

**Cremastochilodius tristis, a new Scarabaeoid genus and species from Brazil**

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## ABSTRACT

*Cremastochilodius tristis* gen. nov., sp. nov. (Brazil) is described and illustrated. It is placed near *Callosides* Howden in the Hybosoridae.

In 1971 Howden published the description of a peculiar prognathous scarab, *Callosides campbelli*, which he referred to the Hybosorinae and compared with *Anaides* Westwood; Howden also commented on the somewhat doubtful accommodation of both genera in the aforesaid subfamily. In this paper I describe a Brazilian specimen allied with, though yet generically distinct from, *Callosides* Howden.

Genus *Cremastochilodius* nov.

Generic diagnosis. — General surface of head convex, deflexed, with set of elevations (fig. 1); head completely reflexable. Dorsally visible portion of eyes small. Mandibles strongly developed, greatly extended ventro-caudally (fig. 2), with extensive membranous inner flap. Clypeus trapeziform. Fore-tibia (fig. 6) with 3 external denticles, proximally serrate. Elytra with serially arranged tubercles and carinulae (fig. 5). General body form conspicuously complanate; medium-sized (length 8.5 mm). Pronotum (fig. 3) with projecting posterolateral angle. Posterior part of prosternum with ventro-caudally directed denticle.

Labrum, fig. 1. Antenna (fig. 1) 10-segmented, the 3 lamellae free, not more or less telescoped. Eye-canthus not developed. Lateral border of pronotum (fig. 2) crenulate or serrate; general surface of pronotum flat. Elytral epipleuron from base to apex rather wide. Anterior part of prosternum consisting of a pair of concavities limited laterally by longitudinal ridge and separated by median ridge. Metasternum weakly convex, unmodified. Six abdominal sternites distinguishable; sternite 1 almost invisible, 2 short, 3-5 of equal length, 6 slightly longer (along midline). All coxae contiguous. Femora and tibiae of middle and hind legs long and slender. Tarsal claws small, simple; tarsi 5-segmented, segments 2-4 short, almost globular. Predominant microsculpture simply striolate to annulate-striolate, partly associated with pilosity (fig. 4). — Contents of diagnosis tentative due to limited material.

Type-species. — *Cremastochilodius tristis* sp. nov.

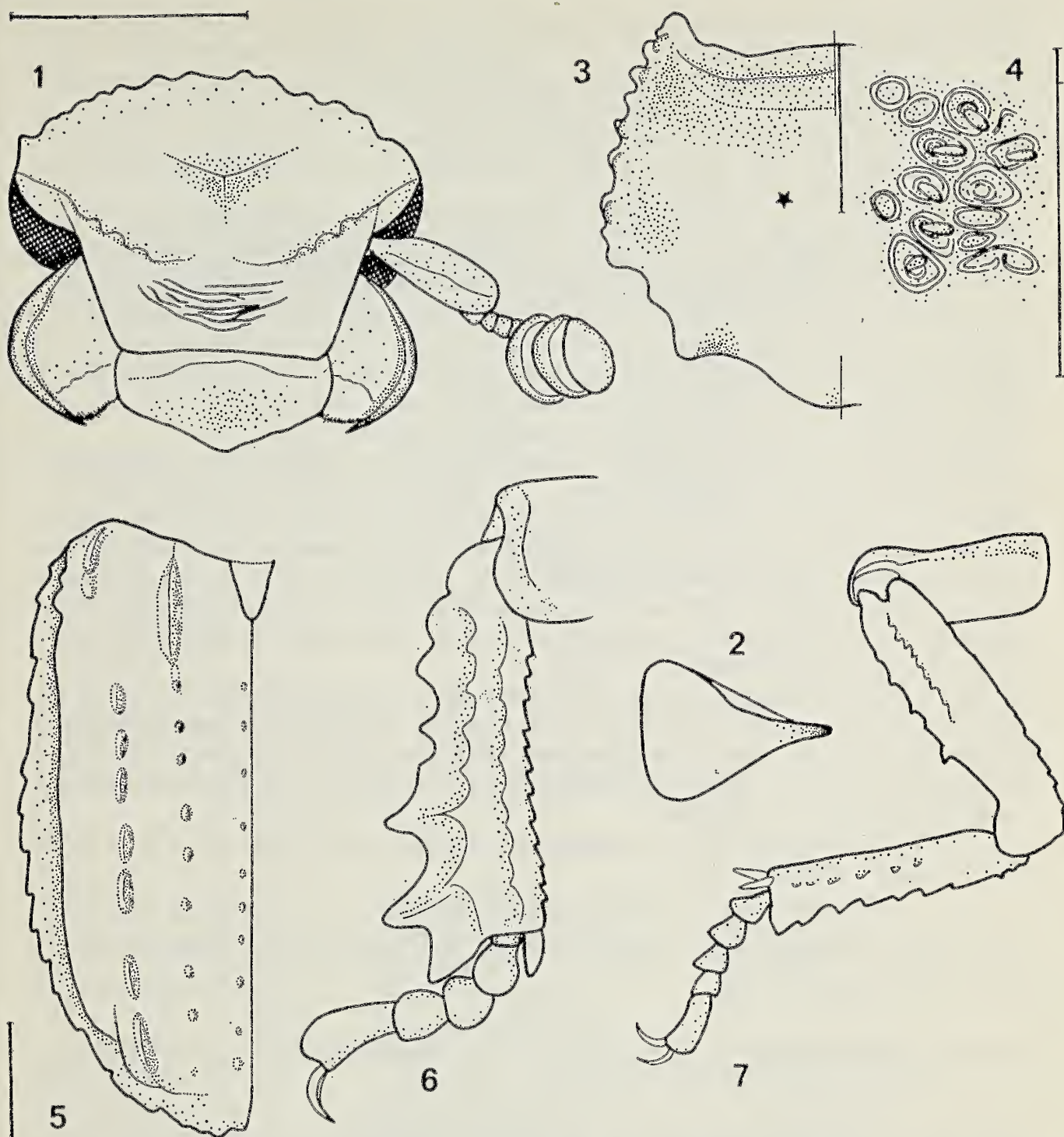
Affinities. — As stated in the introduction, *Callosides* Howden seems to be the closest relative of *Cremastochilodius*. Together with *Anaides* Westwood, both genera have free antennal lamellae and other structural features in common, and therefore a common family-group position, i.e. in the Hybosoridae, seems justified (but see Howden's comment, 1971: 1470).

*Callosides* is much smaller (length 4.4 mm), differs in shape of head capsule, pronotum, elytra, and in several other characters (compare my figures with Howden's fig. 11), those of primary importance being mentioned in the first paragraph of the generic diagnosis.

Distribution. — Neotropical: Brazil.

Bionomics. — A cursory inspection of material from the alimentary tract revealed the presence of a large amount of fungal material, including Hyphomycetes, and therefore *Cremastochilodius* is suggested to feed on fungi.

The head of *Cremastochilodius* shows remarkable protective features, indicative of a highly vulnerable way of life.



Figs. 1-7; *Cremastochilodius tristis*. Contours of: 1, head, full-face; 2, right mandible, lateral; 3, left half of pronotum, dorsal, with 4, sculpture and pilosity on spot marked with asterisk, enlarged; 5, left elytron, dorsal; 6, right fore-tibia and tarsus; 7, left hind leg. Scale lines = 1 mm; figs. 1, 2, 6: same scale; figs. 5, 7: same scale.

*Cremastochilodius tristis* sp. nov. (figs. 1-7)

Description (holotype, female). — Approximate length 8.5, width 4, height 2 mm. Colour black, opaque, due to sculpture; pilosity pale brown. Habitus reminiscent of *Placodidus* and other cremastochiliform Cetoniinae.

Cephalic contours, disposition of elevations, fig. 1. Clypeus immarginate, finely transversely striolate (magnification  $\times 25$ ), pustulate, and with 15-20 erect setae (exclusive of marginal ones); clypeofrontal transition marked by feeble, medially interrupted ridge. Frons with triangular, in dorsal view (head deflexed) arcuate callosity; surface of frons and vertex contiguously punctate, punctures on frons more or less distinctly annulate-striolate, their diameters ca. 0.125 mm, densities 5-8/0.1 sq. mm, most punctures with more or less erect seta. Maximum width of head 1.80 mm.

Pronotal contours, fig. 3; disc virtually flat, sides laterally and anterolaterally with shallow impression; anterior border of pronotum with distinct transverse ridge, lateral border immarginate, distinctly crenulate in front of posterolateral modifications; entire pronotal base immarginate. Pronotal surface crowdedly annulate-striolate (fig. 4), most units with suberect, claviform seta; diameters of units on discal centre ca. 0.125 mm, densities ca 5/0.1 sq. mm. Median length of pronotum 2.35, maximum width 3.10 mm; ratio l/w 0.77. Scutellum (fig. 5) small.

Elytral contours, fig. 5; juxtasutural margin with small tubercles; two discal ridges fragmented into carinulae and tubercles; paradiscal ridge entire, sharp; apical umbone distinct; lateral declivity steep; lateral margin deplanate, crenulate-setiferous; epipleuron wide, proceeding to apex, internal margin finely crenulate-setiferous. Elytral disc with 4 distinct geminate longitudinal striolae; intervening spaces similarly striolate, but striolae more or less curvilinear, locally even annulate; lateral declivity more distinctly annulate-striolate; entire elytral surface with sparse, long setae. Sutural length of elytra 4.70, maximum width of elytra combined 3.80 mm; ratio l/w 1.23.

Labrum (fig. 1) medially shallowly depressed. Mentum deeply incised; maxilla and palpi well developed; mandibles (figs. 1, 2) striolate, setose externally, superiorly shagreened, membranous inner lobe greatly extended. Anterior part of prosternum transversely striolate, with median longitudinal ridge; posterior part with striolae curving to tip of medial denticle. Other parts of propectus as well as metapectus also striolate. Metasternum honey-comb-like striolate, except for posterior margin, which is transversely striolate; most sculptural units with distinct seta. Abdominal sternites profusely transversely striolate.

Legs all finely striolate and setose. Fore-tibia, fig. 6; inferior side with serrate medial ridge; terminal spur short, reaching to tarsal segment 2. Middle and hind tibiae (fig. 7) with serrate-setiferous ridges. Fore-coxa with long anterolateral denticle. Femora (fig. 7) all relatively long and slender. Tarsal segments 1-4 (figs. 6, 7) all short, compact; tarsal claws simple, sickle-shaped.

Material examined. — Female holotype only, from Brazil (indistinctly handwritten label), in Leiden museum.

#### ACKNOWLEDGEMENT

Dr. C. Bas (Leiden) kindly assisted with the gross identification of the alimentary tract contents.

#### REFERENCE

Howden, H. F., 1971. Five unusual genera of New World Scarabaeidae (Coleoptera). — *Can. Ent.* 103: 1463-1471, figs. 1-12.

NEVILLE, A. C., 1975, *BIOLOGY OF THE ARTHROPOD CUTICLE*. Pp xvi, 448, 233 figs., ca. 100 references, indexen (subject en species) 20 kolommen. (No. 4/5 in de reeks *Zoophysiology and Ecology*). Springer Verlag, Berlin-Heidelberg-New York. ISBN 3-540-07081-8. Prijs (gebonden) DM 145,—.

Na het werk van A. G. Richards, uit 1951, is dit het eerste boek waarin een auteur het aandurft een overzicht te bieden van de kennis omtrent de Arthropoden-cuticula. Hieraan wordt op indrukwekkende wijze geïllustreerd hoezeer het arsenaal aan optische, fysische en chemische technieken dat aan de onderzoeker ter beschikking staat, zich heeft uitgebreid.

Alle aspecten van de cuticula komen aan de orde, al is de tekst, in de eigen woorden van de auteur, in het biofysische deel minder onvolledig dan in de overige. Niet zonder reden, want de grote importantie van de cuticula ligt juist op dit terrein.

De voornaamste hoofdstukken zijn: algemene structuur van het integument, structurele macromoleculen, moleculaire cross-linking, architectuur van de supermoleculen, fysiologie, verkalking, fysische eigenschappen en fylogenetische aspecten.

Het boek is bijzonder goed verzorgd en de illustraties zijn werkelijk heel mooi. Het besluit met een lijst van actuele problemen, met een handvol suggesties omtrent hun aanpak. — W. N. Ellis.