

Notes on Mitobatinae VI. A Review of *Metamitobates* Roewer with New Synonymies (Opiliones: Laniatores: Gonyleptidae)

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With 9 figures

Abstract. *Neomitobates gracilipes* ROEWER, 1913, *Neomitobates venustus* MELLO-LEITÃO, 1933, both described upon females, *Metamitobates genusulphureus* ROEWER, 1913, hitherto known only from males, and *Neobourguyia rosai* MELLO-LEITÃO, 1941 are herein considered new junior synonyms of *Goniosoma squalidum* PERTY, 1833, type species of *Ancistrotellus* ROEWER, 1923. The monotypic genus *Neobourguyia* MELLO-LEITÃO, 1941 (currently included in the synonymy of *Discocyrtoides* MELLO-LEITÃO, 1923) and *Ancistrotellus* are considered junior synonyms of *Metamitobates* ROEWER, 1913. Of the remnant 22 species currently grouped in *Ancistrotellus*, 16 are referred to a monophyletic group, to which the available name *Neoancistrotus* MELLO-LEITÃO, 1927 (currently under the synonymy of *Ancistrotellus*) is given. *Neomitobatooides* MELLO-LEITÃO, 1933 is considered a new junior synonym of *Neoancistrotus*. *Neoancistrotus* is treated briefly, and an emended diagnosis is given. Some comments are made on the relationships of *Metamitobates*, and an emended diagnosis is given for the genus. *Metamitobates squalidus* (PERTY, 1833) new comb. is redescribed and figured.

Key words: Opiliones, Laniatores, Gonyleptidae, *Metamitobates*; synonymy; Neotropics; Brazil.

Introduction

Amidst the confuse systematic of some Opiliones, that of the Neotropical laniatorid family Gonyleptidae needs much work to be cleared up. In the following pages, I will try to show how individuals of the same species can be easily assigned to different genera due to variable characters and to the stiffness of the criteria used. The system created by C. F. ROEWER in the beginning of the century (see e.g. ROEWER, 1923) proves to be not only inadequate under a phylogenetic point of view, but also defective in grouping taxa even by their overall similarity.

According to the Roewerian system, *Neomitobates* ROEWER, 1913 and *Metamitobates* ROEWER, 1913, both from Brazil, were the only mitobatine genera with unarmed pedipalpal femur. They were to be distinguished by the number of tarsomeres in the leg I, respectively 6 and 7. *Metamitobates*, as most Roewerian genera, was monotypic (type *M. genusulphureus* ROEWER), while *Neomitobates* counted two species, *N. gracilipes* ROEWER and *N. cancellatus* ROEWER. This was the arrangement used by ROEWER (1913, 1923) and MELLO-LEITÃO (1932). The latter described *Neomitobates venustus*, from the mountains of the Brazilian State Rio de Janeiro (1933). SOARES & SOARES (1949: 233), without comments, considered *Neomitobates* as a junior synonym of *Metamitobates*, while the four species by ROEWER/MELLO-LEITÃO were conserved.

MELLO-LEITÃO (1940a: 40) created in Bourguiiinae the monotypic genus *Neobourguiya*, based on material from Rio de Janeiro. Its single species, *N. rosai* MELLO-LEITÃO, 1940, was transferred to the wastebasket genus *Discocyrtoides* MELLO-LEITÃO, 1923 of the Bourguiiinae by SOARES & SOARES (1949), after being synonymized with *Despiroides* MELLO-LEITÃO, 1932 by B. SOARES (1944d). I proposed to remove *Discocyrtoides* to the Mitobatinae (KURY, 1990a), at the same time that the lack of identity of the Bourguiiinae was shown. After studying fresh and abundant material from the Rio de Janeiro State, I can confidently propose the synonymy of *N. rosai*, *N. gracilipes*, *N. venustus* and *M. genusulphureus* with *Goniosoma squalidum* PERTY, type species of *Ancistrotellus* ROEWER. This will cause some alterations in the nomenclature, since most species of the large genus *Ancistrotellus* can be united to form a monophyletic group (KURY, in prep.) that does not include the type species, here transferred to *Metamitobates*. As a synapomorphy for this new taxon can be cited the specialized structure of the glans penis ventral branch (for description of the glans see KURY 1990c). To this taxon the available name *Neoancistrotus* MELLO-LEITÃO, 1927 should be given. This generic name is currently listed as a junior synonym of *Ancistrotellus*. *Neomitobatoides* MELLO-LEITÃO, 1933, also considered by SOARES & SOARES (1948b) as a junior synonym of *Ancistrotellus*, should be removed to the synonymy of *Neoancistrotus*, since its type species also shares the character state of the glans penis just cited. Below an emended diagnosis is given to *Neoancistrotus*, with a list of the included species in the new concept of the genus. A systematic revision is likely to reduce the number of recognized species of the genus, presently in a confuse situation. Also a new definition for *Metamitobates* and a redescription of its type species are provided. All measurements are in mm.

Abbreviations used:

DZUFRJ = Depto de Zoologia, UFRJ
 MNRJ = Museu Nacional do Rio de Janeiro
 NHMS = Naturhistorisches Museum Senckenberg, Frankfurt a. M.
 ZMB = Zoologisches Museum Berlin
 ZMK = Zoologisk Museum Kopenhagen

Neoancistrotus MELLO-LEITÃO, 1927

Neoancistrotus MELLO-LEITÃO, 1927: 21; ROEWER, 1931: 121; MELLO-LEITÃO, 1931: 143; 1932: 397; 1935: 25; 1940b: 28.

Neomitobatoides MELLO-LEITÃO, 1933: 148 (type *N. rosai* MELLO-LEITÃO). NEW SYNONYMY.

Diagnosis. Mitobatines with bifurcate external apophysis in coxa IV of male, without internal apophysis; basitarsi I 3-segmented in both sexes and swollen in male; astragalus of metatarsus I twice as long as the calcaneus, others much longer; spination of pedipalpal tibia ectal and mesal lili; all segments of pedipalpus short and thick; fusion of scutal areas III and IV complete; eye mound high, armed with a pair of parallel spines, scutal area III armed with a pair of spines, much stouter in the female; other areas and free tergites unarmed; ventral plate of penis rectangular, without cleft; ventral branch of glans ("fan") cylindrical, medially bent, sharpened in the apex and provided with long sclerites; dorsal branch (stylus) of glans cylindrical, straight, armed with tubercles in distal part.

Type species: *Neoancistrotus thiacanthus* MELLO-LEITÃO, 1927.

Included species: *Ancistrotellus anomalus* MELLO-LEITÃO, 1935, *Ancistrotus bifurcatus* KOCH, 1839; *Ancistrotellus bipustulatus* MELLO-LEITÃO, 1940; *Ancistrotus bristowei* MELLO-LEITÃO, 1924; *Ancistrotellus dubius* MELLO-LEITÃO, 1932; *Ancistrotus gracilis* ROEWER, 1916; *Ancistrotellus guapimirim* SOARES & SOARES, 1946; *Ancistrotellus intermedius* MELLO-LEITÃO, 1936; *Ancistrotellus maculipalpi* SOARES & SOARES, 1948; *Ancistrotellus melacanthus* MELLO-LEITÃO, 1932, *Ancistrotellus nigroides* SOARES & SOARES, 1947; *Ancistrotellus obscurus* MELLO-LEITÃO, 1931; *Ancistrotellus perlatus* MELLO-LEITÃO, 1932, *Neoancistrotus rosae* MELLO-LEITÃO, 1933; *Neoancistrotus thiacanthus* MELLO-LEITÃO, 1927, *Ancistrotellus tijucae* B. SOARES, 1944.

Metamitobates ROEWER, 1913

Metamitobates ROEWER, 1913: 287; 1923: 510; MELLO-LEITÃO, 1923: 164; 1926: 34; ROEWER, 1931: 106; MELLO-LEITÃO, 1932: 400; 1935: 108; SOARES & SOARES, 1949: 232.

Neomitobates ROEWER, 1913: 289; 1923: 511; MELLO-LEITÃO, 1923: 164; 1926: 33; ROEWER, 1931: 106; MELLO-LEITÃO, 1932: 398; 1933: 148; 1935: 108. SYNONYMY by SOARES & SOARES, 1949.

Neobourguyia MELLO-LEITÃO, 1940a: 40. NEW SYNONYMY.

Discocyrtoidea (part): SOARES & SOARES, 1948: 563.

Despiroides (part): B. SOARES, 1944d: 168; 1945b: 347.

Ancistrotus KOCH, 1839a: 43, 45, 48 (non SERVILLE, 1832); 1839b: 14; BERTKAU, 1880: 104, 105; ROEWER, 1913: 293; 1916: 141; MELLO-LEITÃO, 1923: 165; 1924: 183; 1926: 55. NEW SYNONYMY.

Ancistrotellus ROEWER, 1923: 512 (nom. nov. pro *Ancistrotus* KOCH); 1927: 350; 1931: 110; MELLO-LEITÃO, 1932: 391; 1935: 24; 1936: 37; 1940b: 26; SOARES & SOARES, 1948b: 5; 1949: 226.

(Type *Goniosoma squalidum* PERTY, by subsequent designation, SOARES & SOARES, 1949). NEW SYNONYMY.

Type species. *Metamitobates genusulphureus* ROEWER, 1913; by monotypy (= *Goniosoma squalidum* PERTY, 1833).

Included species. Only the type species.

Diagnosis. Mitobatines with reduced armature in basal segments of leg IV of male; basitarsus I swollen and four-segmented in male, and three-segmented in female; first basitarsomere IV three times longer than the second; calcanei of all metatarsi much shorter than astragali; pedipalps relatively long and slender; distal mesal spine of pedipalpal femur reduced or wanting; spination of pedipalpal tibia mesal either IiIi or IiIi, ectal IiIi; area III of scute armed with a pair of spines; eye mound high, armed with a pair of parallel spines; ventral plate of penis piriform, without a median cleft. The penis resembles closely that of *Ischnotherus* KURY; differing only in the smooth stylus with swollen apex (provided with tubercles and afiled in *Ischnotherus*), but the monophyly of *Ischnotherus* + *Metamitobates* is not supported by sure derived character states, and perhaps this structure represents the ancestral plan, further highly modified in some other mitobatines. *Metamitobates* is not obviously more closely related to any mitobatine taxon, and it appears to be a precocious branch in the history of the subfamily. Distinguished from the other taxa with unarmed coxa and trochanter of male by the piriform scute outline, and from the other with piriform outline by the unarmed coxa and trochanter.

***Metamitobates squalidus* (PERTY, 1833) n. comb.**

Goniosoma squalidum PERTY, 1833: 202; Gervais, 1844: 107; SIMON, 1879: 233.

Ancistrotus squalidus: KOCH, 1839a: 43, fig 558; BERTKAU, 1880: 105; ROEWER, 1913: 293, fig. 117; MELLO-LEITÃO, 1923: 166.

Ancistrotellus squalidus: ROEWER, 1923: 512, fig. 640; Giltay, 1930: 239; ROEWER, 1931: 111; MELLO-LEITÃO, 1932: 394, fig. 259; B. SOARES, 1945c: 367; SOARES & SOARES, 1949: 229.

Ancistrotus urceolaris BERTKAU, 1880: 104. SYNONYMY by ROEWER, 1913.

Metamitobates genusulphureus ROEWER, 1913: 288; 1923: 510; MELLO-LEITÃO, 1923: 164; 1932: 400; SOARES & SOARES, 1949: 233. NEW SYNONYMY.

Neomitobates gracilipes ROEWER, 1913: 290, fig. 115; 1923: 511, fig. 638; MELLO-LEITÃO, 1923: 164; 1932: 399, fig. 263. NEW SYNONYMY.

Metamitobates gracilipes: SOARES & SOARES, 1949: 233.

Neomitobates venustus MELLO-LEITÃO, 1933: 148, figs. 13–14; 1935: 109. NEW SYNONYMY.

Metamitobates venustus: SOARES & SOARES, 1949: 233.

Neobourguyia rosai MELLO-LEITÃO, 1940a: 40. NEW SYNONYMY.

Despiroides rosai: B. SOARES, 1944: 168; 1945: 347.

Discocyrtoides rosai: SOARES & SOARES, 1948: 563.

Material examined. 1 male holotype of *Mitobates gradarius* SOERENSEN in *schedula*, W. Soerensen det. 16 November 1889 (ZMK), Nova Friburgo, RJ; 1 male holotype, 1 female paratype of *N. rosai* (MNRJ 139), Jacarepaguá, Rio, RJ (M. Rosa); 1 female (NHMS RII 874), Bahia, *A. squalidus*, ROEWER det. 1913; 2 females (ZMB 944) Brasil, *N. gracilipes* ROEWER det., 1916; 1 male (ZMB 945) Brasil, *M. genusulphureus* ROEWER det., 1916 (Langsdorff); 1 male, 1 female (DZUFRJ 0439) Varginha, Teresópolis, RJ, 24 September 1988 (G. Luigi/M. Raposo/I. Schloemp); 3 males, 2 females (DZUFRJ 0562) P. Nac. Serra dos Órgãos, Teresópolis, RJ, 25 December 1989 (A. KURY); 12 males, 9 females (DZUFRJ 0573) Faz. Vale da Revolta, Teresópolis, RJ, 11–18 January 1990 (A. Kury); 1 male, 1 female (ZMB 29856) same data; 4 males, 1 female (DZUFRJ 0629) same locality, 17 February 1990 (S. P. C. Silva/R. Sachsse). Most collected on mossy rocks and logs along streams.

Distribution. State of Rio de Janeiro, Brazil: Nova Friburgo, Teresópolis and Rio de Janeiro. ROEWER cited also the Bahia State, but this occurrence has never been confirmed.

Description

Male. Dorsal scute 4.40–4.61 long; cephalothorax 1.82–2.09 long, 2.83–2.95 wide; abdominal scute 2.41–2.79 long, 4.09–4.27 wide (measurements are minimum – maximum of adult specimens examined).

Dorsum (Figs. 1–2). Body outline hexagonal, widest at groove III. Mesotergum convex, limited by transverse grooves I and V, and divided by grooves II to IV in four areas; area I divided by a longitudinal median groove; area IV shorter, separated from area III by a sinuous groove; area II slightly projecting into area I. Anterior margin of cephalothorax thickened, with cheliceral sockets and with a median elevation provided with granules. Eye mound rising at middle of cephalothorax, not wide, moderately high, armed with a pair of blunt parallel spines. Area III armed with two paramedian blunt high spines very thickened at base. Granulations distributed irregularly all over mesotergum, including spines of area III and forming a definite row only in area IV. A few granulations on the posterior half of cephalothorax, just two in eye mound, behind the eyes. Lateral

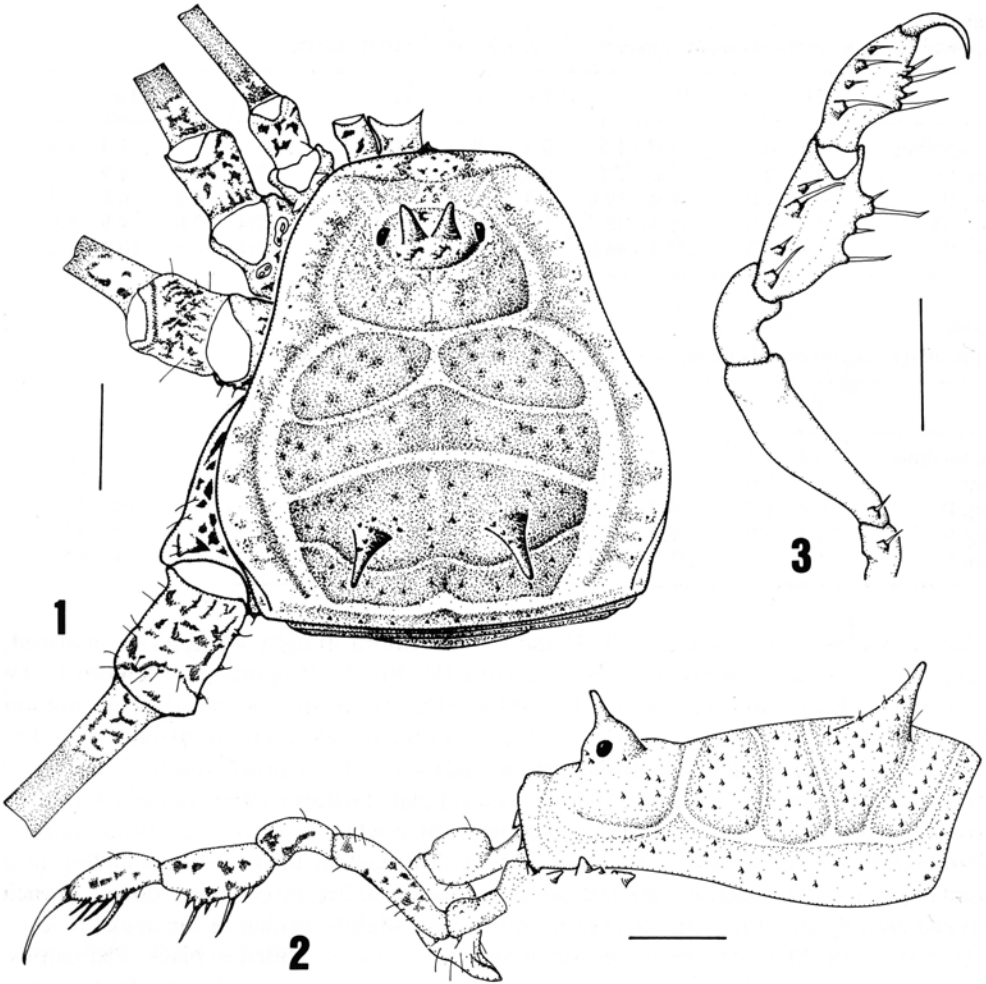


Fig. 1–3. *Metamitobates squalidus*. — Figs. 1 and 2: male DZUFJRJ 0439, habitus, 1 dorsal view; 2 lateral view. — Fig. 3: male ZMB 945, right pedipalpus, ectal view (scale bars = 1 mm).

margins of scute provided with a dozen granules forming a marginal longitudinal row. Posterior margin of scute and free tergites with a transverse row of few fine granules each. Anal opercle smooth. Venter: Free sternites, stigmatic area and coxae III–IV finely granular; coxae II and I provided with a row of setiferous tubercles, much stouter in coxa I. Deep suture in the stigmatic area.

Pedipalpus (Figs. 2–3). All segments much longer than wide, trochanter with a dorsal hump, armed ventrally with two setiferous tubercles. Femur armed with a small basal tubercle and a weak mesal distal spine (wanting in some specimens). Patella widened distally, unarmed. Tibia armed with four mesal (IiIi) and four ectal (IiIi) spines — about one half of the specimens examined showed mesal spination IiIi. Tarsus armed with three mesal (IiI) and four ectal spines (IiIi). Tarsal claw long, curved, smooth.

Table 1
Appendage measurements of *M. squalidus*. — Range of 10 adult males.

	Tr	Fe	Pa	Ti	Mt	Ta
Pedipalpus	0.5–0.7	1.0–1.2	0.8–0.9	1.0–1.1	—	1.4–1.6
Leg I	0.6–0.7	6.6–7.1	0.9–1.2	4.5–5.2	8.3–8.5	2.9–3.3
Leg II	0.8–1.0	18.9–19.6	1.4–1.8	15.7–16.1	23.5–24.0	6.8–7.3
Leg III	0.7–1.0	15.3–16.2	1.6–2.0	8.9–9.6	17.4–17.6	4.8–5.0
Leg IV	1.0–1.3	42.4–46.0	2.0–2.2	33.1–36.6	63.2–74.8	10.9–12.3

Table 2
Appendage measurements of *M. squalidus*. — Range of 10 adult females.

	Tr	Fe	Pa	Ti	Mt	Ta
Pedipalpus	0.4–0.5	1.2–1.3	0.6–0.8	1.0–1.1	—	1.2–1.5
Leg I	0.5–0.6	3.9–4.1	0.8–1.0	2.0–2.9	4.2–4.8	1.6–1.9
Leg II	0.8–1.2	10.4–12.1	0.9–1.4	8.1–9.0	12.0–13.8	4.9–5.3
Leg III	0.7–1.0	8.1–8.9	1.2–1.5	4.4–5.0	8.5–9.3	3.0–3.7
Leg IV	1.0–1.1	11.9–13.3	1.6–2.0	7.7–8.9	14.2–16.7	4.1–4.8

Legs. All legs very long, especially II and IV. All femora straight, all segments unarmed, except for small apical outer apophysis on coxa IV (Fig. 1). Proportion of femora I–IV is: 1:3:2:6. Basitarsomeres of leg I swollen (Fig. 4). Range of tarsal segmentation among males: 7/12–15/9–12/10–13. Ratio calcaneus/astragalus of metatarsi I–IV: 0.3/0.1/0.2/0.1. Tarsus III and IV with unpectinated claws, a tarsal process and no scopula.

Genitalia (Figs. 6–7). Penis 2.10 long. Ventral plate piriform with widened basal lobes provided with three setae; distal part armed with three setae; no cleft in the distal margin. Glans bifid; ventral branch (fan) spoon-like, with a median thickened axis ending in a pointed recurved projection; all fan bordered with smaller projections; dorsal branch (stylus) entirely smooth, without ornamentation and slightly swollen in the apex.

Coloration. Mesotergum and cephalothorax olive-green, shaded in black. Pedipalpus, chelicera, trochanters I–IV, anterior, posterior and lateral margins of scute, free tergites, anal opercles, coxae I–IV and stigmatic area all yellow with many minute black spots. Legs dark olive green, excepted for the patellae I–IV and both extremities of femora and tibiae, which are light yellow spotted in black. Stigmata white.

Female coloration. Body dark brown, cephalothorax and mesotergum (excepted the granulations) covered with a beautiful greenish yellow pigmentation (greatly lost in alcohol). Appendages dark brown with black reticle. Chelicera olive green with dense black reticle; palpus yellow with black spots. Free tergites I–II with a posterior light yellow border. Dorsal anal opercle brown with a median lighter oval spot; ventral anal opercle with a pair of such spots. Venter: Coxae and free sternites dark brown, these with a posterior yellow border.

Other sexual dimorphism in female. Abdomen of female is swollen and strongly convex, with paired spines of area III much stouter than those of eye mound. Legs much shorter, basitarsus I as thick as distitarsus (Fig. 5). Proportion of femora I–IV is 1:3:2:3. Ratio calcaneus/astragalus of metatarsi I–IV: 0.3/0.1/0.1/0.1. Range of tarsal segmentation among females: 6/10–13/9–11/9–13.

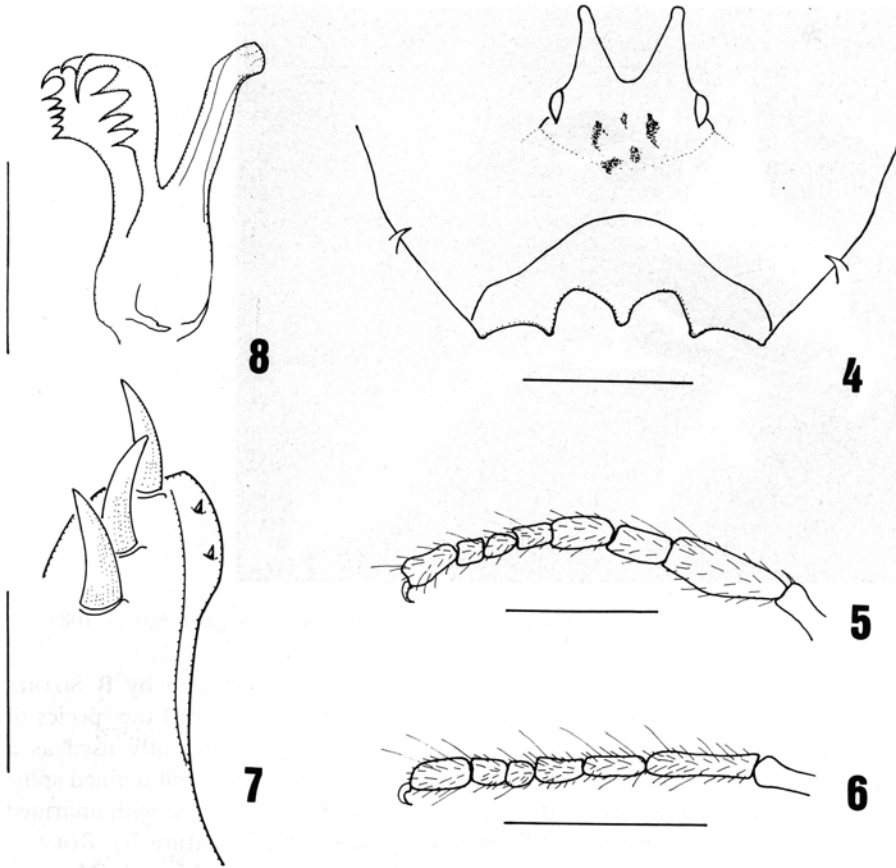


Fig. 4–8. *Metamitobates squalidus*. — Fig. 4: male DZUFRJ 0629, eye mound, frontal view. — Figs. 5 and 6: left tarsus of leg I, 5 male ZMB 945; 6 female ZMB 944. — Fig. 7: male DZUFRJ 0629, border of ventral plate of penis. — Fig. 8: male DZUFRJ 0629, glans (scale bars for Figs 4–6 = 1 mm, Fig. 7 = 50 μ m, Fig. 8 = 10 μ m).

Discussion

The trend to extreme simplification present in ROEWER's diagnoses makes relationships obscure. For him, the number of tarsomeres of leg I was "genus worthy", so all females of this species were called *N. gracilipes*, while the males were put in another genus, *Metamitobates*, characterized by 7 tarsomeres instead of 6 (see Table 3, feature A). As remarked in other occasion (KURY, 1990b), I regard the number of basitarsomeres as a reliable character (despite some variation), since comparable semaphoronts are considered, so the expression "tarsi I with 6 or more segments" can be changed to the more informative "tarsi I with 7 segments in male and 6 in female", or still better: "basitarsi I with 4 segments in male and 3 in female" — for Mitobatinae it makes no difference, since the distitarsus is three-segmented in all known species, but this use can be extended to other subfamilies.

The reduction of the pedipalpal femur spine attains various degrees among individuals. The types of *N. rosai*, with a small spine in the pedipalpal femur, were described by

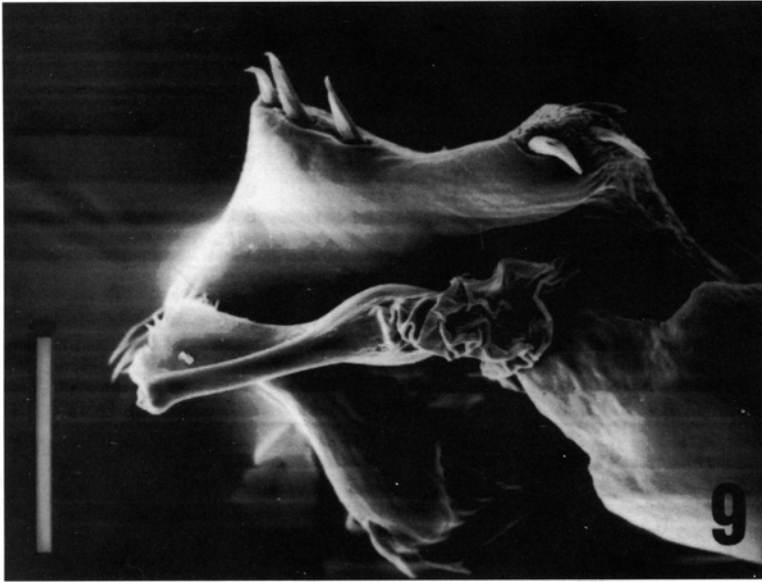


Fig. 9. *Metamitobates squalidus*. — Male DZUFRJ 0439, distal part of penis (scale bar = 100 μ m).

MELLO-LEITÃO as having the femur unarmed. The mistake was corrected by B. SOARES (1944d: 168), who failed, however, in recognizing its affinities and assigned the species to *Despiroides* MELLO-LEITÃO. So, the lack of this spine cannot be confidently used as a clear-cut characterization for the genus. This way, the individuals with a well-defined spine on pedipalpal femur were determined by ROEWER as *A. squalidus*, while those with unarmed femur were labeled as *Neomitobates* or *Metamitobates* (see Table 3, feature B). ROEWER overlooked KOCH's statement that the individual of *A. squalidus* in Munich Museum possessed unarmed pedipalpal femur (see KOCH, 1839a: 44) and considered the new material in NHMS as conspecific with PERTY's species in spite of the armed pedipalpal femur.

Table 3

Diagramatic view of the diagnostic features for the 5 canonic species to which different individuals of *M. squalidus* have been assigned. The different conditions are due to a A = sexual dimorphism; B = individual variation and C/D = subjective interpretation (see text for further explanation).

A: Tarsus I	B: Pedipalpal femur spine	C: Division of mesotergum	D: Granules in lat. marg.	Char/sp
6-segmented	absent	3 areas	2 rows	<i>Neomitobates venustus</i>
6-segmented	absent	3 areas	1 row	<i>Neomitobates gracilipes</i>
6-segmented	absent (KOCH) present (ROEWER)	3 areas	1 row	<i>Ancistrotellus squalidus</i>
7-segmented	absent	3 areas	2 rows	<i>Metamitobates genusulphureus</i>
7-segmented	absent (M-L) present (B. S)	4 areas	2 rows	<i>Neobourguyia rosai</i>

As most mitobatines, *M. genusulphureus* shows incomplete fusion of scutal areas III and IV. This caused the inclusion of this species either in Mitobatinae (three mesotergal areas) or in Bourguiyinae (four mesotergal areas), depending on subjective interpretation about the condition of these areas (see Table 3, feature C). As in other mitobatines, the granules of the lateral margin do not form definite rows, so, speaking of one or two rows as a diagnostic character (as in Table 3, feature D) is useless.

The material of ZMB labelled as *M. genusulphureus* (male) and *Neomitobates gracilipes* (females) seems to be co-specific with the types of *Neobourguyia rosai* (male and female) from Rio de Janeiro and with the specimens newly collected in Teresópolis. MELLO-LEITÃO described this species as *M. venustus* upon a female mistakenly cited as a male. This species fits well in ROEWER's description of *M. genusulphureus* from Bahia. From a careful reading of ROEWER's text, the only difference between the alleged species of *Neomitobates* from Santos (only females) and that of *Metamitobates* from Bahia (only males) rests on the segmentation of tarsus I.

There is no evidence to assign *N. cancellatus* to *Metamitobates*, excepted for the lack of the pedipalpal spine — a character variable and easily paralleled in many gonyleptid taxa. It may be related to some taxa presently placed in the heterogenous assemblage of *Discocyrtoides*.

By all explained above, it can be said that *M. squalidus* now loses its status of "ghost-species" and thus becomes a recognizable taxon, while the taxonomy of the Mitobatinae gets free of four superfluous names.

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