



A second species of the genus *Panolcus* Gerstaecker 1860 (Coleoptera: Curculionidae: Molytinae: Cryptorhynchini) from French Guiana and Suriname with taxonomic changes in Cryptorhynchini

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Abstract

A second species of the genus *Panolcus* Gerstaecker, 1860 (Coleoptera: Curculionidae: Molytinae: Cryptorhynchini) from French Guiana and Suriname is described and compared with *Panolcus scolopax* Gerstaecker, 1860. Diagnostic characters and images are provided to facilitate identification. Adults were collected in a fruit of *Duguetia surinamensis* R.E. Fr. (Annonaceae). The genus *Panolcus* is transferred from Aedemonina (Cryptorhynchini) to Cryptorhynchina (Cryptorhynchini). The type species of *Thrasyomus* Pascoe, 1880 is here designated as *Thrasyomus tumens* Pascoe, 1880 and the species *Thrasyomus uniformis* Champion, 1905 is transferred from the genus *Thrasyomus* to *Eubulus* Kirsch, 1869 as *Eubulus uniformis* (Champion, 1905), new combination.

Keys words: biodiversity, species discovery, weevils

Introduction

On a recent visit to The Natural History Museum (London, United Kingdom), Michael Geiser asked me to examine some weevil specimens the museum recently acquired from French Guiana. One species in particular had a very long and very fine rostrum in the female specimens, which when in repose extended well beyond the apex of the elytra. At first, I thought the specimens to be yet another species of the hyperdiverse genus *Conotrachelus* Dejean, 1835, but on closer examination realized they were Cryptorhynchini (Coleoptera: Curculionidae: Molytinae). The sternal channel in the males terminated in the typical mesosternal cup (into which the apex of the rostrum fits); however, in the females, the sternal channel was open posteriorly and extended beyond the mesoventrite onto the metaventrite as well as impressed onto each of the abdominal ventrites (although less deep on ventrites 3–5). Along with the very small head, recessed almost fully in an anterior extension of the pronotum, this is a feature shared only with the species *Panolcus scolopax* Gerstaecker, 1860; however, these specimens were larger and the female rostrum much longer. They are here described as *Panolcus filirostris* new species, the second known species of the genus *Panolcus* Gerstaecker, 1860.

Lyal (2014) had placed *Panolcus* in the Aedemonina as the sole New World member of this subtribe. The basis for this placement is reassessed and Neotropical taxa formerly placed in the tribe Sophrophorini, along with a number of other Neotropical genera in which the mesoventral cup was supposedly open posteriorly, were also examined and their affinities within Cryptorhynchini (where they are now placed) are discussed. Morphological diversity within the genus *Thrasyomus* Pascoe, 1880 is also discussed and some taxonomic reassignments made.

Material and methods

Specimens were examined with standard techniques for the study of dried insect specimens. Body length is measured from apex of elytra to anterior margin of pronotum (head excluded). Examined specimens are from or are deposited in the following collections:

BMNH—The Natural History Museum, London, United Kingdom; M. Geiser

CMNC—Canadian Museum of Nature, Ottawa, Canada; F. Génier.

FSCA—Florida State Collection of Arthropods, Gainesville, Florida, United States of America; K. Schnepf, P. Skelley

MTDC—Museum für Tierkunde, Dresden, Germany; K. Klass.

Taxonomy

Panolcus Gerstaecker, 1860

(Figs. 1–12)

Panolcus Gerstaecker 1860: 377; Wibmer & O'Brien 1986: 216 (checklist); Alonso-Zarazaga & Lyal 1999: 138 (catalog).

Type species: *Panolcus scolopax* Gerstaecker, 1860 by monotypy.

Diagnosis: Easily recognized by the very small head, recessed almost fully in anterior extension of pronotum; large eyes almost fully covered by postocular lobes when rostrum in repose, eyes narrowly separated dorsally by about ½ width of rostrum at base; rostrum of female very fine, shiny, long, curved, reaching or greatly exceeding elytral apex when in repose, that of male much shorter, only weakly curved, terminating at level of hind margin of mesocoxae; anterior portion of pronotum tubuliform (more so in female), disc of pronotum with a pair of lateral tubercles just anterior to midlength; elytra lacking swellings or tubercles, distinctly wider than pronotum at base; scutellar shield large, scaly; sternal channel narrow, deep, extended from prosternum to abdominal ventrite 5 in female, ending in mesoventral cup at level of hind margin of mesocoxae in male; metanepisternum present, sclerolepidia present along metanepisternal suture; legs with femora each with single, large, more distally located tooth on inner margin. Male genitalia distinctive, with lateral margins in apical region abruptly constricted just before apex; parameres well developed.

Remarks: Based on the presence of a distinct mesoventral cup in males (Fig. 9) this genus is removed from Aedemonina and placed in Cryptorhynchina (Cryptorhynchini).

Panolcus scolopax Gerstaecker

(Figs. 1–3, 12)

Panolcus scolopax Gerstaecker 1860: 378; Wibmer & O'Brien 1986: 216 (checklist); Alonso-Zarazaga & Lyal 1999: 138 (catalog).

Diagnosis: Body length 5.4–5.6 mm in females, 5.3–5.5 mm in males, width 2.9–3.0 mm in females, 2.9–3.0 mm in males. Rostrum in female about as long as elytra, apex of rostrum not reaching apex of elytra when in repose, of male, reaching to level of posterior margin of mesocoxae. Pronotum only slightly tubulate anteriorly in both sexes. Femora and tibiae robust, profemora about 3 x as long as width at base, protibiae about 4 x as long as maximum width. Protarsus with tarsomere 1 about as long as tarsomeres 2–5 combined. Aedeagus with lateral margins sinuate, each with distally directed tooth at point of constriction.

Specimens examined: Brazil: Bahia, Encruzilhada, 980 m, Nov 1974, M. Alvarenga (1 male, 1 female, CMNC; 2 males, 1 female, FSCA). Brazil, Kirsch (1 female, MTDC).

Panolcus filirostris Anderson, new species

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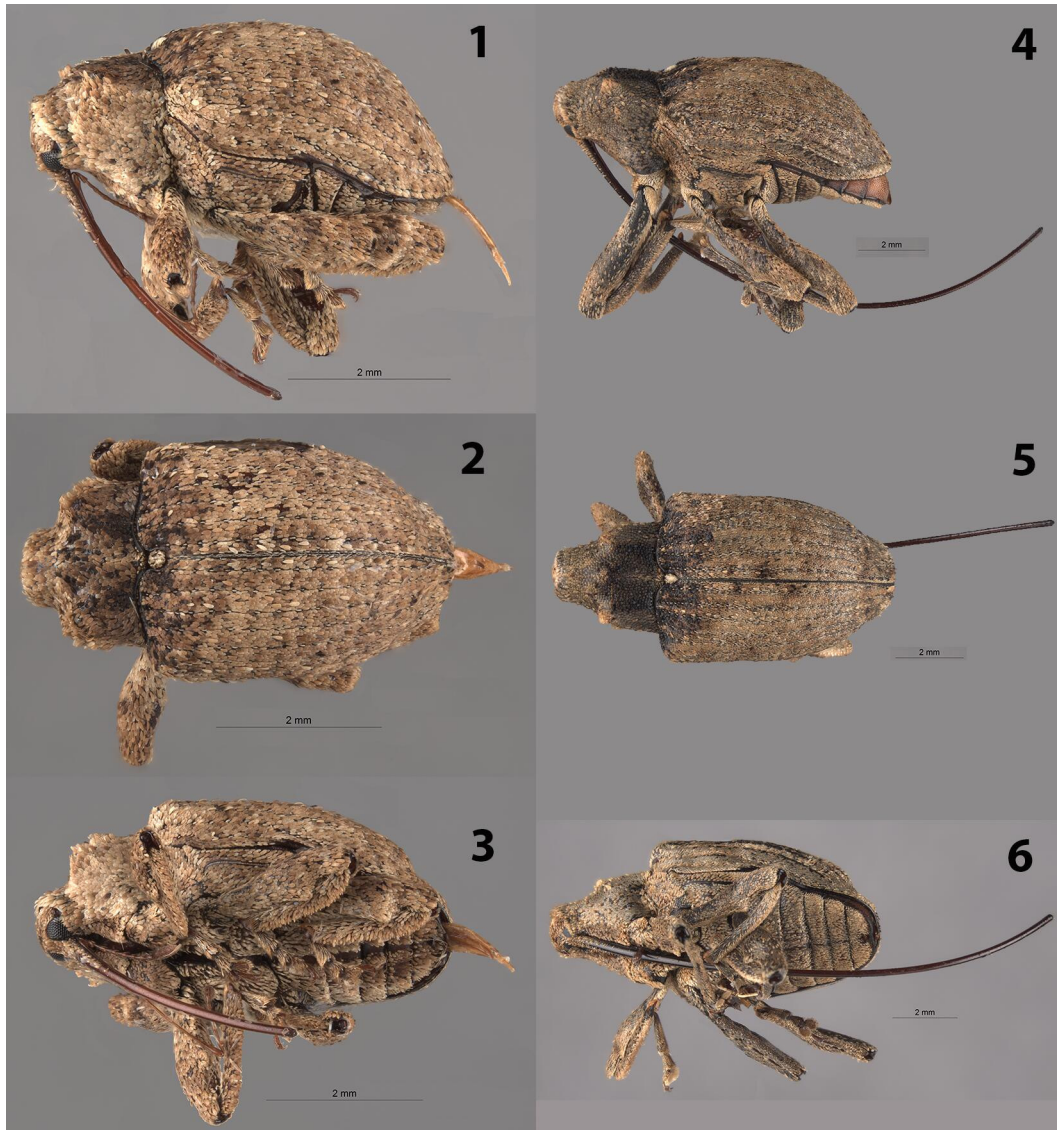
(Figs. 4–11)

Diagnosis: Body length 10.8–11.0 mm in females, 9.5–9.8 mm in males, width 5.0–5.5 mm in females, 4.8–5.0 mm in males. Rostrum in female about twice as long as elytra, apex of rostrum reaching far beyond apex of elytra (by almost length of elytra) when in repose, of male, reaching to level of posterior margin of mesocoxae. Pronotum

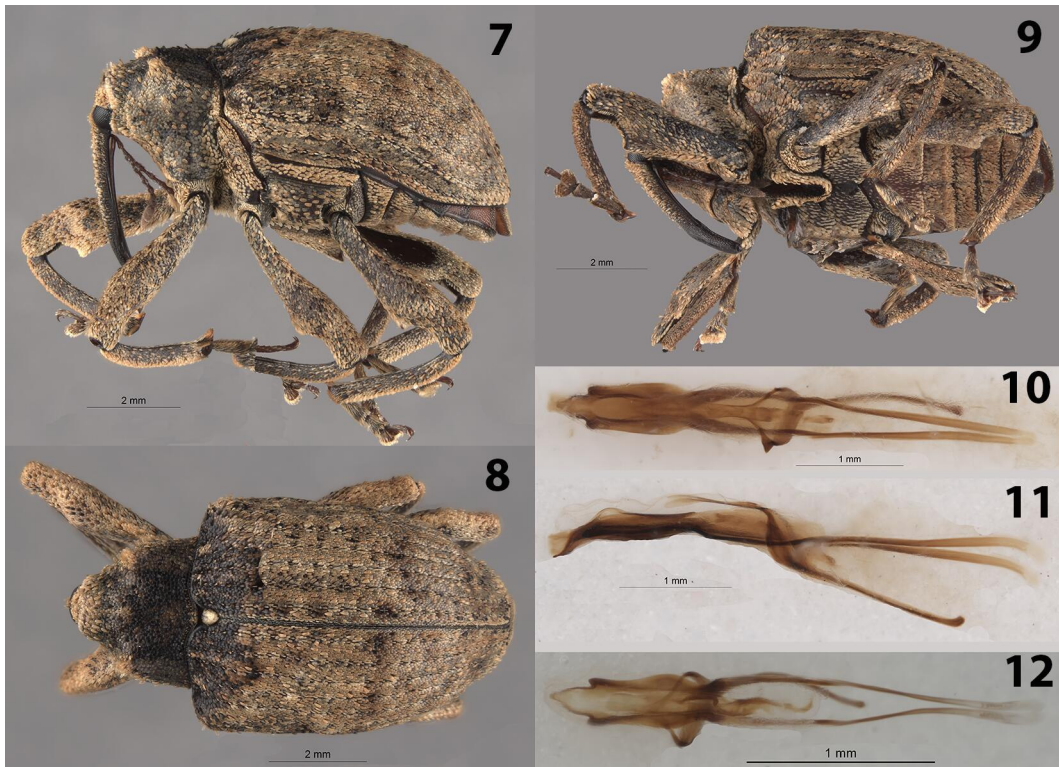
very strongly tubulate anteriorly in female, less so in male. Femora and tibiae proportionally slenderer in both sexes (although slightly less so in male), profemora about 4 x as long as width at base, protibiae about 7–8 x as long as maximum width. Protarsus with tarsomere 1 longer than tarsomeres 2–5 in female, shorter than tarsomeres 2–5 in male. Aedeagus with lateral margins subparallel, each with acute angle (but no tooth) at point of constriction.

Specimens examined: Holotype male, labelled French Guiana: Régina, Camp Patawa, Route de Kaw, 4°32'45"N, 52°09'14"W, ~ 210 m, March–April 2018, G. Bittencourt-Silva, BMNH(E) 2018-150 (BMNH). Paratypes, same data as holotype (2 males, 2 females, BMNH; 2 males, 1 female, CMNC). Suriname: Brokopondo District, Brownsburg Nature Park, Cabin Kapasi, 4.94939°N, 55.18034°W, 413 m, 8 April 2016, E. Rodriguez (1 male, FSCA).

Natural history: Specimens in French Guiana were collected from a mature fruit of *Duguetia surinamensis* R.E. Fr. (Annonaceae) (Fig. 13).



FIGURES 1–6. *Panolcus* female habitus images. 1, *Panolcus scolopax*, lateral; 2, *Panolcus scolopax*, dorsal; 3, *Panolcus scolopax*, ventral; 4, *Panolcus filirostris*, lateral; 5, *Panolcus filirostris*, dorsal; 6, *Panolcus filirostris*, ventral.



FIGURES 7–12. *Panolcus* male habitus and aedeagus images. 7, *Panolcus filirostris* habitus, lateral; 8, *Panolcus filirostris* habitus, dorsal; 9, *Panolcus filirostris* habitus, ventral; 10, *Panolcus filirostris* aedeagus, dorsal view; 11, *Panolcus filirostris* aedeagus, lateral view; 12, *Panolcus scolopax* aedeagus, dorsal view.



FIGURES 13–15. *Panolcus filirostris* host plant and *Thrasyomus tumens* and *Eubulus uniformis* head images. 13, Mature fruit of *Duguetia surinamensis* R.E. Fr. (Annonaceae) from which *Panolcus filirostris* specimens were collected (photograph by G. Bittencourt-Silva); 14, *Thrasyomus tumens* head, frontal, male; 15, *Eubulus uniformis* head, frontal, female.

Key to species of *Panolcus*

- 1 Body length less than 6 mm; pronotum slightly tubulate in both sexes (Figs. 1–2); female rostrum about as long as elytra, apex of rostrum not reaching apex of elytra when in repose (Figs. 1, 3) *P. scolopax*
- 1' Body length greater than 9 mm; pronotum tubulate in both sexes (Figs. 4–5, 7–8), strongly so in female (Figs. 4–5); female rostrum about twice as long as elytra, apex of rostrum reaching far beyond apex of elytra (by almost length of elytra) when in repose (Figs. 4–6) *P. filirostris*

Discussion

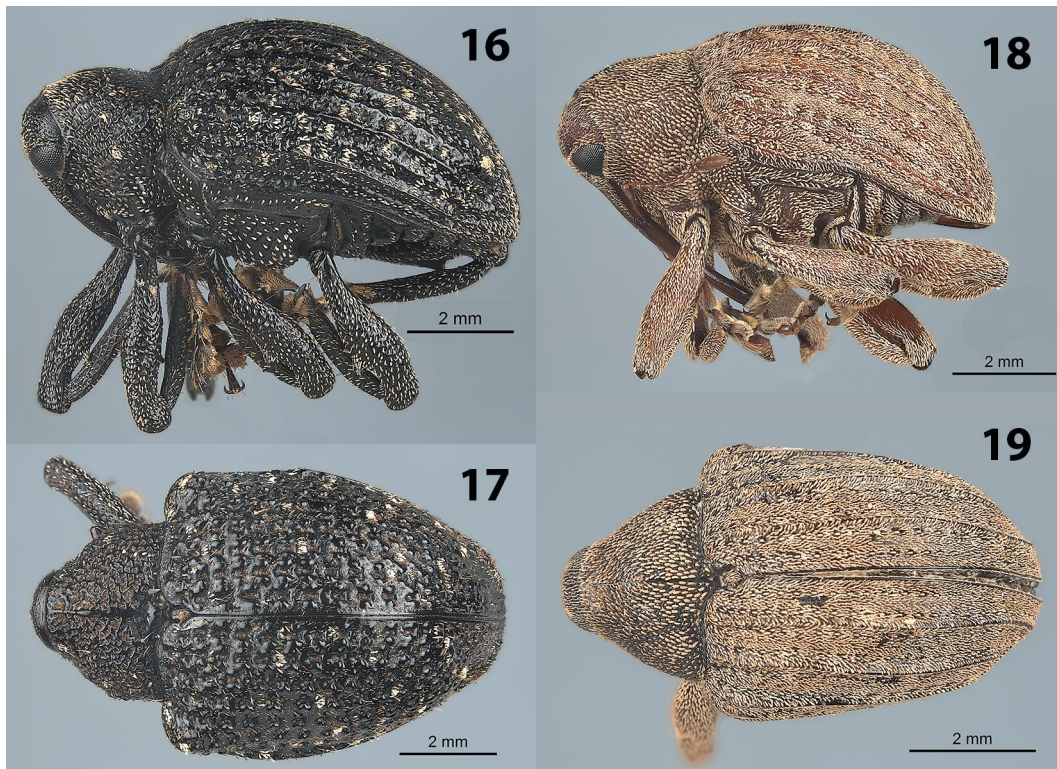
Panolcus has been recognized as a member of the tribe Sophrorhynini along with a number of other Neotropical genera in which the mesoventral cup was supposedly open posteriorly. This placement largely followed the definition of Sophrorhynini by Lacordaire (1865) who distinguished the tribe by the simple rostral canal present on the mesoventrite, metaventrite (and sometimes abdomen), or by the absence of a receptacle on the mesoventrite for the rostral apex (Lyal 2014). However, these apparent similarities were recognized as erroneous or being non-homologous in many of the New World taxa placed in the tribe and most of these genera were removed and placed as Cryptorhynchinae (now Cryptorhynchini) *incertae sedis* (Alonso-Zarazaga & Lyal 1999). Lyal *et al.* (2006) removed *Panolcus*, *Molicorynes* Waterhouse, 1878 and *Corynephorus* Schoenherr, 1837 from Sophrorhynini to Aedemonina (Cryptorhynchini) (for *Panolcus*), and Cryptorhynchina (Cryptorhynchini) (for *Molicorynes* and *Corynephorus*), as all possess sclerolepidia and true Sophrorhynini do not. Lyal (2014) subsequently removed *Pterygomus* Jekel, 1873 from Sophrorhynini to Molytinae *incertae sedis* and in doing so stated there are now no New World members of the Sophrorhynini.

The placement of *Panolcus* in Aedemonina (Cryptorhynchini) by Lyal (2014) would mean that this is the sole genus of this subtribe in the New World. He based this placement on the presence of postcoxal laminae on the prothorax and in sharing general morphological features of members of the subtribe. I suspect he may have examined only a female, which because of the long rostrum, lacks a mesoventral cup and only possesses the postcoxal laminae along the sides of the sternal channel (Fig. 3); however, males of *Panolcus* have a much shorter rostrum and a well-developed mesoventral cup (Fig. 9). Thus, I here transfer *Panolcus* from Aedemonina (Cryptorhynchini) to Cryptorhynchina (Cryptorhynchini) thus now meaning there are again no Aedemonina in the New World.

I have examined representatives of many of these genera and confirmed they are Cryptorhynchina, as evidenced by the posteriorly closed mesoventral channel and presence of a mesoventral cup (at least in one of the two sexes). Given the poor state of the higher classification in the Cryptorhynchini, most are best left as *incertae sedis* within the subtribe. *Molicorynes*, represented only by *M. longimanus* Waterhouse, 1878 shares features with *Macromerus* Schoenherr, 1825 and its relatives, such as long prothoracic legs and setose tarsomeres in males, and despite a posteriorly open mesoventral cup would appear easily placed with those genera. *Metrania palliata* Pascoe, 1872 and *Thrasyomus tumens* Pascoe, 1880 (Figs. 14, 16–17) share a sharply costate interval 9 on the elytra and similar habitus and would appear related even though the mesoventral channel in *M. palliata* is open and extended onto abdominal ventrite 1 (likely to accommodate the long fine rostrum) and it is closed in *Thrasyomus tumens* (which has a much shorter rostrum).

Generic limits in numerous Cryptorhynchinae need to be reassessed, among them *Thrasyomus*, a New World genus with 6 species distributed from Nicaragua south into South America (O'Brien and Wibmer, 1982; Wibmer and O'Brien 1986). As no type species for the genus has been previously designated, I here designate *Thrasyomus tumens* Pascoe, 1880 (Figs. 14, 16–17) as type species for the genus. This is the most widespread species and the one that most embodies the prevailing concept of *Thrasyomus*. In looking at other species in the genus, *Thrasyomus uniformis* Champion, 1905 (Figs. 15, 18–19) should be transferred from the genus *Thrasyomus* to *Eubulus* as *Eubulus uniformis* (Champion, 1905), new combination. Adults of this species have the alternate intervals of the elytra sharply costate (Figs. 18–19), eyes large, somewhat narrowly separated dorsally, and not covered by pronotal lobes when the rostrum is in repose (Figs. 15, 18), rostrum elongate and fine, usually glabrous and shiny throughout most of length, and there is a supraorbital broadly rounded u-shaped ridge across the frons (Fig. 15). These are characters found in many species of *Eubulus*. Additionally, they share a similar habitus with a conical pronotum that is widest at base with lateral margins strongly convergent to a narrow apex, elytra wider at base than pronotum, elytra widest at or near humeri and tapered gradually to a broadly rounded apex, the width of the elytra almost as long as the length (Fig. 19). The placement of *Thrasyomus conotracheloides* Champion, 1905 is less certain but it does not appear to be congeneric with *T. tumens* and will eventually require removal from *Thrasyomus*. It is congeneric with *Thrasyomus turpiculus* (Boheman, 1837), as the two share features of the elytral sculpture particularly in the very similar patterns of location and orientation of tubercles. The habitus, form of the legs, eye position, and sculpturing of frons also suggest these two species might be placed near *Cryptorhynchus melastomae* (Champion, 1906).

Metraniella Champion, 1905 and *Corynephorus* are typical Cryptorhynchini with a closed mesoventral canal and cup even though the posterior margin of the latter is deep within the length of the metaventrite (especially so in *Metraniella*, but this may simply be a correlate of a long rostrum, perhaps as dictated by their host plant morphology, not any shared relationship). The genus *Pterygomus* has not been examined by me.



FIGURES 16–19. *Thrasyomus tumens* and *Eubulus uniformis* habitus images. 16, *Thrasyomus tumens*, lateral, male; 17, *Thrasyomus tumens*, dorsal, female; 18, *Eubulus uniformis*, lateral, female; 19, *Eubulus uniformis*, dorsal, male.

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Literature cited

- Alonso-Zarazaga, M.A. & Lyal, C.H.C. (1999) *A World Catalogue of Families and Genera of Curculionoidea (Insecta: Coleoptera) (Excepting Scolytidae and Platypodidae)*. Entomopraxis, Barcelona, 315 pp.
- Gerstaecker, C.E.A. (1860) Beiträge zur Kenntniss der Curculionen. No. II. *Stettiner Entomologische Zeitung*, 21, 376–398.
- Lacordaire, J.T. (1865) *Histoire naturelle des insectes. Genera des Coléopteres ou exposé méthodique et critique de tous les genres proposés jusqu'ici dans cet ordre d'insectes. Tome septieme contenant les familles des curculionides (suite), scolytides, brenthides, anthribides et bruchides*. Librairie Encyclopédique de Roret, Paris, (2) + 620 pp.
- Lyal, C.H.C. (2014) Molytinae Schoenherr 1823. In: Beutel, R.G. & Leschen, R.A.B. (Eds.), *Handbook of Zoology. Arthropoda: Insecta. Coleoptera, Beetles. Vol. 3. Morphology and Systematics (Phytophaga)*. Walter de Gruyter, Berlin, pp. 529–570.
- Lyal, C.H.C., Douglas, D.A. & Hine, S.J. (2006) Morphology and systematic significance of sclerolepidia in the weevils (Coleoptera: Curculionoidea). *Systematics and Biodiversity*, 4, 203–241.
<https://doi.org/10.1017/S1477200005001714>
- Wibmer, G.J. & O'Brien, C.W. (1986) Annotated checklist of the weevils (Curculionidae *sensu lato*) of South America (Coleoptera: Curculionoidea). *Memoirs of the American Entomological Institute*, 39, i–xvi + 1–563.