Труды Русского энтомологического общества. С.-Петербург, 2006. Т. 77: 274–283.
Proceedings of the Russian Entomological Society. St. Petersburg, 2006. Vol. 77: 274–283.

Adult and larval descriptions of a new termitophilous genus of the tribe Staphylinini with two species from South America (Coleoptera: Staphylinidae)

A.Yu. Solodovnikov

Описание имаго и личинки нового термитофильного рода трибы Staphylinini с двумя видами из Южной Америки (Coleoptera: Staphylinidae)

А.Ю. Солодовников

Field Museum of Natural History, 1400 S Lake Shore Drive, Chicago Illinois 60605, U. S. A.
E-mail: asolodovnikov@fieldmuseum.org

Abstract. A new apparently termitophilous rove beetle genus *Sedolinus* gen. n., with two very closely related species collected in the nests of termites in tropical South America, is described based on adults and larvae. *Sedolinus* undoubtedly belongs to the tribe Staphylinini and superficially resembles representatives of the subtribe Quediina. However, because of the very distinctive habitus of members of the new genus and puzzling combination of morphological characters in the lack of a robust phylogenetic classification for Staphylinini, the systematic position of this unusual genus within the tribe remains unresolved.

Key words. New genus, new species, Staphylinini, adults, larvae, morphology, termitophile, termites, *Nasutitermes*, South America.

Резюме. На основании изучения имаго и личинки описан новый, по-видимому, термитофильный род жуков-стафилинид, *Sedolinus* gen. n., с двумя очень близкими новыми видами из гнезд термитов в тропиках Южной Америки. Новый род относится к трибе Staphylinini и внешне сходен с представителями подтрибы Quediina, однако очень своеобразный облик и необычное сочетание у видов нового рода морфологических признаков при отсутствии хорошо обоснованной филогенетической системы Staphylinini не позволяют пока с точностью определить его систематическое положение.

Ключевые слова. Новый род, новые виды, Staphylinini, имаго, личинка, морфология, термитофил, термиты, *Nasutitermes*, Южная Америка.

Introduction

In the course of my current work on the staphylinine subtribe Quediina, in the collection of the Field Museum, I came across a series of odd-looking, apparently termitophilous rove beetles from South America, which habitually resembled Quediina (and were preliminarily identified by the curator, Alfred

Newton, as a new genus of Quediina). Detailed examination of this material confirmed A. Newton's identification of this taxon as a new genus of Staphylinini (here named *Sedolinus* gen. n.), and revealed that the series includes two very similar species. Also doubts arose about the affinity of the new genus to Quediina. These doubts come not only from the re-examination of the adults and larvae of the beetle itself, but also from the emerging results of my on-going phylogenetic analysis of the world Quediina and allied groups. This analysis indicates that the subtribe Quediina as it stands now (e.g. Herman, 2001; Newton, Thayer, 2003; and others) is a polyphyletic assemblage of various lineages of Staphylinini, which in some cases are united by nothing more than superficial resemblance. Namely, the adults of "Quediina" have the pronotum with characteristically deflexed hypomera and head with some kind of "infraorbital ridges" [which are not always homologous to the true infraorbital ridges sensu Smetana, Davies (2000)], whereas larval diagnoses of Quediina (as well as of other subtribes of Staphylinini) do not exist at all.

Under the newly emerging phylogenetic framework, adults of *Sedolinus* fit neither a lineage of "true Quediina" (a big group of mostly north-temperate *Quedius* Stephens, 1829 and some other allied genera), nor a species-rich monophylum of "Quediina" from the south-temperate regions (genera *Cheilocolpus* Solier, 1849, *Loncovilius* Germain, 1903, *Natalignathus* Solodovnikov, 2005, *Quediomimus* Cameron, 1948, and some other described or yet undescribed taxa), nor any other of the well supported groups of Staphylinini. Instead, in the preliminary analyses based on the morphology of adults, the position of *Sedolinus* within Staphylinini remains obscure and depends to a high degree on particular hypotheses of primary homology for certain characters, as well as on the variation in the taxon/character sampling for the whole cladistic analysis. (This is also true for some other less specialized genera of Staphylinini currently placed in Quediina or in other subtribes). Larvae of *Sedolinus*, although being unambiguously Staphylinini-like, are also special, not resembling any genus of Staphylinini for which the larvae are known.

Pending a much more rigorous phylogenetic analysis of Staphylinini as a whole, a proper placement of *Sedolinus* within the system of the tribe now seems impossible. A rather high degree of specialization of both larvae and adults of the new genus, apparently representing an adaptation to living with termites, mask the plesiomorphic conditions for many morphological features and make its phylogenetic assessment especially difficult. Although it is a challenge to formally name and describe new taxa without resolving their systematic position, this unique genus of termitophilous Staphylinini should be brought to a broad scientific community and made easily available for further study. Therefore, here it is named and described, as well as its two species, also new to science.

Material and methods

Holotype and three paratypes of *Sedolinus quediosimilis* are deposited at the Museu de Zoologia da Universidade de São Paulo, Brazil, São Paulo, São Paulo (MZSP). Holotype of *Sedolinus trinidadus* and all other paratypes of the new taxa are retained in the Field Museum of Natural History at Chicago (FMNH) or, under the kind permission of the Field Museum curators of Coleoptera, are shared with the following institutions: BMNH – Natural History Museum, London; NHMW – Naturhistorisches Museum Wien, Vienna; ZIN – Zoological Institute of the Russian Academy of Sciences, St. Petersburg.

Adult and larval specimens were examined using a dissecting (Leica®MZ12.5) microscope. Adults were mostly examined as dry pinned specimens, but a few of them were macerated in 10 % KOH, rinsed, disarticulated and examined as wet preparations in glycerine. One disarticulated adult beetle was earlier bleached by Alfred Newton by the method described in Solodovnikov, Newton (2005). Of the two larvae, one was preserved in 70 % alcohol, the other was macerated in 10 % KOH, rinsed in distilled water, dehydrated in acetone, and partly disarticulated and placed in mineral oil by Alfred Newton. Both larvae were examined immersed in mineral oil. All line illustrations were made using a camera lucida on the microscope.

Measurements of adults and larvae were taken with an ocular linear micrometer and are given in millimeters. *Measurements for adults* are abbreviated as follows: HL – head length (from apex of clypeus to neck constriction); HW – head width (maximal, including eyes); PL – pronotal length (along median

line); PW – pronotal width (maximal); EL – elytral length (from humerus to most distal apical margin; best taken from lateral view of the elytron); EW – combined width of both elytra (maximal, with elytra closed along suture); total length of the body was measured from tip of mandibles to apex of abdomen. *Measurements for larvae* are abbreviated as follows: HL – head capsule length (from apex of nasale to occipital foramen along dorsal median line of head); HW – head capsule width (maximal); PL – length of protergal sclerite (from apical carina to basal carina) along median line; PW – maximal width of protergite; ML – length of mesotergal sclerite along median line (from apical carina to basal carina); AW – maximal width of abdomen (at abdominal segment II). Total length of the body was measured from apex of nasale to apex of abdomen.

Chaetotaxy of the larvae examined here is described and mapped based on the same principles used for the description of the larvae in Solodovnikov, Newton (2005) and Solodovnikov (2005). But since the homology of many larval setae among these taxa is yet unclear**,** the same numbers of some chaetotaxic features in the descriptions of the larvae of *Arrowinus* by Solodovnikov, Newton (2005), *Nataligmathus* and *Atanygnathus* by Solodovnikov, 2005, and also of *Sedolinus* here do NOT indicate homology! Based on the similarity of the chaetotaxic patterns within some serially homologous body segments of the examined larvae, serial homologies of the chaetotaxic features of *Sedolinus quediosimilis* sp. n. were hypothesized. Serial homology is established only within the following groups of body segments, but not between them: 1) for the tergites of meso-, metathorax and abdominal segments I–X; 2) for the sternites of the abdominal segments II–X. For the coding of chaetotaxic elements across serially homologous body parts, a segment with the most complete chaetotaxy is chosen as a starting point.

Genus *Sedolinus* Solodovnikov, gen. n.

Type species *Sedolinus quediosimilis* sp. n.

Diagnosis. *Sedolinus* seems to be a rather specialized genus. There is no doubt, however, that it belongs to the tribe Staphylinini of the subfamily Staphylininae. Adults of *Sedolinus* share with other Staphylinini the following diagnostic combination of character states: no frontoclypeal suture; mandibles without mola; no pronotal postcoxal processes (only weakly sclerotized translucent postcoxal appendages) [synapomorphy of Staphylinini]; distance between antennal insertions longer than distance from antennal insertion to eye; antesternal plates absent; elytra without epipleural suture; male and female laterosclerites IX somewhat inflated and widely separated by tergite X [synapomorphy of Staphylinini]; aedeagus with parameres fused into one lobe [synapomorphy of Staphylinini]. Larvae of the new genus, like other Staphylinini, have: four pairs of stemmata [synapomorphy of Staphylinini]; four-segmented antennae; large sensory appendage of antenna situated anteriorly [synapomorphy of Staphylinini]; head with nasale; tarsungulus with three pairs of spines [synapomorphy of Staphylinini]; no trichobothria.

It is noteworthy that, unlike most (but not all) other Staphylinini, adults of the new genus have a very weakly defined neck constriction with traces of only one head ridge [which I believe is homologous to the nuchal ridge in Smetana, Davies (2000)], the other usual head ridges of Staphylinini being absent. Also, unlike many (but not all) Staphylinini, they do not have prototergal glands (or at least their cuticular manifestations) on abdominal tergite I, and, in females, they do not have styli. Larvae of *Sedolinus* have undivided abdominal tergites (except a narrow ecdysial line on abdominal tergite I), and no frayed setae, their urogomphi are extremely reduced. Such features are unusual for Staphylinini.

Such a peculiar combination of character states and the overall quite distinctive habitus make the new taxon a very easily distinguishable genus of Staphylinini, but do not provide a clue for its proper assignment to any of the existing subtribes. Superficially, *Sedolinus* resembles a quediine rove beetle. Such resemblance is due to the shape of the pronotum with anterior angles protruding over the anterior margin of the prosternum, and hypomera deflected inwards. Even given some ambiguity of the current definitions of Quediina and other big subtribes of Staphylinini [for more details see Solodovnikov (2005); Solodovnikov, Newton (2005), and "Introduction" above in this paper], there are no other features supporting the affiliation of the new genus to Quediina. And there are no character states linking it to any other subtribe. The systematic position of *Sedolinus* within Staphylinini remains to be resolved.

Description. A d u l t s . Habitus as in Fig. 1. Body length 4.7–5.5 mm.

Head capsule rounded, slightly oblong, with poorly indicated nuchal constriction (Figs 1–3), with its dorsal basal part concealed under anterior margin of pronotum; no epistomal suture; basal part latero-ventrally with nuchal ridge (NR in Figs 2 and 3) distinct at sides only, dorsally obliterate; other ridges usually typical for Staphylinini at base of head capsule (e.g. postgenal, ventral basal, etc.) absent; postmandibular ridge absent. Antennal insertions at anterolateral margins of frons, anterior to eyes, not concealed from above; distance between them longer than distance from either insertion to margin of eye. Antennae with all segments slightly dorso-ventrally compressed; 1st segment considerably wider than next segments; 2nd and 3rd elongate, about same length; next segments shorter; pre-apical segments with somewhat attenuate anterior angle; last segment about as long as two preceding segments combined. Mandibles (Figs 2, 3, 7) moderately long, basal two thirds rather broad, apex sharp and narrow, without distinct groove or ridge dorsally or laterally, with blunt broad tooth on inner side (tooth narrower on left mandible, broader on right mandible, thus mandibles are asymmetrical), and elongate prostheca narrowly attached near base of mandible (PT in Fig. 7); mola not developed. Labrum (Figs 1–3) slightly transverse, with weakly sclerotized membranous apical margin and slightly emarginate apex. Maxilla (Fig. 5) with lacinia and galea densely hairy at apex; stipes with clear sutures; maxillary palpus four-segmented, last segment slightly shorter and thinner than penultimate, fusiform, with broad base and slightly truncate apex, glabrous. Labium (Figs 3, 6): mentum (MT in Fig. 3) large, slightly transverse, with one pair of setae anterolaterally; ligula small, entire; labial palpus three-segmented, with all segments oblong, last segment about as long as penultimate, slightly fusiform with slightly truncate apex (Fig. 6).

Pronotum with anterior angles strongly projecting anteriad over apical margin of prosternum; pronotal hypomera strongly inflected inwards, not visible in lateral view; superior marginal line of pronotum (SML in Fig. 8) well developed throughout its whole length, not deflexed ventrad; inferior marginal line (IML in Fig. 8) obsolete (tracked by inferior margin of pronotal hypomeron) shorter, not reaching anterior angle of pronotum; pronotal postcoxal processes (PCP in Fig. 8) narrow, semi-translucent, weakly sclerotized. Prosternum with narrow strongly transverse basisternum (BST in Fig. 8), without longitudinal carina; furcasternum (FST in Fig. 8) longer than basisternum in median part, without carina; sternacostal ridge (SCR in Fig. 8) weak. Notosternal sutures (NSS in Fig. 8) well developed. Mesothoracic spiracles (SP in Fig. 8) with relatively small narrow peritreme. Mesosternum without medial carina, with distinct but short and obtuse mesosternal process (Fig. 10). Mesosternal-metasternal suture (MMS in Fig. 10) well developed throughout its whole length. Mesoscutellum with two transverse carinae: one (C1 in Fig. 9) very close to base, another (C2 in Fig. 9) close to middle. Elytra (Fig. 9) relatively short, with rounded humeri and well developed short subbasal ridge (SBR in Fig. 9) immediately adjacent to elytral articulation and extending anteriad to anterior margin of elytron; epipleural part gradually deflexed, lacking epipleural ridge; sutural angle very distinct. Hind wings fully developed. Metaventrite well developed, with deep mesocoxal acetabuli (MCA in Fig. 10) margined by distinct ridge (R in Fig. 10) only at sides. Legs relatively short, slender; anterior leg (Fig. 8) slightly shorter and thicker than middle and hind legs (Fig. 10). Anterior and middle (smaller) coxae large, conical, contiguous. Hind coxae slightly transverse, contiguous at base. Femora without spines. Anterior tibia densely setose at inner margin, with spines only at apical margin; middle and posterior tibiae setose, with few spines apically. Tarsal formula 5-5-5; claws moderately long, arcuate; pair of small empodial setae (shorter than claws) on each tarsus.

Abdomen more or less parallel-sided along most of its length, narrowed posteriad (Fig. 1), slightly flattened dorsoventrally; abdominal tergite I (ATG I in Fig. 9) without external cuticular manifestation of an apparently absent prototergal gland (no indentation [acetabulum] at each side of tergite, no groups of setae at sites of their potential location). Each of first eight segments bearing one pair of spiracles (SP in Figs. 9, 11, 13), at side of tergite on segments I and II and laterally in tergite on segments III–VIII. Segments III–VI each with two pairs of elongate paratergites (PTG in Fig. 11), segment VII with two pairs of paratergites, basal short one and apical long one (PTG in Fig. 13); segment VIII without paratergites; tergite III with two basal carinae: anterior and posterior (CCIII in Fig. 11), both situated well anterior to spiracles; tergites IV–VII with anterior carina only (C in Fig. 11); sternite III with basal carina medially slightly angulate (C in Fig. 12); basal carinae of other sternites more or less straight (similar to carina (C) of sternite IV in Fig. 12). Sternite VIII with very shallow apical emargination in males (Fig. 14), simple in females. Abdominal intersegmental membranes attached preapically and having a pattern of small irregular rounded sclerites. Eversible defensive glands between tergites VIII and IX as found in many Staphylinini were not detected. Male (Fig. 15) and female (Fig. 16) tergite IX consisting of two broad, inflated but somewhat flattened lateral sclerites (LSIX in Figs 15, 16), apically obtuse, widely separated dorsally by tergite X (TGX in Figs 15, 16) and ventrally by sternite IX (STIX in Fig. 15) in males or valvifers (first gonocoxites) (VF in Fig. 16) in females. Male sternite IX slightly elongate, more or less symmetrical, with broad and very short basal portion. Aedeagus (Figs 17, 18): median lobe elongate, narrowing apically, slightly asymmetrical (in dorsal or ventral view), with large bulbous basal part; paramere broader at base, gradually narrowing apically, without peg setae, attached to median lobe at base only, apically not extending beyond apex of median lobe; internal sac with pair of large heavily sclerotized pieces (ISP in Figs 17, 18). Aedeagus rotated at 90° in the abdomen in repose: its dorsal (parameral) side facing left laterally. Female external genitalia consisting of a pair of large basal valvifers (VF in Fig. 16) and short coxites (second gonocoxites) (CX in Fig. 16), styli absent; female tergite X (TGX in Fig. 16) symmetrical, large.

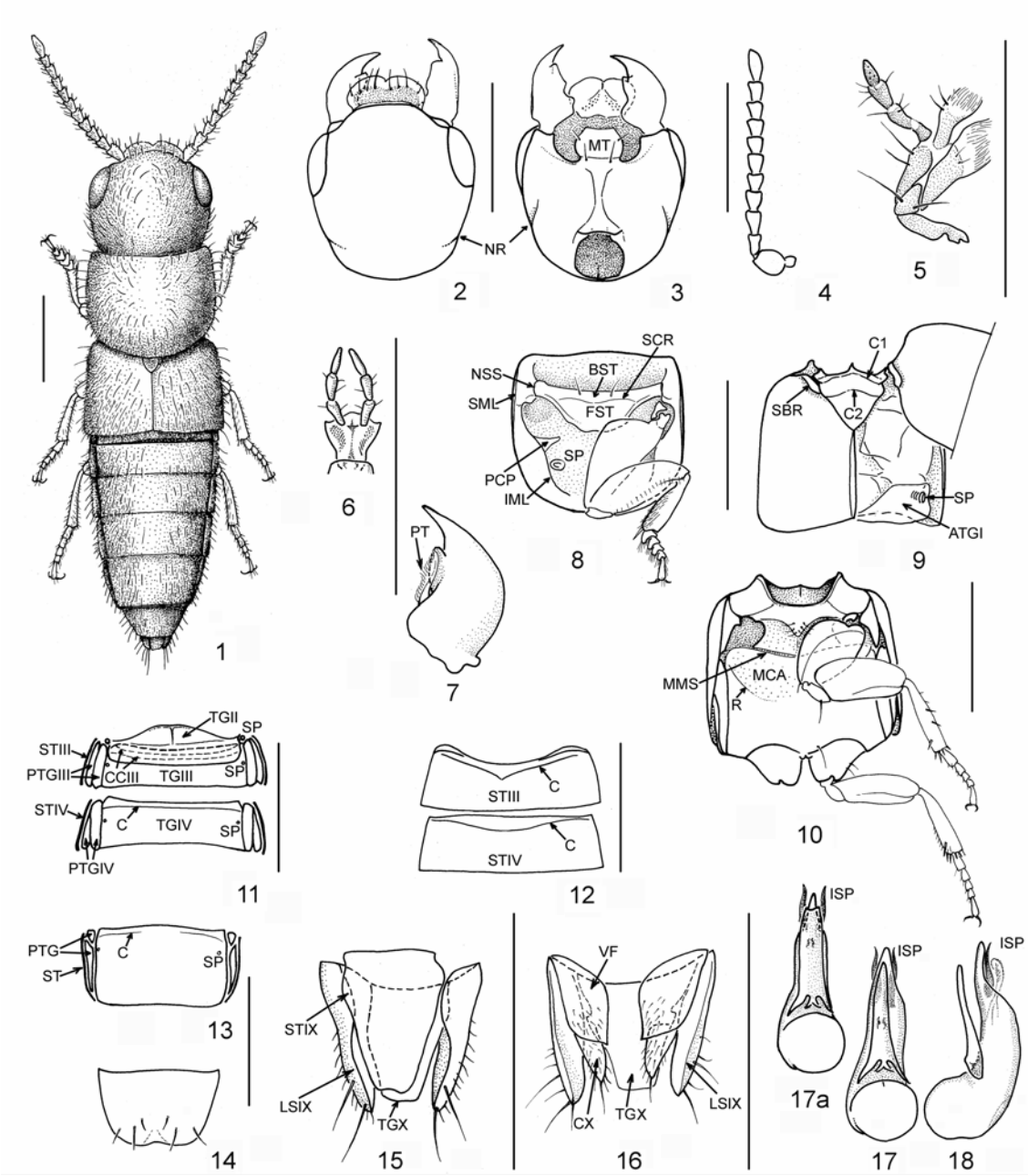
L a r v a (presumed third instar larva of *Sedolinus quediosimilis*).

(Grounds for larval identification are explained below in the respective species section).

Habitus as in Fig. 19. Body length 4.5–4.6 mm.

Head (Figs 19, 21, 22) prognathous, short, with broadly rounded sides, indistinct neck constriction and large occipital foramen. Dorsal ecdysial lines distinct, their anterior arms slightly curved, each about as long as epicranial stem; ventral ecdysial lines distinct only at base of head capsule, short stem and anterior arms extending to ventral tentorial pits (TP in

Fig. 22). Four pigmented stemmata (Fig. 20, and ST in Fig. 22) clustered together on each side. Chaetotaxy of head capsule as in Figs 21, 22. Epicranial gland absent, or at least not distinct. Labrum completely fused to head capsule, forming well-developed nasale with seven hardly distinct, very obtuse teeth. Antenna (Figs 21, 22) four-segmented, relatively short; segments I and II without setae or visible pores, segment III with one large sensory appendage (SA in Figs 21, 22) situated anteriorly near apex of the segment, and with three long setae near apex in coronate arrangement; segment IV with three long setae in coronate arrangement near apex and cluster of three shorter styli on apex. Mandibles moderately long, symmetrical, with sharp apex and relatively broad base, without teeth internally (Figs 21, 22). Maxilla (Fig. 22) with large articulated mala (MA), and three-segmented maxillary palpus; cardo with one seta; stipes with several setae. Mouth cavity relatively small, transverse, with pair of setose brushes at anterior margin. Labium (Fig. 22) small; prementum and mentum (MT in Fig. 22) each with two pairs of setae ventrally; labial palpi two-segmented, glabrous, apical segment about as long as penultimate. Ligula very small, narrow.



Protergite with rather poorly visible but distinct midlongitudinal ecdysial line, without anterior or posterior carinae, with chaetotaxy as in Fig. 25, with cuticular manifestation of some possibly glandular organs (?G in Fig. 25) which are probably homologous to similar organs known on protergite of some other Staphylinini as "gland" in Kranebitter and Schatz (2002), "campaniform sensilla" in Schmidt (1994), and "coeloconic sensilla" in Staniec (2004). Cervicosternum (CS in Fig. 24) weakly sclerotized, hardly distinct, with pair of small setae near anterior margin; no episternal sclerites.

Meso- and metatergite (Fig. 26) with poorly visible midlongitudinal ecdysial line and similar chaetotaxy, with distinct but weak anterior carina (C in Fig. 26), without distinct posterior carina, with pair of pretergal glands (PTG in Fig. 26). Ventral side of meso- and metathorax without sclerotized episterna or setae. Mesothoracic spiracle without spiracular sclerite.

All setae of thorax simple (no frayed setae).

Legs five-segmented (Fig. 23), moderately long and relatively slender, all three pairs equal in structure: coxa large, about as long as trochanter and femur combined; tibia slightly shorter than femur, without tibial comb; tarsungulus (TU in Fig. 23) short, very much shorter than tibia, with three spines: one smaller dorsal, and two larger lateral ones.

Abdomen 10-segmented; tergal and sternal sclerites, and laterosclerites hardly distinct from rest of the cuticle. All setae of abdomen simple (no frayed setae). Segments VIII–X without laterosclerites; segment IX with extremely short, highly reduced one-segmented urogomphi (UG in Figs 29 and 30). Segment X (pygopod) very short, cylindrical, with few setae as in Figs 29, 30, its apex with four eversible membranous lobes (ML in Figs 29, 30) without hooks. Spiracles of segment I slightly larger than those of segments II–VIII, all spiracles (SP in Figs 28, 30) rounded, situated in the membrane outside tergites (TG in Figs 28, 30). Tergite I (Fig. 27) with visible midlongitudinal ecdysial line and weak but distinct anterior carina (similar to those of meso- and metatergites, C in Fig. 27), with few setae along its sides and posterior margin; tergites II–VIII with same pattern of chaetotaxy as tergite I, but without distinct midlongitudinal line of weaker sclerotization and without carinae; tergites IX and X with reduced chaetotaxy compared to preceding tergites (Fig. 29). All abdominal tergites with more or less distinct pretergal glands (PTG in Figs 27, 29). Sternite I weakly sclerotized and without setae; sternites II–VII with chaetotaxy pattern as in Fig. 28; sternites VIII and IX with reduced set of setae (Fig. 30); all sternites with midlongitudinal line of weaker sclerotization. Laterosclerites (LS in Fig. 28) of segments II–VII of nearly identical structure and chaetotaxy.

Distribution and bionomics. The new genus, even based on fragmentary data, has a relatively wide range in tropical South America (for details see species sections below). All specimens of both known species were collected in termite nests.

Etymology. The generic name is derived from the combination of the Latin words "sedo" (smooth) and "staphylinus" (rove beetle). It refers to the smooth surface of the body of the new genus. It is a noun of masculine gender.

Taxonomic placement and discussion. Based on the exclusive and repetitive findings of both species of *Sedolinus* in the nests of termites (Insecta: Isoptera), and on some morphological features which can be interpreted as possibly adaptive to living with termites, one can assume that the new genus is termitophilous, i.e. its biology is closely associated with termites and their habitats. The nature and other details of this association remain to be unknown. As summarized by Seevers (1957) and Kistner (1979, 1982), there are two major morphological adaptative types among termitophilous Staphylinidae: "physogastric" and "limuloid". Neither adult nor larva of *Sedolinus* is physogastric, nor has a truly limuloid body

---

Figs 1–18. *Sedolinus quediosimilis* sp. n. (1–17, 18) and *S. trinidadus* sp. n. (17a), adults. 1 – habitus dorsally; 2 – head dorsally (maxillae, antennae and parts of labium removed); 3- same ventrally; 4 – right antenna dorsally; 5 – right maxilla ventrally; 6 – labium ventrally (without mentum); 7 – left mandible ventrally; 8 – prothorax ventrally (right leg removed); 9 – meso- and metathorax and abdominal tergite I dorsally (right elytron opened, hind wings removed); 10 – meso- and metathorax ventrally (right legs removed); 11 – sclerites of abdominal segments II–IV dorsally; 12 – sternites of abdominal segments III, IV; 13 – abdominal segment VII dorsally; 14 – sternite of male abdominal segment VIII; 15 – male terminalia ventrally; 16 – female terminalia ventrally; 17, 17a – aedeagus dorsally (parameral side); 18 – aedeagus laterally. ATG – abdominal tergite; BST – basisternum; C – carina; CC – carinae; CX – coxites (second gonocoxites); FST – furcasternum; IML – inferior marginal line; ISP – internal sac pieces; LS – laterosclerites; MCA – mesocoxal acetabulum; MMS – meso-metasternal suture; MT – mentum; NR – nuchal ridge; NSS – notosternal suture; PCP – postcoxal process; PT – prostheca; PTG – paratergites; R – ridge; SBR – subbasal ridge; SCR – sternacostal ridge; SML – superior marginal line; SP – spiracle; ST – sternite; TG – tergite; VF – valvifers; I–X – numbers of abdominal segments from which particular structures are derived; 1, 2 – numbers of carinae. Scale bars = 1 mm.

shape. However, in both known life stages, the body is rather robust, the base of the head is concealed under the pronotum, the appendages are relatively short, and the long setae on the body surface so common in other Staphylinini are absent. These features of *Sedolinus* are seemingly defensive and fit the defensive "limuloid"-type of morphological adaptation. Termites possess a voluminous fauna of commensalous Staphylinidae (Seevers, 1957; Kistner, 1979, 1982; and others), but no representative of Staphylinini (or Staphylininae), as far as I am aware, was hitherto known among their obligatory, more or less specialized guests. *Sedolinus* is thus the first known such representative of Staphylininae.

***Sedolinus quediosimilis* Solodovnikov, sp. n.**

Diagnosis. For differences from the very similar *Sedolinus trinidadus* sp. n. see description of that species below.

Description. A d u l t s (Figs 1–19). Dark blackish brown, with pale mouthparts, antennae and legs; elytra narrowly brown along suture; surface moderately glossy, densely covered with short setae and very short and very dense pubescence. Body rather parallel-sided along most of its length, robust, with large broad-necked head and relatively short legs. Habitus as in Fig. 1. Length of body 5.2–5.6 mm.

Head capsule slightly wider than long (HL = 1.00–1.04; HW = 1.18–1.24); eyes well developed, only slightly convex, slightly longer than temples (in lateral view).

Pronotum slightly transverse (PL = 1.06–1.14; PW = 1.28–1.32), slightly wider than head, widest just behind middle, slightly narrowing anteriad, with distinct anterior angles and very broadly rounded posterior angles; elytra relatively short (EL = 1.00–1.08; EW = 1.40–1.46), with sides slightly diverging posteriad; wings well developed. Abdominal tergite VIII with narrow palisade fringe. First four segments of anterior tarsi equally dilated in both sexes, with pale tenent setae on the underside, and with regular moderately dense setation overall; middle and posterior tarsi simple, not modified, sparsely setose, with scattered setae.

Aedeagus as in Figs 17, 18.

In addition, adults of *Sedolinus quediosimilis* can be recognized by the characters given in the generic description.

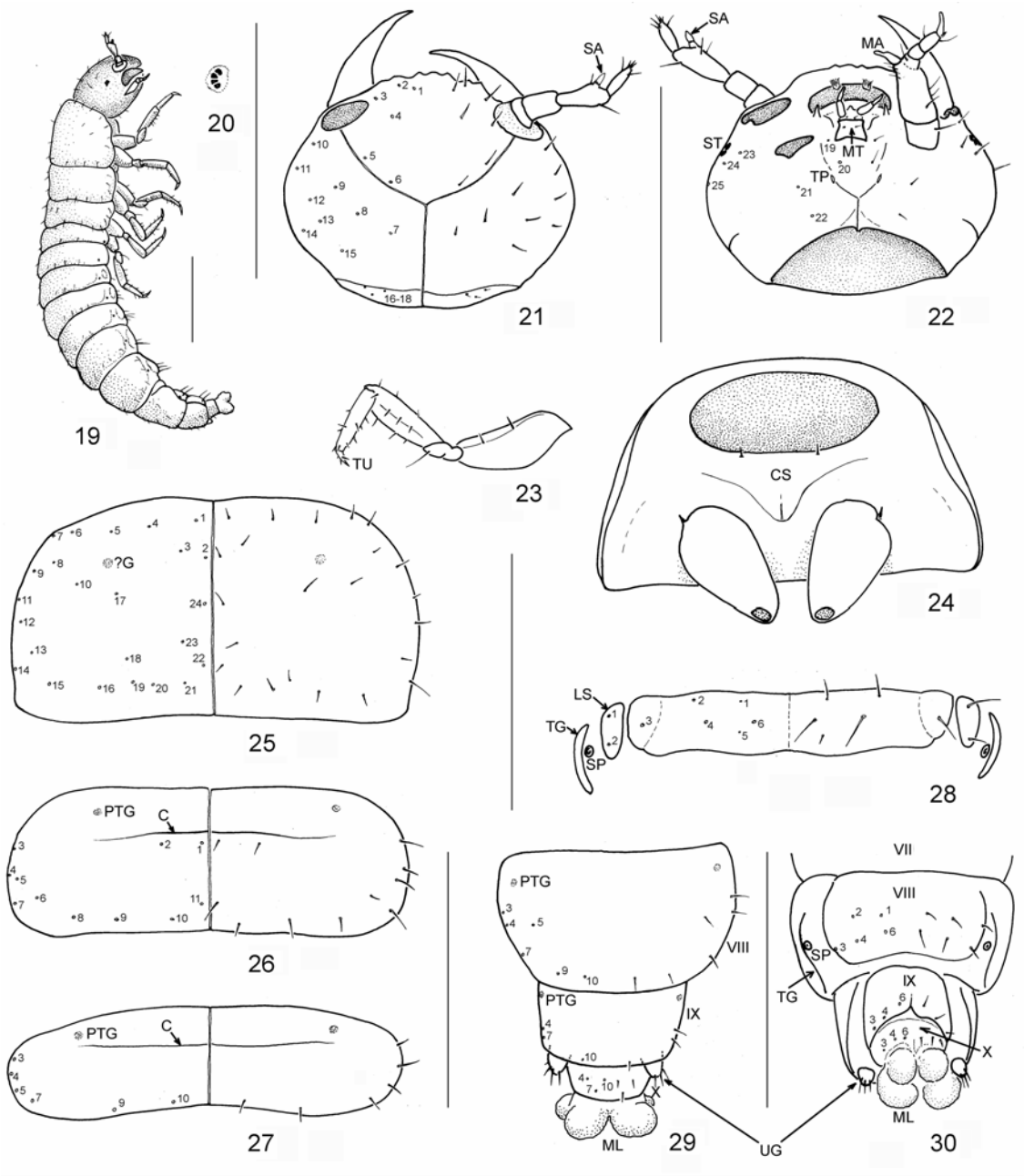
Material. B r a z i l . Rondônia: H o l o t y p e : ♂, "Brazil: Rondônia, Fazenda Rancho Grande nr Cacaolandia, 10 January 1996, ex nest T-6100 Coll. D.H. & A.C. Kistner No. 5338/ FMNH-INS 0000 009 176" (MZSP). P a r a t y p e s . 1 ♂, 2 ♀, same data, but FMNH-INS 0000 009 177–179 (MZSP); 6 ♂, 4 ♀, same data, but FMNH-INS 0000 009 179–189 (FMNH); 1 ♂, 1 ♀, same data, but FMNH-INS 0000 009 190, 191 (BMNH); 1 ♂, 1 ♀, same data, but FMNH-INS 0000 009 192, 193 (NHMW); 1 ♂, 1 ♀, same data, but FMNH-INS 0000 009 194, 195 (ZIN); 1 ♂, 2 ♀, same data, but FMNH-INS 0000 009 196–198 [partly disarticulated specimens preserved in 70 % alcohol] (FMNH);1 ♂, same locality, but "30 December 1995 ex nest T-6091 Coll. D.H. & A.C. Kistner No. 5300"/ FMNH-INS 0000 009 199 (FMNH); 1 ♂, 1 ♀, same locality, but 23 October 1993/ ex nest no. T-6086 Coll. D.H. & A.C. Kistner No. 6270/ FMNH-INS 0000 009 200, 201; 1 ♀, same locality, but 14 October 1993, ex nest no. T-6076 Coll. D.H. & A.C. Kistner No. 6238/ FMNH-INS 0000 009 202 (FMNH); São Paulo: 1 ♂ [partly disarticulated, on slide], 1 ♀ [in 70 % alcohol], also 2 larvae [one on slide, another in 70 % alcohol; both larvae not included in paratypes!], Sta. Rita Passo Quatro, S. P. [São Paulo], 16 July 1998, Coll. A.M. Costa-Leonardo, with *Nasutitermes* sp. (in nest)/ FMNH-INS 0000 009 203–206 (FMNH).

Identification of the larvae. Two larvae from the above listed material are identified as *Sedolinus quediosimilis* by association with adults. They were taken with two adults of that species at the same collecting event. Both larvae are conspecific, undoubtedly belong to Staphylinini, and, as for adults of *Sedolinus quediosimilis*, they do not obviously belong to any known group within the tribe. Some morphological adaptations of the larvae are parallel to those of adults: robust body; relatively short appendages; lack of long setae; head with broad, weakly defined neck, and at base concealed under anterior margin of pronotum. Both larvae are of about the same size as the respective adults. Thus, they are apparently of the last (presumed third) instar.

L a r v a e (Figs 20–30). Body elongate but robust, in dorsal view more or less parallel-sided along thorax and base of abdomen, gradually narrowing posteriad along rest of abdomen, the latter slightly dorso-ventrally compressed. Coloration of body pale brownish, thoracic and abdominal sclerites and legs only slightly darker than rest of body; mandibles darker, brown. Surface of body glossy, smooth. Overall length 4.5–4.6 mm; maximum width (in the region of abdominal segment II) 1.50 mm. Legs relatively short, slender. Head slightly transverse (HL = 0.88; HW = 1.10); prothorax transverse (PL = 0.70; PW = 1.40); metathorax as long as mesothorax (ML = 0.50), much wider than long, each shorter than prothorax.

Additionally, larvae of *Sedolinus quediosimilis* can be recognized by the characters given in the generic description.

Distribution and bionomics. Known from two localities in south-central and south-western Brazil, respectively. All specimens were collected in termite nests. Termites collected from the nests T-6100 and T-6086 were identified as *Nasutitermes surinamensis* (Holmgren) by R. Constantino (1998) and



Figs 19–30. *Sedolinus quediosimilis* sp. n., larva. 19 – habitus laterally; 20 – stemmata (of the right side of head capsule); 21 – head dorsally (left antenna removed); 22 – head ventrally (right mandible and maxilla removed); 23 – right anterior leg anteriorly; 24 – prothorax ventrally; 25 – protergite; 26 – mesotergite; 27 – abdominal tergite I; 28 – abdominal sternite and laterosclerites II (with tergite II visible); 29 – apical part of abdomen dorsally; 30 – same ventrally. CS – cervicosternum; ?G – presumed gland; LS – laterosclerite; MA – mala; ML – eversible membranous lobes; MT – mentum; PTG – pretergal gland; SA – large sensory appendage; SP – spiracle; TG – tergite; TU – tarsungulus; UG – urogomphi; VII–X – numbers of abdominal segments; 1–25 – numbers of mapped setae. Scale bars = 1 mm.

L.R. Fontes (1994). Termites from the nest T-6100 were identified as *N*. cf. *peruanus* (Holmgren) by R. Constantino, while the termites from the nest T-6076 were identified as *N*. *tatarandae* (Holmgren).

Etymology. The species name is derived from the combination of two Latin words: "Quediina" and "similis" (similar). It is an adjective of masculine gender in nominative case.

***Sedolinus trinidadus* Solodovnikov, sp. n.**

Diagnosis. In all characters practically identical with *Sedolinus quediosimilis* sp. n., from which it differs in the slightly smaller size of the body, somewhat paler coloration (especially of elytra), and shape of the aedeagus. In *S. trinidadus*, the apex of the median lobe is slightly narrower (in dorsal or ventral view) and the paramere is broader, with an emarginate apex (cf. Figs 17a and 17).

Description. Measurements: HL = 0.84–0.90; HW = 1.06–1.14; PL = 0.88–0.96; PW = 1.08–1.16; EL = 0.94–1.02; EW = 1.24–1.30. Length of the body 4.7–5.1 mm.

Material. Trinidad and Tobago. Holotype: ♂, "Trinidad: 7 km ex Arima – Blanchesseuse, 25.VII.1981, ex nest T-1156, Coll. H.R. & J.A. Jacobson No. 4645/ FMNH-INS 0000 009 207" (FMNH). Paratypes. 3 ♂, same data/ FMNH-INS 0000 009 208–210 (FMNH).

Distribution and bionomics. Known only from one locality in the north of Trinidad Island. All specimens were collected in a nest of the termite identified as *Nasutitermes ephraetae* (Holmgren) by Kumar Krishna in 1982. The field notes state that they were found deep within the nest.

Etymology. The species name is derived from the name of Trinidad Island. It is an adjective of masculine gender in the nominative case.

Acknowledgements

I am very glad to contribute a paper to this volume featuring Gleb Sergeevich Medvedev, a prominent coleopterist and kind person, with whom I had the pleasure to work in the same department at the Zoological Institute in St. Petersburg during past years.

Also I am much obliged to my current Field Museum colleagues, Al Newton and Margaret Thayer, for generous sharing of ideas, material under their care, and enormous reference and database resources they have developed through the years. In particular, it was the preliminary identification of the new genus by Al Newton that called my attention to this taxon, and both these colleagues provided very helpful general and technical comments for this paper.

The generous donation of David Kistner, who is depositing his huge collection of termitophilous Staphylinidae at the Field Museum, is appreciated.

This paper is based upon work supported by the National Science Foundation under Grant No. 0118749 (awarded to Margaret Thayer).

References

Herman L.H. 2001. Catalog of the Staphylinidae (Insecta: Coleoptera). 1758 to the end of the second millennium. Parts I–VII. *Bull. Amer. Mus. Nat. Hist.* **265**: 1–4218 [in seven volumes].

Kistner D.H. 1979. Social and evolutionary significance of social insect symbionts. *Social Insects*. New York: Academic Press. **1**: 339–413.

Kistner D.H. 1982. The social insects' bestiary. *Social Insects.* New York: Academic Press. **3**: 1–244.

Kranebitter P., Schatz I. 2002. The larval instars of *Philonthus aerosus* Kiesenwetter (subgenus *Kenonthus* Coiffait) from the central Alps (Tyrol, Austria) with a comparison of the known species of the genus (Coleoptera, Staphylinidae). *Entomol. Blätter.* **98**: 61–74; 148–149 (erratum).

Newton A.F., Thayer M.K. 2003. *Catalog of higher taxa of Staphyliniformia and genera and subgenera of Staphylinoidea.* Chicago: Field Museum of Natural History. Available at **http://www.fieldmuseum.org/peet_staph/db_1a.html** [verified 14 October 2003].

Schmidt D.A. 1994. Notes on the biology and a description of the egg, third instar larva and pupa of *Platydracus tomentosus* (Gravenhorst) (Coleoptera: Staphylinidae). *Coleopt. Bull.* **48**: 310–318.

Seevers C.H. 1957. A monograph on the termitophilous Staphylinidae (Coleoptera). *Fieldiana: Zoology.* **40**: 1–344.

Smetana A., Davies A. 2000. Reclassification of the north temperate taxa associated with *Staphylinus* sensu lato, including comments on relevant subtribes of Staphylinini (Coleoptera: Staphylinidae). *Amer. Mus. Novit.* **3287**: 1–88.

Solodovnikov A.Yu. 2005. *Natalignathus*, gen. nov. and larvae of *Atanygnathus*: a missing phylogenetic link between subtribes Quediina and Tanygnathinina (Coleoptera: Staphylinidae: Staphylininae: Staphylinini). *Invertebrate Syst*. **19**: 75–98.

Solodovnikov A.Yu., Newton A.F. 2005. Phylogenetic placement of Arrowinini trib. n. within the subfamily Staphylininae (Coleoptera: Staphylinidae), with revision of the relict South African genus *Arrowinus* and description of its larva. *Syst. Entomol.* **30**: 398–441.

Staniec B. 2004. Description of the developmental stages of *Hesperus rufipennis* (Gravenhorst, 1802) (Coleoptera: Staphylinidae), with comments on its biology. *Ann. Zool.* **54**(3): 529–539.