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A revision of the genus *Macrolygistopterus* Pic, 1929 (Coleoptera, Lycidae, Calochromini)

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Abstract

A taxonomic review of the Lycid genus *Macrolygistopterus* Pic, 1929 with illustrations of diagnostic characters, geographic distribution maps and an identification key to the species is presented. Also, a key to the world Calochromini is given. Of the 12 species of the genus, 9 were studied: *M. succinctus* (Latreille, 1811), *M. quadricostatus* (Buquet, 1842), *M. caeruleus* (Gorham, 1884), *M. germaini* Pic, 1930, *M. grandjeani* Pic, 1930, *M. subparallelus* Pic, 1930, *M. testaceirostris* Pic, 1930, *M. simoni* Pic, 1930 and *M. kirschi* Pic, 1931 were redescribed and their status as valid species is confirmed. The lectotypes and paralectotypes were designated for all those examined species. *M. bilineatus* (Pic, 1923), *M. diversicornis* Pic, 1930 and *M. bipartitus* Pic, 1933 remain as valid species since these specimens were not available for this study. *M. succinctus* var. *scutellaris* Pic, 1930 is proposed here as new junior synonym of *M. succinctus* (Latreille, 1811).

Key words: Lycidae, Calochromini, Taxonomy, Neotropical Region, Malacodermes

Resumo

Uma revisão taxonômica do gênero *Macrolygistopterus* Pic, 1929 com ilustrações dos caracteres diagnósticos, mapas de distribuição geográficas e uma chave de identificação para as espécies é apresentada. Além disso, uma chave para os Calochromini mundiais também é fornecida. Das 12 espécies do gênero, 9 foram estudadas: *M. succinctus* (Latreille, 1811), *M. quadricostatus* (Buquet, 1842), *M. caeruleus* (Gorham, 1884), *M. germaini* Pic, 1930, *M. grandjeani* Pic, 1930, *M. subparallelus* Pic, 1930, *M. testaceirostris* Pic, 1930, *M. simoni* Pic, 1930 e *M. kirschi* Pic, 1931 foram redescritas e seus status como espécies válidas confirmados. Lectótipos e paralectótipos foram designados para as espécies examinadas. *M. bilineatus* (Pic, 1923), *M. diversicornis* Pic, 1930 e *M. bipartitus* Pic, 1933 permanecem como espécies válidas pois tais espécimens não estavam disponíveis para este estudo. *M. succinctus* var. *scutellaris* Pic, 1930 é proposto aqui como um novo sinônimo júnior de *M. succinctus* (Latreille, 1811).

Palavras chave: Lycidae, Calochromini, Taxonomia, Região Neotropical, Malacodermes

Introduction

The study of the genus *Macrolygistopterus* began as a part of the author's master's degree research in 2012, and this is the first section of a revision of the poorly known world tribe Calochromini Lacordaire, 1857, a widely distributed lineage of net-winged beetles with representatives in all zoogeographical regions.

Members of Calochromini are characterized by the head partially covered by the pronotum; the rostrum with weakly developed antenniferous tubercles (*Lygistopterus* Mulsant, 1838 & *Lucaina* Dugès, 1879) or in the genera without the rostrum, the antenniferous tubercles are strongly developed (*Calochromus* Guérin-Ménéville, 1833 and

Adoceta Bourgeois, 1882); the antennae are serrate to flabellate, the pronotum has a median longitudinal impression with oblique elevations, the elytra do not have transverse costae and reticulate cells are preserved only on posterior margins of elytra and strongly asymmetrical phallobase (Green, 1950; Bocák & Bocáková, 1990; Bocák & Bocáková, 2008).

The tribe currently comprises six genera: *Adoceta* Bourgeois, 1882 (Afrotropical), *Caloptognatha* Green 1954 (Nearctic), *Calochromus* Guérin-Ménéville, 1833 (Nearctic, Afrotropical, Oriental and Australian), *Lygistopterus* Mulsant, 1838 (Neotropical, Afrotropical, Nearctic, Palearctic and Oriental), *Lucaina* Dugès, 1879 (Nearctic) and *Macrolygistopterus* Pic, 1929 (Neotropical). The former two Calochromini genera, *Falsocalochromus* Pic, 1942 and *Dumbrellia* Lea, 1909, were respectively synonymized with *Platerodrilus* Pic, 1921 (Lyropaeinae: Lyropaeini) and *Plateros* Bourgeois, 1878 (Lycinae: Platerodini) (Masek *et al.* 2014; Motyka & Bocák, 2015). Of these genera only *Caloptognatha* and *Lucaina* are more or less defined and the delimitation and relationships of the other ones still remains unclear and confuse.

Much of the chaos in Calochromini, and in soft-bodied Elateroidea in general, are due to the describing activities of Maurice Pic. After Pic's papers, well known by the abundant, telegraphic and non-informative descriptions, the taxonomy of the tribe was left into obscurity, with solitary new species descriptions, geographically restricted revisions and a few nomenclatural papers (e.g. Bocáková, 1992; Zaragoza-Caballero, 2003; Ramsdale, 2007). The most inclusive taxonomic revision of the group was published by Green (1950, 1954), but, despite its good quality, to the time it was written, it is a regional work (only North American Calochromini) and now outdated.

The aim of this first study was to provide an updated preliminary key to the world Calochromini and to revise the genus *Macrolygistopterus* and provide more information on morphology, nomenclature, distribution of the species and the delimitation of this genus.

Historical background of *Macrolygistopterus*

During the bibliographical survey of this study some complications appeared concerning the nomenclatural status of *Macrolygistopterus* and the American *Lygistopterus*. Maurice Pic, in (1929) proposed the genus *Macrolygistopterus*, and designated *Lycus succintus* Latreille, 1881 as the type species. At that occasion a short description was presented and Pic stated that the American species of *Lygistopterus* should be transferred to the genus *Macrolygistopterus*. The paragraph is transcript below:

“Les espèces américaines classées dans le genre *Lygistopterus* Muls. doivent être séparées et formeront un groupement nouveau que je nomme **Macrolygistopterus** nov. gen., ayant pour type l'ancien *L. succintus* Latr., et qui offre les principaux caractères suivants: Tête prolongée en un museau rostrifère, élytres plus ou moins élargis postérieurement (à faciès de *Calopteron* Guér.) avec quelques côtes bien distinctes et plus ou moins saillantes.”

However, Maurice Pic did not present a list of the formerly American *Lygistopterus* species he included in the genus *Macrolygistopterus*. In the early 1930's Pic described eight species of *Macrolygistopterus*: *M. germaini* Pic, 1930, *M. grandjeani* Pic, 1930, *M. subparallelus*, 1930, *M. testaceirostris* Pic, 1930 *M. diversicornis* Pic, 1930, *M. simoni* Pic, 1930, *M. kirschi* Pic, 1931 and *M. bipartitus* Pic, 1933. Later, Kleine (1933), in the Lycidae part of the Schenkling's Coleopterorum Catalogus, presented several nomenclatural changes, such as an arrangement of the family at tribal level and new delimitations of several genera and species, including *Macrolygistopterus* Pic, 1929. Kleine depicted *Macrolygistopterus* in a different way from Pic's concept, but without any justification of his approach.

Material and methods

The specimens were relaxed in hot water and detergent. Photos were taken using a Leica M205C® microscope attached to a computer and a Leica DFC 295 camera. Photographs of genitalia were taken using a SEM Zeiss LEO 440 camera and a Zeiss Microscope Axionskop 2 and with a Canon EOS Rebel T3i DSLR camera, Canon MP-E 65mm f/2.8 1–5X macro lens, controlled by Zerene Stacker software. Drawings were prepared from photographs with the Adobe Illustrator CS5. Drawings and photographs were edited in Adobe Photoshop CS6. Morphological

terminology follows Bocák & Bocáková (1990), Kazantsev (2003) and Lawrence *et al.* (2011). Given the rarity of the *Macrolygistopterus*, genitalia descriptions of most of species were not possible to be done. Label information of each specimen is given as written on the label itself, with each label separated by a semicolon. Additional data on labels are presented between brackets. Detailed data for conservation status is given with comments after labels information.

Following Pic's original definition of *Macrolygistopterus* (type species *Lycus succinctus* Latreille, 1811) it would be necessary to include in the genus about all 30 known American *Lygistopterus* species for that time. Nevertheless, Kleine (1933) reduced the *Macrolygistopterus* number to 12 species, which is the classification adopted in this study. Nine of the 12 known species of *Macrolygistopterus* were examined in this study, including identified specimens, type specimens or photographs of the type material of the following species: *M. succinctus* (Pic, 1929), *M. quadricostatus* (Buquet, 1842), *M. caeruleus* (Gorham, 1881), *M. germaini* Pic, 1930, *M. grandjeani* Pic, 1930, *M. simoni* Pic, 1930, *M. subparallelus* Pic, 1930, *M. testaceirostris* Pic, 1930 and *M. kirschi* Pic, 1931. Types of *M. bilineatus* (Pic, 1923), *M. diversicornis* Pic, 1930 and *M. bipartitus* Pic, 1933 were unavailable for examination. Overall 93 specimens of *Macrolygistopterus* were examined from 13 collections. The material examined is deposited in the following collections:

DZUP	Coleção Entomológica Pe. Jesus Santiago Moure, Departamento de Zoologia da Universidade Federal do Paraná, Curitiba, Brasil (Lúcia M. Almeida)
FSCA	Florida State Collection of Arthropods, Gainesville, USA (Michael C. Thomas)
IBSP	Coleção Entomológica "Adolph Hempel", Instituto Biológico, São Paulo, Brasil (Sérgio Ide)
IRSN	Institut Royal des Sciences Naturelles de Belgique, Brussels, Belgium (P. Limbourg)
MTEC	Montana Entomological Collection, Montana State University, Bozeman, USA (Michael A. Ivie)
MNHN	Muséum National d'Histoire Naturelle, Paris, France (Thierry Deuve)
MNRJ	Museu Nacional da Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brasil (Miguel A. Monné and Marcela L. Monné)
MZSP	Museu de Zoologia da Universidade de São Paulo, São Paulo, Brasil (Sônia A. Casari)
BMNH	Natural History Museum, London, United Kingdom (Michael Geiser and Max Barclay)
NMCZ	Narodní Museum, Prague, Czech Republic (Jiří Hájek)
NHMB	Naturhistorisches Museum, Basel, Switzerland (D. Burckhardt)
SGFN	Senckenberg Naturhistorische Sammlungen, Dresden, Germany (Olaf Jäeger)

Taxonomic part

Key to the world Calochromini (modified from Green, 1954)

1. Head prolonged in rostrum, antenniferous tubercles not developed, mandibles distant when closed never overlapping 2
- Head not prolonged in rostrum, antenniferous strongly developed, mandibles when closed overlapping or approximated . . . 4
2. Elytral costae well developed and strongly demarcated, some of which partially obliterated, apex of elytra with traces of reticulated cells, specimens medium to big size. *Macrolygistopterus* Pic, 1929 (Neotropical region)
- Elytral costae not developed, not obliterated, without traces of reticulate cells at apex, specimens small to medium size. 3
3. Labrum completely free, distinctly visible, mandibles curved, more or less connate to labrum, secondary elytral costae absent, dorsal pubescence decumbent, anterior coxae approximated, rostrum of variable shape. *Lygistopterus* Mulsant, 1838 (Neotropical, Afrotropical, Nearctic, Palearctic and Oriental regions)
- Labrum suture sometimes indistinct, apparently fused with rostrum, mandibles straight or curved, secondary elytral costae weakly developed, dorsal pubescence long and erected, anterior coxae not approximated, rostrum elongated and stout. *Lucaina* Dugés, 1879 (Nearctic and Neotropical regions)
4. Elytral pubescence sparse, mostly confined to the elytral costae, intervals subglabrous. Anterior coxae distinctly separated. *Caloptognatha* Green, 1954 (Nearctic region)
- Elytra uniformly pubescent. Anterior coxae contiguous or very approximated. 5
5. Elytra with reticulate cells at apex, with 4 primary elytral costae well defined and 5 secondary costae weakly developed, antennae serrate *Adoceta* Bourgeois, 1882 (Afrotropical region)
- Elytra without reticulated cells at apex, with 4 primary elytral costae well defined and secondary usually absent, antennae serrate or flabellate. *Calochromus* Guérin-Méneville, 1833 (Nearctic, Afrotropical, Oriental and Australian regions)

Taxonomic revision

Genus *Macrolygistopterus* Pic, 1929

Macrolygistopterus Pic, 1929:1. Kleine, 1933:104; Blackwelder, 1945: 351.

Type species—*Lycus succinctus* Latreille, 1811.

Differential diagnosis. The pronotum strongly sculptured, usually with a single longitudinal black, moderately wide stripe (except in *M. succinctus*, which is mostly black), the elytra with four well defined elytral costae, with traces of reticulate cells at the apex and subserrate antennae. Body medium to large sized.

Redescription. Body medium to large sized. Head prognathous, prolonged in rostrum, with visible longitudinal sulcus more or less prominent; integument from black to testaceous, sometimes intercalated, usually with a fine pubescence. Interocular distance 2 to 3 times the median width, the eyes sometimes touching the anterior margin of pronotum; maxillary palpus 4-segmented, with the last broader than the others; mandibles short, not or weakly curved, the tips distant when mandibles are closed, moderately connate to the labrum, the last always free. Antennae 11-segmented, subserrate, reaching middle of elytra; scape conic to subconic, other antennomeres dorsoventrally flattened, narrowing to the apex. Pronotum transverse to longer than wider, rectangular, subtrapezoidal or pentagonal, with longitudinal sulcus moderately deep, sculpturing variable.

Elytra rugged, lateral margins divergent, almost parallel-sided basally, from widened distally, with four well-developed elytral costae, costae I+II and III+IV merged at base in humeral region, of variable arrangement among the species; elytral reticulation variable, from strongly developed distally to vestigial or absent reticulation basally; color variable, metallic blue to green, reddish or testaceous, with the posterior half regularly black. Legs flattened, elongated, black to testaceous, finely pubescent; anterior coxa contiguous; meso and metacoxae apert; protochanters triangular and prominent; tibiae always with pair of spurs, spurs shorter in meso- and metatibiae.

Abdomen with seven visible ventrites in females and eight in males, in both sexes conspicuously lobed and pronounced angles; last ventrite of females of variable shape. Male genitalia with phallobase asymmetrical, parameres as long as aedeagus; aedeagus with apex acuminate or spoon shaped, slender. Female genitalia long, styli apically to subapically positioned, approximated, densely pubescent; coxites approximated at apex, both carrying setae; valvifers long and slender, at least 5 times longer than coxites, involved by membrane.

Distribution. *Macrolygistopterus* is a genus with 12 described species. They occur from the northern regions in Mexico, through the continental Central America to south of Brazil and northwest of Argentina (Figs. 45, 46).

Macrolygistopterus succinctus (Latreille, 1811)

(Figs. 1, 10, 19, 27, 36, 42, 44, 46)

Lycus succinctus Latreille, 1811: 177 (original description). *Lycus* (*Dictyoptera*) *regalis* Buquet, 1842: 6 (synonym).

Macrolygistopterus succinctus Pic, 1929: 1 (new combination). Kleine, 1933: 104 (catalogue). Blackwelder, 1945: 351 (catalogue).

Macrolygistopterus succinctus var. *scutellaris* Pic, 1930a: 84. **syn. nov.**

Type material. *Lycus succinctus* Latreille, 1811: male, syntype (labeled as a female), hereby designated lectotype. "Colombia, Fusagasuga", no other details, deposited at (MNHN).

Diagnosis. This species can be distinguished from other *Macrolygistopterus* by having the pronotum subtrapezoidal, black, its disc is glabrous and of shiny aspect, strongly sculptured (some specimens have the pronotum testaceous with a slender black stripe), by elytra testaceous or reddish and by the relatively longer rostrum (Fig. 10).

Redescription. Head black, with a thin yellow pubescence, with rostrum as long as the sum of antennomeres I+II (Fig. 10); coronal suture deep; median interocular distance of 3x the width of eyes. Mandibles not curved, with basal portion blackened and apical portion testaceous. Maxillary palp with palpomere I small, about 1/4 the length of II; palpomere II long, as long as sum of III+IV; palpomere IV slightly longer than III, securiform, truncate. Antennae finely pubescent with scape subconic, pedicel with 1/4 the length of scape; antennomere III 1/4 longer than I+II; antennomere IV subequal to III in length and shape; antennomeres IV to XI gradually decreasing in length.

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FIGURES 1–9. Dorsal view: 1. *Macrolygistopterus succinctus*; 2. *M. quadricostatus*; 3. *M. caeruleus*; 4. *M. germaini*; 5. *M. grandjeani*; 6. *M. simoni*; 7. *Macrolygistopterus subparallelus*; 8. *M. testaceirostris*; 9. *M. kirschi*.

FIGURES 10–18. Rostrum: **10.** *Macrolygistopterus succinctus*; **11.** *M. quadricostatus*; **12.** *M. caeruleus*; **13.** *M. germaini*; **14.** *M. grandjeani*; **15.** *M. subparallelus*; **16.** *M. testaceirostris*; **17.** *M. simoni*; **18.** *M. kirschi*. Scale bar 1 mm.

Pronotum subtrapezoidal, wider than longer (9:11), margins stout, black, with a pair of median elevations, divergent from anterior margin to the middle and converging towards posterior margin, with oblique carinae separating each side of pronotum in two sides (Fig. 19). If testaceous with a slender black stripe restricted to the region between the median elevations.

Elytra parallel, margins not pronounced, basal third testaceous, some specimens with the inner margins of elytra bluish black, with the rest of elytra bluish black. Arrangement of elytral costae: costa I following alone not touching the apex, obliterated in apical third; costa II and IV subapically fused, forming an arch; costa III fused with the inner margin of the arch formed by costae II+IV, obliterated in the apical half, with transverse lines hardly visible, obliterated (Figs. 1, 27). Scutellum black, transverse.

Female VII ventrite triangularly, as long as wide, apical region of ventrite VII of females notched, forming two acuminate apices (Fig. 36).

Male genitalia with parameres longer than aedeagus, fused in the basal half; aedeagus with acuminate apex (Fig. 44). Female genitalia with styli prominent, subapically positioned. Coxites slender, approximated in the apex, with setae in the surface. Valvifers long, 6x longer than coxites (Fig. 42).

FIGURES 19–26. Pronotum: 19. *Macrolygistopterus succinctus*; 20. *M. quadricostatus*; 21. *M. caeruleus*; 22. *M. germaini*; 23. *M. grandjeani*; 24. *M. simoni*; 25. *M. subparallelus*; 26. *M. testaceirostris*. Scale bar 1 mm.

Width (across humerus)—4.2–6.0 mm. Elytral length—13.8–19.8 mm.

Distribution. Colombia, Ecuador, Venezuela and Guatemala (Fig. 46).

Examined material. Fusagasuga [Colombia], 1 ♂ [labelled as a female] (lectotype) (MNHN); Muzo, Colombie, 1 ♂ (IRSN); Coban, Vera Paz [Guatemala], Conradt, 1 ♀ (BMNH); Colombie, 1 ♀ (BMNH); Crowley Bequest, 1901–78, sem procedência, 1 ♀ (BMNH); Ecuador, Pichincha, Bellavista Cloudforest Reserve, 0°00'948"S 78°40'824"W, 2200–2300m, Tropical Cloudforest, 24–28.vii.2007, coll. CPDT Gillet, 1 ♀ (BMNH); Santa Lucia, Ecuador, R. Haensch S., Coll. Richard Hicker Wrien, 1 ♀ (NHMB); Jarugui, Ecuador, Coll. Richard Hicker, Wien, 1 ♀ (NHMB); America, Colombia, Quindiu-pass, Colombia, S. Antonio, Columbia, Coll. Richard Hicker, Wien, 1 ♀ (NHMB); Colombia, Achetti, 1 ♀ (IRSN); Ecuador, Ex. Coll. Fruhstorfer, Coll. Richard Hicker, Wien, 1 ♀ (NHMB); Coll. Ogier de Baulny, no procedence, 1 ♀, 1 ♂ (IRSN); S. America, Venezuela, MF. Roraima, J. G. Myers, 1932, 1 ♂ (BMNH); Venezuela, Monagas, Cueva Guacharo, 15.III.1987, R. Miller & L. Stange, 1 ♀ (FSCA); Colombia: Huilla, State: Fundacion, Merenberg, 2300 m, 10–17.VIII.1982, R. Greenfield Collector 1 ♀ (MTEC).

Comments. In 1930a Pic described the variation *M. succinctus* var. *scutellaris*, which differs from the *M. succinctus* only in the coloration of elytra, which is reddish instead of testaceous, and by the bluish-blackened inner elytral margins. Despite color differences, I was not able to find any morphological character to separate the form and the type form and I propose to consider *M. succinctus* var. *scutellaris* as a new junior synonym of *M. succinctus*.

FIGURES 27–35. Elytra: 27. *Macrolygistopterus succinctus*; 28. *M. quadricostatus*; 29. *M. caeruleus*; 30. *M. germaini*; 31. *M. grandjeani*; 32. *M. subparallelus*; 33. *M. testaceirostris*; 34. *M. simoni*; 35. *M. kirschi* Scale bar 1 mm.

***Macrolygistopterus quadricostatus* (Buquet, 1842)**

(Figs. 2, 11, 20, 28, 37, 41, 43, 46)

Dictyoptera quadricostatus Buquet, 1842: 6 (original description). Kleine, 1933: 104 (catalogue); Blackwelder, 1945: 351 (catalogue).

Type material. *Dictyoptera quadricostatus*: female syntype, hereby designated lectotype. "Brasilia, 4-costatus, Buq.", deposited at MNHN.

Diagnosis. This species can be recognized from others *Macrolygistopterus* by having the pronotum subtrapezoidal, with the elytral costae strongly prominent and by antennomeres IV distinctly larger and wider than the others.

Redescription. Head black, some specimens with gena and ventral region testaceous, with thin yellow pubescence, with rostrum as long as the antennomeres I+II+III (Fig. 11); coronal suture shallow; median interocular distance of 2.5x the width of eyes. Mandibles curved, mostly testaceous, with external margins black. Maxillary palp with palpomere I small, about half the length of II, palpomeres III+IV as long as II, palpomere IV securiform, broader compared to the others. Antennae finely pubescent with scape subconic, pedicel with 1/4 the length of scape; antennomeres IV to XI dorsoventrally flattened; antennomere IV twice as long the length of I, distinctly larger and wider than the others; V to VII subequal; antennomeres V to XI gradually decreasing in length (Fig. 11).

Pronotum subtrapezoidal, wider than longer (8:10), with rounded angles, transverse, testaceous, with a black stripe restricted to the region between the median elevations, with a pair of longitudinal carinae broadened medially and an oblique carinae in parallel dividing pronotum in two (Fig. 20). Scutellum black, subquadrate.

Elytra subparallel, dehiscent, with outer margins stout, testaceous, their apical half black to bluish black, distally wider, region adjacent to scutellum varying from black to testaceous. Elytral costae strongly marked. Arrangement of elytral costae: costae I and IV following alone towards apex not reaching it, both free; costae II and III subapically fused, forming arch that follows towards apex without reaching it (Figs. 2, 28).

Female ventrite VII transverse, densely pubescent, with apical region notched, forming two separately rounded, closely approximated apices (Fig. 37).

Male genitalia with aedeagus slightly longer than parameres, ventrally with a pair of extensions (laterophyses); parameres at the quarter basal fused; aedeagus with spoon-shaped apex (Fig. 43). Female genitalia with prominent styli, apically positioned, aparted from each other, with setae in surface. Valvifers long, 8x longer than coxites, with a membrane bag-shaped covering basal third of valvifers (Fig. 41).

Width at humeri > 2.0–3.5 mm. Elytral length: 8.5–15.5mm.

Distribution. Argentina, Brazil (SP, RJ, ES, MG, PR, SC, PA and AM states) (Fig. 46).

Examined material. Brasilien, 1♀, 4-costatus, Buq. (lectotype) (MNHN); Brasil, São Paulo, Peruíbe, II.[1]975, na praia, M. Carrera col., 1♂ (MZSP); Brasil, Espírito Santo, Conceição da Barra, 22–28.X.1968, C. & C. Elias leg., 1♀ (DZUP); Brasil, Castro, Paraná, E.D. Jones [col.], 1920—422, 9♀, 8♂ (BMNH); Brasil, Espírito Santo, Santa Tereza, C. Elias leg., 26.X.1964, 3♀ (DZUP); Brasil, Espírito Santo, Santa Tereza, C. Elias leg., 7.XII.1964, 3♀ (DZUP); Brasil, Espírito Santo, Santa Tereza, C. & C.T. Elias, 11.12.1964, 1♀ (DZUP); Brasil, Espírito Santo, Santa Tereza, C. & C.T. Elias, 22–28.X.1968, 1♀ (DZUP); Brasil, Espírito Santo, Santa Tereza, C. Elias leg., XII.[19]64, 1♀ (DZUP); Brasil, Espírito Santo, Santa Tereza, C. Elias leg., 3.XII.[19]64, 1♀ (DZUP); Brasil, Minas Gerais, Ibiá, C. Elias leg., 28.X.1965, 1♀ (DZUP); Brasil, Espírito Santo, Santa Tereza, C. & C.T. Elias, 25.X.1967, 1♀ (DZUP); Brasil, Minas Gerais, Araxá, 22/11/1965, C.T. & C. Elias, 2♂, 1♀ (DZUP); Brasil, Paraná, Ponta Grossa, Fazenda Aug. Justus, G. Chuva, 1♀, 2♂ (DZUP); Brasil, São Paulo, Ribeirão Preto, Mata Santa Tereza—EERP, 03.XI.2006, Nascimento E.A. & Polegatto, C.M. col., 1♀, 1♂ (MZSP); Brasil, São Paulo, S. J. Barreiros, S. Bocaina 1600m, XI.1967, Alvarenga e Seabra, 1♂, 1♀ (DZUP); Brasil, Santa Catarina, Mafra, XII, Anton Maller, 1♂, 1 unknown sex (abdomen missing) (MNRJ); Brasil, Santa Catarina, Corupá, I-1954, A. Maller, 1♀ (MNRJ); Brasil, Espírito Santo, Córrego Ita, XI.1956, W.Zikan, 1♀ (MNRJ); Brasil, Paraná, Piraquara, 31.X.1970, Pe. Moure, 1♂, 1♀ (DZUP); Brasil, Rio de Janeiro, Itatiaia, 2♀ (MNRJ); Brasil, Rio de Janeiro, Itatiaia, 20.X.1942, W. Zikán col., 1 unknown sex—abdomen missing (MNRJ); [no collector data] 1♀ (MNRJ); Brasil, Paraná, Londrina, 1♀, 3♂ (IBSP); São Paulo, Bras. Mraz. LGT., Mus Pragense, [Pic's handwriting] *Lygistopterus bilineatus* Pic, 1♀ (MN); Hansa Humboldt, Sta. Catharina, Brasilien Reitter, Coll. Richard Hicker, Wien, 1♀ (NHMB); B. Retiro, Coll. Richard Hicker Wien, 1♀ (NHMB); Brasil, Londrina, Norte Paraná, Coleção Dirings, Lyc 11, 7?, 2♂, 5♀ (MZSP); Argentina, Pcia Salta, Pocitos II. 1961, A. Martinez leg., 1♀ (MZSP); Pará, Cachimbo, X.955, Pe. Pereira, 1♀ (MZSP); Brasil, Benj. Constant, rio Javary, alto Amazonas, XII.6, Dirings, 2 ♀ (MZSP); Faz. Aceiro, Jataí, Goiás—Brasil, X. 1962, Exp. Dep. Zool., 1 ♀ (MZSP).

Comments. One of the specimens studied was labelled as *Lygistopterus bilineatus* with Pic's handwriting. No other specimen labelled as type has been presently retrieved in Pic's collection. However, since there is no evidence that it is a type specimen of *Lygistopterus bilineatus*, I preferred, for this paper, do not make any nomenclatural change.

FIGURES 36–40. Female ventrite VII: **36.** *Macrolygistopterus succinctus*; **37.** *M. quadricostatus*; **38.** *M. caeruleus*; **39.** *M. grandjeani*; **40.** *M. testaceirostris*. Scale bar 1 mm.

***Macrolygistopterus caeruleus* (Gorham, 1881)**

(Figs. 3, 12, 21, 29, 38, 45)

Lygistopterus caeruleus Gorham, 1884: 227 (original description); Kleine, 1933: 104 (catalogue); Blackwelder, 1945: 351 (catalogue).

Type material. *Lygistopterus caeruleus*: syntype, male from Guatemala, Quiche Mountains, and two syntype females from Guatemala, one from Tepan and the other from Totonicapam, hereby designated as lectotype and paralectotypes, deposited at BMNH.

Diagnosis. This species can be distinguished from other *Macrolygistopterus* by having the pronotum subtrapezoidal, with anterior and lateral margins stout and pronounced and by the entire elytra bluish black, iridescent, distally broadened.

Redescription. Head black, with rostrum as long as antennomeres I+II (Fig. 12); coronal suture shallow; median interocular distance of 3x the width of eyes. Mandibles slightly arched, testaceous. Maxillary palp with palpomeres III+IV as long as II; palpomere I small, about half the length of II; palpomere IV securiform, broadened compared to others. Antennae finely pubescent, scape long, tubular, as long as III; antennomere II small, 1/6 of antennomere I length; antennomere III subequal to I in length; antennomeres IV and V subequal, length of 3/4 of antennomere III; antennomeres V to XI gradually decreasing in length.

Pronotum subtrapezoidal, transverse, wider than longer (9:11), orange testaceous, with margins stout and pronounced, and median black stripe; a pair of longitudinal elevations parallels, constrict at basal and apical third, broadened in middle third; with a pair of oblique elevations in basal third region (Fig. 21). Scutellum black, longer than wider.

Elytra broadened in apical third, margins stout, bluish black, iridescent, strongly punctate, without transversal lines. Arrangement of elytral costae: costa I and IV subapically forming an arch, obliterated in the apical third in costa I and in middle third in costa IV; costa II following alone until touching the costa IV margin of arch, not obliterated; costa III following alone until middle third splitting in two and touching the outer margin of costa III and inner margin of costa IV, obliterated. Apical region of elytral costa partially obliterated (Figs. 3, 29).

Female ventrite VII transverse, densely pubescent, with apical region shallow notched, forming two non-prominent rounded apices (Fig. 38).

Width at humeri > 3.2–3.6mm. Elytral length—12.5–14.5mm.

Distribution. Guatemala and Mexico (Fig. 45).

Examined material. [Guatemala] Quiche Mts., 7–900ft, Champion, B.C.A. Col. III.(2), 1♂(lectotype) (BMNH); [Guatemala] Totonicapam, 85–100 ft., Champion, B.C.A. Col. III.(2), 1♀(paralectotype) (BMNH); [Guatemala] Tepan, Guatemala, Conradt, 1♀ (paralectotype) (BMNH); Mexique, 1♂ (IRSN).

FIGURES 41–44. Female genitalia, ventral view: 41. *Macrolygistopterus quadricostatus*; 42. *M. succinctus*. Male dorsal, lateral and ventral view of genitalia: 43. *M. quadricostatus*; 44. *M. succinctus*. Scale 1mm.

***Macrolygistopterus germaini* Pic, 1930**

(Figs. 4, 13, 22, 30, 45)

Macrolygistopterus germaini Pic, 1930a: 84 (original description); Kleine, 1933: 104 (catalogue); Blackwelder, 1945: 351 (catalogue); Nascimento, 2013: 324 (checklist of species).

Type material. *Macrolygistopterus germaini*: syntype, male, from Minas Gerais State, Brazil, hereby designated as lectotype, deposited at MNHN.

Diagnosis. Elytral costa I reaching elytral apex, subapically obliterated; costae II and IV subapically fused, forming an arch, subapically obliterated; costa III not touching the arch formed by costae II+IV (Fig. 30). Adjacent area of scutellum black (Fig. 30).

Redescription. Head black, prolonged in short rostrum, as long as sum of antennomeres II+III (Fig. 13); coronal suture shallow; median interocular distance of 2x width of eyes. Mandibles curved, connate to labrum, testaceous. Maxillary palp with palpomere IV slightly larger than III, securiform; segments II and III subequal in length. Antennae finely pubescent, scape subconic, pedicel small (1/3 of scape length); antennomere III as long as I; IV subequal to III, slightly larger and longer; antennomeres V to XI gradually decreasing in length.

Pronotum rectangular, transverse, slightly wider than longer (8:9), with rounded angles and posterior angles pronounced, testaceous, with a longitudinal black stripe medially located; a pair of longitudinal elevations parallels, discontinued at basal and apical third, broadened in middle third. Pair of oblique elevations in basal third and a pair of parallel median elevations (Fig. 4). Scutellum black, wider than longer.

Elytra subparallel, margins stout and pronounced, testaceous, with apical third black. Arrangement of elytral costae: Elytral costa I reaching elytral apex, subapically obliterated; costae II and IV subapically fused, forming an arch, subapically obliterated; costa III not touching arch formed by costae II+IV (Fig. 30). Adjacent area of scutellum black (Fig. 4, 30).

Width at humeri > 3.4mm. Elytral length—11.1mm.

Distribution. Brazil, Minas Gerais, only known by the lectotype (Fig. 45).

Examined material. Brasil [Minas Gerais], Caraça, P. Germaini, 2º Semestre 1884, 1♂ (lectotype) (MNHN). Female unknown.

***Macrolygistopterus grandjeani* Pic, 1930**

(Figs. 5, 14, 23, 31, 39, 45)

Macrolygistopterus grandjeani Pic, 1930a: 83 (original description); Kleine, 1933: 104 (catalogue); Blackwelder, 1945: 351 (catalogue).

Type material. *Macrolygistopterus grandjeani*: syntype, male, Durango, Mexico, hereby designated as lectotype, deposited at MNHN.

Diagnosis. Pronotum transverse, rectangular, elytra blue, subparallels, both densely pubescent, short rostrum.

Redescription. Head black, prolonged in short rostrum, as long as sum of antennomeres I+II+III (Fig. 14); coronal suture widened close to antennal insertion; median interocular distance of 3x width of eye. Mandibles curved, longer than labrum, orange. Maxillary palp with palpomere I short, ca. 1/3 the length of II; palpomere II elongated, as long as the sum of III+IV; palpomere IV securiform. Antennae with seven antennomeres (others missing), scape conic, 1/3 the shorter than III; pedicel minute, ca. 1/4 the length of scape; antennomere III as long as I+II; antennomere IV slightly larger and longer than III; antennomeres V to VII gradually shorter.

Pronotum rectangular, slightly wider than longer (6:7), with rounded angles and posterior angles pronounced and lateral margins not pronounced, densely pubescent, orange, with a wide longitudinal black stripe; pair of longitudinal elevations parallels, slightly larger in basal third, with pair of oblique carinae starting from basal 2/4 (Fig. 23). Scutellum dark blue, transverse, subquadrate (Figs. 5, 31).

Elytra subparallel, dehiscent, margins stout and pronounced, bluish black, pubescent. Arrangement of elytral costae: costae I and II region and costae III and IV fused in subapical region, each of the fusions continuing as a single costa, not reaching the apex.

Female ventrite VII transverse, laterally moderately pubescent, with a shallow and wide groove dividing the apex, forming two backwards divergent apices (Fig. 39).

Width at humeri > 3.1mm. Elytral length—13.0mm.

Distribution. Durango, Mexico, only known by the lectotype (Fig. 45).

Examined material. Durango, Mexique, 1♀ (lectotype) (MNHN).

Male unknown.

***Macrolygister simoni* Pic, 1930**

(Figs. 6, 17, 24, 34, 45)

Macrolygister simoni Pic, 1930c: 240 (original description); Kleine, 1933: 104 (catalogue); Blackwelder, 1945: 351 (catalogue).

Type material. *Macrolygister simoni*: syntype, male, Venezuela, Colonia Tovar, hereby designated as lectotype, deposited at MNHN.

Diagnosis. Shiny appearance, poorly pubescent, long rostrum, as long as the sum of antennomeres I+II, body small when compared with other *Macrolygister* species, costae I and IV apically fused, forming an arch, with elytral 4/5 strongly obliterated; costa III obliterated at elytral 4/5; costa II reaching elytral apex, crossing the arch formed by costae I+IV, obliterated after the arch (Fig. 34).

Redescription. Head black, prolonged in a long rostrum, as long as the sum of antennomeres I+II (Fig. 17); median interocular distance of 2x eye width. Mandibles simple, not curved, slightly shorter than labrum, testaceous. Maxillary palp with palpomere I short, about 1/3 the length of II; palpomere II subconic, as long as III; palpomere IV truncated, transverse, securiform. Antennae with scape conic; pedicel with 1/5 of scape's length, other antennomeres missing.

Pronotum pentagonal, wider than longer (6:7.5), rounded angles, testaceous, with a wide longitudinal black strip; a pair of median elevations widened in median third; a pair of weak oblique elevations in median and basal region (Fig. 24). Scutellum black, rectangular, longer than wider (Figs. 6, 34).

Elytra subparallel, with lateral margins stout and pronounced, testaceous, with apical third bluish black. Arrangement of elytral costae: costae I and IV apically fused, forming an arch, with elytral 4/5 strongly obliterated; costa III obliterated at elytral 4/5; costa II reaching elytral apex, crossing the arch formed by costae I+IV, obliterated after the arch.

Width at humeri > 2.5mm. Elytral length—11.0mm.

Distribution. Colonia Tovar, Venezuela, only known by the lectotype (Fig. 45).

Examined material. Colonia Tovar, E. Simon, 1.11.[18]86, 1♂ (lectotype) (MNHN).

Female unknown.

***Macrolygister subparallelus* Pic, 1930**

(Figs. 7, 15, 25, 32, 45)

Macrolygister subparallelus Pic, 1930a: 84 (original description); Kleine, 1933: 104 (catalogue); Blackwelder, 1945: 351 (catalogue); Costa & Vanin, 2012:55 (immature stages).

Type material. *Macrolygister subparallelus*: syntype, male, Paraguay, no other data, hereby designated as lectotype, deposited at MNHN.

Diagnosis. Pronotum rectangular, with angles slightly directed backwards and strongly sculptured (Fig. 25). Elytral costa arrangement: costa I and II fused subapically, apex of costa I apically obliterated; costa III subapically obliterated and fused to the outer margin of II; costa IV reaching elytral apex, with an oblique obliterated line linking costa II and IV (Fig. 32).

Redescription. Head black, prolonged in rostrum as long as sum of antennomeres I+II+III (Fig. 15); coronal suture reduced, hardly visible. Median interocular distance of 2x width of eye. Mandibles curved, connates to labrum, testaceous. Maxillary palp with palpomere I short; palpomere II twice the length of I; palpomere III slightly shorter than the precedent; palpomere IV securiform. Antennae with scape conic; pedicel 1/3 of scape length; antennomere III subequal to I in length; antennomere IV slightly longer than precedent; antennomeres V to VII gradually shorter.

Pronotum subtrapezoidal, wider than longer (6:9), with anterior margin pronounced, and lateral and posterior margins not pronounced, testaceous, with a wide longitudinal black strip, strongly sculptured; a pair of shallow longitudinal elevations parallels, constricted in 2/5 and 4/5; a pair of oblique elevations starting from close to the anterior angles and reaching but not touching the median enlarged region (Fig. 25). Scutellum black, transverse (Figs. 7, 32).

Elytra subparallels, lateral margins stout, testaceous with apical third bluish black. Arrangement of elytral costae: Costa I and II fused subapically, apex of costa I apically obliterated; costa III subapically obliterated and fused to outer margin of II; costa IV reaching elytral apex, with an oblique obliterated line linking costa II and IV (Fig. 32).

Width at humeri > 2.6mm. Elytral length—10.4mm.

Distribution. Paraguay, only known by the lectotype (Fig. 45).

Examined material. Paraguay, 1 ♂ (lectotype) (MNHN).

Female unknown.

Comments. Costa & Vanin (2012) described the immatures stages of a *Macrolygistopterus* species that at the moment of the publication was tentatively identified as *M. subparallelus*, however, after the comparison of the specimen with the lectotype of *M. subparallelus* I was able to recognize that the specimen was from another species.

***Macrolygistopterus testaceirostris* Pic, 1930**

(Figs. 8, 16, 26, 33, 40, 45)

Macrolygistopterus testaceirostris Pic, 1930a: 84 (original description); Kleine, 1933: 104 (catalogue); Blackwelder, 1945: 351 (catalogue); Nascimento, 2013: 324 (checklist of species).

Type material. *Macrolygistopterus testaceirostris*: syntype, female, São Paulo, Brazil, no other data, hereby designated as lectotype, deposited at MNHN.

Diagnosis. Dorsal rostrum and profemora testaceous, apex of ventrite VII of females acuminate, elytral costa strongly demarcated.

Redescription. Head black, with rostrum dorsally testaceous, as long as antennomeres I+II (Fig. 16); coronal suture shallow, hardly visible; median interocular distance of 2x the width of eyes. Mandibles short, slightly arched, testaceous, connate to labrum. Maxillary palp with palpomere I small, ca. 1/3 the length of II; palpomere II elongate, subconic; palpomeres III+IV as long as II, the last broadened, securiform. Antennae finely pubescent, scape subconic, constrict basally; pedicel small, 1/4 the length of scape; antennomere III as long as the sum of I+II; III to V subequal; antennomeres V to XI gradually decreasing in length.

Pronotum subtrapezoidal, wider than longer (9:12), with margins stout and rounded, angles rounded, testaceous, with a median longitudinal black stripe; a pair of longitudinal elevations parallel, broadened in middle third and less prominent in anterior and posterior region; a pair of oblique elevations in basal third region starting from 3/4 portion and reaching but not touching the broadened region in middle third of pronotum; a pair of curved longitudinal elevations parallel to median longitudinal elevations (Fig. 26).

Elytra subparallel, broadened apically, with lateral margins stout, testaceous, apical third black, not reticulated. Arrangement of elytral costae: costa I and IV not fused to any other, both free; costae II and III subapically fused, this fusion continuing into a single costa (II+III); elytral costae not reaching elytral apex. Scutellum black, transverse (Figs. 8, 33).

Female ventrite VII transverse, densely pubescent, with apical region deeply notched, forming two acuminate apices (Fig. 40).

Width at humeri > 3.4 mm. Elytral length—15 mm.

Distribution. Brazil, São Paulo, only known by the lectotype (Fig. 45).

Examined material. São Paulo, Brasil, 1 ♀ (lectotype) (MNHN).

Male unknown.

***Macrolygistopterus kirschi* Pic, 1931**

(Figs. 9, 18, 35, 45)

Macrolygistopterus kirschi Pic, 1931: 4 (original description); Kleine, 1933: 104 (catalogue); Blackwelder, 1945: 351 (catalogue).

Type material. *Macrolygistopterus kirschi*: syntype, female, Buenos Aires, Argentina, Kirsch col, 1878, hereby designated as lectotype, deposited at SGFN.

Diagnosis. A wide black stripe on pronotum with only lateral margins testaceous and elytral costae I and II apically fused, forming an arch; costae III subapically fused with the arch formed by costae I+II; costa IV following alone without touching the elytral apex (Fig. 35).

Redescription. Head black, with short rostrum, as long as 3x the median interocular distance of eyes (Fig. 18); median interocular distance of 3x the width of eyes. Mandibles short, slightly curved, testaceous, connates to labrum. Antennae black, scape subconic, pedicel small, ca. 1/4 the length of scape; antennomere III as long as sum of I+II; antennomere IV slightly longer and wider than III; antennomeres V to XI gradually decreasing in length.

Pronotum pentagonal, with rounded angles; with a wide black stripe on pronotum, with only lateral margins testaceous; a pair of longitudinal elevations parallels, broadened in middle third; a pair of oblique elevations starting from posterior angles and touching the broadened region in the middle third.

Elytra subparallel, lateral margins stout, testaceous, apical third blackened. Arrangement of elytral costae: elytral costae I and II apically fused, forming an arch; costae III subapically fused with the arch formed by costae I+II; costa IV following alone without touching the elytral apex (Fig. 35).

Width at humeri > 3.2mm. Elytral length—9.6mm.

Distribution. Buenos Aires, Argentina, only known by the lectotype (Fig. 45).

Examined material. Lectotype: ♂, Buenos Ayres Kirsch, [18]78, Kirschi n. sp., 1♂ (photography provided by SGFN).

Key to the species of *Macrolygistopterus*

1. Elytra entirely bluish black 2
- Elytra with basal portion testaceous or reddish and apical third to half black or bluish black 3
2. Apical portion of elytra widened; costa I subapically fused with costa IV, forming an arch subapically; costa II approximately touching the middle apex of the arch formed by costae III+IV; costa III partially obliterated after elytral apical half, fused with costa II and IV at the 4/5 elytral (Figs. 3, 29). Pronotum trapezoidal, glabrous, with anterior and lateral margins thickened, pronounced (Fig. 21) *M. caeruleus* (Gorham, 1881)
- Elytra subparallel, not broadened distally; elytral costae I and II apically fused; costa III and IV fused apically (Figs. 5, 31). Pronotum rectangular, densely pubescent, with anterior and lateral margins thin (Fig. 23). *M. grandjeani* Pic, 1930
3. Pronotum black, glabrous, strongly sculptured (Fig. 19), if testaceous with a slender black stripe restricted to the middle of the median elevations. Arrangement of elytral costae: costa I subapically obliterated, costae II and IV subapically fused forming an arch; costa III apically fused with the arch formed by costae II+IV, with parallel lines between costae II and III, in some specimens parallel lines very obliterated (Figs. 1, 27) *M. succinctus* (Latreille, 1811)
- Pronotum testaceous, scarcely pubescent, with a broad black longitudinal stripe. Arrangement of elytral costae not like above 4
4. Pronotum more or less pentagonal, with anterior margins rounded 5
- Pronotum more or less subtrapezoidal 6
5. Rostrum short (Fig. 18); costa I and II apically fused, forming an arch; costa III subapically fused with the arch formed by costae I+II; costa IV following alone without touching the elytral apex (Fig. 35) *M. kirschi* Pic, 1931
- Rostrum long (Fig. 17); costae I and IV apically fused, forming an arch, with elytral 4/5 strongly obliterated; costa III obliterated at elytral 4/5; costa II reaching elytral apex, crossing the arch formed by costae I+IV, obliterated after the arch (Fig. 35) *M. simoni* Pic, 1930
6. Elytral costa I reaching elytral apex, subapically obliterated; costae II and IV subapically fused, forming an arch, subapically obliterated; costa III not touching the arch formed by costae II+IV (Fig. 30). Adjacent area of scutellum black (Fig. 30) *M. germaini* Pic, 1930
- Arrangement of elytral costae not like above. Adjacent area of scutellum of the same color of basal portion of elytra 7
7. Costa I and II fused subapically, apex of costa I apically obliterated; costa III subapically obliterated and fused to the outer margin of II; costa IV reaching elytral apex, with an oblique obliterated line linking costa II and IV (Fig. 32) *M. subparallelus* Pic, 1930
- Costa I and IV not fused to any other, both free; costae II and III subapically fused, this fusion continuing into a single costa (II+III); elytral costae not reaching elytral apex. Rostrum black or testaceous 8
8. Rostrum testaceous; apical region of ventrite VII of females notched, forming two acuminate apices (Fig. 40); antennomere IV subequal to III in width; elytral costae slightly distinct (Figs. 8, 33) *M. testaceirostris* Pic, 1930
- Rostrum black; apical region of ventrite VII of females notched, forming two rounded apices (Fig. 37); antennomere IV distinctly wider than the others; elytral costa distinctly visible (Figs. 2, 28) *M. quadricostatus* (Buquet, 1842)

FIGURES 45–46. Distribution maps: 45. Distribution of *Macrolygistopterus caeruleus*, *M. germaini*, *M. grandjeani*, *M. simoni*, *M. subparallelus*, *M. testaceirostris* and *M. kirschi*. 46. Distribution of *M. succinctus* and *M. quadricostatus*.

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References

- Blackwelder, R.E. (1945) Checklist of the coleopterous insects of Mexico, Central America, the West Indies and South America. *Bulletin of the United States National Museum*, 185 (3), 343–550.
<http://dx.doi.org/10.5479/si.03629236.185.3>
- Bocáková, M. (1992) Revision of the genus *Calochromus* Guérin-Ménéville (Coleoptera, Lycidae) from New Guinea and adjacent islands. *Acta Societatis Zoologicae Bohemicae*, 89, 301–308.
- Bocák, L. & Bocáková, M. (1990) Revision of the suprageneric classification of the family Lycidae (Coleoptera). *Polskie Pismo Entomologiczne*, 59, 623–676.
- Bocák, L. & Bocáková, M. (2008) Phylogeny and Classification of the Family Lycidae (Insecta: Coleoptera). *Annales Zoologici*, 58, 695–720.
<http://dx.doi.org/10.3161/000345408X396639>
- Buquet, L. (1842) Description de cinq espèces nouvelles de Coléoptères du genre *Lycus* de Fabricius (*Dictyoptera* Latr. *Dictyopterus* Guér.). *Revue Zoologique*, 5, 6–8.
- Costa, C. & Vanin, S.A. (2012) Descriptions of *Macroligysopterus subparallelus* Pic, 1930 immatures from southeastern Brazil (Coleoptera, Lycidae, Lycinae, Calochromini). *Zootaxa*, 3403, 54–60.
- Gorham, H.S. (1884) *Biologia Centrali-Americana, Insecta, Coleoptera and Supplement to Malacodermata*, 3 (pt. 2), 13 plates, 1–372.
- Green, J.W. (1950) The Lycidae of the United States and Canada. II. The tribe Lygistorini. *Transactions of the American Entomological Society*, 76, 13–25.
- Green, J.W. (1954) An addition to the lycid fauna of the United States (Coleoptera). *Coleopterists Bulletin*, 8, 55–57.
- Kazantsev, S.V. (2003) Morphology of Lycidae with some considerations on evolution of the Coleoptera. *Elytron*, 17, 49–226.
- Kleine, R. (1933) Lycidae Pars 128. In: Junk, W. & Schenkl, S. (Eds.), *Coleopterorum Catalogueus auspiciis et auxilio*. W. Junk, Berlin, pp. 1–145.
- Latreille, P. (1811) *Insectes de l'Amérique équinoxiale recueillis pendant le voyage de MM. de Humboldt et Bonpland*. In: *Voyage de Humboldt et Bonpland, deuxième partie. Observations de zoologie et d'anatomie comparée*, 1, pp. 127–252, planches 15–25.
- Lawrence, J.F., Slipinski, A., Seago, A.E., Thayer, M.K., Newton, A.F. & Marvaldi, A.E. (2011) Phylogeny of the Coleoptera based on morphological characters of adults and larvae. *Annales Zoologici*, 61, 1–217.
<http://dx.doi.org/10.3161/000345411X576725>
- Masek, M. & Bocák, L. (2014) The taxonomy and diversity of *Platerodrilus* (Coleoptera, Lycidae) inferred from molecular data and morphology of adults and larvae. *Zookeys*, 426, 29–63.
<http://dx.doi.org/10.3897/zookeys.426.7398>
- Motyka, M. & Bocák, L. (2015) The classification of *Flabellochromus* and *Dumbrelia* (Coleoptera: Lycidae) with descriptions of two new species of *Calochromus* from the Sundaland Region. *Zootaxa*, 3941 (1), 125–130.
<http://dx.doi.org/10.11646/zootaxa.3941.1.7>
- Nascimento, E.A. (2013) The current status of knowledge on Lycidae Laporte, 1836 from Brazil (Insecta: Coleoptera). *Checklist*, 9 (2), 323–238.
- Pic, M. (1929) Nouveautés diverses. *Mélanges Exotico-Entomologiques*, 53, 1–36.
- Pic, M. (1930a) Malacodermes Exotiques. *L'Échange, Revue Linnéenne*, Hors-texte 441, 82–85.
- Pic, M. (1930b) Coléoptères Nouveaux de La République Argentine. *Bulletin de la Société Zoologique de France*, 55 (2), 175–179.
- Pic, M. (1930c) Notes synonymiques et corrections (Col.). *Bulletin de la Société Entomologique de France*, 36, 239–241.
- Pic, M. (1931) Coléoptères exotiques en partie nouveaux. *L'Échange, Revue Linnéenne*, 443, 4.

- Pic, M. (1933) Malacodermes Exotiques. *L'Échange, Revue Linnéenne*, Hors-texte 451, 227 [in pars].
- Ramsdale, A.S. (2007) A new species of *Calochromus* Guérin-Méneville (Coleoptera: Lycidae) from Fiji. *Zootaxa*, 1625, 43–46.
- Zaragoza-Caballero, S. (2003) Cantharoidea (Coleoptera) de México. VII. Nuevos *Lygisterus* Dejean (Lycidae: Calochrominae). *Acta Zoologica Mexicana*, 89, 1–16.