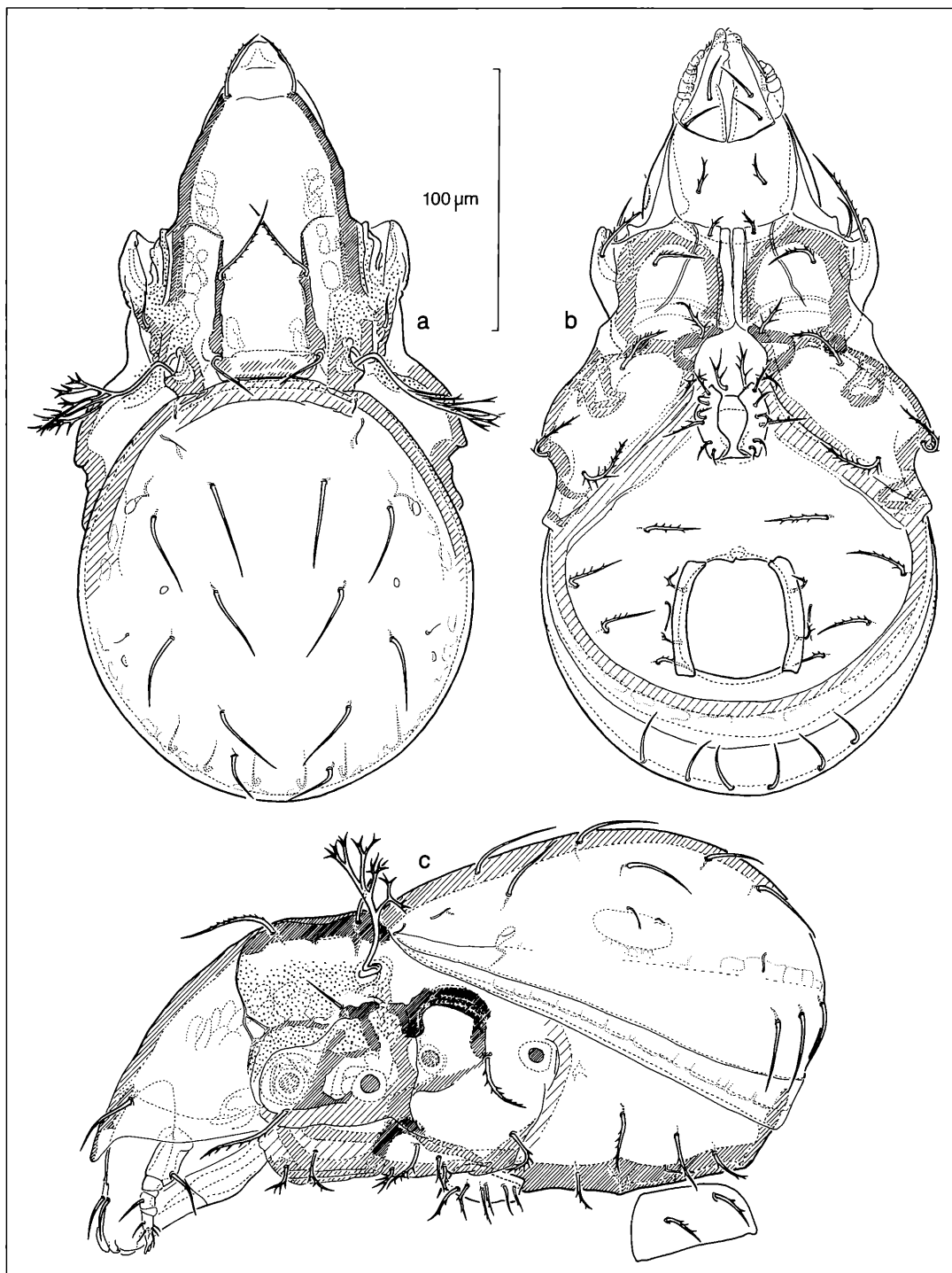


Figure 1. *Sternoppia brasiliensis* n. sp.: a) dorsal; b) ventral; c) lateral; All drawings by E. FRANKLIN and F. WEICK.

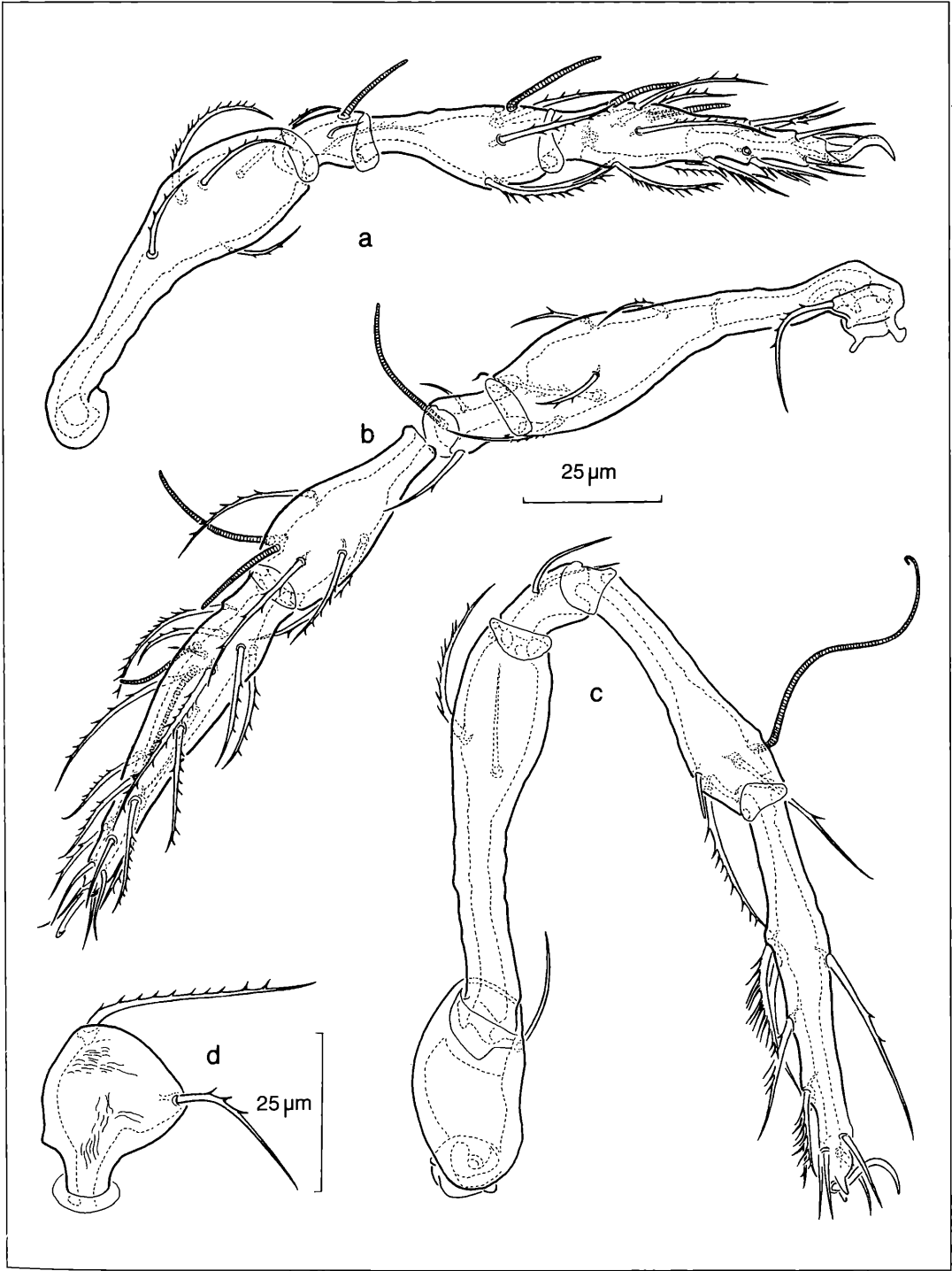


Figure 2. *Sternoppia brasiliensis* n. sp.: a) leg I; b) leg II; c, d) leg IV

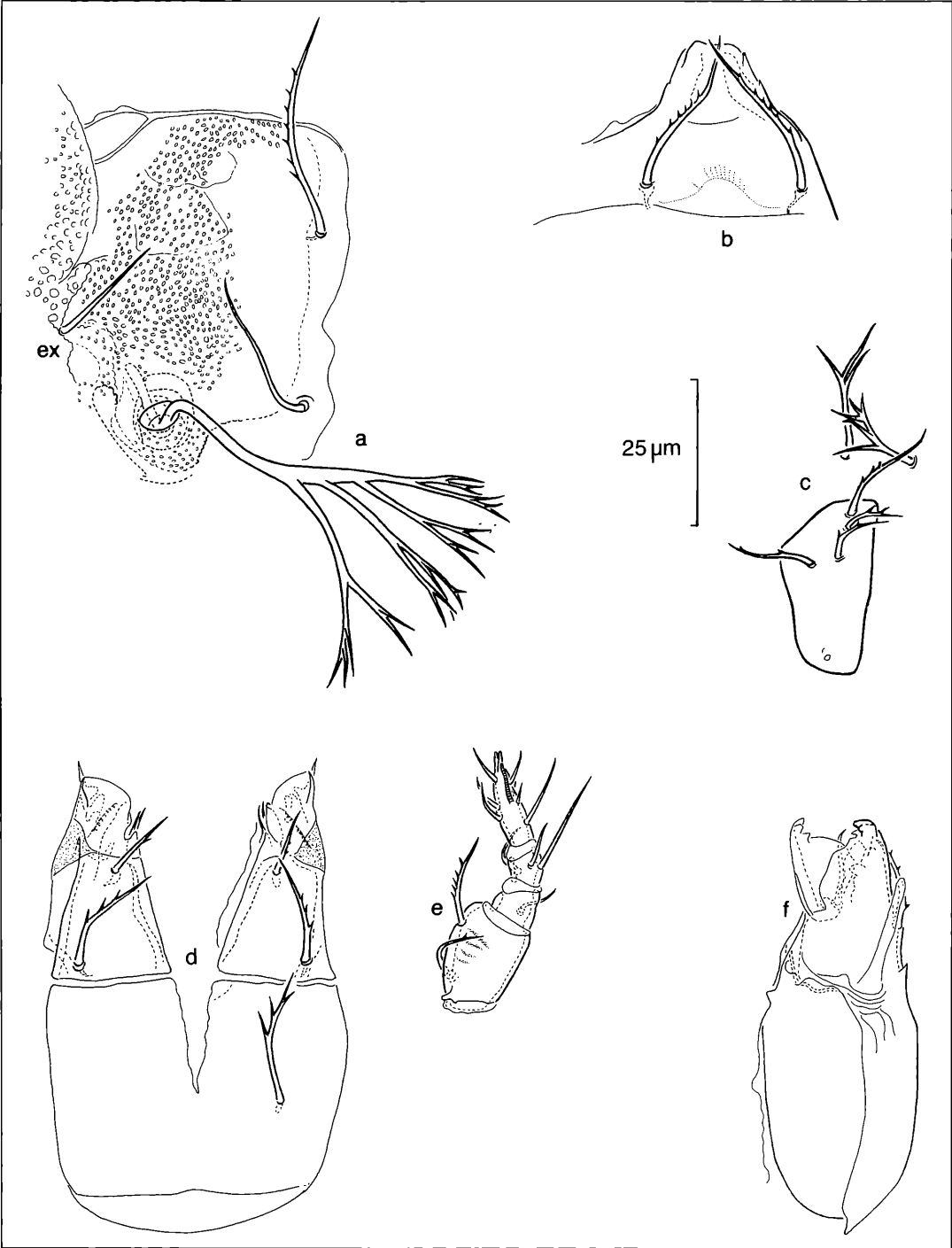


Figure 3. *Sternoppia brasiliensis* n. sp.: a) bothridial region; b) rostral region; c) genital region; d) infracapitulum; e) pedipalpus; f) chelicera.

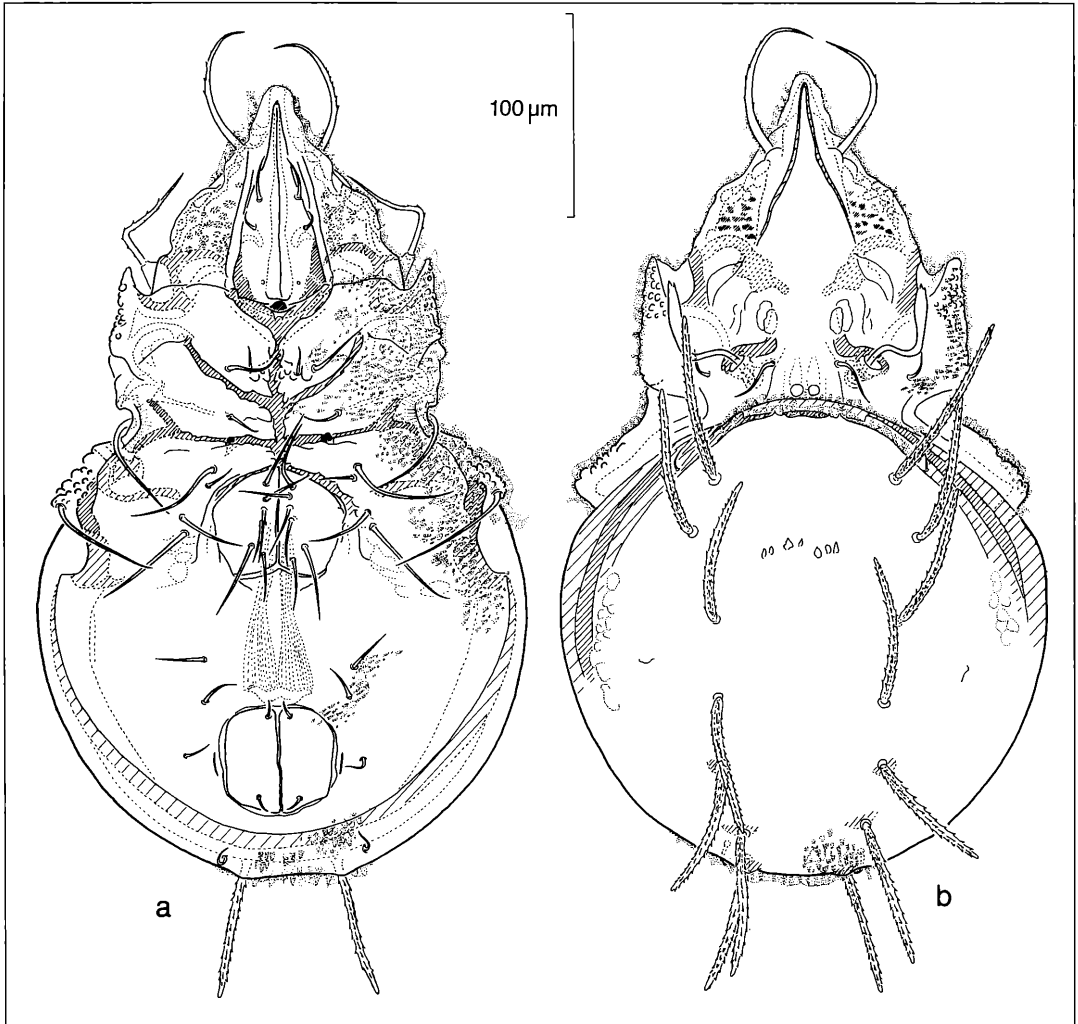


Figure 4. *Suctoribates crassisetosus* n. sp.: a) dorsal; b) ventral.

zoogeographical as well as from the ecological point of view, it will be not very favourable, therefore, to incorporate the genera *Sternoppia* and *Ramuloppia* to different subfamilies, like it is done by BALOGH (1983).

***Suctoribates crassisetosus* n. sp.**

Diagnosis

Colour bright red brown. Length 400 µm, width 240 µm. Prodorsum with a bill-shaped rostrum, the rostrum with a distinct triangular area surrounded by a groove. Ventral region with a distinct apophysis in the middle of epimera 1 directly behind the mentum. Lamellar seta absent. Femora of legs with indistinct dilatations in ventral and dorsal position. Mouthparts suctorial.

Description

Cuticle (fig. 4, 5, 7): Generally smooth, but with distinct nodules of medium size in the acetabular region and with a cerotegument showing organ pipe- or nodule-like exudations on the prodorsum, the notogaster, the ventral side and on the legs. Interlamellar region with one pair of distinct round maculae.

Prodorsum (fig. 4, 5, 7): Elongated, with a bill-shaped rostrum, the rostrum with a distinct triangular scale-like area surrounded by a groove. In front of the rostrum two faintly sclerotized dilatations in lateral position. Lamella extremely short and restricted to the bothridial region. Lamellar seta totally absent. Rostral seta very large, slightly incrassate, curved inwards, and bearing small spines. Interlamellar seta relatively small and of normal

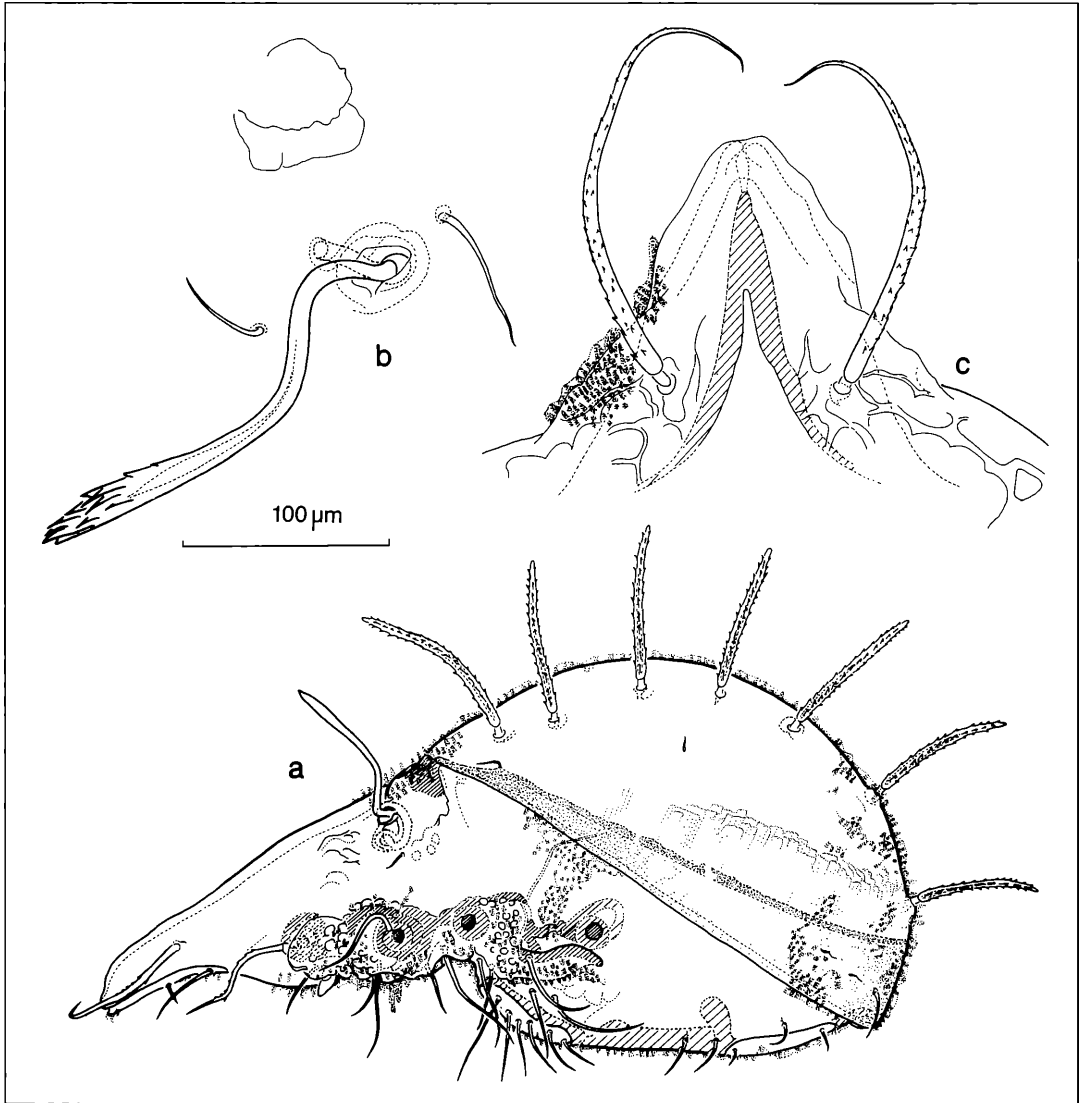


Figure 5. *Suctoribates crassisetosus* n. sp.: a) bothridial region; b) rostral region; c) lateral.

appearance. Sensillus of medium length, the head slightly clavate with short spines in distal position. Prodorsum with one pair of smooth exobothridial setae. Notogaster (fig. 4, 5, 7): Convex and with 9 pairs of setae. Seta ta and the pair of opisthopleural setae very small and smooth. The remaining notogastral setae very large, incrassate, blunt-ending and with very strong spines. The insertion-points of the setae arranged in two nearly parallel running lines. Medium portion of the convex dorsosejugal line slightly protruding forming a wide arch.

Podosoma (fig. 4, 5, 7): Position of the acetabula III and

IV above the acetabula I and II. Epimeral region with an indistinct apodema 4 restricted to the front of the genital opening. Epimera 1 with a distinct protruding knob behind the mentum. Epimeral setae on epimera 3 and 4 very long and smooth. Formula of epimeral setae: 2-1-2-3

Anogenital region (fig. 4, 5): Genital opening much larger than the anal opening and widening to the front. Genital flaps with 6 pairs of setae, the last two pairs inserting at some distance from the rest of the setae. Anal flaps with two pairs of setae. The adanal region with a variable number of adanal setae. The first and the last

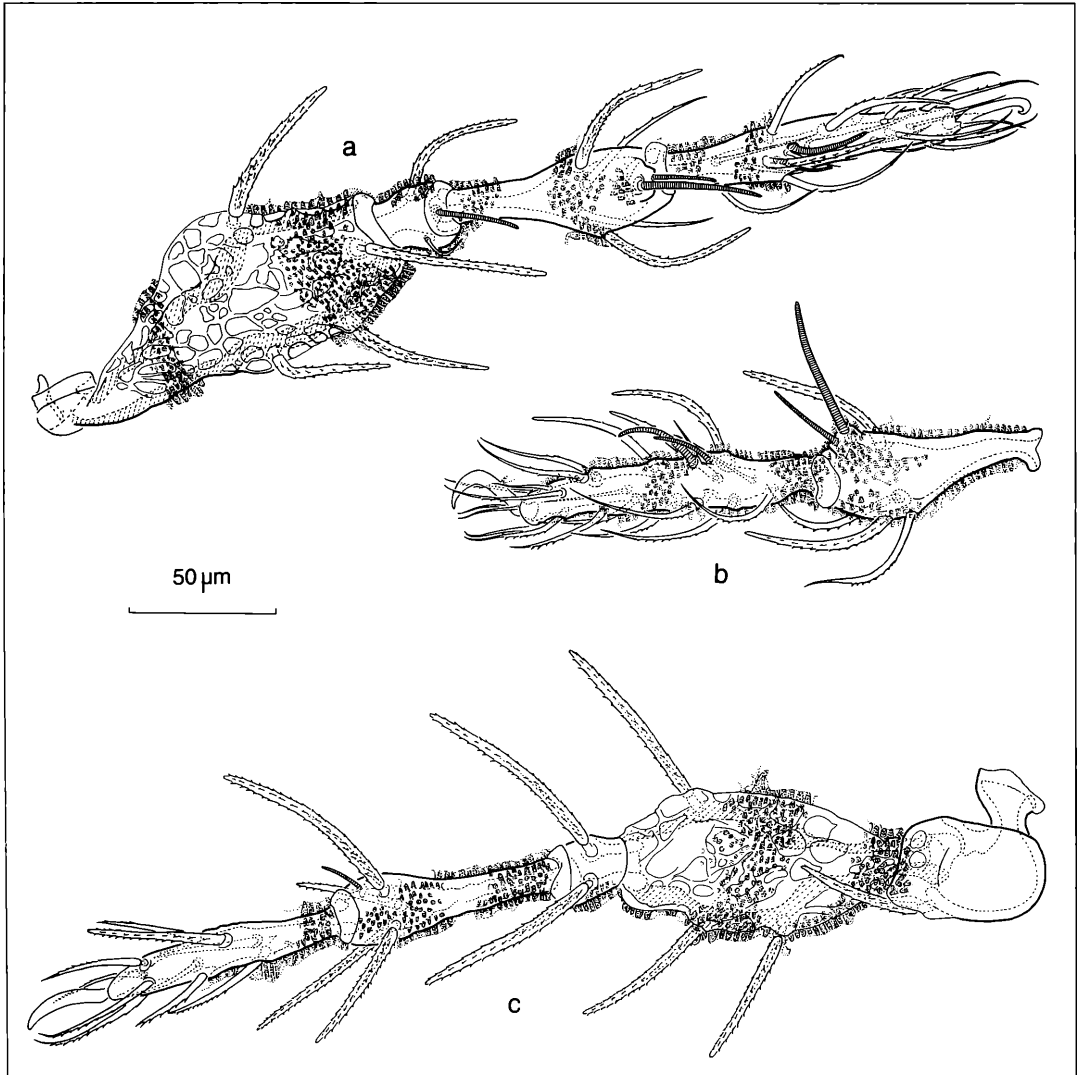


Figure 6. *Suctoribates crassisetosus* n. sp.: a) leg I; b) leg IV.

pair of adanal setae very often affected by reduction. Lyrifissure iad running parallel to the border of the anal opening

Legs (fig. 6): Articles with normal articulation, femora with indistinct dorsal and ventral dilatations. Tarsi with one claw. Setation formula of legs (including solenidia):

leg I 4-3-6-22-1

leg IV 1-3-2-5-10-1

Infracapitulum (fig. 7): Suctorial, anarthric. Rutellar lobes elongated and faintly sclerotized.

Chelicera (fig. 7): Chelicera aviculid, peloptulid, very elongated, the digiti extremely small. Seta cha faintly feathered, seta chb missing.

Pedipalpus (fig. 7): Femur short, of conical shape, narrowing to their distal region. Genu relatively long, reaching almost the length of the tarsus. Setation formula (including solenidium): 1-0-1-9. Solenidium and eupathidia elongated,, the solenidium touching the eupathidia in distal position.

Brazil, Amazonas, Region of Pico da Neblina, Morro dos Seis Lagos, "Lago Verde", ca. 70 km from São Gabriel da Cachoeira, 28.03.90, P. PETRY & J. A. S. ZUANON leg.; holotype and 7 paratypes at INPA, Manaus and 7 paratypes at Staatliches Museum für Naturkunde Karlsruhe, Germany, LNK A 0422.

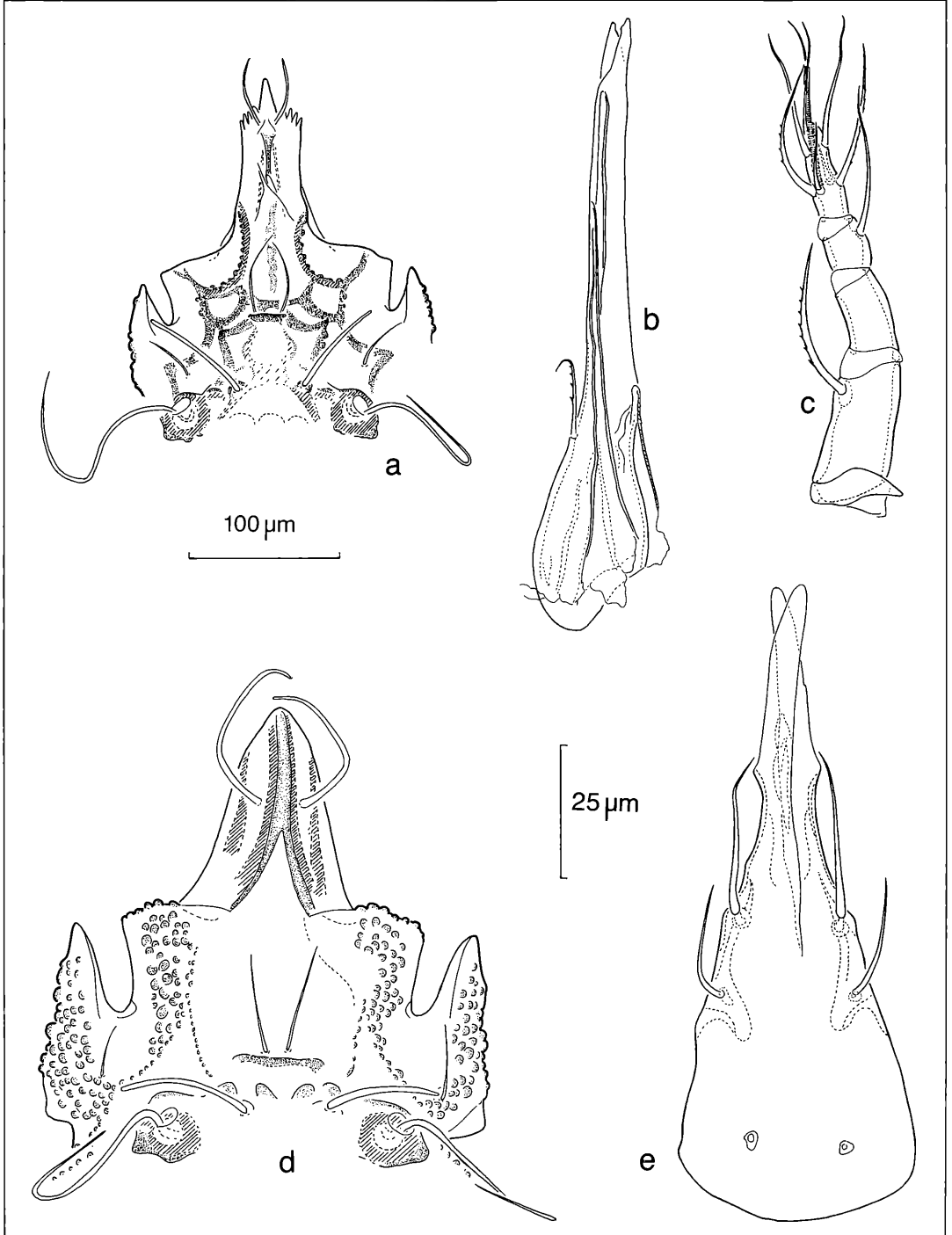


Figure 7. *Rhynchoribates brasiliensis* WOAS, 1986: a) Prodorsum. *Rhynchoribates amazonicus* WOAS, 1986: d) Prodorsum. *Suctoribates crassisetosus* n. sp.: b) chelicera; c) pedipalpus; e) infracapitulum.

Discussion

With its bill-shaped rostrum, its suctorial mouth-parts and its two blunt-endig solenidia on tibia I, originating from the same position, and the very long setae on epimera 3 and 4, this species resembles *Oxyamerus spathulatus* AOKI, 1965. According to the drawings of AOKI (fig. 47, p. 161), *O. spathulatus* even may show a rostral scale, like *Suctoribates crassisetosus*, however different in shape and position. The tip of the rostrum of *S. crassisetosus* is extremely hyalin. The lower border of this rostral tip is divided in a right and a left part, overlapping in the middle. It could be, therefore, that the spathulated rostral seta of *O. spathulatus*, mentioned and shown by AOKI (figs. 47, 49), are a special structure of the rostral tip and that the lamellar seta of this species, defined by the author, is in fact its rostral seta. Otherwise the well developed pedotectum II of *O. spathulatus* and its missing cerotegumental granulation on the cuticle elongates this species from *S. crassisetosus*.

It should be remembered, however, that the "morphotype" in basic systematical groups of higher Oribatei is on a very low level of synorganization. Therefore the appearance of perhaps even relatively near related taxa may be very different, so, for instance the appearance of the genus *Machuella*. According to our own investigations, species of this genus show a sclerite, originating from apodema 1, protruding the area of the camerostom. A hint for this structure is given by the ventral aspect of *Machuella ventrisetosa* HAMMER, 1961 (pl. 20, fig 49b), where this sclerite is drawn as a little triangle in the middle of apodema 1. In fact, such a structure, apparently very seldom in higher Oribatei, is shown as a distinct knob behind the mentum of *S. crassisetosus* too. In the same time this species shows some similarities to species of the genus *Rhynchoribates*. This is not only expressed by the bill-shaped rostrum and the suctorial mouth-parts of *S. crassisetosus*, but also by its triangular rostral scale, covering a rostral groove. The structure last mentioned is a character of the genus *Rhynchoribates*, too. As in this genus, always covered by a more or less thick cerotegument, it was overseen by different authors such as GRANDJEAN (1929), HAMMER (1961), BECK (1961), BALOGH (1962) and WOAS (1986). Fig. 7, therefore, once more give an aspect of the rostrum of *Rhynchoribates brasiliensis* WOAS, 1986 and *R. amazonicus* WOAS, 1986. In contrast to *S. crassisetosus*, in the latter species the rostral groove is much more narrow and the triangular shaped rostral scale very much smaller.

Tecteremaeus cachoeirensis n. sp.

Diagnosis

Colour red brown. Length 420 µm, width 210 µm. Prodorsum with very indistinct protuberances in the lamellar region. Sensillus thread-like, with fine bristles. Notogaster with 10 pairs of setae and with two parallel running chitinized ridges, stretching from the dorsoseju-

gal line towards the caudal region. Epimeral region with minitecta reaching from the front of the genital opening to the area of the acetabula II. Genital opening in a distinct field, separated by a minitectum- like structure from the epimera 4 and from the lateral flanks of the anogenital region. Femora of the legs with large ventral and smaller dorsal keels. Tibia I with a short but massive horn, carrying the solenidia. Legs monodactyl, the claws with a small but distinct tooth in basic position.

Description

Cuticle (fig. 8, 10): Generally smooth, but with tiny tubercles, especially in the acetabular region and on the legs. Interbothridial region with larger but very indistinct maculae.

Prodorsum (fig. 8, 10): Lamella absent but with very indistinct protuberances in the lamellar region. Rostral- seta, the lamellar seta extremely short, nearly spine- like. Sensillus long thread- shaped, with fine bristles, formed like an S, the tips pointing forwards. Prodorsum with one pair of smooth and short exobothridial seta inserting at some distance from the bothridia.

Notogaster (fig. 8): Notogaster with 10 pairs of short, smooth and spine like setae and with two parallel running chitinized ridges stretching from the dorsosejugal line towards the caudal region. The ridges are flanked by the setae ta, ti, ms and r2. Notogaster without any area porosa-like macula.

Podosoma (fig. 8): Acetabula I - IV arranged in one line parallel to the ventral border of the epimeral region. Epimeral region with distinct apodemata 1- 4 and with minitactal ridges reaching from the front of the genital opening to the area of the acetabula II. Epimeral setae of medium length and smooth. Formula of epimeral seta: 3-1-2-3

Anogenital region (fig. 8): Genital opening much smaller than the anal opening and broadening to the front. Each genital flap with a condylus at its outer front-edge and with 6 pairs of setae, the last two pairs inserting at some distance from the rest of the setae. Anal flaps with two pairs of setae. The adanal region with the setae ad 1 3. Position of the aggenital seta at some distance from the seta ad3. Lyrifissure iad running parallel to the border of the anal opening.

Legs (fig. 9): With normal articulation. Femora with very large ventral and with smaller dorsal keels. Tibia I with a short but massive horn bearing the solenidia. Tarsi with one claw, the claw with a small but distinct tooth in basic position. Setation formula of legs (including solenidia):

leg I 5-2-6-22-1

leg IV 0-2-2-4-12-1

Infracapitulum (fig. 10): Diarthric. Rutella pantelebasic, with a smooth and transparent plate covering the distal denticles

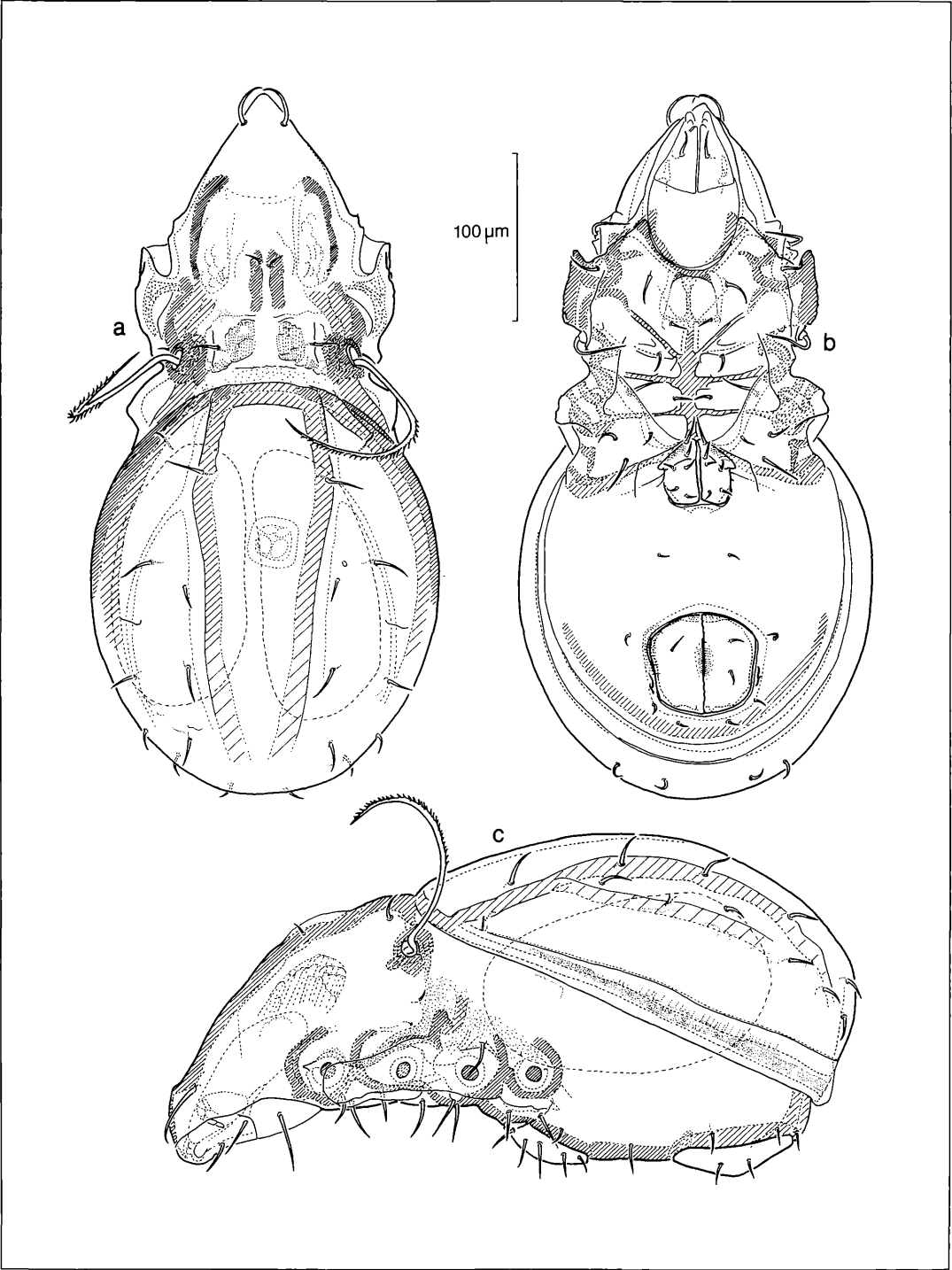


Figure 8. *Tecteremaeus cachoeirensis* n. sp.: a) dorsal; b) ventral; c) lateral.

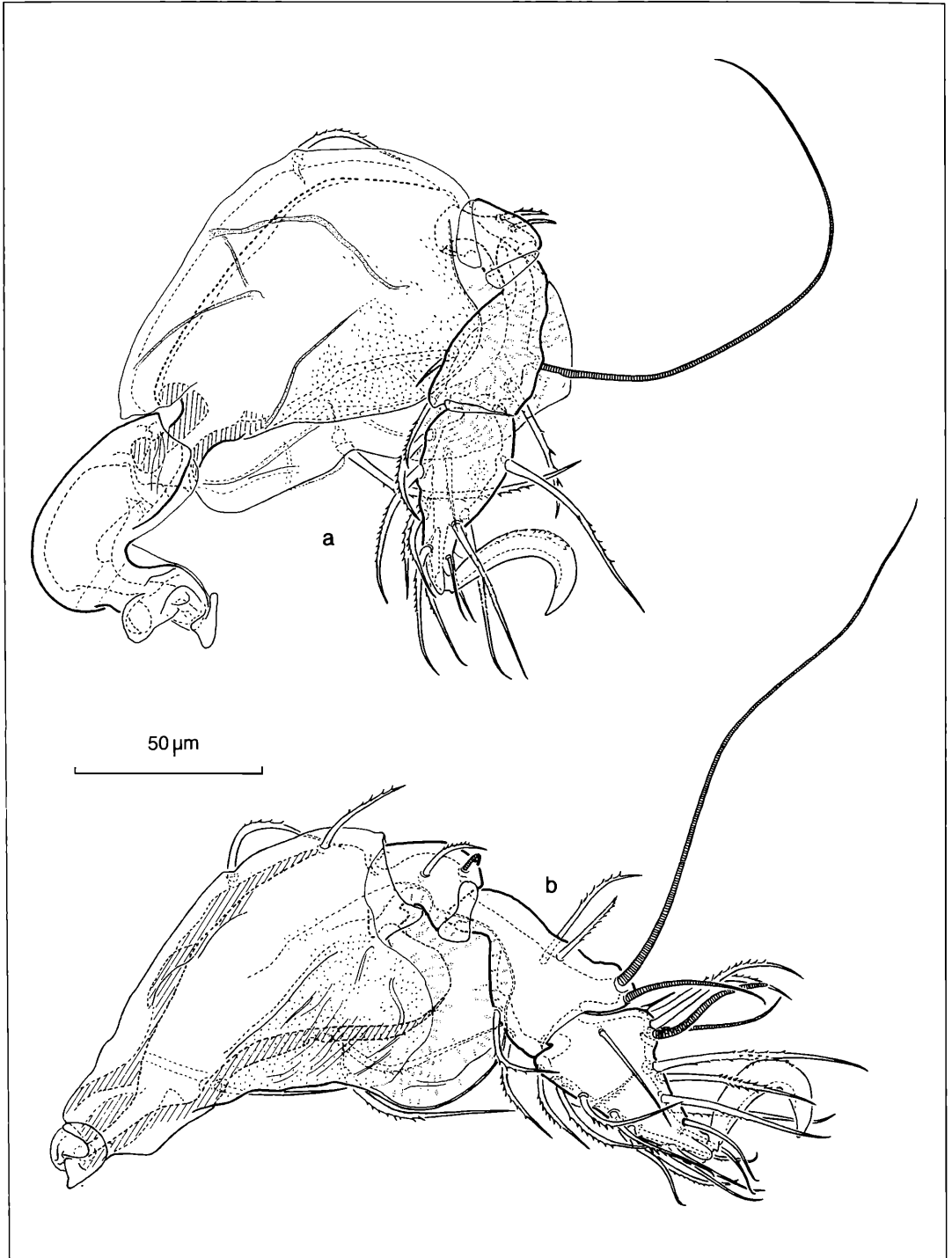


Figure 9. *Tecteremaeus cachoeirensis* n. sp.: a) leg IV; b) leg I.

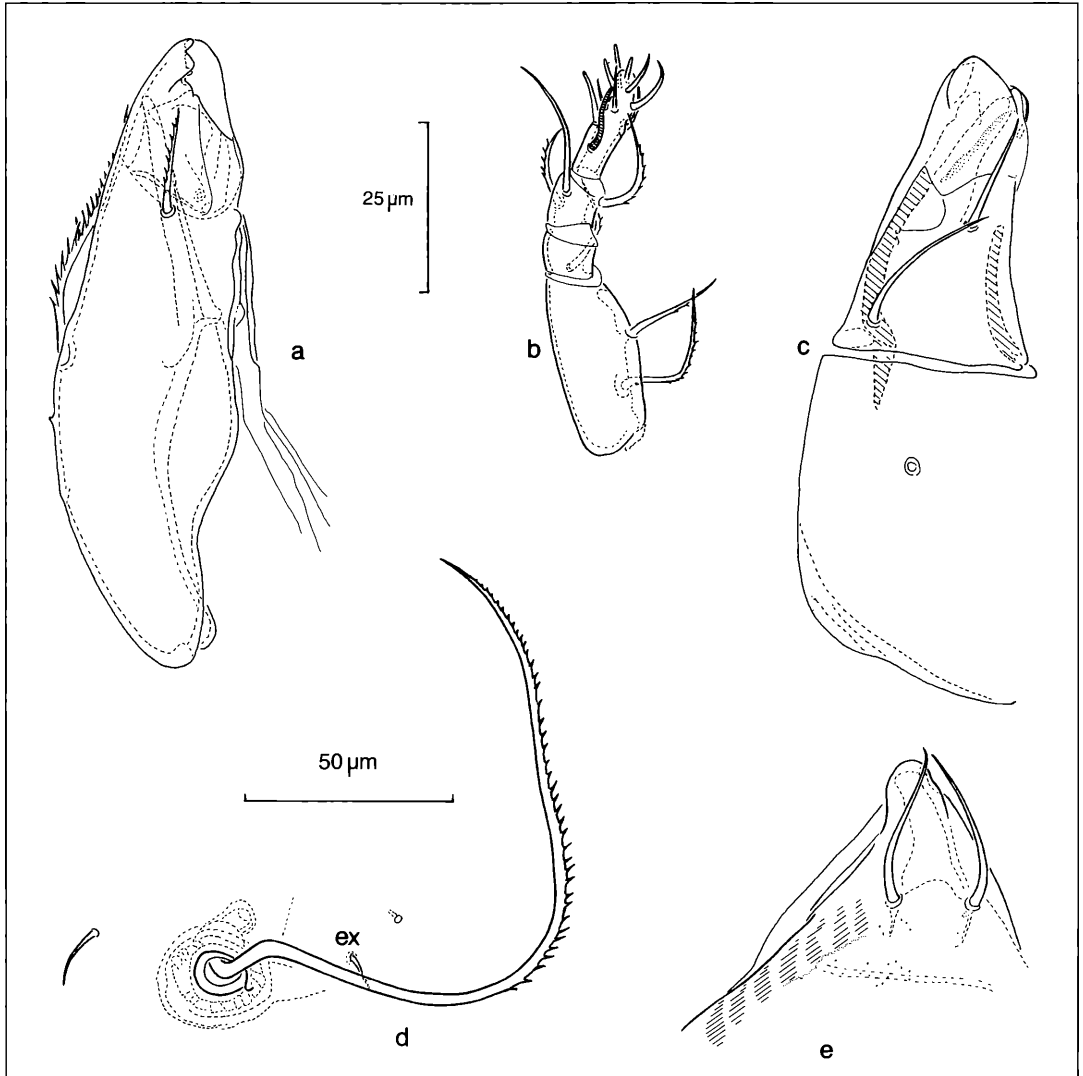


Figure 10. *Tecteremaeus cachoeirens* n. sp.: a) chelicera; b) pedipalpus; c) infracapitulum; d) bothridial region; e) rostral region.

Chelicera (fig. 10): Chelicera from the normal type but relatively slender. Setae cha and chb normally feathered.

Pedipalpus (fig. 10): Femur relatively long and slightly incrassate. Tarsus slightly elongated. Setation formula (including solenidium): 2-1-3-10.

Brazil, Amazonas, Region of Pico da Neblina, Morro dos Seis Lagos, ca. 70 km from São Gabriel da Cachoeira. 25.03. 90, P. PETRY & J. A. S. ZUANON leg.; holotype and 8 paratypes at INPA, Manaus and 8 paratypes at Staatliches Museum für Naturkunde, Karlsruhe, Germany, LNK A 0423.

Discussion

In 1961, BALOGH described *Lyroppia scutigera* and incorporated this species into the Oppiidae, a position which the author maintained in his "Oribatid Genera of the World" (1972) and in his "Partial revision of the Oppiidae" (1983). According to the drawings of *L. scutigera*, given by BALOGH (1961, p. 4, figs. 1-3), however, this species shows ventral blade-like keels on the femora of all legs. This character, totally missing in the Oppiidae, reminds more the conditions of *Tecteremaeus cachoeirens*, described above. This impression is strengthened by the very large claws on the legs and by the tarsi of the legs, keeping in contact

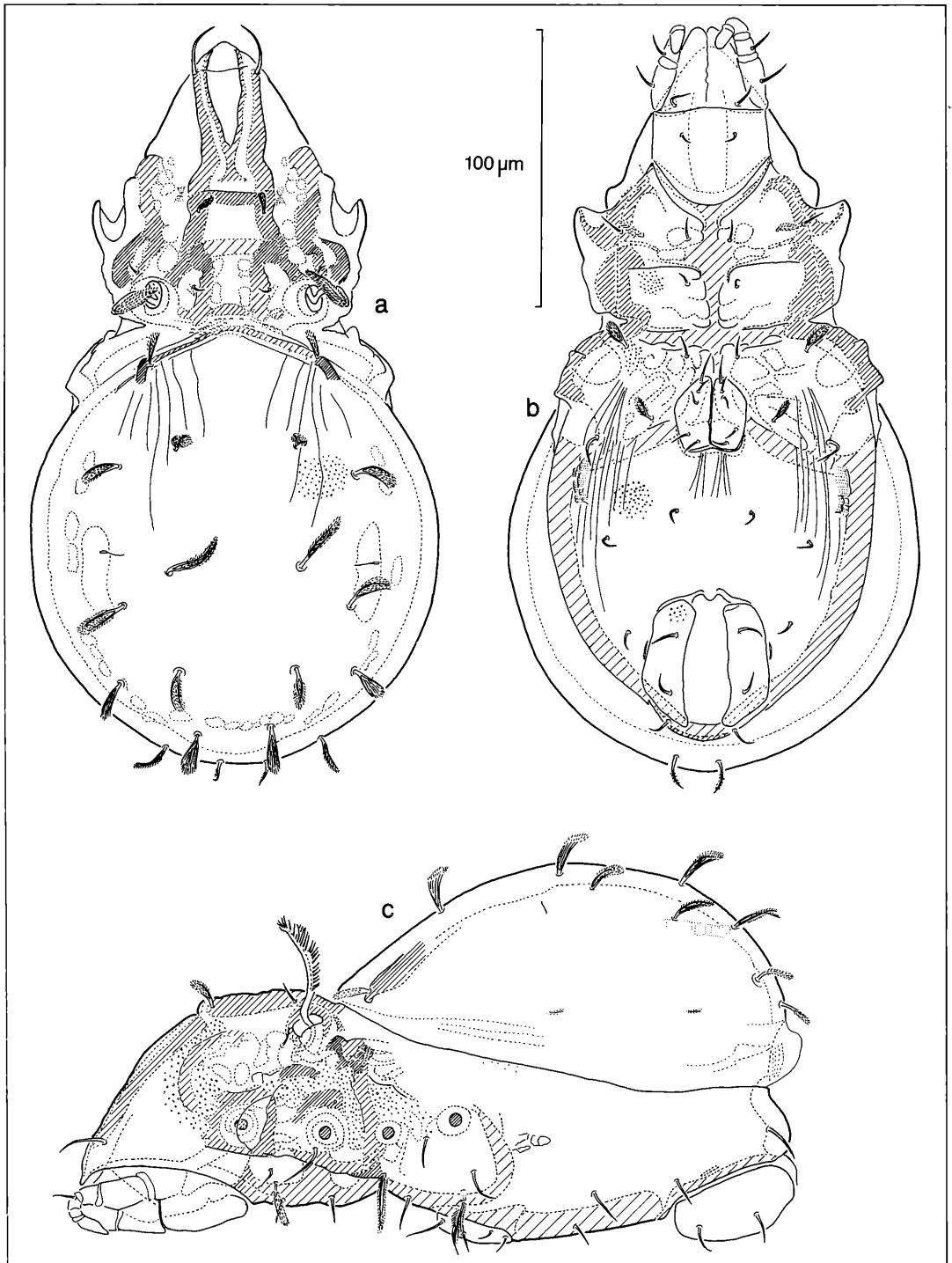


Figure 11. *Striatoppia silvicola* n. sp.: a) dorsal; b) ventral; c) lateral.

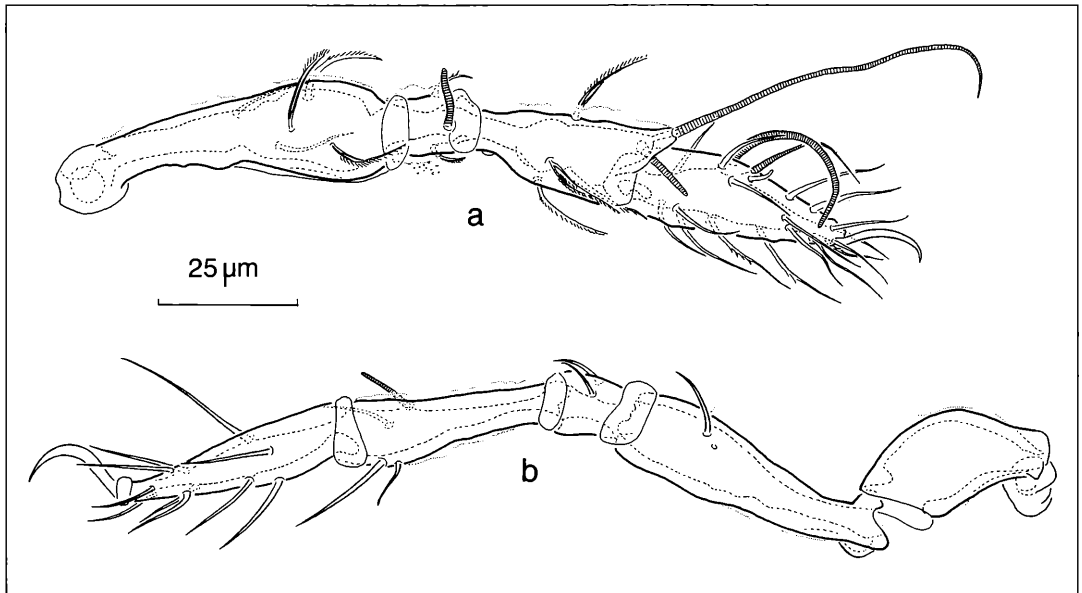


Figure 12. *Striatoppia silvicola* n. sp.: a) leg I; b) leg IV.

with the following tarsi over their whole width. The very large claws and at least the type of articulation between tarsus and tibia of leg I of *T. cachoeirensis* resembles very much the conditions of *L. scutigera*. Furthermore, in both species the solenidia of tibia I share a common insertion area on the top of a horn, though the horn in *L. scutigera* is very much smaller than in *T. cachoeirensis*. The two species compared even show similarities in the shape of the notogaster (middle axis of the notogaster bordered by two longitudinal running carinae). But insecurity will remain on the more detailed structures of the ventral plate and of the femora of *L. scutigera*. This concerns the possibilities of bearing minitactal structures on the epimera and of carrying two ventral keels on the femora of the legs in paraxial and axial position. Both characters are to be found in *T. cachoeirensis*. As far as can be presumed by the description and by the drawings of *Tecteremaeus cornutus* HAMMER, 1961, the new species stands near to *T. cornutus*.

***Striatoppia silvicola* n. sp.**

Diagnosis

Colour yellowish-pale, parallel striation of cuticle very faint. Length 260 µm, width 150 µm. Prodorsum with an indistinct trapezoid costular plate. Epimeral region with foliate, densely ciliated setae on epimera 3 and 4. Adanal setae setiform.

Description

Cuticle (fig. 11, 13): Lateral side of prodorsum and acetabular region with very small round nodules, cuticle

with a very faint and indistinct parallel striation (oil emersion!) on the front-part of the notogaster and on the anogenital region. Interlamellar region with two pairs of oval or nearly rectangular maculae in parallel position. Epimeral region with a very indistinct mesh-net on epimera 1 - 4.

Prodorsum (fig. 11, 13): Much shorter than the notogaster and of oppiid shape. Rostrum with a median groove, surrounded by 4 lamella-like ridges. Lamellar region with an indistinct and short trapezoid costular plate and an indistinct transverse running translamellar ridge. Rostral and interlamellar setae setiform and smooth, lamellar seta with a furcated base, clavate and densely ciliated. Position of the lamellar seta very much nearer to the interlamellar than to the rostral seta. The upright standing interlamellar seta shorter than the rostral and the lamellar setae. Sensillus of medium length, relatively thick, with a slightly elongated central spindle. The distal portion of the sensillus with relatively long seta-like side branchings, the basic part with shorter spines at the outer border. Prodorsum with one pair of smooth exobothridial setae.

Notogaster (fig. 11): Convex and with 10 pairs of clavate, densely ciliated setae, the setae with furcated bases. The first three pairs of setae in ta-te-ti position, seta ta pointing forwards. Notogaster without any area porosa-like maculae.

Podosoma (fig. 11): Position of the acetabula III and IV above the acetabula I and II, acetabulum III above acetabulum IV. Epimeral region with a distinct apodema 4. Setae on epimera 1 - 4 partially clavate, densely

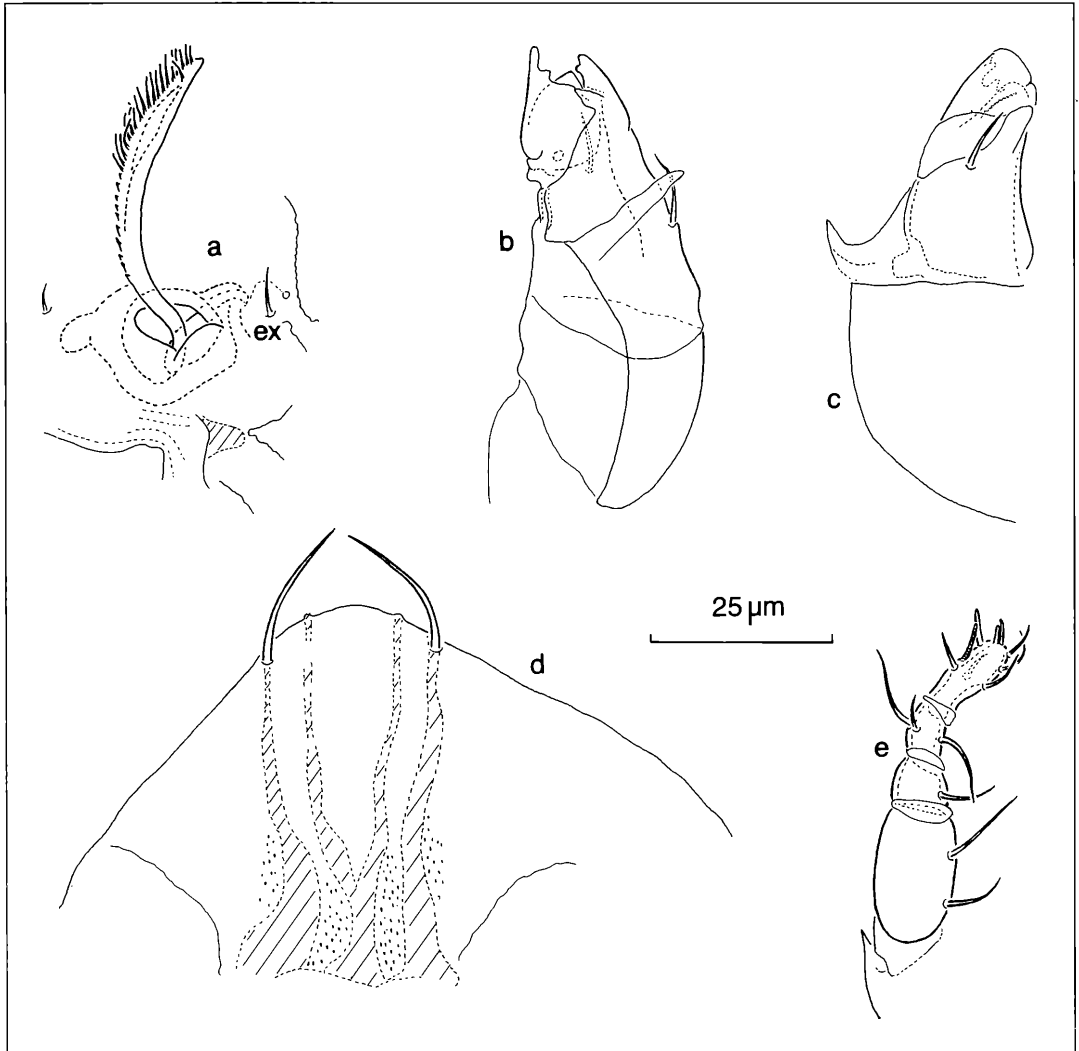


Figure 13. *Striatoppia silvicola* n. sp.: a) bothridial region; b) chelicera; c) infracapitulum; d) rostral region; e) pedipalpus.

ciliated and with a furcated base. Formula of epimeral setae: 3-1-2-2.

Anogenital region (fig. 11): Genital opening smaller than the anal opening and broadening to the front. Genital flaps with 5 pairs of setae, the last two pairs inserting at some distance from the rest of the setae. Anal flaps with two pairs of setae. The adanal region with the setae ad1-3. The pair of aggenital setae displaced to the median axis of the animal and flanked by a pair of aggenital setae in outside position. Lyrifissure iad running parallel to the border of the anal opening.

Legs (fig. 12): Articles with normal articulation. Tibia I with a dorsal slightly infolded saddle and with a horn bearing the larger solenidium at its top and the smaller

solenidium at its base. Tarsi with one claw. Setation formula of legs (including solenidia):

leg I 5-3-6-20-1

leg IV 0-2-2-4-10-1

Infracapitulum (fig. 13): Diarthric. Rutella atelebasic, with a smooth and transparent plate covering the distal denticles.

Chelicera (fig. 13): Chelicera of normal type. Setae cha and chb smooth.

Pedipalpus (fig. 13): Femur relatively short and slightly incrassate. Tarsus with an uncomplete "corne double"

Tarsus slightly elongated. Setation formula (including solenidium): 2-1-3-9.

Brazil, Amazonas. Biological Reserve INPA-SUFRAMA (02° 34' S, 60° 06' W), at ZF-02 road, located between Manaus-Boa Vista-Highway (BR 174, km 51) and the Rio Cuieiras. Primary Forest on yellow latosol, terra-firme. 17.5.1980, E. FRANKLIN leg.; holotype and 1 paratype at INPA, Manaus and 1 paratype at Staatliches Museum für Naturkunde Karlsruhe, Germany, LNK A 0424.

Discussion: This species resembles to some account *Striatoppia tribuliformis* BALOGH & MAHUNKA, 1981. The body size however is very much smaller. There is a slight difference in the appearance of the lamellar seta, which is only slightly clavated.

4. Sumário

Oribatídeos superiores do tipo oppiide, dos quais os Oppioidea devem ter certamente derivado, são provenientes de uma condição sistemática bastante basilar. Entretanto, mesmo as espécies estreitamente relacionadas de um taxa monofilético, podem diferir sensivelmente em sua aparência morfológica. Além disso, o caráter-padrão é principalmente do tipo mosaico, mudando sua composição de grupo para grupo.

Um bom exemplo para este tipo mosaico é encontrado nos Carabodidae e no grupo de gêneros *Mystroppia/Striatoppia*. Nos Carabodidae, caracterizados por redução tricobotridial durante a ontogenia (GRANDJEAN 1953, TRAVÉ 1978), existe um morfotipo mais dominado por caracteres do tipo cepheide (como em *Carabodes*), abaixo de um morfotipo mais dominado por caracteres do tipo oppiellide (como em *Dolicheremaeus*). Ambos morfotipos são ligados pelo tipo intermediário de *Tukunocepheus mizusawai* Aoki, 1966. Em adição, mesmo as condições peloptoide ou suctobelbide podem ter tido presságio dentro dos Carabodidae, como mostrado pelas peças bucais de *Beckiella*. No grupo de gêneros *Mystroppia/Striatoppia* o morfotipo pode ser dominado por caracteres de oribatídeos inferiores, assim como também de *Passalozetes*.

O tipo mosaico de caracteres, entretanto, certamente combina a transformação do tipo ancestral de oribatídeos inferiores com o presságio de novos tipos (i. e. o tipo oppiellide ou mesmo o tipo pterogasterinide) de oribatídeos superiores e, ao mesmo tempo, mostra caracteres especiais, restritos a esta área evolucionária basilar. Apesar de muito diferentes em sua aparência, muitas destas espécies basilares podem ter conservado uma demanda especial e mais ancestral ao seu meio ecológico. Esta pode ser a razão do porquê, em contraste com as espécies mais periféricas, as espécies basilares frequentemente parecem ser mais especializadas, mostrando distribuição geográfica e ecologicamente mais restrita. Portanto, especialmente dentro do ponto de vista ecológico, a definição dos taxa superiores mais basilares tem se tornado uma tarefa importante a reali-

zar. Para este propósito, descrições e desenhos detalhados de espécies pertencentes a tais taxa basilares são urgentemente necessários.

No presente trabalho faz-se a descrição de quatro espécies novas de taxa basilares do tipo oppiide: *Suctoribates crassisetosus* n. sp., *Tecteremaeus cachoeirensis* n. sp., *Sternoppia brasiliensis* n. sp. e *Striatoppia silvicola* n. sp., incluindo-se um discussão sobre a posição sistemática. Em adição, procurou-se caracterizar o grupo basilar de oribatídeos superiores, aos quais estes taxa devem ser incorporados.

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