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## Monograph

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# Macroductylini (Coleoptera, Scarabaeidae, Melolonthinae): primary types of type species and taxonomic changes to the generic classification

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## Table of contents

Abstract .....	3
Introduction .....	3
Genera whose type-species are not treated here .....	4
Material and methods .....	10
Results .....	11
<i>Agaocnemis</i> Moser, 1918 .....	11
<i>Agaocnemis pruina</i> Moser, 1918 .....	11
<i>Alvarinus</i> Blanchard, 1850 .....	14
<i>Alvarinus canescens</i> (Burmeister, 1855) .....	14
<i>Ancistrosoma</i> Curtis, 1835, nomen protectum .....	14
<i>Anomyx</i> Saylor, 1940 .....	15
<i>Anomyx uruguayensis</i> (Moser, 1921) .....	16
<i>Barybas</i> Blanchard, 1850 .....	16
<i>Barybas nana</i> Blanchard, 1850 .....	18
<i>Barybas pellucens</i> (Burmeister, 1855) .....	20
<i>Barybas viridiaenea</i> (Moser, 1821) .....	20
<i>Byrasba</i> Harold, 1869, revalidated .....	21
<i>Byrasba volvula</i> (Burmeister, 1855) .....	22
<i>Calodactylus</i> Blanchard, 1850 .....	22
<i>Calodactylus tibialis</i> Blanchard, 1850 .....	23
<i>Ceraspis</i> LePeletier de Saint-Fargeau & Audinet-Serville, 1828 .....	24
<i>Ceraspis bivulnerata</i> (Germar, 1824) .....	25
<i>Ceratolontha</i> Arrow, 1948 .....	26
<i>Ceratolontha venezuelae</i> Arrow, 1948 .....	28

*European Journal of Taxonomy* 350: 1–71 (2017)

<i>Chariodactylus</i> Moser, 1919 .....	28
<i>Chariodactylus chacoensis</i> Moser, 1919 .....	28
<i>Chariodema</i> Blanchard, 1850 .....	30
<i>Chariodema virescens</i> (Blanchard, 1842) .....	30
<i>Clavipalpus</i> Laporte, 1832 .....	30
<i>Clavipalpus dejeani</i> Laporte, 1832 .....	31
<i>Euryaspis</i> Blanchard, 1850, revalidated .....	31
<i>Euryaspis gaudichaudii</i> Blanchard, 1850 .....	32
<i>Euryaspis obesa</i> (Burmeister, 1855) comb. nov. ....	32
<i>Faula</i> Blanchard, 1850, revalidated .....	34
<i>Faula cornuta</i> Blanchard, 1850 .....	34
<i>Junkia</i> Dalla Torre, 1913, revalidated .....	35
<i>Junkia ceylanica</i> (Nonfried, 1894) .....	35
<i>Mallotarsus</i> Blanchard, 1850 .....	36
<i>Mallotarsus spadiceus</i> Blanchard, 1850 .....	36
<i>Manodactylus</i> Moser, 1919 .....	36
<i>Manodactylus gaujoni</i> Moser, 1919 .....	37
<i>Manopus</i> Conte de Castelnau, 1840 .....	37
<i>Manopus biguttatus</i> Conte de Castelnau, 1840 .....	39
<i>Oedichira</i> Burmeister, 1855 .....	39
<i>Oedichira pachydactyla</i> Burmeister, 1855 .....	39
<i>Paulosawaya</i> Martínez & d'Andretta, 1956, revalidated .....	40
<i>Paulosawaya ursina</i> (Blanchard, 1850) comb. nov. ....	41
<i>Pectinosoma</i> Arrow, 1913 .....	41
<i>Pectisonoma elongate</i> Arrow, 1913 .....	42
<i>Philochloenia</i> Dejean, 1833 .....	42
<i>Philochloenia armata</i> Fuhrmann & Vaz-de-Mello, 2017 nom. nov. ....	44
<i>Philochloenia rufipennis</i> (Fabricius, 1801) comb. nov. ....	45
<i>Philochloenia castaneipennis</i> (Guérin-Méneville, 1831) comb. nov. ....	45
<i>Plectris</i> LePeletier de Saint-Fargeau & Audinet-Serville, 1828 .....	46
<i>Plectris fallax</i> (Blanchard, 1850) .....	46
<i>Plectris singularis</i> (Blanchard, 1850) comb. nov. ....	47
<i>Plectris tomentosa</i> LePeletier de Saint-Fargeau & Audinet-Serville, 1828 .....	47
<i>Pseudoserica</i> Guérin-Méneville, 1838, revalidated .....	48
<i>Pseudoserica grandicornis</i> (Blanchard, 1850) comb. nov. ....	48
<i>Pseudoserica marmorea</i> (Guérin-Méneville, 1838) .....	49
<i>Pseudoserica viridis</i> (Blanchard, 1850) comb. nov. ....	49
<i>Rhinaspis</i> Perty, 1833 .....	49
<i>Rhinaspis aenofusca</i> (Moser, 1919) .....	50
<i>Rhinaspis fuhrmanni</i> Smith, 2016 .....	51
<i>Schizochelus</i> Blanchard, 1850 .....	51
<i>Schizochelus flavescens</i> Blanchard, 1850 .....	59
<i>Schizochelus mirabilis</i> (Moser, 1921) comb. nov. ....	60
Key to Macroductylini genera .....	60
Discussion .....	64
Male morphology and nomenclature .....	64
Acknowledgements .....	64
References .....	65

**Abstract.** Type series for 35 type species of Macroductylini (Coleoptera: Scarabaeidae: Melolonthinae) are studied and taxonomic changes are proposed. The following 35 lectotypes are designated: *Agaocnemis pruina* Moser, 1918; *Amphicrania ursina* Burmeister, 1855; *Anomalochilus singularis* Blanchard, 1850; *Anomalonyx uruguayensis* Moser, 1921; *Aulanota sulcipennis* Moser, 1924; *Barybas nanus* Blanchard, 1850; *Barybas volvulus* Burmeister, 1855; *Calodactylus tibialis* Blanchard, 1850; *Ceraspis pruinosa* LePeletier de Saint-Fargeau & Audinet-Serville, 1828; *Ceratolontha venezuelae* Arrow, 1948; *Chariodactylus chacoensis* Moser, 1919; *Clavipalpus dejeani* Laporte, 1832; *Corminus canescens* Burmeister, 1855; *Ctenotis obesa* Burmeister, 1855; *Ctilocephala pellucens* Burmeister, 1855; *Demodema fallax* Blanchard, 1850; *Euryaspis gaudichaudii* Blanchard, 1851; *Faula cornuta* Blanchard, 1850; *Gama grandicornis* Blanchard, 1850; *Gastrohoplus mirabilis* Moser, 1921; *Mallotarsus spadiceus* Blanchard, 1850; *Manodactylus gaujoni* Moser, 1919; *Manopus biguttatus* Conte de Castelnau, 1840; *Melolontha rufipennis* Fabricius, 1801; *Oedichira pachydactyla* Burmeister, 1855; *Pachycerus castaneipennis* Guérin-Méneville, 1831; *Pachylotoma viridis* Blanchard, 1850; *Pectinosoma elongata* Arrow, 1913; *Philochlaenia virescens* Blanchard, 1842; *Plectris tomentosa* LePeletier de Saint-Fargeau & Audinet-Serville, 1828; *Pseudohercitis viridiaenea* Moser, 1921; *Rhinaspoides aeneofusca* Moser, 1919; *Schizochelus flavescens* Blanchard, 1850; *Serica marmorea* Guérin-Méneville, 1831; and *Ulomenes hypocrita* Blanchard, 1850. The following six genera are revalidated: *Byrasba* Harold, 1869 (formerly a synonym of *Rhinaspis* Perty, 1833); *Euryaspis* Blanchard, 1851 (formerly a synonym of *Plectris* LePeletier de Saint-Fargeau & Audinet-Serville, 1828); *Junkia* Dalla Torre, 1913 (formerly a synonym of *Plectris*); *Faula* Blanchard, 1850 (formerly a synonym of *Ceraspis* LePeletier de Saint-Fargeau & Audinet-Serville, 1828); *Paulosawaya* Martínez & d'Andretta, 1956 (formerly a synonym of *Clavipalpus* Laporte, 1832); and *Pseudoserica* Guérin-Méneville, 1838 (formerly a synonym of *Plectris*). The following 11 new generic synonymies are proposed: *Anomalochilus* Blanchard, 1850 a new synonym of *Plectris*; *Amphicrania* Burmeister, 1855 (formerly a synonym of *Clavipalpus* and a homonym of *Amphicrania* Dejean, 1833) and *Pseudoleuretra* Martínez & d'Andretta, 1956 are synonymized with *Paulosawaya*; *Aulanota* Moser, 1924 and *Hadrocerus* Guérin-Méneville, 1838 are synonymized with *Philochloenia*; *Ctenotis* Burmeister, 1855 a new synonym of *Euryaspis* Blanchard, 1851; *Gama* Blanchard, 1850, *Pachylotoma* Blanchard, 1850 (formerly a synonym of *Gama*) and *Harpodactyla* Burmeister, 1855 (formerly a synonym of *Gama*) are synonymized with *Pseudoserica*; *Gastrohoplus* Moser, 1921 a new synonym of *Schizochelus* Blanchard, 1850; and *Hercitis* Burmeister, 1855 a new synonym of *Barybas* Blanchard, 1850. One new specific synonymy is proposed: *Hercitis pygmaea* Burmeister, 1855 a synonym of *Barybas nana* Blanchard, 1850. *Philochloenia armata* nom. nov. is proposed for *Aulanota sulcipennis* Moser, 1924 to avoid secondary homonymy. *Ancistrosoma* Curtis, 1835, *nomen protectum*, has priority over *Sciuropus* Dejean, 1833, *nomen oblitum*. Taxonomic remarks, diagnoses and a key are given to all Macroductylini genera.

**Keywords.** Lectotype, Neotropical, Scarabaeoidea, systematic, type series.

Fuhrmann J. & Vaz-de-Mello F.Z. 2017. Macroductylini (Coleoptera, Scarabaeidae, Melolonthinae): primary types of type species and taxonomic changes to the generic classification. *European Journal of Taxonomy* 350: 1–71. <https://doi.org/10.5852/ejt.2017.350>

## Introduction

Melolonthinae is among the most poorly known subfamilies within the Scarabaeoidea, and its tribal classification is in dire need of review (cf., Smith *et al.* 2006). Recent studies on the Macroductylini have begun to address this problem. An important contribution to the Neotropical Melolonthinae was produced by Evans (2003), a checklist supplemented by Smith & Evans (2005) and updated by Evans & Smith (2005, 2007, 2009). Katovich (2008) provided the first phylogenetic hypothesis for the tribe, and proposed a new view about the group. Since Katovich's (2008) Macroductylini review, some changes to

the generic classification were added by Smith (2008), who proposed taxonomic changes and described two genera (*Ampliodactylus* Smith, 2008 and *Pusiodactylus* Smith, 2008), by Katovich (2011) and Fuhrmann (2012), who described a genus each (*Pseudopectinosoma* Katovich, 2011 and *Compsodactylus* Fuhrmann, 2012), by Mondaca & Ocampo (2012), who transferred *Phyophis* Redtenbacher, 1868 from Tanyproctini to Macroductylini, and by Smith & Mondaca (2015), who changed two genus placements (*Modialis* Fairmaire & Germain, 1860 and *Phytholaema* Blanchard, 1851 to Macroductylini) and described three genera (*Extenuoptyophis* Smith & Mondaca, 2015, *Insimuloissacaris* Smith & Mondaca, 2015 and *Neuquenodactylus* Smith & Mondaca, 2015).

An evident problem within the tribe is that many genera have been characterized and taxonomic acts proposed without examination of their respective type series.

This paper proposes lectotype designations for the type species of 35 generic names (21 valid and 14 invalid names) of Macroductylini, emends diagnoses, provides a key to genera, and corrects some nomenclatural problems that have persisted for more than a century. The importance of the boundary between taxon and name-bearing type as the objective standard of reference in modern taxonomy is stressed here and some important systematic problems are identified to encourage future studies.

Including the new changes proposed here, the Macroductylini now comprises 46 Neotropical genera (*Ceraspis* LePeletier de Saint-Fargeau & Audinet-Serville, 1828 with two subgenera) and 1028 species (Table 1).

#### **Genera whose type species are not treated here**

Macroductylini now includes 85 available generic names, of which 46 are valid genera, one is a valid subgenus, and 38 are invalid names (Table 1). Five of them are replacement names (*Anomonyx* Saylor, 1940 for *Anomalonyx* Moser, 1921; *Byrasba* Harold, 1869 for *Barybas* Burmeister, 1855; *Hadrocerus* Guérin-Méneville, 1838 for *Pachycerus* Guérin-Méneville, 1831; *Junkia* Dalla Torre, 1913 for *Trichoderma* Nonfried, 1894; *Pristerophora* Harold, 1869 for *Prionophora* Solier, 1851), *Macroductylus* Dejean, 1821 and *Stenothorax* Harris, 1827 have the same type species (*Melolontha subspinosa* Fabricius, 1775), and the other 79 generic names have type species (i.e., Macroductylini includes 79 type species for generic names).

The present study designates 35 lectotypes for some of these 79 type species. The primary types of the other 44 macroductiline type species are noted below.

The following five type species are being studied (articles in preparation): *Alvarinus hilarii* Blanchard, 1850 (type species of *Alvarinus* Blanchard, 1850, with four syntypes in MNHN) by Larissa Albuquerque (Universidade Federal de Pernambuco, Brazil) (pers. comm.); *Canestera marshalli* Saylor, 1938 (type species of *Canestera* Saylor, 1938, with a male holotype in BMNH) by J.F.; *Dicrania nigra* LePeletier de Saint-Fargeau & Audinet-Serville, 1828 (type species of *Dicrania*, with a male syntype in MNHN) by J.F.; *Hercitis pygmaea* Burmeister, 1855 (type species of *Hercitis* Burmeister, 1855, and a new synonym of *Barybas nana* Blanchard, 1850, with a male syntype in ZNSM) by Holger Dombrow (pers. comm.); *Monocrania luridipennis* Laporte, 1832 (type species of *Monocrania* Laporte, 1832, a synonym of *Dicrania*, with a female syntype in MNHN) by J.F.

The depositories for the male holotypes are known for the following 11 type species: *Astaenoplia miserabilis* Martínez, 1957 (type species of *Astaenoplia* Martínez, 1957, holotype in the Antonio Martínez Collection, currently in MACN); *Eubarybas asper* Gutiérrez, 1952 (type species of *Eubarybas* Gutiérrez, 1952, and a synonym of *Barybas*, holotype in MNHC); *Dicrania martinezi* Frey, 1972 (type species of *Compsodactylus*, holotype in MACN); *Extenuoptyophis metropolitensis* Smith & Mondaca,

## FUHRMANN J. &amp; VAZ-DE-MELLO F.Z., Type series of type species of Macroductylini

**Table 1** (continued on next pages). Synopsis of Macroductylini genera. Genus with number of valid and available (in brackets) names; “sp./spp”, number of species / species and subspecies; “=” stands for: synonym of.

	Genus	Type species	Designation	Taxonomy	sp./spp
1	(1) <i>Agaoenemis</i> Moser, 1918	<i>Agaoenesis pruiina</i> Moser, 1918	monotypy	–	1
2	(2) <i>Alvarinus</i> Blanchard, 1850	<i>Alvarinus hilarii</i> Blanchard, 1850	Evans 2003	–	16
3	(3) <i>Corminus</i> Burmeister, 1855	<i>Corminus canescens</i> Burmeister, 1855	Evans 2003	Katovich 2008: = <i>Alvarinus</i>	
3	(4) <i>Ampliodyctylus</i> Smith, 2008	<i>Macroductylus marmoratus</i> Curtis, 1844	original	–	7
4	(5) <i>Ancistrosoma</i> Curtis, 1835	<i>Ancistrosoma klugii</i> Curtis, 1835	monotypy	Present study: <i>nomen protectum</i>	15
6	(6) <i>Sciuropus</i> Dejean, 1833	<i>Melolontha rufipes</i> Latreille, 1813	monotypy	Erichson 1848: = <i>Ancistrosoma</i> Present study: <i>nomen oblitum</i>	
5	(7) <i>Anomalonyx</i> Saylor, 1940 (replacement name)	<i>Anomalonyx uruguayensis</i> Moser, 1921	monotypy	–	1
8	(8) <i>Anomalonyx</i> Moser, 1921 (non Weise, 1903)	<i>Anomalonyx uruguayensis</i> Moser, 1921	monotypy	Saylor 1940: = <i>Anomalonyx</i>	
6	(9) <i>Astaenoplia</i> Martínez, 1957	<i>Astaenoplia miserabilis</i> Martínez, 1957	original	–	1
7	(10) <i>Barybas</i> Blanchard, 1850	<i>Barybas nana</i> Blanchard, 1850	Bates 1887	–	53
11	(11) <i>Ctilocephala</i> Burmeister, 1855	<i>Ctilocephala pellucens</i> Burmeister, 1855	monotypy	Katovich 2008: = <i>Barybas</i>	
12	(12) <i>Eubarybas</i> Gutiérrez, 1952	<i>Eubarybas asper</i> Gutiérrez, 1952	original	Katovich 2008: = <i>Barybas</i>	
13	(13) <i>Hercitis</i> Burmeister, 1855	<i>Hercitis pygmaea</i> Burmeister, 1855 new synonym of <i>Barybas nana</i>	monotypy	Present study = <i>Barybas</i>	
14	(14) <i>Microcrania</i> Burmeister, 1855	<i>Philochloenia compacta</i> Erichson, 1847	Evans 2003	Burmeister 1855: = <i>Barybas</i>	
15	(15) <i>Pseudohercitis</i> Moser, 1921	<i>Pseudohercitis viriditaenea</i> Moser, 1921	Evans 2003	Katovich 2008: = <i>Barybas</i>	
8	(16) <i>Byrasba</i> Harold, 1869 (replacement name)	<i>Barybas vohvulus</i> Burmeister, 1855	monotypy	Katovich 2008: = <i>Rhinaspis</i> Present study: revalidated.	1
17	(17) <i>Barybas</i> Burmeister, 1855 (non Blanchard, 1850)	<i>Barybas vohvulus</i> Burmeister, 1855	monotypy	Harold 1869: = <i>Byrasba</i>	
9	(18) <i>Calodactylus</i> Blanchard, 1850	<i>Calodactylus tibialis</i> Blanchard, 1850	monotypy	–	10
19	(19) <i>Dioplia</i> Burmeister, 1855	<i>Dioplia sulphurea</i> Burmeister 1855	Evans 2003	Harold 1869: = <i>Calodactylus</i>	
10	(20) <i>Canestera</i> Saylor, 1938	<i>Canestera marshalli</i> Saylor, 1938	monotypy	–	1
11	(21) <i>Ceraspis</i> LePeletier de Saint-Fargeau & Audinet-Serville, 1828	<i>Ceraspis pruinosa</i> LePeletier de Saint-Fargeau & Audinet-Serville, 1828 = <i>Ceraspis bivulnerata</i> (Germar, 1824)	Lacordaire 1856	–	75
22	(22) <i>Ceraspis</i> ( <i>Isoceraspis</i> ) Ohaus, 1911	<i>Ceraspis</i> ( <i>Isoceraspis</i> ) <i>duckeii</i> Ohaus, 1911	monotypy	valid subgenus	1
12	(23) <i>Ceratolontha</i> Arrow, 1948	<i>Ceratolontha venezuelae</i> Arrow, 1948	monotypy	–	1

Genus	Type species	Designation	Taxonomy	sp./spp
13 (24) <i>Chariodactylus</i> Moser, 1919	<i>Chariodactylus chacoensis</i> Moser, 1919	Evans 2003	–	2
14 (25) <i>Chariodema</i> Blanchard, 1850	<i>Philochlaenia virescens</i> Blanchard, 1842	Evans 2003	–	12
15 (26) <i>Clavipalpus</i> Laporte, 1832	<i>Clavipalpus dejeani</i> Laporte, 1832	monotypy	<i>Ootoma</i> Dejean 1833, <i>nomen nudum</i>	4
16 (27) <i>Compsodactylus</i> Fuhrmann, 2012	<i>Dicrania martinezi</i> Frey, 1972	original	–	3
17 (28) <i>Dasyus</i> LePeletier de Saint-Fargeau & Audinet-Serville, 1828	<i>Dasyus collaris</i> LePeletier de Saint-Fargeau & Audinet-Serville, 1828	monotypy	–	2/4
18 (29) <i>Dicrania</i> LePeletier de Saint-Fargeau & Audinet-Serville, 1828	<i>Dicrania nigra</i> LePeletier de Saint-Fargeau & Audinet-Serville, 1828	Blanchard 1850	<i>Carteromyx</i> Dejean 1833, <i>nomen nudum</i>	40/41
(30) <i>Monocrania</i> Laporte, 1832	<i>Monocrania luridipennis</i> Laporte, 1832	Evans 2003	Lacordaire 1856: = <i>Dicrania</i>	
19 (31) <i>Euryaspis</i> Blanchard, 1851	<i>Euryaspis gaudichaudii</i> Blanchard, 1851	monotypy	Lacordaire 1856: = <i>Plectris</i> Present study: revalidated	2
(32) <i>Ctenotis</i> Burmeister, 1855	<i>Ctenotis obesa</i> Burmeister, 1855	monotypy	Present study: = <i>Euryaspis</i>	
20 (33) <i>Extenuoptophis</i> Smith & Mondaca 2015	<i>Extenuoptophis metropolitensis</i> Smith & Mondaca 2015	original	–	2
21 (34) <i>Faula</i> Blanchard, 1850	<i>Faula cornuta</i> Blanchard, 1850	Evans 2003	Lacordaire 1856: = <i>Ancistrostoma</i> Gemminger & Harold 1869: = <i>Ceraspis</i> Present study: revalidated	27
22 (35) <i>Hamatoplectris</i> Frey, 1967	<i>Hamatoplectris rosettae</i> Frey, 1967	original	–	3
23 (36) <i>Hieritis</i> Burmeister, 1855	<i>Hieritis macrocera</i> Burmeister, 1855	monotypy	–	1
24 (37) <i>Isonychus</i> Mannerheim, 1829	<i>Isonychus sulphureus</i> Mannerheim, 1829	original	–	147/148
(38) <i>Colporhina</i> Curtis, 1844	<i>Colporhina bifoveolata</i> Curtis, 1844 = <i>Isonychus variegatus</i> (Germar, 1824)	monotypy	Lacordaire 1856: = <i>Barybas</i> Gemminger & Harold 1869: = <i>Isonychus</i>	
25 (39) <i>Insimuloissacaris</i> Smith & Mondaca, 2015	<i>Insimuloissacaris nahuelbutensis</i> Smith & Mondaca, 2015	original	–	1
26 (40) <i>Issacaris</i> Fairmaire, 1889	<i>Issacaris petalophora</i> Fairmaire, 1889	monotypy	–	5
27 (41) <i>Junkia</i> Dalla Torre, 1913 (replacement name)	<i>Trichoderma ceylanica</i> Nonfried, 1894	monotypy	Moser 1913: = <i>Philochlaenia</i> Frey 1967: = <i>Plectris</i> Present study: revalidated	1
(42) <i>Trichoderma</i> Nonfried, 1894 (non Stephens 1835)	<i>Trichoderma ceylanica</i> Nonfried, 1894	monotypy	Dalla Torre 1913: = <i>Junkia</i>	
28 (43) <i>Macroductylus</i> Dejean, 1821	<i>Melolontha subspinoso</i> Fabricius, 1775	Evans 2003	–	112/113
(44) <i>Chremastodus</i> Solier, 1851	<i>Chremastodus pubescens</i> Solier, 1851	Evans 2003	Smith 2008: = <i>Macroductylus</i>	

## FUHRMANN J. &amp; VAZ-DE-MELLO F.Z., Type series of type species of Macroductylini

Genus	Type species	Designation	Taxonomy	sp./spp
(45) <i>Melolontha (Stenothorax)</i> Harris, 1827	<i>Melolontha subspinosa</i> Fabricius, 1775	original	Conte de Castelnau 1840: = <i>Macroductylus</i>	
29 (46) <i>Mallotarsus</i> Blanchard, 1850	<i>Mallotarsus spadiceus</i> Blanchard, 1850	monotypy	–	1
30 (47) <i>Manodactylus</i> Moser, 1919	<i>Manodactylus gaujoni</i> Moser, 1919	monotypy	–	1
31 (48) <i>Manopus</i> Conte de Castelnau, 1840	<i>Manopus biguttatus</i> Conte de Castelnau, 1840	monotypy	–	2
32 (49) <i>Modialis</i> Fairmaire & Germain, 1860	<i>Modialis prasinella</i> Fairmaire & Germain, 1860	monotypy	–	1
(50) <i>Acanthosternum</i> Philippi, 1861	<i>Acanthosternum splendens</i> Philippi, 1861 = <i>Modialis prasinella</i> Fairmaire & Germain, 1860	monotypy	Reed 1876: = <i>Modialis</i>	
33 (51) <i>Neuquenodactylus</i> Smith & Mondaca, 2015	<i>Neuquenodactylus ramus</i> Smith & Mondaca, 2015	original	–	1
34 (52) <i>Oedichira</i> Burmeister, 1855	<i>Oedichira pachyductyla</i> Burmeister, 1855	Evans 2003	–	2
35 (53) <i>Paulosawaya</i> Martínez & d'Andretta, 1956	<i>Paulosawaya ornaticissima</i> Martínez & d'Andretta, 1956	original	Smith 2008: = <i>Clavipalpus</i> Present study: revalidated	17/18
(54) <i>Amphicrania</i> Burmeister, 1855 (non <i>Amphicrania</i> Dejean, 1833)	<i>Amphicrania ursina</i> Burmeister, 1855 = <i>Clavipalpus ursinus</i> (Blanchard, 1850)	Evans 2003	Gemminger & Harold 1869: = <i>Clavipalpus</i> Present study: = <i>Paulosawaya</i>	
(55) <i>Pseudoleuretra</i> Martínez & d'Andretta, 1956	<i>Pseudoleuretra bokermanni</i> Martínez & d'Andretta, 1956	original	Present study: = <i>Paulosawaya</i>	
36 (56) <i>Pectinosoma</i> Arrow, 1913	<i>Pectinosoma elongata</i> Arrow, 1913	monotypy	–	1
37 (57) <i>Philochloenia</i> Dejean, 1833	<i>Melolontha filitarsis</i> Germar, 1824 = <i>Philochloenia rufipennis</i> (Fabricius, 1801)	Chevrolat 1847	Frey 1967: = <i>Plectris</i> Smith & Evans 2005: = <i>Dichelomyx</i> Bousquet & Bouchard 2013: revalidated	33/34
(58) <i>Anoplosiagum</i> Blanchard, 1850	<i>Melolontha rufipennis</i> Fabricius, 1801	Lacordaire 1856	Bousquet & Bouchard 2013: = <i>Philochloenia</i>	
(59) <i>Aulanota</i> Moser, 1924	<i>Aulanota sulcipennis</i> Moser, 1924 = <i>Philochloenia armata</i> , new replacement name	monotypy	Present study: = <i>Philochloenia</i>	
(60) <i>Hadrocerus</i> Guérin-Méneville, 1838 (replacement name)	<i>Pachycerus castaneipennis</i> Guérin-Méneville, 1831	monotypy	<i>Anomaloptera</i> Burmeister 1855, <i>nomen nudum</i> Present study: = <i>Philochloenia</i>	
(61) <i>Pachycerus</i> Guérin-Méneville, 1831 (non Schoenherr, 1823)	<i>Pachycerus castaneipennis</i> Guérin-Méneville, 1831	monotypy	Guérin-Méneville 1838: = <i>Hadrocerus</i>	
38 (62) <i>Phytholaema</i> Blanchard, 1851	<i>Areoda mutabilis</i> Solier, 1851	monotypy	–	4
(63) <i>Lacris</i> Fairmaire & Germain, 1860	<i>Lacris dilutipes</i> Fairmaire & Germain, 1860	monotypy	Lacroix 2007: = <i>Phytholaema</i>	
(64) <i>Melicurus</i> Germain, 1905	<i>Phytholaema hermanni</i> Germain, 1901	Smith 2002	Ohaus 1918: = <i>Aulacopalpus</i> Smith 2002: = <i>Phytholaema</i>	

	Genus	Type species	Designation	Taxonomy	sp./spp
39	(65) <i>Plectris</i> LePeletier de Saint-Fargeau & Audinet-Serville, 1828	<i>Plectris tomentosa</i> LePeletier de Saint-Fargeau & Audinet-Serville, 1828	monotypy	<i>Rhizonemus</i> Dejean, 1836b, <i>nomen nudum</i>	362
(66)	<i>Anomalochilus</i> Blanchard, 1850	<i>Anomalochilus singularis</i> Blanchard, 1850	monotypy	Present study: = <i>Plectris</i>	
(67)	<i>Demodema</i> Blanchard, 1850	<i>Demodema fallax</i> Blanchard, 1850	Lacordaire 1856	Katovich 2008: = <i>Plectris</i>	
40	(68) <i>Pristerophora</i> Harold, 1869 (replacement name)	<i>Pristerophora picipennis</i> Solier, 1851	monotypy	–	3
(69)	<i>Pristerophora</i> Solier, 1851 (non Westwood 1848)	<i>Pristerophora picipennis</i> Solier, 1851	monotypy	Harold 1869: = <i>Pristerophora</i>	
(70)	<i>Astaenosiagum</i> Martínez, 1957	<i>Schizochelus longipes</i> Philippi, 1861	original	Smith 2008: = <i>Pristerophora</i>	
41	(71) <i>Pseudodicrania</i> Gutiérrez, 1950	<i>Dicrania aeneobrunnea</i> Philippi, 1861	original	–	1
42	(72) <i>Pseudopectinosoma</i> Katovich, 2011	<i>Pseudopectinosoma mesa</i> Katovich, 2011	original	–	1
43	(73) <i>Pseudoserica</i> Guérin-Méneville, 1838	<i>Serica marmorea</i> Guérin-Méneville, 1831	monotypy	Blanchard 1850: = <i>Plectris</i> Present study: revalidated	30
(74)	<i>Gama</i> Blanchard, 1850	<i>Gama grandicornis</i> Blanchard, 1850	Lacordaire 1856	Present study: = <i>Pseudoserica</i>	
(75)	<i>Harpodactyla</i> Burmeister, 1855	<i>Harpodactyla grandicornis</i> Burmeister, 1855 = <i>Pseudoserica grandicornis</i> (Blanchard, 1850)	Evans 2003	Gemminger & Harold 1869: = <i>Gama</i> Present study: = <i>Pseudoserica</i>	
(76)	<i>Pachylotoma</i> Blanchard, 1850	<i>Pachylotoma viridis</i> Blanchard, 1850	monotypy	Katovich 2008: = <i>Gama</i> Present study: = <i>Pseudoserica</i>	
43	(77) <i>Pustodactylus</i> Smith, 2008	<i>Pustodactylus mondacai</i> Smith, 2008	original	–	2
44	(78) <i>Pyophis</i> Redtenbacher, 1868	<i>Pyophis macrophylla</i> Redtenbacher, 1868	monotypy	–	2
(79)	<i>Tetraphyllus</i> Philippi, 1864 (non Laporte & Brullé, 1831)	<i>Tetraphyllus paulseni</i> Philippi, 1864	monotypy	Reed 1872: = <i>Pyophis</i>	–
45	(80) <i>Rhinaspis</i> Perty, 1833	<i>Rhinaspis schrankii</i> Perty, 1833 = <i>Rhinaspis aenea</i> (Billberg, 1820)	monotypy	<i>Mallogaster</i> Dejean 1833, <i>nomen nudum</i>	14
(81)	<i>Rhinaspoides</i> Moser, 1919	<i>Rhinaspoides aeneofusca</i> Moser, 1919	monotypy	Katovich 2008: = <i>Rhinaspis</i>	
(82)	<i>Hyporhiza</i> Dejean, 1833	<i>Melolontha hypocrita</i> Mannheimer, 1829	monotypy	Lacordaire 1856: = <i>Ulomenes</i> Bousquet & Bouched 2013: = <i>Rhinaspis</i>	
(83)	<i>Ulomenes</i> Blanchard, 1850	<i>Ulomenes hypocrita</i> Blanchard, 1850 = <i>Rhinaspis fuhrmanni</i> Smith, 2016	monotypy	Katovich 2008: = <i>Rhinaspis</i>	
46	(84) <i>Schizochelus</i> Blanchard, 1850	<i>Schizochelus flavescens</i> Blanchard, 1850	Evans 2003	–	3
(85)	<i>Gastrohoplus</i> Moser, 1921	<i>Gastrohoplus mirabilis</i> Moser, 1921	monotypy	Present study: = <i>Schizochelus</i>	



FUHRMANN J. & VAZ-DE-MELLO F.Z., Type series of type species of Macroductylini

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2015 (type species of *Extenuoptyophis*, holotype in MNNC); *Hamatoplectris rosettae* Frey, 1967 (type species of *Hamatoplectris* Frey, 1967, holotype in NHMB); *Insimuloissacaris nahuelbutensis* Smith & Mondaca, 2015 (type species of *Insimuloissacaris*, holotype in MNNC); *Neuquenodactylus ramus* Smith & Mondaca, 2015 (type species of *Neuquenodactylus*, holotype in NHMW); *Paulosawaya ornatissima* Martínez & d'Andretta, 1956 (type species of *Paulosawaya* Martínez & d'Andretta, 1956, holotype in MZSP); *Pseudoleuretra bokermanni* Martínez & d'Andretta, 1956 (type species of *Pseudoleuretra* Martínez & d'Andretta, 1956, a new synonym of *Paulosawaya*, holotype in MZSP); *Pseudopectinosoma mesa* Katovich, 2011 (type species in *Pseudopectinosoma*, holotype in CMNC); *Pusiodactylus mondacai* Smith, 2008 (type species of *Pusiodactylus*, holotype in MNNC).

The following five studies designated primary types for 14 type species.

Lacroix (2007) designated a male lectotype (MNHN) for *Lacris dilutipes* Fairmaire & Germain, 1860 (type species of *Lacris* Fairmaire & Germain, 1860, a synonym of *Phytholaema*).

Smith (2008) designated lectotypes for the following four type species: *Chremastodus pubescens* Solier, 1851 (a synonym of *Macroductylus chilensis* Solier, 1851, and the type species of *Chremastodus* Solier, 1851, a synonym of *Macroductylus*, female lectotype in MNHN); *Macroductylus marmoratus* Curtis, 1844 (type species of *Ampliodyctylus*, male lectotype in BMNH); *Prionophora picipennis* Solier, 1851 (type species of *Prionophora* Solier now *Priesterophora*, male lectotype in MNHN); *Schizochelus longipes* Philippi, 1861 (type species of *Astaenosiaquam* Martínez, 1957, a synonym of *Priesterophora*, male lectotype in MNNC). Thereafter, the author (Smith 2016) also designated a male lectotype for *Melolontha hypocrita* Mannerheim, 1829 (type species of *Hyporhiza* Dejean, 1833, a synonym of *Rhinaspis* Perty, 1833, lectotype in MNZH).

Mondaca & Ocampo (2012) designated male primary types for the following two type species: *Ptyophis macrophylla* Redtenbacher, 1868 (type species of *Ptyophis* Redtenbacher, 1868, lectotype in NHMW); *Tetraphyllus paulseni* Philippi, 1864 (type species of *Tetraphyllus* Philippi, 1864, a synonym of *Ptyophis*, neotype in MNNC).

Smith & Mondaca (2015) designated primary types for the following six type species: *Acanthosternum splendens* Philippi, 1861 (a synonym of *Modialis prasinella* Fairmaire & Germain, 1860, and the type species of *Acanthosternum* Philippi, 1861, an objective synonym of *Modialis*, male neotype in MNHN); *Areoda mutabilis* Solier, 1851 (type species of *Phytholaema*, male neotype in MNNC); *Dicrania aeneobrunnea* Philippi, 1861 (type species of *Pseudodicrania* Gutiérrez, 1950, male lectotype in NMPC); *Issacaris petalophora* Fairmaire, 1889 (type species of *Issacaris* Fairmaire, 1889, male neotype in MNNC); *Modialis prasinella* Fairmaire & Germain, 1860 (type species of *Modialis*, male lectotype in MNHN); *Phytholaema herrmanni* Germain, 1901 (type species of *Melicurus* Germain, 1905, a synonym of *Phytholaema*, male lectotype in MNNC).

The type series of the following 14 type species need to be studied: *Ancistrosoma klugii* Curtis, 1835 (type species of *Ancistrosoma* Curtis, 1835); *Ceraspis (Isoceraspis) duckei* Ohaus, 1911 (type species of *Isoceraspis* Ohaus, 1911, and a subgenus of *Ceraspis*); *Colporhina bifoveolata* Curtis, 1844 (a synonym of *Isonychus variegatus* (Germar, 1824), and type species of *Colporhina* Curtis, 1844, a synonym of *Isonychus* Mannerheim, 1829, see *Barybas* discussion); *Dasyus collaris* LePeletier de Saint-Fargeau & Audinet-Serville, 1828 (type species of *Dasyus* LePeletier de Saint-Fargeau & Audinet-Serville, 1828); *Dioplia sulphurea* Burmeister, 1855 (type species of *Dioplia* Burmeister, 1888, a synonym of *Calodactylus* Blanchard, 1850); *Harpodactyla grandicornis* Burmeister, 1855 (a synonym of *Pseudoserica grandicornis* (Blanchard), and type species of *Harpodactyla* Burmeister, 1855, a new synonym of *Pseudoserica* Guérin-Méneville, 1838); *Hieritis macrocera* Burmeister, 1855 (type species of *Hieritis* Burmeister, 1855); *Isonychus sulphureus* Mannerheim, 1829 (type species of *Isonychus*);

*Melolontha rufipes* Latreille, 1813 (type species of *Sciuroopus* Dejean, 1833, *nomen oblitum*, a synonym of *Ancistrosoma*); *Melolontha filitarsis* Germar, 1824 (type species of *Philochloenia* Dejean, 1833); *Melolontha subspinosa* (type species of *Macroductylus*); *Philochloenia compacta* Erichson, 1847 (type species of *Microcrania* Burmeister, 1855, a synonym of *Barybas*); *Rhinaspis schrankii* Perty, 1833 (a synonym of *Rhinaspis aenea* (Billberg, 1820), and type species of *Rhinaspis*); *Trichoderma ceylanica* Nonfried, 1894 (type species of *Trichoderma* Nonfried now *Junkia*).

The following note on the classification of some genera is added to avoid imprecision in Macroductylini taxonomy. Twenty-two genera have been included in Macroductylini but were subsequently removed and included in other tribes, and they are commented on below.

Nine genera were included as non-Neotropical members of Macroductylini (Arrow 1920; Dalla Torre 1913). The Oriental *Dichelomorpha* Burmeister, 1855, *Dicheloschema* Moser, 1924, *Diphycerus* Deyrolle & Fairmaire, 1878 and *Xenoceraspis* Arrow, 1920 are now included in Diphycerini (Medvedev 1952; Prokofiev 2015) and another five African or Oriental genera remain *incertae sedis* (*Diphyductylus* Thomson, 1858, *Hyperius* Deyrolle & Fairmaire, 1878, *Photyna* Brenske, 1897, *Pseudisonychus* Frey, 1971 and *Metaceraspis* Frey, 1962) (Katovich 2008; Prokofiev 2015).

Twelve New World genera were included in Macroductylini and are now placed in Dichelonychini (*Coenonycha* Horn, 1876, *Dichelonyx* and *Gymnopyge* Linell, 1896), in Diplotaxini (*Homalochilus* Blanchard, 1850, *Homoliogenys* Gutiérrez, 1952, *Liogenys* Guérin-Méneville, 1831 and *Pacuvia* Curtis, 1845), in Liparetrini (*Blepharotoma* Blanchard, 1850), in Sericoidini (*Apterodemidea* Gutiérrez, 1952), in Tanyproctini (*Diaphylla* Erichson, 1847), or in Phaenomerinae (*Oxychirus* Quedenfeldt, 1888) (Evans 2003; Katovich 2008; Ruiz-Mazanos 2006). The genus *Manonychus* Moser, 1919 is placed in Diplotaxini (Gutiérrez 1952, as *Liogenyina*, Macroductylini) or remain *incertae sedis* (Katovich 2008).

A further three genera have been synonymized with non-macroductylina genera: *Apterodema* Fairmaire, 1884 (a synonym of *Sericoides* Guérin-Méneville, 1839, Sericoidini), *Hilarianus* Blanchard, 1850 (a synonym of *Liogenys*) and *Zabacana* Saylor, 1946 (a synonym of *Epectinaspis* Blanchard, 1851, Rutelinae) (Cherman *et al.* 2016; Martínez 1972; Paucar-Cabrera 2003). The name *Epicaulis* Dejean *nomem nudum* (see Bousquet & Bouchard 2013) was sometimes improperly included in Macroductylini (e.g., Dalla Torre 1913).

## Material and methods

This study is based on morphological analysis and the terminology used herein follows Beutel & Lawrence (2005), supplemented by Lawrence *et al.* (2010). Male genitalia are important diagnostic characters and, whenever possible, illustrations of these structures are added.

Collections with material examined (acronym; curators): The Natural History Museum, London, England (BMNH; Malcolm Kerley, Max Barclay); Muséum national d'Histoire naturelle, Paris, France (MNHN; Antoine Mantilleri, Olivier Montreuil); Museum für Naturkunde, Leibniz-Institut für Evolutions- und Biodiversitätsforschung, Humboldt-Universität zu Berlin, Berlin, Germany (ZMHU; Johannes Frisch, Joachim Willers); Senckenberg Deutsches Entomologisches Institut, Müncheberg, Germany (SDEI; Stephan M. Blank); Museum für Tierkunde, Staatliche Naturhistorische Sammlungen Dresden, Dresden, Germany (SMTD; Olaf Jäger, Klaus-Dieter Klass); Zentralmagazin Naturwissenschaftlicher Sammlungen der Martin-Luther-Universität, Halle, Germany (ZNSM; Karla Schneider). Other collections cited (acronym): Canadian Museum of Nature, Ottawa, Canada (CMNC); Museo Argentino de Ciencias Naturales Bernardino Rivadavia, Buenos Aires, Argentina (MACN); Museo Nacional de Historia Natural, Santiago, Chile (MNHC); Finnish Museum of Natural History, Helsinki, Finland (MNZH); Entomologische Abteilung, Naturhistorisches Museum Basel, Basel, Switzerland (NHMB);

FUHRMANN J. & VAZ-DE-MELLO F.Z., Type series of type species of Macroductylini

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Naturhistorisches Museum Wien, Vienna, Austria (NHMW); National Museum of Natural History, Prague, Czech Republic (NMPC).

Horn *et al.* (1990a, b) and Cambefort (2006) were used to locate original type series collections. The date of publication of Blanchard's "Voyage dans l'Amérique méridionale par d'Orbigny" (Blanchard 1835–1847), that of Guérin-Méneville's "Voyage sur la Coquille par L.J. Duperry" (Guérin-Méneville 1830–1831, 1838), that of Dejean's second and third "coleopterous catalogue" (Dejean 1833–1836a, 1836b–1837) and that of "Encyclopédie Méthodique" (LePeletier de Saint-Fargeau & Audinet-Serville 1828) follow Bousquet (2016). Author names follow the ideas expressed by Dubois (2008).

Primary types labels are quoted as: each label is between square brackets "[ ]", lines separated by a vertical bar "|", printed parts in bold, and handwritten parts in regular text format.

## Results

Superfamily Scarabaeoidea Latreille, 1802  
Family Scarabaeidae Latreille, 1802  
Subfamily Melolonthinae Leach, 1819  
Tribe Macroductylini Kirby, 1837

*Agaocnemis* Moser, 1918

### Type species

*Agaocnemis pruina* Moser, 1918: 115 (designation: monotypy).

### Diagnosis

Anterior and posterior pronotal margins not beaded (Fig. 2A), posterior margin prominent with a medial tooth (Fig. 2A); prosternum anteriorly concave (similar to Fig. 12K); protibia with three external teeth and without spur (Fig. 2A); male protarsomeres I–II ventrally flattened and with a setal comb (Fig. 2A); elytral striae indistinct, lateral margins beaded, posterior and posterointernal margins not beaded (Fig. 1A); male metatibia internodistally flattened (Fig. 2E); metatarsomere V without internoproximal spine-like setae; abdomen with intersegmental membrane VII–VIII concealed (Fig. 1A).

### Remarks

The genera *Agaocnemis*, *Byrasba*, *Hamatoplectris* and *Hieritis* have a distinct pronotal posterior lobe bearing a small medial tooth that extends over the scutellum (Fig. 2A–D). *Agaocnemis* is distinguished as follows (opposition to 1, *Byrasba*; 2, *Hamatoplectris*; 3, *Hieritis*): male metatibia internodistally flattened (Fig. 2E) (1, 3, without flattened area or teeth (Fig. 2F); 2, male metatibia with an internodistal tooth (Fig. 2G)), and female elytron with posterolateral margin broadly beaded (Fig. 1B) (1, 3, female elytral margin finely beaded; 2, female not known).

*Agaocnemis pruina* Moser, 1918  
Figs 1, 2A, E, 17A–B

*Agaocnemis pruina* Moser, 1918: 116.

### Note

*Agaocnemis pruina* was described based on an undetermined number of specimens.

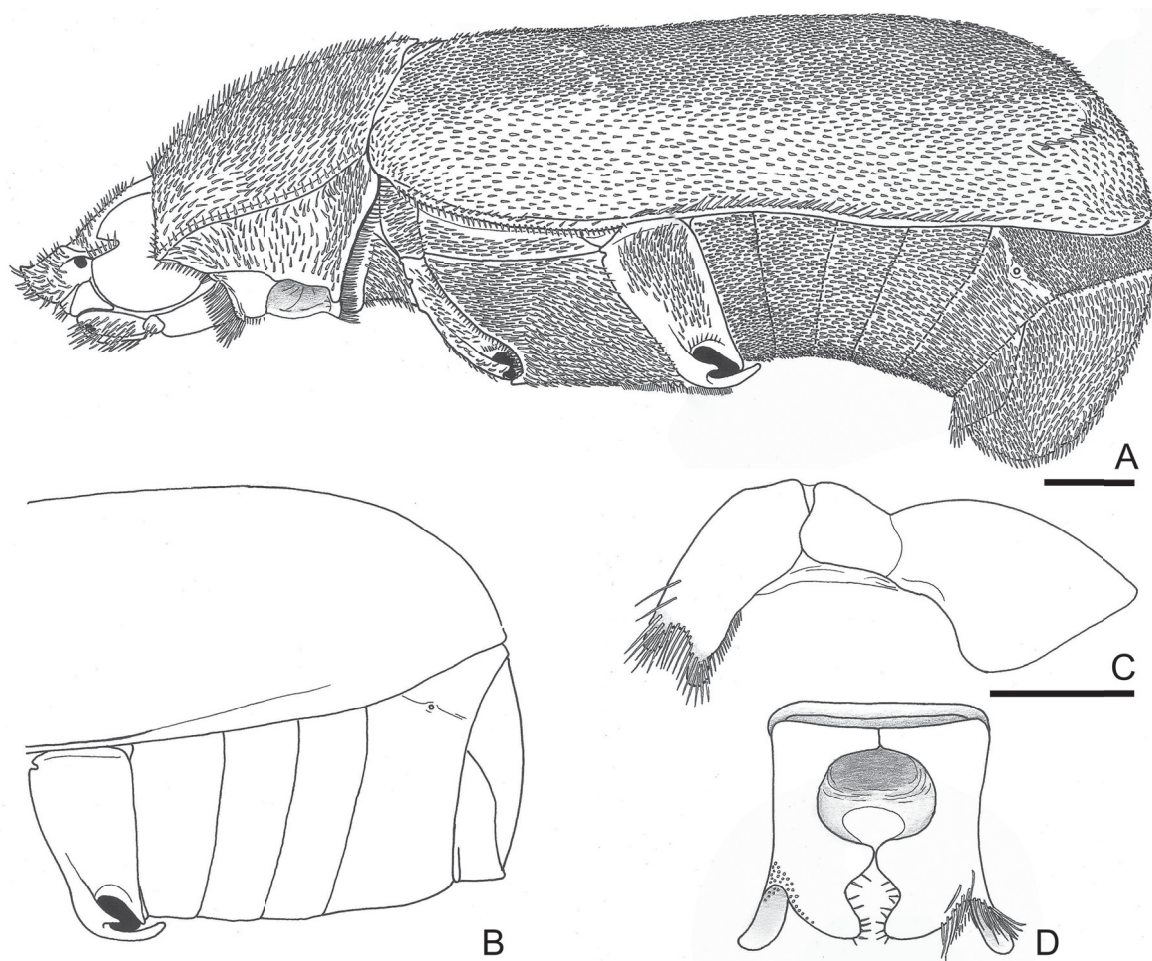
### Material examined

**Lectotype** (hereby designated, Fig. 17A–B)

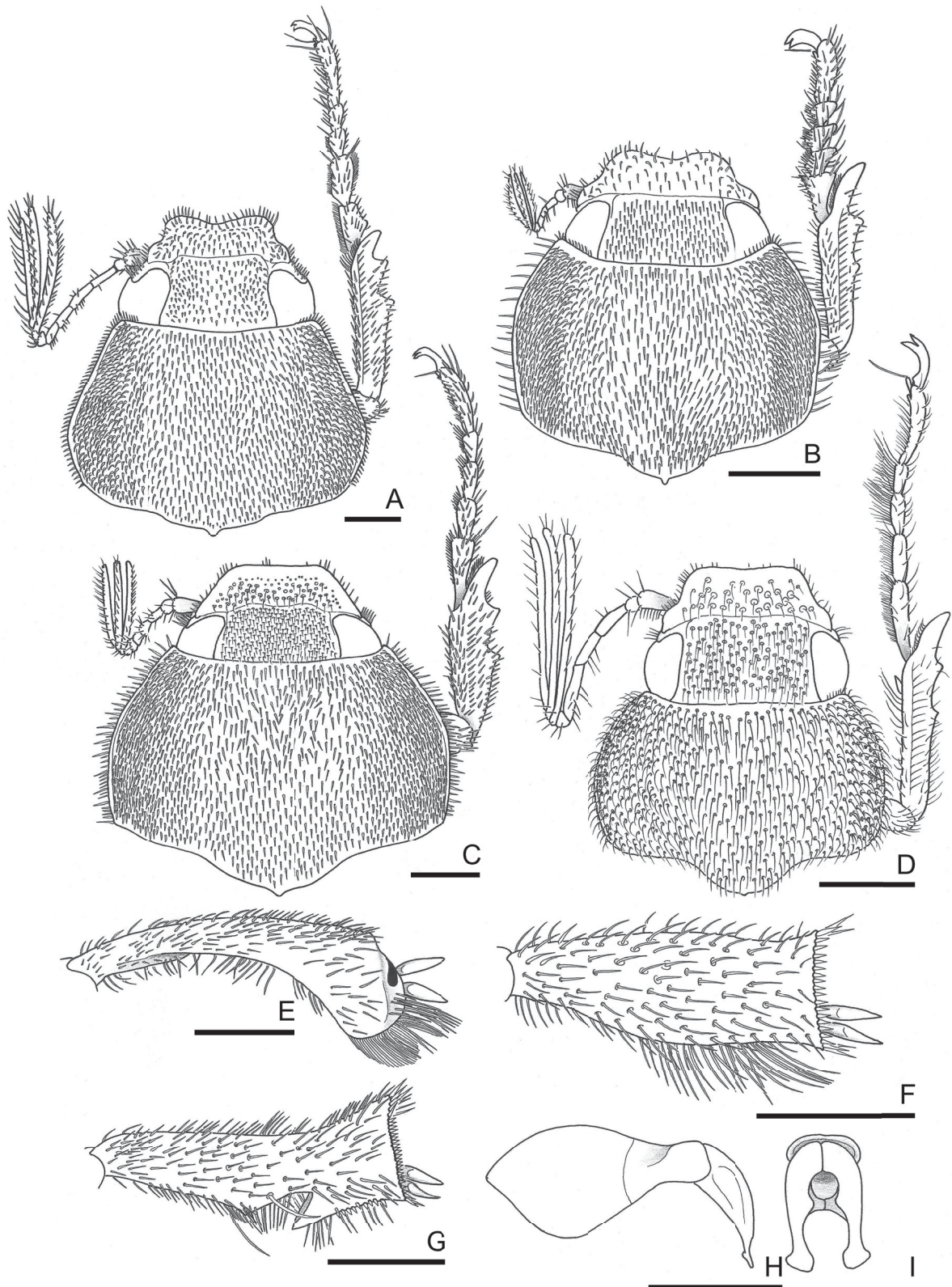
BRAZIL: ♂, ZMHU, labels: [**Brasilia** | **Nova Friburgo** | **b. Beske**] [Agaocnemis | pruina | Type ♂] [LECTOTYPE | Agaocnemis | pruinosa | Moser, 1918 | ♂ | des. j. Fuhrmann & | F.Z. Vaz-de-Mello, 2014].

**Paralectotypes** (n = 4)

BRAZIL: 1 ♂, ZMHU, labels: [**24154**] [“illegible”] [PARALECTOTYPE | Agaocnemis | pruinosa | ♂ | des. j. Fuhrmann & | F.Z. Vaz-de-Mello, 2014]; 1 ♀, ZMHU, labels: [**Brasilia** | **Nova Friburgo** | **b. Beske**] [Agaocnemis | pruina | Type ♀] [PARALECTOTYPE | Agaocnemis | pruinosa | ♀ | des. j. Fuhrmann & | F.Z. Vaz-de-Mello, 2014]; 1 ♀, ZMHU, labels: [**Brasilia** | **Nova Friburgo** | **b. Beske**] [♀] [PARALECTOTYPE | Agaocnemis | pruinosa | ♀ | des. j. Fuhrmann & | F.Z. Vaz-de-Mello, 2014]; 1 ♀, ZMHU, labels: [**24153**] [pruina | Germ, Burm. | Brasil. Germ.] [Agaocnemis Mo | (Liogenys) | pruina Burm. Mos.] [PARALECTOTYPE | Agaocnemis | pruina | ♀ | des. j. Fuhrmann & | F.Z. Vaz-de-Mello, 2014].



**Fig. 1.** *Agaocnemis pruina* Moser, 1918. **A.** Male habitus, lateral (without some appendages). **B.** Female abdomen lateral detail. **C–D.** Aedeagus (lateral, parameres apex). Scale bars = 1 mm.



**Fig. 2.** ♂♂. **A–D.** Head–prothorax dorsal, tarsus rotated laterally to apex. **E–G.** Metatibia. **H–I.** Aedeagus (lateral, parameres apex). **A, E.** *Agaocnemis pruina* Moser, 1918. **B, F, H–I.** *Byrasba volvula* (Burmeister, 1855). **C, G.** *Hamatoplectris caracana* Frey, 1969. **D.** *Hieritis macrocera* Burmeister, 1855. Scale bars = 1 mm.

*Alvarinus* Blanchard, 1850

*Corminus* Burmeister, 1855: 39. Type species: *Corminus canescens* Burmeister, 1855 (designation: Evans 2003: 254).

*Corminus* – Katovich 2008: 6 (synonymy).

**Type species**

*Alvarinus hilarii* Blanchard, 1850 (designation: Evans 2003: 224).

**Diagnosis**

Clypeal ventral area strongly widened (Fig. 3A); pronotal anterior and posterior margins not beaded (Fig. 3B); prosternum anteriorly concave (similar to Fig. 12K); protibia with two external teeth and without spur (Fig. 3B); elytral striae indistinct, posterior and posterointernal margins not beaded; meso- and metafemurs of male with some long and spine-like setae (Fig. 3C); metatarsomere V without spine-like setae; abdomen with intersegmental membrane VII–VIII concealed (Fig. 3A).

*Alvarinus canescens* (Burmeister, 1855)

Figs 3, 17C–D

*Corminus canescens* Burmeister, 1855: 40.

*Alvarinus canescens* – Katovich 2008: 6 (*Corminus* synonym of *Alvarinus*).

**Note**

*Corminus canescens* was described based on an undetermined number of males and females, and at least one specimen of each sex. Only one male was found and designated as lectotype.

**Material examined**

**Lectotype** (hereby designated, Fig. 17C–D)

BRAZIL: ♂, ZNSM, labels: [*Corminus* | Burm.] {drawer label} [*canescens* | Germ. | Bras. Br.] {drawer label} [Nov. | Frib.] [LECTOTYPE ♂ | *Corminus canescens* | Burmeister, 1855 | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014].

*Ancistrosoma* Curtis, 1835, *nomen protectum*

*Sciuropus* Dejean, 1833: 162, *nomen oblitum*. Type species: *Melolontha rufipes* Latreille, 1813 (designation: monotypy).

**Type species**

*Ancistrosoma klugii* Curtis, 1835 (designation: monotypy).

**Remark**

As stated by Bousquet & Bouchard (2013) *Sciuropus* is a senior synonym of *Ancistrosoma*; the latter name, however, was used as valid for a long time (Guimarães 1977; Ayquipa & Cueva 1979; Aguilar-Fernández 1980; Valdieso-Jara & Núñez-Sacariás 1984; Cisneros 1995; Peña & Bennet 1995; Restrepo-Giraldo & López-Ávila 2000; Rogg 2000; Bentley & Vilca 2001; Peck *et al.* 2002; Morales-Valles *et al.* 2003; Evans 2003; Evans & Smith 2005, 2007, 2009; Egúsqüiza-Bayona *et al.* 2006; Katovich 2008, 2011; Mera-Velasco *et al.* 2010; Santandeu 2010; Valoy *et al.* 2011, 2015; Neita-Moreno *et al.* 2012;

Rojo-Jiménez 2014; López-García *et al.* 2015; Ratcliffe *et al.* 2015) (*Ancistrosoma* – Gess & Gess 2014 *lapsus calami* of *Ancistromma* Fox, 1894, Hymenoptera), and *Sciuropus* was used only once since its publication (Rühl 1888). The present study proposes the reversal of precedence of *Ancistrosoma*, *nomen protectum* over *Sciuropus*, *nomen oblitum* in accordance with ICZN (1999) Article 23.9.

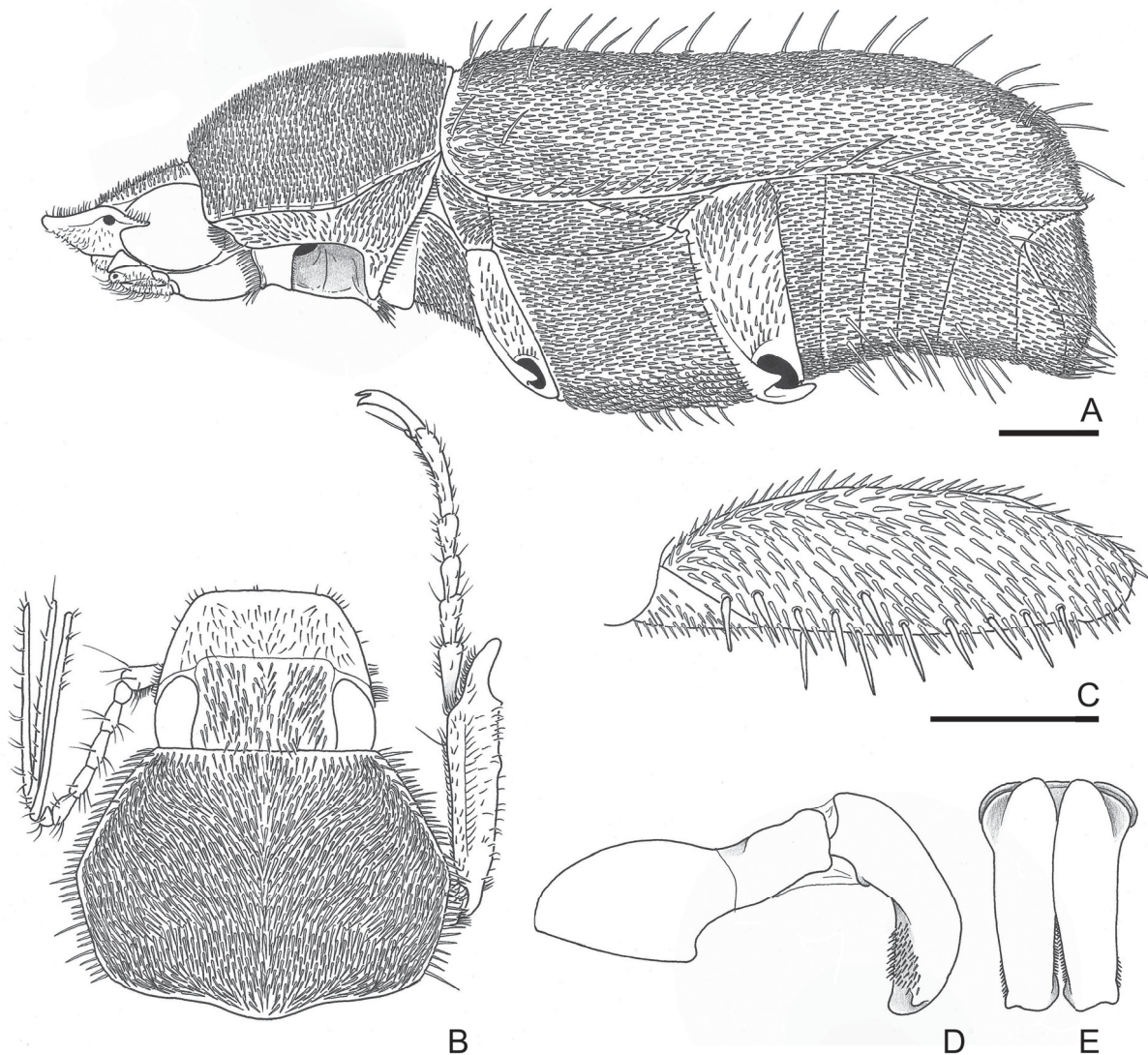
*Anomonyx* Saylor, 1940

*Anomalonyx* Moser, 1921: 156 (*non* Weise, 1903).

*Anomonyx* Saylor, 1940: 46 (replacement name for *Anomalonyx*).

**Type species**

*Anomalonyx uruguayensis* Moser, 1921 (designation: monotypy).



**Fig. 3.** *Alvarinus canescens* Burmeister, 1855, ♂. **A.** Habitus, lateral (without some appendages). **B.** Head–prothorax dorsal, tarsus rotated laterally to apex. **C.** Metafemur. **D–E.** Aedeagus (lateral, parameres apex). Scale bars = 1 mm.

### Diagnosis

Clypeal ventral area large and vertically deflected; labrum slightly emarginate; pronotal anterior and posterior margins not beaded; prosternum with an anterior longitudinal carina; elytral striae indistinct, posterior margin not beaded and posterointernal margin beaded; metatarsomere I as long as II+III (Fig. 4B); metatarsomere V with internoproximal spine-like setae (Fig. 4B).

### Remarks

The genera *Anomonyx*, *Oedichira* Burmeister, 1855 and *Plectris* LePeletier de Saint-Fargeau & Audinet-Serville, 1828 are similar to each other. *Anomonyx* is distinguished as follows (opposition to 1, *Oedichira*; 2, *Plectris*): clypeal ventral area vertically deflected (1, as *Anomonyx*; 2, vertically deflected or not); metatarsomere I as long as II+III (1, 2, as long as II–IV); metatarsomere II at least twice as long as wide (1, wider than long; 2, as *Anomonyx*). Future cladistic analyses and a taxonomic review of *Plectris* including *Anomonyx* and *Oedichira* are needed to determine the possible synonymy between these genera.

### *Anomonyx uruguayensis* (Moser, 1921)

Figs 4B, E–F, 17E–F

*Anomalonyx uruguayensis* Moser, 1921: 156.

*Anomonyx uruguayensis* Saylor, 1940: 46.

### Note

*Anomalonyx uruguayensis* was described based on an undetermined number of specimens.

### Material examined

**Lectotype** (hereby designated, Fig. 17E–F)

URUGUAY: ♂, ZMHU, labels: [Uruguay | Dolores | Breuer] [Anomalonyx | uruguayensis | Type Mos] [LECTOTYPE | Anomalonyx | uruguayensis | Moser, 1921 | ♂ | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014] [Anomonyx | uruguayensis | (Moser, 1921) | ♂ | det. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014].

**Paralectotypes** (n = 4)

URUGUAY: 1 ♂, ZMHU, labels: [Uruguay | Dolores | Breuer] [PARALECTOTYPE | Anomalonyx | uruguayensis | Moser, 1921 | ♂ | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014]; 1 ♂, ZMHU, labels: [Uruguay | Dolores | Breuer] [Anomalonyx Mos | n. gen. “illegible” Philochlaenia | uruguayensis Mos n. sp.] [PARALECTOTYPE | Anomalonyx | uruguayensis | Moser, 1921 | ♂ | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014]; 1 ♂, ZMHU, labels: [Uruguay | Dolores | Breuer] [Philogenis | “illegible” genus | (nov. ?)] [**Anomolonyx | uruguayensis | Moser | fide K. Katovich 02**] [PARALECTOTYPE | Anomalonyx | uruguayensis | Moser, 1921 | ♂ | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014]; 1 ♂, ZMHU, labels: [Uruguay | Dolores | Breuer] [**Anomolonyx | uruguayensis | Moser | fide K. Katovich 02**] [PARALECTOTYPE | Anomalonyx | uruguayensis | Moser, 1921 | ♂ | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014].

### *Barybas* Blanchard, 1850

*Ctilocephala* Burmeister, 1855: 78. Type species: *Ctilocephala pellucens* Burmeister, 1855 (original designation).

*Eubarybas* Gutiérrez, 1952: 216. Type species: *Eubarybas asper* Gutiérrez, 1952 (original designation).

*Hercitis* Burmeister, 1855: 79, **syn. nov.** Type species: *Hercitis pygmaea* Burmeister, 1855 (designation: monotypy), **syn. nov.** of *Barybas nana*.



FUHRMANN J. & VAZ-DE-MELLO F.Z., Type series of type species of Macroductylini

*Microcrania* Burmeister, 1855: 75, 536 (synonymy). Type species: *Philochloenia compacta* Erichson, 1847 (designation: Evans 2003: 230).

*Pseudohersitis* Moser, 1921: 174. Type species: *Pseudohersitis viridiaenea* Moser, 1921 (designation: Evans 2003: 343).

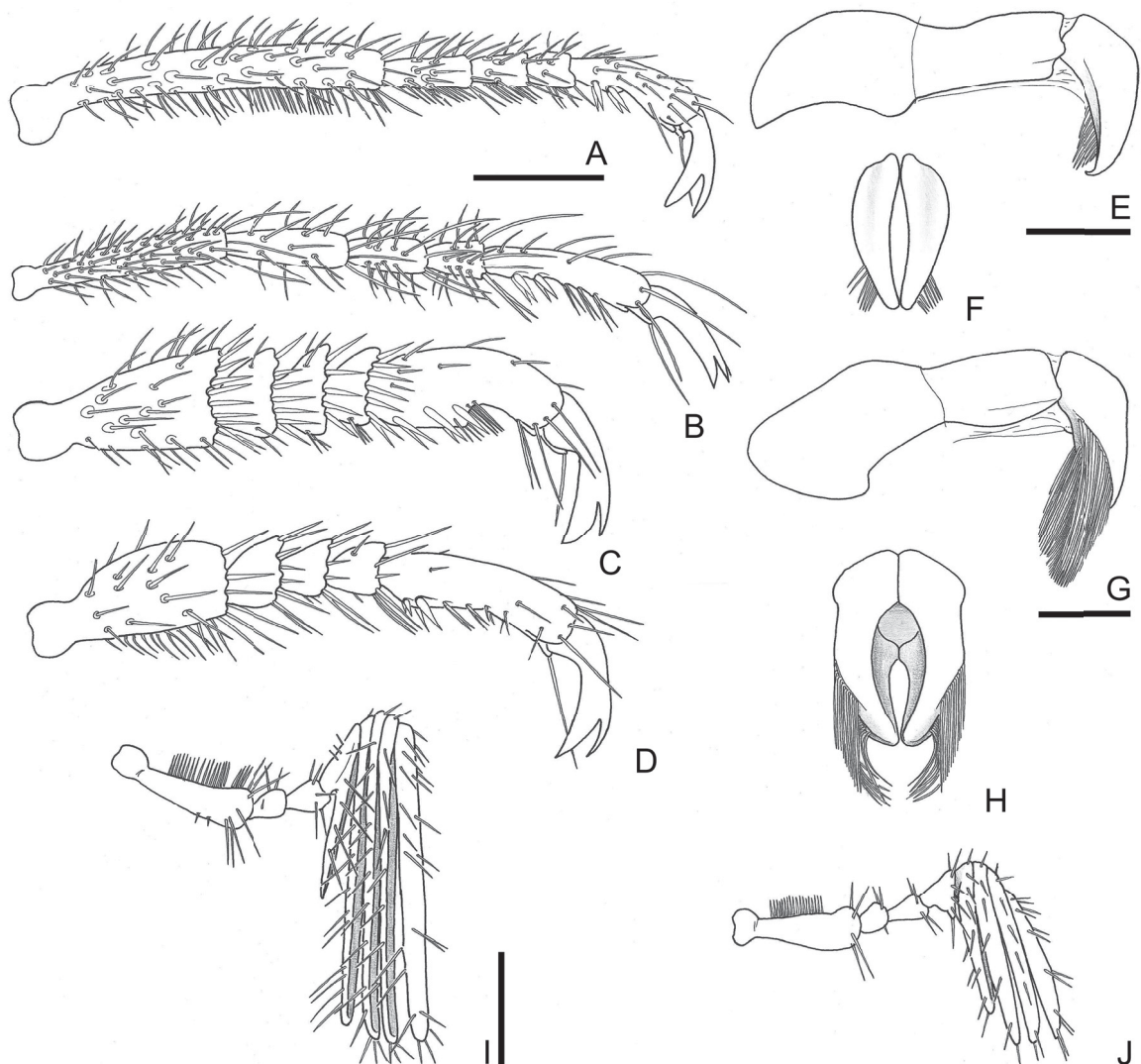
*Ctilocephala* – Katovich 2008: 6 (synonymy).

*Eubarybas* – Katovich 2008: 6 (synonymy).

*Pseudohersitis* – Katovich 2008: 24 (synonymy).

**Type species**

*Barybas nana* Blanchard, 1850 (designation: Bates 1887: 150).



**Fig. 4.** A–C. Male metatarsus. D. Female metatarsus. E–H. Aedeagus (lateral, parameres apex). I–J. Antenna (♂, ♀). A. *Plectris tomentosa* LePeletier de Saint-Fargeau & Audinet-Serville, 1828. B, E–F. *Anomonyx uruguayensis* Moser, 1921. C–D, G–J. *Oedichira pachydactyla* Burmeister, 1855. Scale bars = 1 mm.

## Diagnosis

Clypeus transverse and narrow (Fig. 5B), or trapezoid (Fig. 5A), clypeal posterior angle partially covering the canthus (Fig. 5A–B), ventral area deflected vertically or not (Fig. 5C–H); pronotal anterior and posterior margins not beaded, lateral margins crenulate (Fig. 5A–B); prosternum anteriorly concave (similar to Fig. 12K); mesoscutum–scutellum limit angulate; mesoscutum with a transverse carina (Fig. 6G); male protarsomere I with an internodistal tooth (Fig. 5A–B); elytral striae indistinct, posterior margin not beaded, posterointernal margin beaded; metatarsomere V with internoproximal spine-like setae.

## Remarks

Burmeister (1855) described *Ctilocephala*, *Hercitis* and *Microcrania*, and placed them in the Microcranidae division (these genera were differentiated from each other by antennal and tarsal claw characters). The author (Burmeister 1855) also proposed the synonymy of *Microcrania* with *Barybas* Blanchard (as an invalid name), described *Barybas* Burmeister, and noted that *Barybas nana* (type species of *Barybas* Blanchard) was probably a synonym of *Hercitis pygmaea* (type species of *Hercitis*). Harold (1869) proposed the replacement name *Byrasba* for *Barybas* Burmeister, and Bates (1887) gave precedence to *Barybas* Blanchard over *Microcrania*. Moser (1921) described *Pseudohercitis* as a similar genus to those placed in Microcranidae, and discussed the differences in antennae and tarsal claws of these genera. Gutiérrez (1952), also using antennal and tarsal claw characters as diagnoses, described *Eubarybas* Gutiérrez, 1952, and erected the subtribe Barybasina for *Eubarybas* and those genera formerly in Microcranidae. Katovich (2008) proposed *Pseudohercitis* and *Eubarybas* as synonyms of *Barybas* Blanchard.

The lectotype of *Barybas nana*, photos of the syntype of *H. pygmaea* (by Holger Dombrow), two specimens of *B. nana* from the Fry collection (BMNH, with *in litteris* note about *B. nana* = *H. pygmaea*), and the type series of *Hercitis zikani* Moser, 1921 (ZMHU) were studied, and the synonymy of *Hercitis pygmaea* with *Barybas nana* is proposed here. The tarsal and antennal variation that were presented as the basis of generic diagnoses in previous studies, are also present in other Macroductylini genera (e.g., *Ceraspis*; *Dicrania* LePeletier de Saint-Fargeau & Audinet-Serville, 1828; *Faula* Blanchard, 1850; *Plectris*), and are noted here as interspecific variation. The other three species previously placed in *Hercitis* are transferred to *Barybas*, which now comprises 53 species of which the following three are new combinations: *Barybas flavosquamosa* (Moser, 1924) **comb. nov.**; *Barybas testacea* (Moser, 1918) **comb. nov.**; *Barybas zikani* (Moser, 1921) **comb. nov.**

*Colporhina* is a monotypic genus (*C. bifoveolata*, a junior synonym of *Melolontha variegatus* Germar, 1824) which has been synonymized twice: with *Barybas* (Lacordaire 1856) and with *Isonychus* (Gemminger & Harold 1869). Blanchard (1850: 94) placed *Melolontha variegatus* Germar, 1824 in *Barybas* and Burmeister (1855: 47) placed the species in *Isonychus* and noted the similarity between *Colporhina* and *Microcrania* and *Hercitis* (both synonyms of *Barybas*). After that, Lacordaire (1856) proposed *C. bifoveolata* as a synonym of *M. variegatus*, and confirmed the species position within *Barybas* (in agreement with Blanchard 1850). Gemminger & Harold (1869) confirmed this synonymy but placed the species in *Isonychus* (in agreement with Burmeister 1855). The type series of *C. biflaveolata* was not found, and the possibility that *Colporhina* might be a senior synonym of *Barybas* needs to be checked.

*Barybas nana* Blanchard, 1850  
Figs 5A, C–D, 6G, 17G–H, 21G–K

*Barybas nanus* Blanchard, 1850: 94.

*Hercitis pygmaea* Burmeister, 1855: 79, **syn. nov.**

*Barybas nana* – Blackwelder 1944: 233 (name emendation).

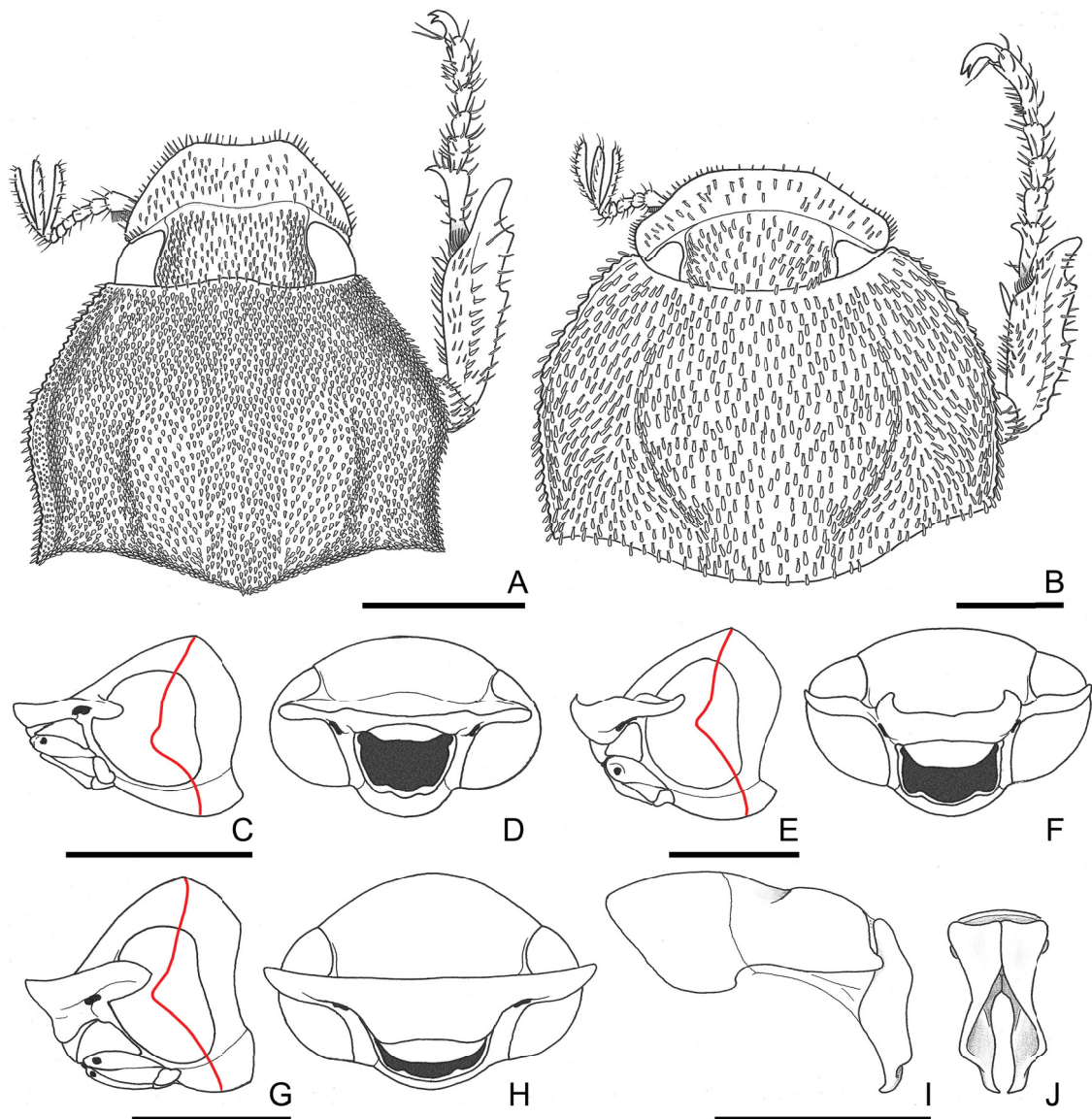
**Note**

*Barybas nana* and *Hercitis pygmaea* were described based on an undetermined number of specimens.

**Material examined**

**Lectotype** (here designated, Fig. 17G–H)

BRAZIL: ♂, MNHN, labels: [Capte. | des mines] [MUSÉUM PARIS | Ouest Capte | des Mises] [B. nanus | Cat. Mus. | Brésil. | M.A. de St. Hilaire] [LECTOTYPE | Barybas nanus | Blanchard, 1850 | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014].



**Fig. 5.** *Barybas* Blanchard, 1850. **A–B.** Head–prothorax dorsal, tarsus rotated laterally to apex. **C–H.** Male head (lateral, frontal), line = prothorax limit. **I–J.** Aedeagus (lateral, parameres apex). **A, C–D.** *Barybas nana* Blanchard, 1850. **B, G–J.** *Barybas viridiaenea* Moser, 1921. **E–F.** *Barybas pellucens* Burmeister, 1855. Scale bars = 1 mm.

### Paralectotype

BRAZIL: ♂, MNHN, labels: [Capte. | des mines] [MUSÉUM PARIS | Ouest Capte | des Mises] [PARALECTOTYPE | Barybas nanus | Blanchard, 1850 | ♂ | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014].

### Syntype of *Hercitis pygmaea* (Fig. 21G–K)

BRAZIL: ♂, ZNSM, labels: ♂, [Hercitis | Burm.] {drawer label} [pygmaea | Burm. | Bras. Br.] {drawer label}.

### Remarks

The present study proposes the synonymy of *H. pygmaea* (type species of *Hercitis*) with *B. nana* (type species of *Barybas* Blanchard). See generic remarks above for historical and taxonomic comments. The syntype of *H. pygmaea* is being studied by Holger Dombrow (pers. comm.).

### *Barybas pellucens* (Burmeister, 1855)

Figs 5E–F, 17I–J

*Ctilocephala pellucens* Burmeister, 1855: 78.

*Barybas pellucens* – Katovich 2008: 6 (*Ctilocephala* synonym of *Barybas*).

### Note

*Ctilocephala pellucens* was described based on an undetermined number of males and females.

### Material examined

#### Lectotype (here designated, Fig. 17I–J)

COLOMBIA: ♂, ZNSM, labels: [Ctilocephala | Burm.] {drawer label} [pellucens | Phil. p. {illegible} | biguttata Dj. | Columb.] {drawer label} [LECTOTYPE | Ctilocephala | pellucens | Burmeister, 1855 | ♂ | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014].

#### Paralectotypes (n = 2)

COLOMBIA: 1 ♂, ZNSM, labels: [Ctilocephala | Burm.] {drawer label} [pellucens | Phil. p. {illegible} | biguttata Dj. | Columb.] {drawer label} [PARALECTOTYPE | Ctilocephala | pellucens | Burmeister, 1855 | ♂ | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014]; 1 ♀, MNHN, labels: [Ctilocephala | Burm.] {drawer label} [pellucens | Phil. p. {illegible} | biguttata Dj. | Columb.] {drawer label} [PARALECTOTYPE | Ctilocephala | pellucens | Burmeister, 1855 | ♀ | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014].

### *Barybas viridiaenea* (Moser, 1921)

Figs 5B, G–J, 17K–L

*Pseudohercitis viridiaenea* Moser, 1921: 174.

*Barybas viridiaenea* – Katovich 2008: 6 (*Pseudohercitis* synonym of *Barybas*).

### Note

*Pseudohercitis viridiaenea* was described based on an undetermined number of males.

**Material examined**

**Lectotype** (here designated, Fig. 17K–L)

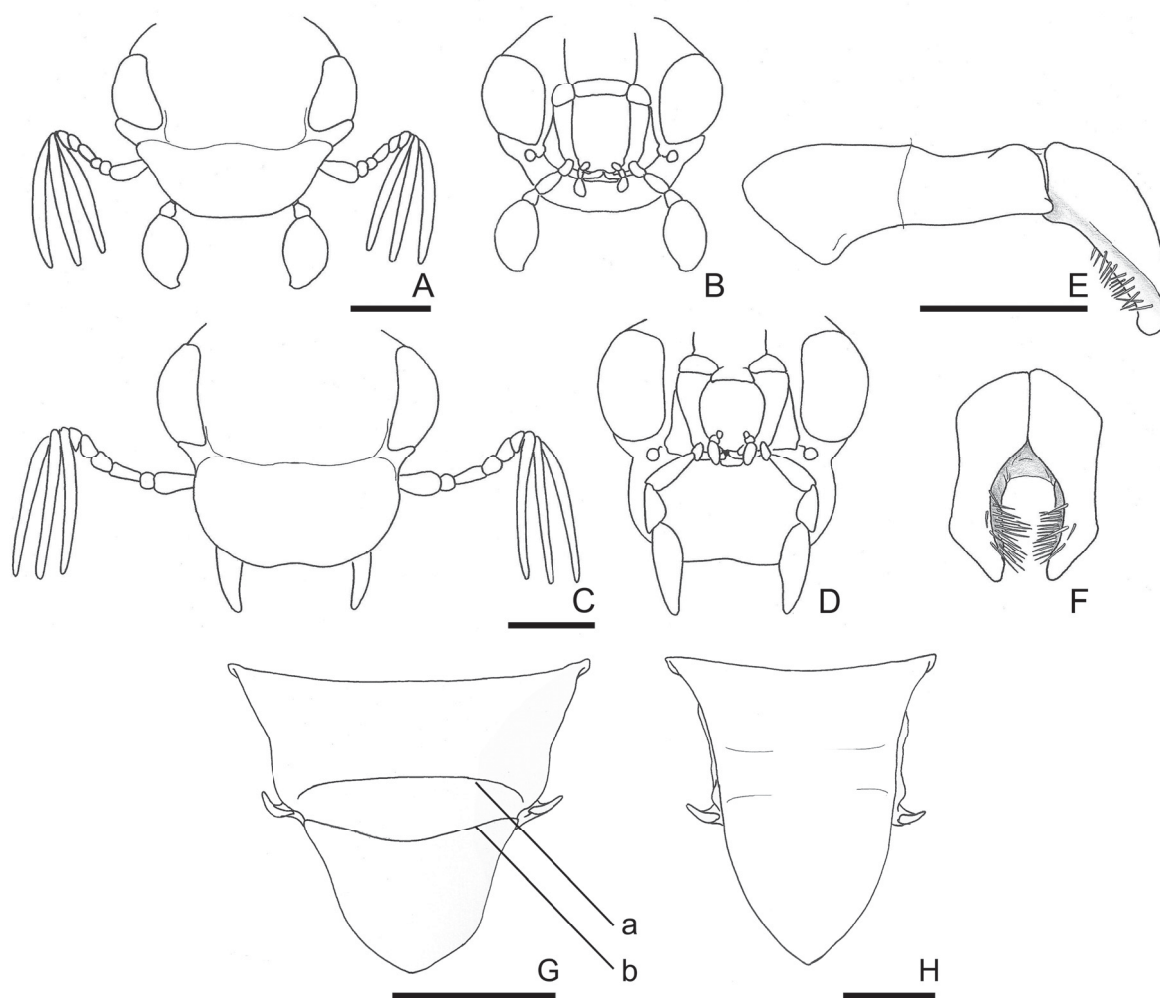
BRAZIL: ♂, ZMHU, labels: [Corumba | Matt Grosso] [Pseudohercitis | viridiaenea | Type Mos] [LECTOTYPE | Pseudohercitis | viridiaenea | Moser, 1921 | ♂ | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014].

*Byrasba* Harold, 1869, revalidated

*Barybas* Burmeister, 1855: 20 (*non* Blanchard 1850).

*Byrasba* Harold, 1869: 122 (replacement name for *Barybas* Burmeister).

*Byrasba* – Katovich 2008: 6 (synonymy with *Rhinaspis* Perty, 1833).



**Fig. 6.** ♂♂. **A–D.** Head (dorsal, ventral). **E–F.** Aedeagus (lateral, parameres apex). **G–H.** Mesoalintum. **A–B, E–F.** *Clavipalpus dejeani* Laporte, 1832. **C–D.** *Paulosawaya ursina* (Blanchard, 1850) comb. nov. **G.** *Barybas nana* Blanchard, 1850. **H.** *Macroductylus pumilio* Burmeister, 1855. a = scutum transverse carina; b = scutum–scutellum limit angulate. Scale bars = 1 mm.

### Type species

*Barybas volvulus* Burmeister, 1855 (designation: monotypy).

### Diagnosis

Pronotal anterior and posterior margins not beaded (Fig. 2B), posterior margin prominent with a medial tooth (Fig. 2B); prosternum anteriorly concave (similar to Fig. 12K); protibia with three external teeth and without spur (Fig. 2B); male protarsomere I with an internomedial tooth and II–VI with external projection (Fig. 2B); elytron with five longitudinal grooves between internal margin and humerus, lateral margins beaded, posterior and posterointernal margins not beaded; metatarsomere V without internoproximal spine-like setae; abdomen with intersegmental membrane VII–VIII concealed.

### Remarks

See *Agaocnemis*. The present study revalidates *Byrasba*, formerly a synonym of *Rhinaspis*, based on the following characters (opposition to *Rhinaspis*): pronotal lateral margins straight (Fig. 2B) (crenulate, Fig. 10D–F); posterior margin prominent with a medial tooth (Fig. 2B) (posterior margin not prominent and unarmed, Fig. 10D–F); protibial spur absent (present); protarsomeres II–IV with externodistal projection (without projection); elytron with five weakly prominent lines between internal margin and humerus (with three lines).

### *Byrasba volvula* (Burmeister, 1855)

Figs 2B, F, H–I, 17M–N

*Barybas volvulus* Burmeister, 1855: 20.

*Byrasba volvula* – Harold, 1869: 1142.

*Rhinaspis volvula* – Katovich, 2008: 6 (*Byrasba* synonym of *Rhinaspis*).

### Note

*Barybas volvulus* was described based on an undetermined number of males and females.

### Material examined

**Lectotype** (hereby designated, Fig. 17M–N)

BRAZIL: 1 ♂, ZNSM, labels: [Barybas | Burm] {drawer label} [volvulus | Bras. Frey.] {drawer label} [Are- | as] [LECTOTYPE | Barybas volvulus | Burmeister, 1855 | ♂ | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014] [Byrasba volvulus | (Burmeister, 1855) | det. J. Fuhrmann | 2014 ♂].

**Paralectotypes** (n = 2)

BRAZIL: 1 ♂, ZNSM, labels: [Barybas | Burm] {drawer label} [volvulus | Bras. Frey.] {drawer label} [6995] [**Byrasba | volvulus | (Burmeister) | Det. K. Katovich 2002**] [PARALECTOTYPE | Barybas volvulus | Burmeister, 1855 | ♂ | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014]; 1 ♀, ZNSM, labels: [Barybas | Burm] {drawer label} [volvulus | Bras. Frey.] {drawer label} [PARALECTOTYPE | Barybas volvulus | Burmeister, 1855 | ♀ | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014].

### *Calodactylus* Blanchard, 1850

### Type species

*Calodactylus tibialis* Blanchard, 1850 (designation: monotypy).

### Diagnosis

Prosternum with an anterior longitudinal carina; protibia with two teeth and with a spur; meso- and metatibiae medially enlarged (Fig. 7E); meso- and metatarsal claws simple; male ventrite VI with two parallel and setose carina (Fig. 7B).

### Remarks

The genera *Calodactylus* and *Dasyus* LePeletier de Saint-Fargeau & Audinet-Serville, 1828 are similar to each other. They can be distinguished by enlargements of the meso- and metatibiae, *Calodactylus* have a medial enlargement whereas *Dasyus* have medial and distal areas of the same width. An evident characteristic of these genera is the simple meso- and metatarsal claws, which also occurs in male *Pectinosoma* Arrow, 1913 and some species of *Ancistrosoma*, *Barybas*, *Ceraspis* and *Faula*.

### *Calodactylus tibialis* Blanchard, 1850

Figs 7, 17O–P

*Calodactylus tibialis* Blanchard, 1850: 91.

### Note

*Calodactylus tibialis* was described based on an undetermined number of specimens.

### Material examined

**Lectotype** (here designated, Fig. 17O–P)

BRAZIL: ♂, MNHN, labels: [11 | 44] [MUSÉUM PARIS | Rio | de Castelnau] [*Calodactylus tibialis*, Bl.] [LECTOTYPE ♂ | *Calodactylus tibialis* | ♂ | Blanchard, 1850 | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014].

**Paralectotype**

BRAZIL: ♂, MNHN, labels: [11 | 44] [MUSÉUM PARIS | Rio | de Castelnau] [PARALECTOTYPE ♂ | *Calodactylus tibialis* | ♂ | Blanchard, 1850 | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014].

### *Ceraspis* LePeletier de Saint-Fargeau & Audinet-Serville, 1828

### Type species

*Ceraspis pruinosa* LePeletier de Saint-Fargeau & Audinet-Serville, 1828 (designation: Lacordaire 1856: 252); a synonym of *C. bivulnerata* (Germar, 1824).

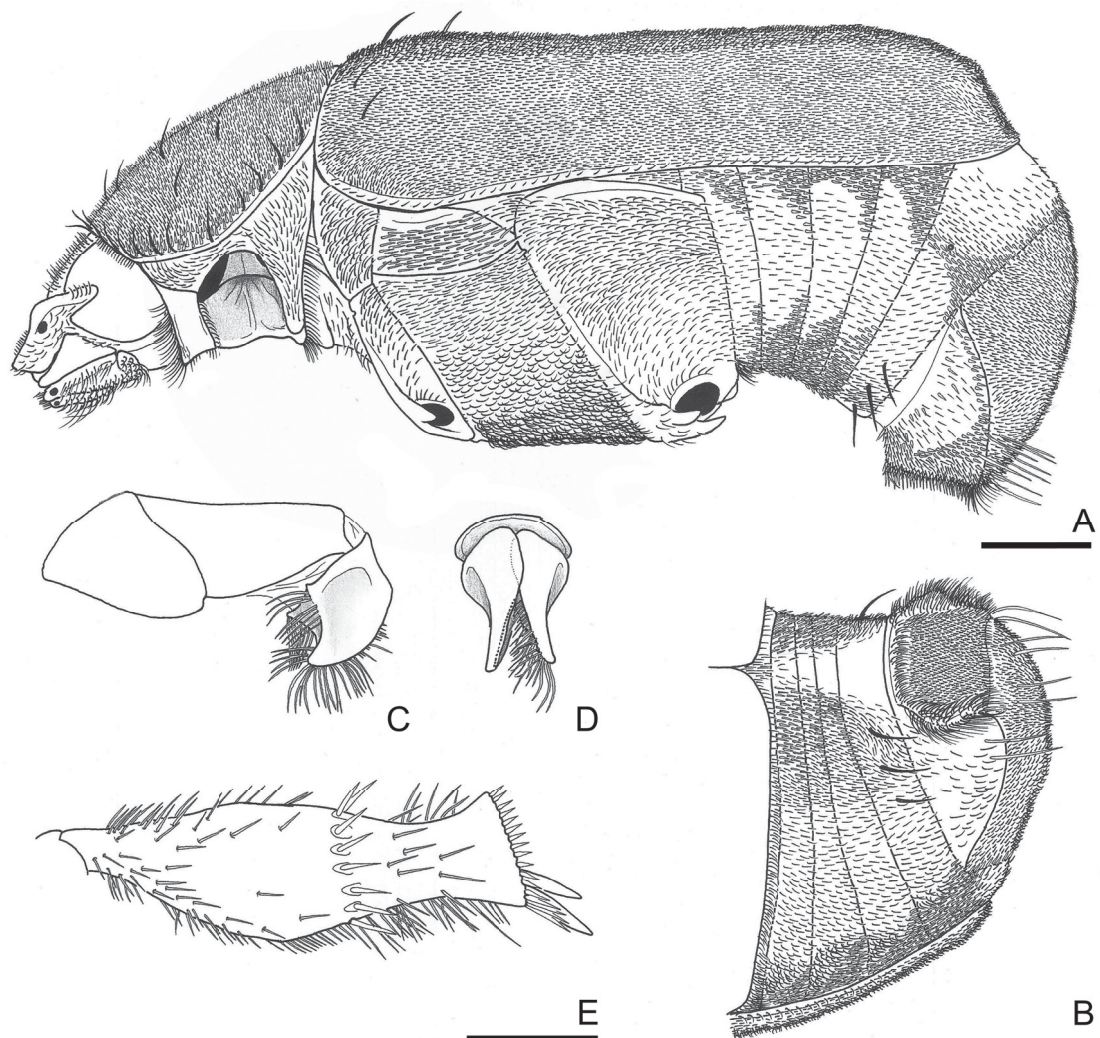
### Diagnosis

Body covered by scale-like or stout setae; pronotal anterior margin not beaded; pronotum–scutellum contact acutely sinuous (Fig. 8C); prosternum with an anterior longitudinal carina; protibia with two external teeth and without spur; meso- and metacoxae contiguous; metatarsomere V with internoproximal spine-like setae.

### Remarks

*Ancistrosoma*, *Ceraspis*, *Chariodema*, *Faula*, *Manopus* Conte de Castelnau, 1840, *Pectinosoma* and *Pseudopectinosoma* have a sinuous pronotum–scutellum contact (Fig. 8A–E). *Ceraspis* is distinguished by the medially contiguous meso- and metacoxae (separate in other genera).

The present study revalidates *Faula*, formerly a synonym of *Ceraspis*. Consequently 27 species are transferred to *Faula*, and *Ceraspis* now comprises 75 species: *C. ajonjoli* Mora-Aguilar, Delgado, and Vallejo, 2013, *C. albipennis* Frey, 1973, *C. albovaria* Frey, 1962, *C. alvarengai* Frey, 1973, *C. amazonica* Frey, 1962, *C. amoema* Frey, 1962, *C. bivulnerata*, *C. brittoni* Frey, 1962, *C. bufo* Frey, 1962, *C. burmeisteri* Frey, 1962, *C. castaneipennis* Blanchard, 1850, *C. cinerea* Moser, 1921, *C. citrina* Blanchard, 1850, *C. colon* Burmeister, 1855, *C. conspersa* Burmeister, 1855, *C. convexicollis* Frey, 1969, *C. costulata* Frey, 1965, *C. decora* Gory, 1831, *C. diversa* Frey, 1962, *C. dorsata* Burmeister, 1855, *C. dorsipicta* Frey, 1972, *C. duckei* Ohaus, 1911 (type species of monotypic subgenus *Isoceraspis* Ohaus, 1911), *C. elegans* Nonfried, 1892, *C. elongata* Frey, 1962, *C. farinosa* Burmeister, 1855, *C. femorata* Frey, 1969, *C. flava* Blanchard, 1850, *C. fulva* Blanchard, 1850, *C. gibbicollis* Blanchard, 1850, *C. globicollis* Frey, 1962, *C. griseosquamosa* Moser, 1921, *C. guttata* Blanchard, 1850, *C. imitatrix* Nonfried, 1892, *C. kuntzeni* Moser, 1921, *C. lepida* Frey, 1973, *C. leucosoma* Blanchard, 1850, *C. linharensis* Frey, 1973, *C. lurida* Frey, 1962, *C. martinezi* Frey, 1962, *C. melanoleuca* LePeletier de Saint-Fargeau & Audinet-Serville, 1828, *C. mixta* Blanchard, 1850, *C. moseri* Frey, 1962, *C. mustela* Frey, 1962, *C. mutica*



**Fig. 7.** *Calodactylus tibialis* Blanchard, 1850. **A.** Male habitus, lateral (without some appendages). **B.** Male abdomen lateroventral detail. **C–D.** Aedeagus (lateral, parameres apex). **E.** Metatibia. Scale bars = 1 mm.



Moser, 1921, *C. nitida* Frey, 1962, *C. nivea* LePeletier de Saint-Fargeau & Audinet-Serville, 1828, *C. niveipennis* Gistel, 1857, *C. oblonga* Moser, 1919, *C. obscura* Blanchard, 1850, *C. ocellata* Frey, 1962, *C. ornata* Frey, 1962, *C. pallida* Blanchard, 1850, *C. pauperata* Burmeister, 1855, *C. penai* Frey, 1964, *C. pereirae* Frey, 1962, *C. plaumanni* Frey, 1962, *C. pulchra* Frey, 1962, *C. rotundicollis* Frey, 1973, *C. ruficollis* Frey, 1962, *C. setiventris* Moser, 1921, *C. signata* Blanchard, 1850, *C. sparsesetosa* Frey, 1972, *C. squamulata* Moser, 1924, *C. striata* Frey, 1973, *C. subvittata* Moser, 1921, *C. sulcicollis* Moser, 1921, *C. tenuisquamosa* Frey, 1962, *C. tibialis* Blanchard, 1850, *C. unguicularis* Moser, 1919, *C. variegata* Perty, 1833, *C. ventralis* Frey, 1862, *C. vestita* Blanchard, 1850, *C. vittata* Moser, 1919, *C. vulpes* Frey, 1962 and *C. zikani* Moser, 1924.

***Ceraspis bivulnerata* (Germar, 1824)**

Figs 8C, 9F–G, 18A–B

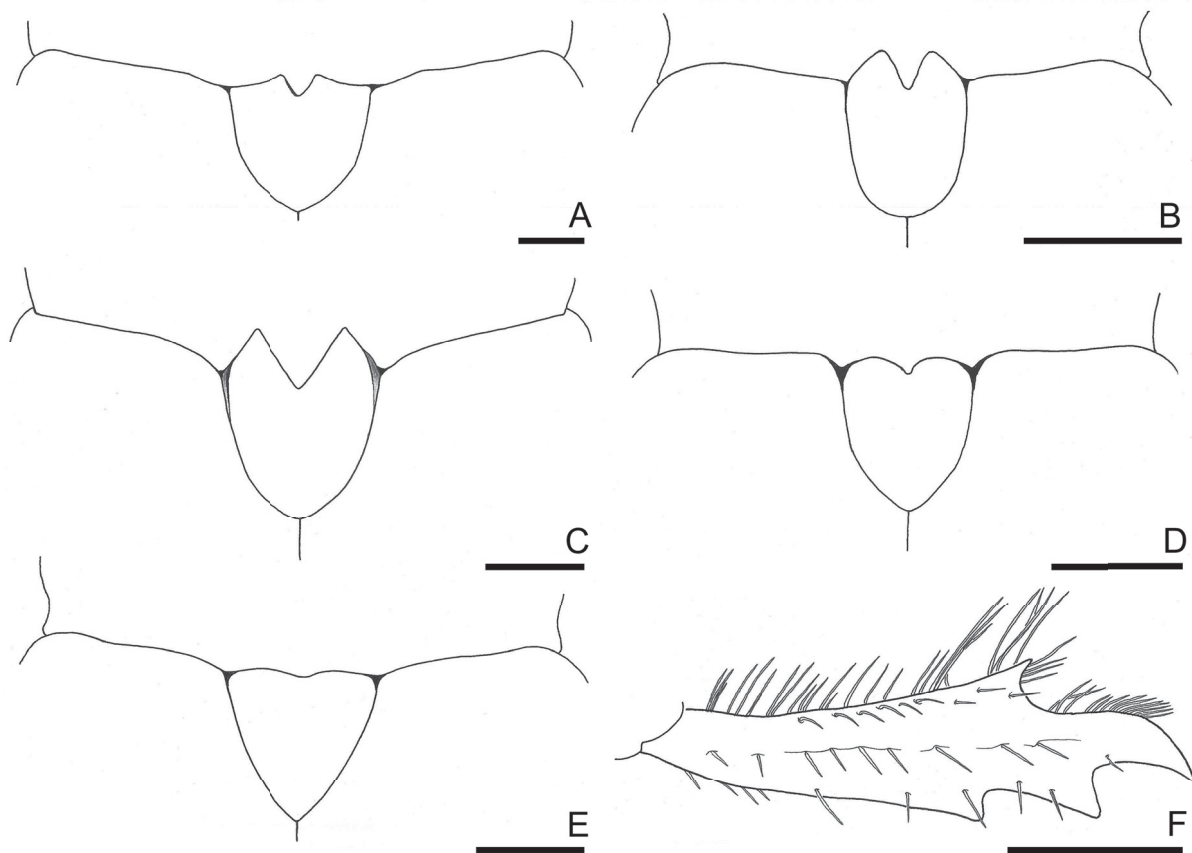
*Melolontha bivulnerata* Germar, 1824: 1824.

*Ceraspis pruinosa* LePeletier de Saint-Fargeau & Audinet-Serville, 1828: 371.

*Ceraspis albida* Guérin-Méneville, 1831: fig. 24bis.

*Ceraspis bivulnerata* – Burmeister 1855: 93.

*Ceraspis pruinosa* – Blanchard 1850: 92 (synonymy).



**Fig. 8.** A–E. Pronotum–scutellum contact. F. Protibia. A. *Ancistrosoma klugii* Curtis, 1835. B. *Chariodema virescens* Blanchard, 1842. C. *Ceraspis bivulnerata* (Germar, 1824). D. *Faula cornuta* Blanchard, 1850. E–F. *Manopus biguttata* Conte de Castelnau, 1840. Scale bars = 1 mm.

*Ceraspis albida* – Blanchard 1850: 92 (synonymy).

### Note

*Ceraspis pruinosa* was described based on an undetermined number of males and females, at least one of each sex. Only one female was located and designated as lectotype.

### Material examined

**Lectotype** (here designated, Fig. 18A–B)

BRAZIL: ♀, MNHN, labels: [Rio-janei. | St. Hilaire] [**MUSÉUM PARIS** | Rio-Janeiro | St Hilaire] [LECTOTYPE ♀ | *Ceraspis pruinosa* | LePeletier & Audinet-Serville, 1828 | des. J. Fuhrmann & F.Z. Vaz-de-Mello, 2014] [*Ceraspis bivulnerata* | (Germar, 1824) ♀ | det. J. Fuhrmann | & F.Z. Vaz-de-Mello, 2014].

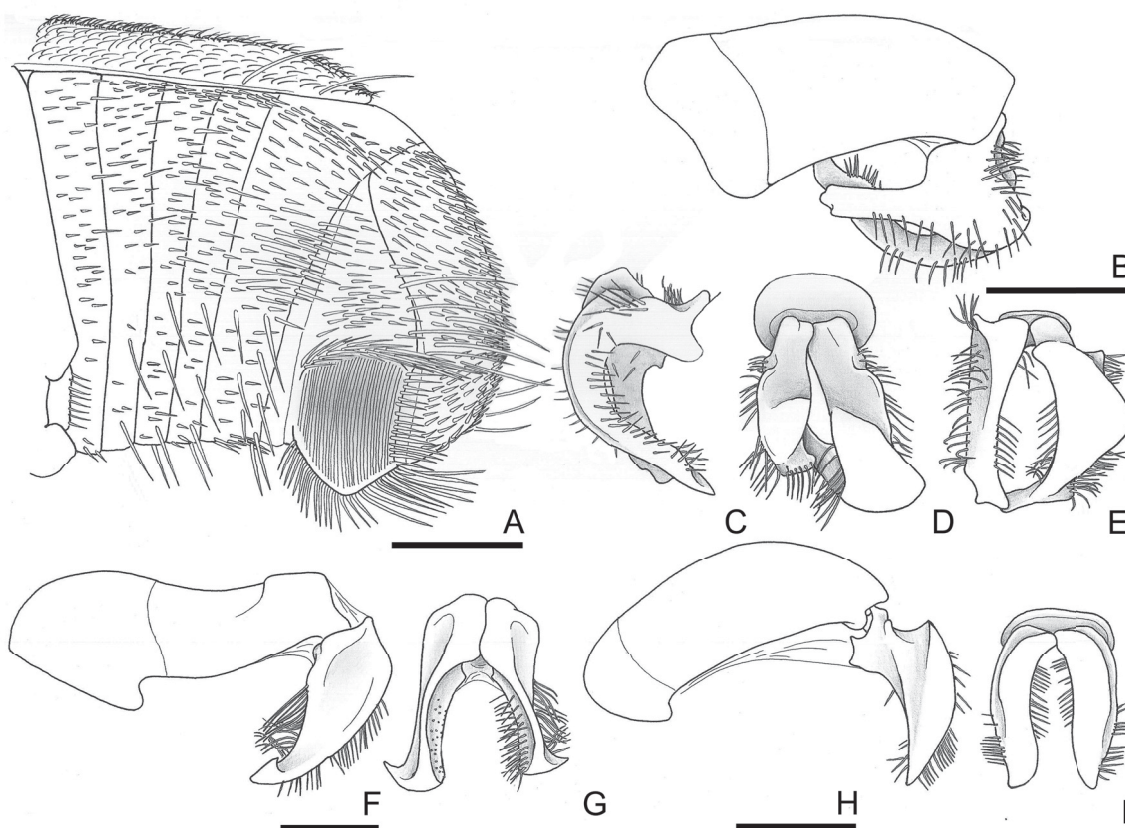
### *Ceratolontha* Arrow, 1948

#### Type species

*Ceratolontha venezuelae* Arrow, 1948 (designation: monotypy).

#### Diagnosis

Male clypeus with two long horns (Fig. 10B–C) and female clypeus deeply emarginate (Fig. 10A); maxillary palpus longer than antennomeres I–VI; pronotal anterior and posterior margins not beaded;



**Fig. 9.** A. Lateroventral detail of male abdomen. B, F, H. Aedeagus, lateral. C. Left paramere. D, G, I. Parameres, apex. E. Parameres, ventral. A–E. *Chariodema virescens* Blanchard, 1842. F–G. *Ceraspis bivulnerata* (Germar, 1824). H–I. *Faula cornuta* Blanchard, 1850. Scale bars = 1 mm.

FUHRMANN J. & VAZ-DE-MELLO F.Z., Type series of type species of Macroductylini

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prosternum anteriorly concave (similar to Fig. 12K); protibia with three external teeth and without spur; elytron with three raised longitudinal lines between internal margin and humerus, posterior and posterointernal margins not beaded; mesotibia with some spines; metatarsomere V without spine-like setae; abdomen with intersegmental membrane VII–VIII concealed.

**Remark**

*Ceratolontha* is distinguished from other Macroductylini genera by the head ornamentation (Fig. 10B–C).

*Ceratolontha venezuelae* Arrow, 1948  
Figs 10A–C, H–I, 18C–D

*Ceratolontha venezuelae* Arrow, 1948: 372.

**Note**

*Ceratolontha venezuelae* was described based on two males and one female.

**Material examined**

**Lectotype** (hereby designated, Fig. 18C–D)

VENEZUELA: ♂, BMNH, labels: [Type] [Venez.a] [Fry Coll. | 1095-100] [18613] [Ceratolontha | venezuelae | Type Arrow] [Ceratolontha | venezuelae Arrow | type] [LECTOTYPE | Ceratolontha | venezuelae | Arrow, 1948 | ♂ | des. des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014].

**Paralectotypes** (n = 2)

VENEZUELA: 1 ♂, BMNH, labels: [Venez.a | 55789.] [Ceratolontha | venezuelae | Co-type Arrow] [PARALECTOTYPE | Ceratolontha | venezuelae | Arrow, 1948 | ♂ | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014]; 1 ♀, BMNH, labels: [Venez.a] [Fry Coll. | 1905-100] [Ceratolontha | venezuelae | Co-type Arrow] [PARALECTOTYPE | Ceratolontha | venezuelae | Arrow, 1948 | ♀ | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014].

*Chariodactylus* Moser, 1919

**Type species**

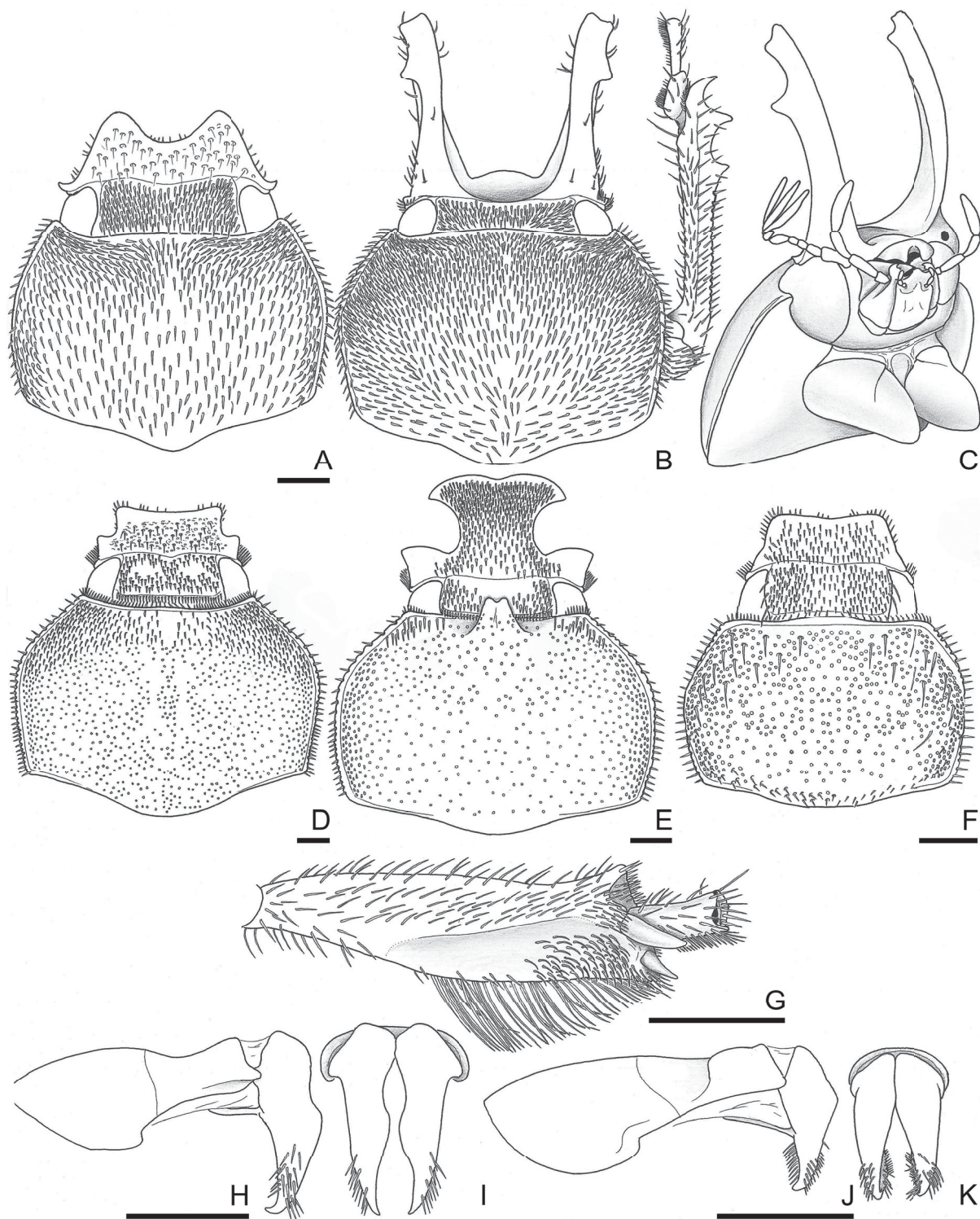
*Chariodactylus chacoensis* Moser, 1919 (designation: Evans 2003: 247).

**Diagnosis**

Clypeus and frons gradually raised over the lateral area of head (Fig. 11A); clypeal anteroventral area strongly reduced (similar to Fig. 11H); posterior ocular area exposed (Fig. 11A), eye large; pronotum as long as wide, with anterior and posterior margins not beaded; prosternum with two anterior sulci (similar to Fig. 11H); protibia with two external teeth and without spur (Fig. 11A); abdomen with intersegmental membrane VII–VIII exposed.

**Remarks**

The genera *Chariodactylus*, *Macroductylus* and *Manodactylus* Moser, 1919 are similar to each other. *Chariodactylus* (Fig. 11A) is distinguished as follows (opposition to 1, *Macroductylus* (Fig. 11C); 2, *Manodactylus* (Fig. 11B)): clypeus broad, trapezoid (1, narrow, trapezoid; 2, as *Chariodactylus*); eye large (1, 2, small); pronotum wider than long (1, longer than large; 2, as *Chariodactylus*). Future cladistic analysis and a taxonomic review of *Macroductylus* including *Chariodactylus* and *Manodactylus* are needed to confirm the possible synonymy between these genera.



**Fig. 10.** A–B, D–F. Head–pronotum, dorsal. C. Head–prothorax, lateroventral. G. Metatibia, internal. A. ♀. B–G. ♂. H–K. Aedeagus (lateral, parameres apex). A–C, H–I. *Ceratolontha venezuelae* Arrow, 1948. D. *Rhinaspis aenea* Billberg, 1820. E. *Rhinaspis ohausi* Moser, 1921. F–G, J–K. *Rhinaspis aeneofusca* Moser, 1919. Scale bars = 1 mm.

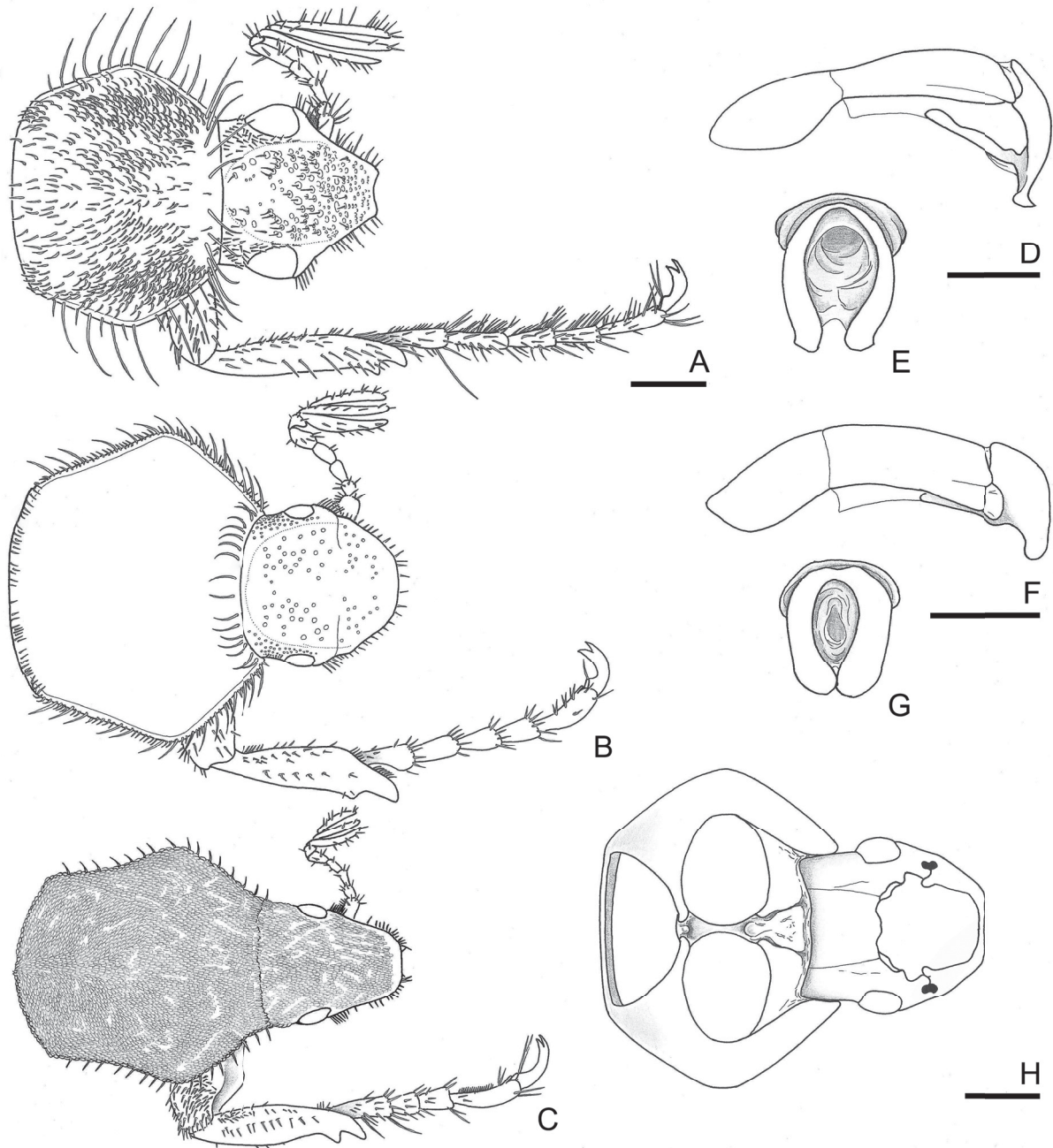
*Chariodactylus chacoensis* Moser, 1919

Figs 11A, D–E, 18E–F

*Chariodactylus chacoensis* Moser, 1919a: 57.

**Note**

*Chariodactylus chacoensis* was described based on an undetermined number of males and females.



**Fig. 11.** ♂♂. **A–C.** Head–prothorax dorsal, tarsus rotated laterally to apex. **D–G.** Aedeagus (lateral, parameres apex). **H.** Head–prothorax, ventral. **A, D–E.** *Chariodactylus chacoensis* Moser, 1919. **B, F–H.** *Manodactylus gaujoni* Moser, 1919. **C.** *Macroductylus pumilio* Burmeister, 1855. Scale bars = 1 mm.

### Material examined

**Lectotype** (here designated, Fig. 18E–F)

BOLIVIA: ♂, ZMHU, labels: [Bolivia | Chaco {illegible}] [**Chariodactylus** | **chacoensis** | **Moser** | **fide K. Katovich 02**] [LECTOTYPE | Chariodactylus | chacoensis | Moser, 1919 | ♂ | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014].

**Paralectotype**

BOLIVIA: 1 ♂, ZMHU, labels: [Bolivia | Chaco {illegible}] [**Chariodactylus** | **chacoensis** | **Moser** | **fide K. Katovich 02**] [PARALECTOTYPE | Chariodactylus | chacoensis | Moser, 1919 | ♂ | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014].

*Chariodema* Blanchard, 1850

*Chariodema* Blanchard, 1850: 117.

### Type species

*Philochlaenia virescens* Blanchard, 1842 (designation: Evans 2003: 247).

### Diagnosis

Body usually yellow or yellowish-brown, bright, and pronotum with or without green reflex (Fig. 18G); pronotal anterior margin not beaded; pronotum–scutellum contact acutely sinuous (Fig. 8B); prosternum with an anterior longitudinal carina; protibia with two external teeth and with a spur; meso- and metacoxae separate; internal area of metatarsomere V with spine-like setae; male ventrite VI with two parallel and setose carinae (Fig. 9A).

### Remarks

The genera *Ancistrosoma*, *Chariodema*, *Faula*, *Manopus*, *Pectinosoma* and *Pseudopectinosoma* are similar to each other. They have a sinuous pronotum–scutellum contact and meso- and metacoxae separate. *Chariodema* is distinguished by protibia with two external teeth and with a spur, and male ventrite VI with two parallel and setose carinae (Fig. 9A).

*Chariodema virescens* (Blanchard, 1842)

Figs 8B, 9A–E, 18G–H

*Philochlaenia virescens* Blanchard, 1842: fig. 11.

*Philochlaenia virescens* – Blanchard 1845: 192.

*Chariodema virescens* – Blanchard 1850: 117.

### Note

*Philochlaenia virescens* was described based on an undetermined number of specimens.

### Material examined

**Lectotype** (here designated, Fig. 18G–H)

BOLIVIA: ♀, MNHN, labels: [6458 | 34] [1489] [**MUSÉUM PARIS** | Santa Cruz | d'Orbigny] [LECTOTYPE | ♀ | *Philochlaenia virescens* | Blanchard, 1842 | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014] [*Chariodema virescens* (Blanchard, 1842) ♀ | det. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014].

### Remarks

See remarks for *Philochloenia*.

### *Clavipalpus* Laporte, 1832

*Ootoma* Dejean, 1833: 163, *nomen nudum*.

### Type species

*Clavipalpus dejeani* Laporte, 1832 (designation: monotypy).

### Diagnosis

Clypeal ventral area slightly enlarged (Fig. 6A–B); maxillary palpomere IV enlarged (Fig. 6A–B); pronotal anterior and posterior margins not beaded; prosternum anteriorly concave (similar to Fig. 12K); protibia with three external teeth and without spur; elytral striae indistinct, posterior margin not beaded, posterointernal margin beaded; metatarsomere V without internoproximal spine-like setae; abdomen with intersegmental membrane VII–VIII concealed.

### Remarks

The present study revalidates *Paulosawaya*, formerly a synonym of *Clavipalpus*. Consequently 17 species are transferred to *Paulosawaya*, and *Clavipalpus* now comprises four species: *C. dejeani*, *C. hirticollis* Frey, 1969, *C. orbignyana* Blanchard, 1850 and *C. tenuis* Arrow, 1903.

### *Clavipalpus dejeani* Laporte, 1832

Figs 6A–B, E–F, 18I–J

*Clavipalpus dejeani* Laporte, 1832: 406.

*Ootoma clavipalpe* Dejean, 1837: 163, *nomen nudum*.

### Note

*Clavipalpus dejeani* was described based on an undetermined number of specimens.

### Material examined

**Lectotype** (here designated, Fig. 18I–J)

BRAZIL: 1 ♂, MNHN, labels: [Dejeani | Bres Castl.] [Collection Mnizech] [Ex-Musaeo | VAN LÂNSBERGE] [LECTOTYPE | Clavipalpus | dejeani | Laporte, 1832 | ♂ | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014].

**Paralectotype**

BRAZIL: 1 ♂, MNHN, labels: [MUSÉUM PARIS | Castelnau] [PARALECTOTYPE | Clavipalpus | dejeani | Laporte, 1832 | ♂ | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014].

### *Euryaspis* Blanchard, 1850, revalidated

*Ctenotis* Burmeister 1855: 20, **syn. nov.** Type species: *Ctenotis obesa* Burmeister, 1855 (designation: monotypy).

*Euryaspis* Lacordaire, 1856: 259 (synonymy with *Plectris*).

### Type species

*Euryaspis gaudichaudii* Blanchard, 1850 (designation: monotypy).

### Diagnosis

Clypeus transverse, narrow, posterior angle partially covering the canthus (Fig. 12A), ventral area deflected vertically; pronotal anterior and posterior margins not beaded, lateral margins crenulate, posterior margin prominent (Fig. 12A), prosternum anteriorly concave (similar to Fig. 12K); protibia with three external teeth and with a spur (Fig. 12A, C); elytral striae indistinct, posterior and posterointernal margins not beaded; abdomen with intersegmental membrane VII–VIII concealed.

### Remarks

The present study proposes the synonymy of *Ctenotis* with *Euryaspis* and revalidates *Euryaspis*, formerly a synonym of *Plectris*, based on the following characters (opposition to *Plectris*): pronotal lateral margins crenulate (margins straight), posterior margin prominent (not prominent); internal area of metatarsomere V without spine-like setae (with spine-like setae).

*Euryaspis* is distinguished from other Macroductylini by having a narrow and transverse clypeus, pronotal lateral margins crenulate and posterior margin strongly prominent.

According to the new synonymy proposed here (*Ctenotis* synonym of *Euryaspis*), the genus now comprises two species: *E. gaudichaudii* (type species of *Euryaspis*) and *E. obesa* (Burmeister, 1855) **comb. nov.** (type species of *Ctenotis*). *Euryaspis gaudichaudii* is distinguished as follows (opposition to *E. obesa*): antennal clavae of male and females with three antennomeres (Fig. 12B) (four antennomeres, Fig. 12A); protarsomere IV about twice as long as wide (Fig. 12C) (as long as wide, Fig. 12A); protarsal claws gradually curved (Fig. 12C) (abruptly curved, Fig. 12A); male abdominal ventrites with a medial comb of long setae (setae homogeneously distributed).

*Euryaspis gaudichaudii* Blanchard, 1850  
Figs 12B–E, 18M–N

*Euryaspis gaudichaudii* Blanchard, 1850: 130.

*Phyllophaga (Phytalus) malleata* Frey, 1964: 696.

*Plectris gaudichaudii* – Lacordaire 1856: 259.

*Phyllophaga (Phytalus) malleata* – Frey 1975: 220 (synonymy).

### Note

*Euryaspis gaudichaudii* was described based on an undetermined number of specimens.

### Material examined

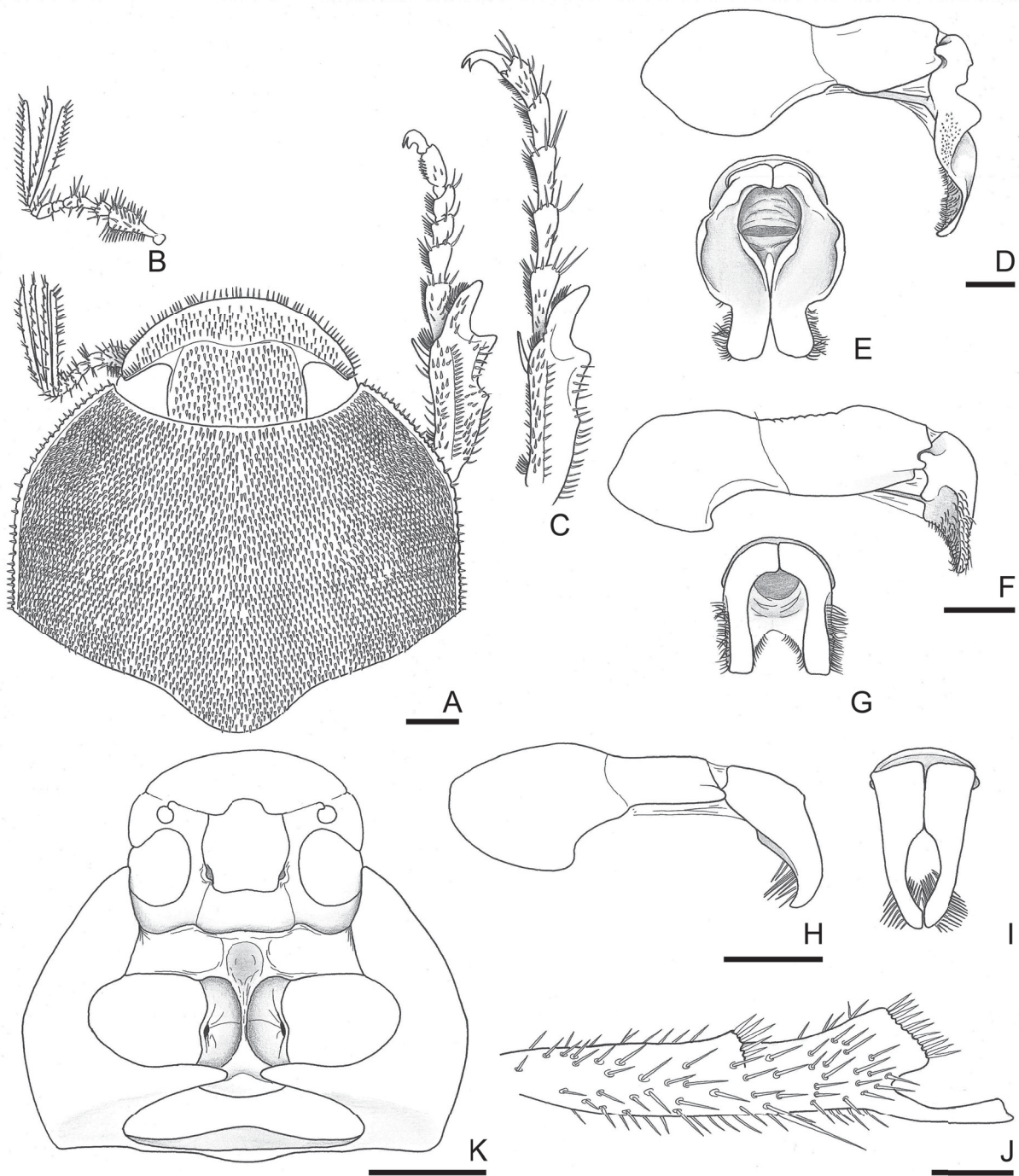
**Lectotype** (here designated, Fig. 18M–N)

BRAZIL: ♂, MNHN, labels: [MUSÉUM PARIS | Bresil | Coll. Malvoidel | 1942] [TYPE] [Plectris | Euryaspis | gaudichaudi | Bl. | det. G. Frey, 1965] [E. Gaudichaudii | Cat. Mus. | Brésil | M. Gaudichaud.] [LECTOTYPE ♂ | *Euryaspis gaudichaudii* | Blanchard, 1850 | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014].

**Paralectotype**

BRAZIL: 1 ♂, MNHN, labels: [“illegible”] [MUSÉUM PARIS | Gaudichaud] [PARALECTOTYPE ♂ | *Euryaspis gaudichaudii* | Blanchard, 1850 | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014].





**Fig. 12.** ♂♂. **A.** Head–prothorax dorsal, tarsus rotated laterally to apex. **B.** Antenna. **C.** Protibia–tarsus. **D–I.** Aedeagus (lateral, parameres apex). **J.** Metatibia. **K.** Head–prothorax, ventral. **A, F–G.** *Euryaspis obesa* (Burmeister, 1855) comb. nov. **B–E.** *Euryaspis gaudichaudi* Blanchard, 1850. **H–J.** *Philochloenia amata* nom. nov. **K.** *Philochloenia castaneipennis* (Guérin-Méneville, 1831) comb. nov. Scale bars = 1 mm.

***Euryaspis obesa*** (Burmeister, 1855) comb. nov.  
Figs 12A, F–G, 18K–L

*Ctenotis obesa* Burmeister, 1855: 21.

*Phyllophaga (Phytalus) alvarengai* Frey, 1964: 697.

*Phyllophaga (Phytalus) alvarengai* – Frey 1975: 220 (synonymy).

**Note**

*Ctenotis obesa* was described based on an undetermined number of specimens.

**Material examined**

**Lectotype** (here designated, Fig. 18K–L)

BRAZIL: ♂, ZNSM, labels: [Ctenotis | Burm.] {drawer label} [obesa Br | Rollar | Bras. inter.] {drawer label} [LECTOTYPE | Ctenotis obesa ♂ | burmeister, 1855 | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014].

***Faula*** Blanchard, 1850, revalidated

*Faula* – Lacordaire 1856: 253 (synonymy with *Ancistrosoma*). — Geminger & Harold 1869: 1154 (synonymy with *Ceraspis*).

**Type species**

*Faula cornuta* Blanchard, 1850 (designation: Evans 2003: 236).

**Diagnosis**

Body usually brown or reddish-brown, opaque; pronotal anterior margin not beaded; pronotum–scutellum contact roundly sinuous (Fig. 8D); prosternum with an anterior longitudinal carina; protibia with 3–4 external teeth and without spur; meso- and metacoxae separate; metatarsomere V with internoproximal spine-like setae.

**Remarks**

The genera *Ancistrosoma*, *Chariodema*, *Faula*, *Manopus*, *Pectinosoma* and *Pseudopectinosoma* are similar to each other. They have a sinuous pronotum–scutellum contact and meso- and metacoxae separate. *Faula* is distinguished by the protibia with 3–4 external teeth (rarely with proximal tooth reduced) and without spur; male ventrite VI weakly prominent or flat and straight.

The present study revalidates *Faula*, formerly a synonym of *Ceraspis*, based on the following characters (opposition to *Ceraspis*): pronotum and elytron glabrous or sparsely setose, pronotum rarely densely setose, elytron of some species with longitudinal setose bands, at least in females (usually densely setose, sometimes setae covering the surface largely or entirely); pronotum–scutellum contact roundly sinuous (Fig. 8D) (acutely sinuous, Fig. 8C); protibia with 3–4 external teeth, some minor specimens with proximal tooth reduced (two teeth); meso- and metacoxae medially separate (contiguous).

*Faula* comprises 27 species (13 species from original combination and 14 species transferred from *Ceraspis*): *F. bicolor* (Moser, 1919) **comb. nov.**, *F. bivittata* (Burmeister, 1855) **comb. nov.**, *F. brunneipennis* Bates, 1887, *F. centralis* Sharp, 1877, *F. clypealis* (Frey, 1962) **comb. nov.**, *F. cornuta* Blanchard, 1850, *F. hispida* Bates, 1887, *F. immaculata* (Burmeister, 1855) **comb. nov.**, *F. innotata* Blanchard, 1850, *F. insularis* Arrow, 1903, *F. jaliscoensis* (Delgado & Navarette-Heredia, 2004) **comb. nov.**, *F. klenei* (Brenske, 1890) **comb. nov.**, *F. lineata* Waterhouse, 1879, *F. macrophylla* (Moser, 1919) **comb. nov.**,

FUHRMANN J. & VAZ-DE-MELLO F.Z., Type series of type species of Macroductylini

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*F. mexicana* Harold, 1863, *F. modesta* (Burmeister, 1855) **comb. nov.**, *F. oaxacaensis* (Delgado, 2001) **comb. nov.**, *F. ohausi* (Moser, 1921) **comb. nov.**, *F. opacipennis* Moser, 1919, *F. pilatei* Harold, 1863, *F. quadrifoliata* (Moser, 1919) **comb. nov.**, *F. quadrimaculata* Blanchard, 1850, *F. quadripustulata* Blanchard, 1850, *F. rubiginosa* (Latreille, 1813) **comb. nov.**, *F. ruhli* (Brenske, 1890) **comb. nov.**, *F. rufoscutellata* (Moser, 1919) **comb. nov.** and *F. squamulifera* Moser, 1919.

***Faula cornuta*** Blanchard, 1850

Figs 8D, 9H–I, 18O–P

*Faula cornuta* Blanchard, 1850: 124.

*Ceraspis cornuta* – Gemminger & Harold 1869: 1154.  
in *Ancistrosoma* (but genus combination not used) – Lacordaire 1856: 253.

#### Note

*Faula cornuta* was described based on an undetermined number of specimens.

#### Material examined

**Lectotype** (hereby designated, Fig. 18O–P)

BRAZIL: ♂, MNHN, labels: [11 | 44] [MUSÉUM PARIS | RIO-JANEIRO | DE CASTELNAU 17-44] [LECTOTYPE ♂ | *Faula cornuta* | Blanchard, 1850 | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014].

**Paralectotypes** (n = 3)

BRAZIL: 2 ♂, MNHN, labels: [11 | 44] [MUSÉUM PARIS | Rio | de Castelnau] [PARALECTOTYPE ♂ | *Faula cornuta* | Blanchard, 1850 | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014]; 1 ♀, MNHN, labels: [11 | 44] [MUSÉUM PARIS | Rio | de Castelnau] [PARALECTOTYPE ♀ | *Faula cornuta* | Blanchard, 1850 | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014].

***Junkia*** Dalla Torre, 1913, revalidated

*Trichoderma* Nonfried, 1894: 11 (*non* Stephens, 1835).

*Junkia* Dalla Torre, 1913: 310 (replacement name for *Trichoderma* Nonfried).

*Junkia* – Moser 1913: 293 (synonymy with *Philochloenia*). — Frey 1967: 79 (synonymy with *Plectris*).

#### Type species

*Trichoderma ceylanica* Nonfried, 1894 (monotypy).

***Junkia ceylanica*** (Nonfried, 1894), *species inquirenda*

Fig. 22E

*Trichoderma ceylanica* Nonfried, 1894: 11.

*Junkia ceylanica* – Dalla Torre 1913: 310.

*Philochloenia ceylanica* – Moser 1913: 293 (*Junkia* synonym of *Philochloenia*).

*Plectris ceylanica* – Frey 1967: 79 (*Junkia* synonym of *Plectris*).

#### Note

Nonfried (1894) erected *Trichoderma* for *T. ceylanica* based on an undetermined number of specimens from Kandy, Sri Lanka (“Ceylon”). Dalla Torre (1913) proposed *Junkia* as a replacement name for

*Trichoderma* Nonfried, 1894 (*non* Stephens, 1848). In the same year Moser (1913) proposed the synonymy of *Junkia* with *Philochlaenia* [sic] Blanchard, 1850 and noted that the type locality “Ceylon” was probably a labelling error due to the fact that the genus occurs in South America. Frey (1967) synonymized *Junkia* with *Plectris*, and reported its occurrence in Brazil. The original collection of Nonfried is currently housed in ZMHU, but the type series of *T. ceylanica* was not found. However, two of Moser’s homeotypes of the species from Paraguay were examined (ZMHU, Fig. 22E). The revalidation of *Junkia* proposed by the present study is based on these specimens and the original description. Further studies are needed to find or designate primary types, check the taxa systematics, and find the correct occurrence of the species.

The present study revalidates *Junkia*, formerly a synonym of *Plectris*, based on the following characters (opposition to *Plectris*): labrum transverse, not prominent (prominent and deeply emarginate), metatarsomere I as long as II (metatarsomere I as long as II–IV, Fig. 4A), internal area of metatarsomere V without spine-like setae (with spine-like setae, Fig. 4A).

### *Mallotarsus* Blanchard, 1850

#### Type species

*Mallotarsus spadiceus* Blanchard, 1850 (designation: monotypy).

#### Diagnosis

Protibia with three external teeth and with a spur; mesotarsomere I with an internal hook-like tooth (Fig. 13C); metafemur with a ventral row of denticle-like setae (Fig. 13H); tarsomere IV with an internodistal small tooth (Fig. 13H); abdomen with intersegmental membrane VII–VIII exposed.

#### Remarks

Males of *Mallotarsus* have mesotarsomere I with a hook-like tooth similar to that found on *Pseudoserica* and part of *Dicrania* (e.g., *D. ebenina* Blanchard, 1850). *Mallotarsus* is distinguished as follows (opposition to 1, *Dicrania*; 2, *Pseudoserica*): pronotal posterior margin straight (1, as *Mallotarsus*; 2, margin with two lateromedial teeth projected between anterior elytron-scutellum contact, Fig. 13A), protibia with three external teeth and a spur (1, with two external teeth and without spur; 2, with 1–3 external teeth and with or without spur).

### *Mallotarsus spadiceus* Blanchard, 1850 Figs 13C, F–H, 19A–B

*Mallotarsus spadiceus* Blanchard, 1850: 119.

#### Note

*Mallotarsus spadiceus* was described based on an undetermined number of specimens.

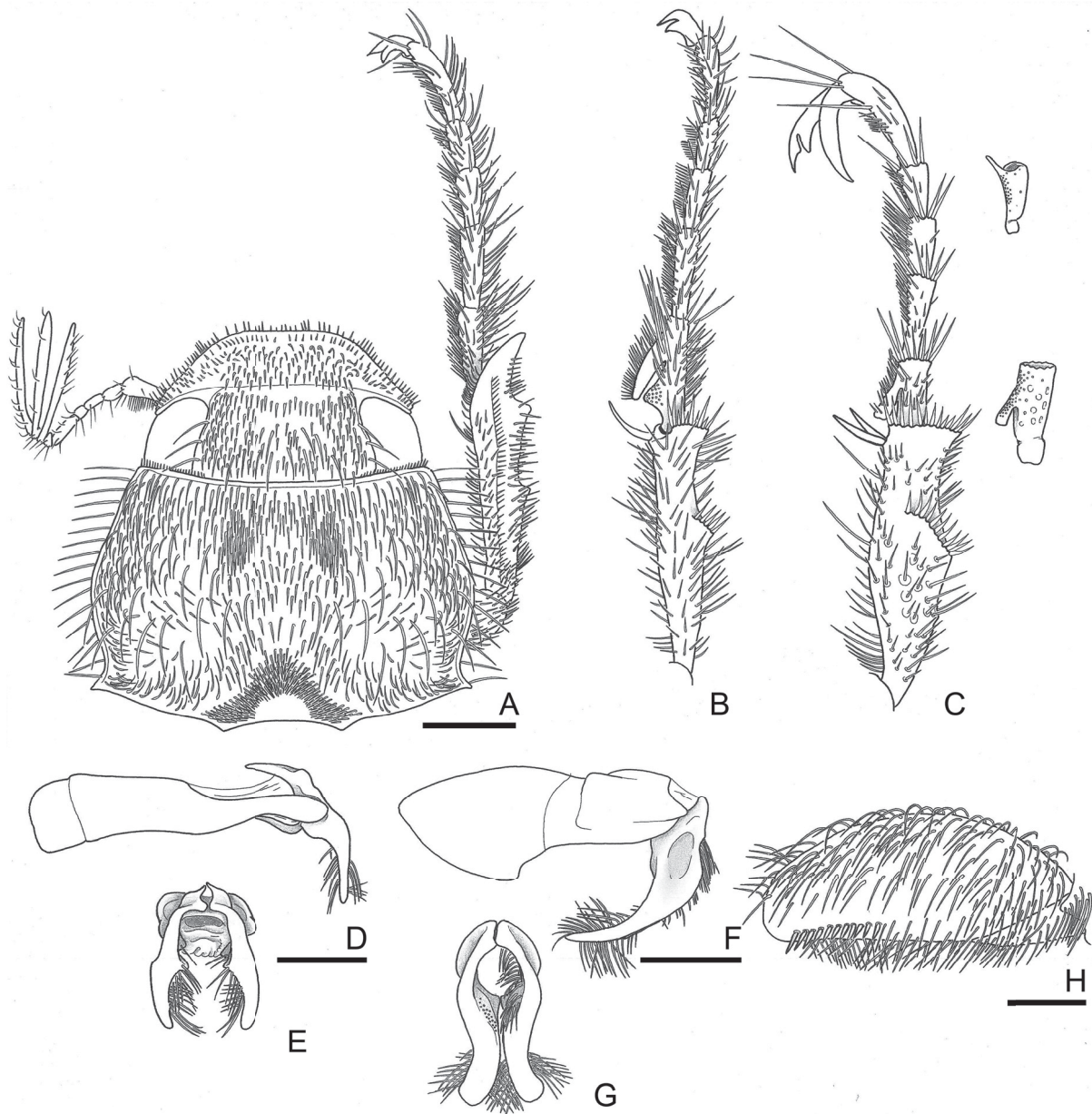
#### Material examined

**Lectotype** (here designated, Fig. 19A–B)

BRAZIL: ♂, MNHN, labels: [Campos | Geraes] [MUSÉUM PARIS | BRÉSIL | CAMPOS GERAES] [COTYPE] [LECTOTYPE ♂ | *Mallotarsus spadiceus* | Blanchard, 1850 | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014].

**Paralectotype**

BRAZIL: 1 ♂, MNHN, labels: [Campos | Geraes] [Mallotarsus | spadiceus, Bl.] [MUSÉUM PARIS] [Mallotarsus | spadiceus | Blanchard | fide K. Katovich 03] [PARALECTOTYPE | Mallotarsus spadiceus ♂ | Blanchard, 1850 | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014].



**Fig. 13.** ♂♂. **A.** Head–prothorax dorsal, tarsus rotated laterally to apex. **B–C.** Mesotibia–tarsus (**C**, with details of tarsomere I and IV). **D–G.** Aedeagus (lateral, parameres apex). **H.** Metafemur. **A–B, D–E.** *Pseudoserica marmorea* Guérin-Méneville, 1831. **C, F–H.** *Mallotarsus spadiceus* Blanchard, 1850. Scale bars = 1 mm.

*Manodactylus* Moser, 1919

**Type species**

*Manodactylus gaujoni* Moser, 1919 (designation: monotypy).

**Diagnosis**

Clypeus and frons forming a flat subcircular abruptly raised area (Fig. 11B); clypeal anteroventral area strongly reduced (similar to Fig. 11H); posterior ocular area exposed; eye small (Fig. 11B); pronotal anterior and posterior margins not beaded and with similar width; prosternum with two anterior sulci (similar to Fig. 11H); protibia with two external teeth and without spur (Fig. 11B); abdomen with intersegmental membrane VII–VIII exposed.

**Remarks**

See *Chariodactylus*.

*Manodactylus gaujoni* Moser, 1919

Figs 11B, F–H, 19C–D

*Manodactylus gaujoni* Moser, 1919a: 44.

**Note**

*Manodactylus gaujoni* was described based on an undetermined number of males and females.

**Material examined**

**Lectotype** (here designated, Fig. 19C–D)

ECUADOR: ♂, ZMHU, labels: [**Equateur** | **Loja** | **Abbé Gaujon**] [LECTOTYPE | *Manodactylus* | *gaujoni* | Moser, 1919 | ♂ | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014].

**Paralectotypes** (n = 9)

ECUADOR: 1 ♂, ZMHU, labels: [*Macroductylus* | *gaujoni* | Type Mos.] [**Equateur** | **Loja** | **Abbé Gaujon**] [PARALECTOTYPE | *Manodactylus* | *gaujoni* | Moser, 1919 | ♂ | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014]; 1 ♂, ZMHU, labels: [**Equador** | **Loja**] [*Macroductylus* | *gaujoni* | Type Mos.] [PARALECTOTYPE | *Manodactylus* | *gaujoni* | Moser, 1919 | ♂ | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014]; 1 ♂, ZMHU, labels: [**Equador** | **Loja**] [PARALECTOTYPE | *Manodactylus* | *gaujoni* | Moser, 1919 | ♂ | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014]; 1 ♂, ZMHU, labels: [**Equateur** | **Loja** | **Abbé Gaujon**] [*gaujoni* Mos.] [PARALECTOTYPE | *Manodactylus* | *gaujoni* | Moser, 1919 | ♂ | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014]; 4 ♂♂, ZMHU, labels: [**Equateur** | **Loja** | **Abbé Gaujon**] [PARALECTOTYPE | *Manodactylus* | *gaujoni* | Moser, 1919 | ♂ | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014]; 1 ♂, SDEI, labels: [**Equateur** | **Loja** | **Abbé Gaujon**] [**Syntypus**] [*Macroductylus* | *Gaujoni* | Cotype Moser] {Ohaus label} [PARALECTOTYPE | *Manodactylus* | *gaujoni* | Moser, 1919 | ♂ | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014].

**Remarks**

The name *Macroductylus gaujoni* was used by Ohaus (1909: 95) for small black specimens with long, red legs collected on “Hormillos”, 3000 m, Loja Eastern Cordillera, between San Francisco River (tributary of Zamora River) and Loja municipality (Ecuador). *Macroductylus gaujoni* Ohaus, 1909 was an available name, and is probably the senior synonym of *Manodactylus gaujoni* Moser, 1919, but the type series of the former species was not found and further studies are needed to solve this nomenclatural problem.

*Manopus* Conte de Castelnau, 1840

**Type species**

*Manopus biguttatus* Conte de Castelnau, 1840 (designation: monotypy).

**Diagnosis**

Body brown with elytron bearing irregular dark areas, opaque; pronotal anterior margin not beaded; pronotum–scutellum contact slightly sinuous (Fig. 8E); prosternum with an anterior longitudinal carina; protibia with three external teeth and without spur, internal angle spine-like (Fig. 8F); meso- and metacoxae separate; internal area of metatarsomere V with spine-like setae.

**Remarks**

The genera *Ancistrosoma*, *Chariodema*, *Faula*, *Manopus*, *Pectinosoma* and *Pseudopectinosoma* are similar to each other. They have a sinuous pronotum–scutellum contact and separate meso- and metacoxae. *Manopus* is distinguished by having the pronotum–scutellum contact slightly sinuous (similar to *Pectinosoma*, Fig. 8E); protibia with three teeth, without spur, and with internal angle spine-like (Fig. 8F); male ventrite VI straight.

*Manopus biguttatus* Conte de Castelnau, 1840  
Figs 8E–F, 19E–F

*Manopus biguttatus* Conte de Castelnau, 1840: 147.

**Note**

*Manopus biguttatus* was described based on an undetermined number of specimens.

**Material examined**

**Lectotype** (here designated, Fig. 19E–F)

COLOMBIA: ♂, MNHN, labels: [MUSÉUM PARIS] [LECTOTYPE | *Manopus biguttatus* | Laporte, 1840 | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014].

**Paralectotypes** (n = 2)

COLOMBIA: 1 ♂, MNHN, labels: [MUSÉUM PARIS] [PARALECTOTYPE | *Manopus biguttatus* | Laporte, 1840 | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014]; 1 ♂, MNHN, labels: [11 | 44] [MUSÉUM PARIS | “illegible” | de Castelnau] [COTYPE] [PARALECTOTYPE | *Manopus biguttatus* | Laporte, 1840 | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014].

*Oedichira* Burmeister, 1855

**Type species**

*Oedichira pachyductyla* Burmeister, 1855 (designation: Evans 2003: 303).

**Diagnosis**

Antennae with four lamellae (Fig. 4I–J); clypeal ventral area large and vertically deflected; labrum deeply emarginate; pronotal anterior and posterior margin not beaded; prosternum with an anterior longitudinal carina; elytral striae indistinct, posterior and posterointernal margins not beaded; metatarsomere I as long as II–IV; metatarsomere II wider than long; metatarsomere V with internoproximal spine-like setae (Fig. 4C–D).

## Remarks

See *Anomonyx* (above).

### *Oedichira pachydactyla* Burmeister, 1855

Figs 4C–D, G–J, 19G–H

*Oedichira pachydactyla* Burmeister, 1855: 81.

## Note

*Oedichira pachydactyla* was described based on an undetermined number of specimens.

## Material examined

**Lectotype** (here designated, Fig. 19G–H)

BRAZIL: ♂, ZNSM, labels: [Oedichira | Burm.] {drawer label} [pachydactyla | Bras. Br.] {drawer label} [LECTOTYPE | Oedichira pachydactyla | Burmeister, 1855 | ♂ | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014].

**Paralectotypes** (n = 2)

BRAZIL: 1 ♀, ZNSM, labels: [Oedichira | Burm.] {drawer label} [pachydactyla | Bras. Br.] {drawer label} [Nov. | Frib.] [Oedichira | pachydactyla | Burmeister | fide K. Katovich 2002] [PARALECTOTYPE | Oedichira pachydactyla | Burmeister, 1855 | ♀ | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014]; 1 ♀, ZNSM, labels: [Oedichira | Burm.] {drawer label} [pachydactyla | Bras. Br.] {drawer label} [PARALECTOTYPE | Oedichira pachydactyla | Burmeister, 1855 | ♀ | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014].

### *Paulosawaya* Martínez & d'Andretta, 1956, revalidated

*Amphicrania* Burmeister, 1855: 26 (*non Amphicrania* Dejean, 1833, a synonym of *Liogenys*, Diplotaxini), **syn. nov.** Type species: *Amphicrania ursina* Burmeister, 1855 (designation: Evans 2003: 249); junior synonymy of *Paulosawaya ursina* (Blanchard, 1850) **comb. nov.** (original combination: *Clavipalpus ursinus* Blanchard, 1850).

*Pseudoleuretra* Martínez & d'Andretta, 1956: 351, **syn. nov.** Type species: *Pseudoleuretra bokermanni* Martínez & d'Andretta, 1956 (original designation).

*Amphicrania* – Gemminger & Harold 1869: 1143 (synonymy with *Clavipalpus*).

*Paulosawaya* – Smith 2008: 22 (synonymy with *Clavipalpus*).

## Type species

*Paulosawaya ornatissima* Martínez & d'Andretta, 1956 (original designation).

## Diagnosis

Clypeal ventral area strongly widened; maxillary palpomere IV elongate (Fig. 6D); pronotal anterior and posterior margins not beaded; prosternum anteriorly concave (similar to Fig. 12K); protibia with 2–3 external teeth and without spur; elytral striae indistinct, posterior and posterointernal margins not beaded; meso- and metatibiae each with a transverse carina; metatarsomere V without spine-like setae; abdomen with intersegmental membrane VII–VIII concealed.



## Remarks

Katovich (2008) redescribed *Clavipalpus* based on syntypes of *C. ursinus* Blanchard, 1850 and the holotype of *C. aequatorialis* Moser, 1918. Thereafter, Smith (2008) proposed the synonymy of *Paulosawaya* with *Clavipalpus* based on the study of *P. ornatissima* (type species of *Paulosawaya*) and *Clavipalpus* spp. *Clavipalpus ursinus*, *C. aequatorialis* and *P. ornatissima* evidently belong to the same genus as stated by Smith (2008), but the problem is that the type material of the type species of the genus *Clavipalpus* (*C. dejeani*) was not examined by these studies (Katovich 2008; Smith 2008).

The present study designates a lectotype for *Clavipalpus dejeani* and *Amphicrania ursinus*, revalidates *Paulosawaya* (type species: *P. ornatissima*, Fig. 22A–B), and proposes the synonymy of *Amphicrania* Burmeister and *Pseudoleuretra* (type species: *P. bokermanni*, Fig. 22C–D) with *Paulosawaya*. *Amphicrania* Burmeister is a senior synonym of *Paulosawaya*, but it is a junior homonym of *Amphicrania* Dejean (a synonym of *Liogenys* according to Erichson 1848) and may not be used as a valid name (ICZN 1999: Articles 23.3.5. and 52.2).

*Paulosawaya* now comprises 17 species and one subspecies: *P. aequatorialis* (Moser, 1918) **comb. nov.**, *P. antisanae* (Bates, 1891) **comb. nov.**, *P. basalis* (Moser, 1918) **comb. nov.**, *P. blanchardi* (Kirsch, 1885) **comb. nov.**, *P. bokermanni* (Martínez & d'Andretta, 1956) **comb. nov.**, *P. castanea* (Moser, 1924) **comb. nov.**, *P. cochleata* (Burmeister, 1855) **comb. nov.**, *P. hirsuta* (Kirsch, 1885) **comb. nov.**, *P. ornatissima* Martínez & d'Andretta, 1956, *P. peruana* (Moser, 1918) **comb. nov.**, *P. rimbachi* (Moser, 1924) **comb. nov.**, *P. sinuatus* (Kirsch, 1885) **comb. nov.**, *P. spadicea* (Burmeister, 1855) **comb. nov.**, *P. ursina* (Blanchard, 1850) **comb. nov.**, *P. variolosa* (Burmeister, 1855) **comb. nov.**, *P. vestita* (Moser, 1924) **comb. nov.**, *P. whymperi chimborazonus* (Bates, 1891) **comb. nov.** and *P. whymperi whymperi* (Bates, 1891) **comb. nov.**

The present study revalidates *Paulosawaya*, formerly a synonym of *Clavipalpus*, based on the following characters (opposition to *Clavipalpus*): clypeus broad and semicircular or truncated (narrow and trapezoid); clypeal posterior angle not extended over the canthus (partially covering the canthus); maxillary palpus long (Fig. 6D) (short, Fig. 6B), palpomere IV distinctly enlongate (Fig. 6D) (enlarged, Fig. 6B); meso- and metatibiae each with a raised transverse carina (carina distinct by large punctation). *Paulosawaya* usually includes large specimens (over 12 mm), that are reddish-brown, with long setae and occurring in northern Brazil, Guyana, Peru, Ecuador and Colombia, and *Clavipalpus* includes medium-sized specimens (about 9 mm), yellowish-brown, with short setae and occurring in Brazil.

*Paulosawaya ursina* (Blanchard, 1850) **comb. nov.**

Figs 6C–D, 19I–J

*Clavipalpus ursinus* Blanchard, 1850: 120.

*Amphicrania ursina* Burmeister, 1855: 27 (different species, with the same epithet, later synonymized).

*Amphicrania ursina* – Gemminger & Harold 1869: 1143 (synonymy).

## Note

*Amphicrania ursina* Burmeister was described based on an undetermined number of specimens.

## Material examined

**Lectotype** (here designated, Fig. 19I–J)

COLOMBIA: ♂, ZNSM, labels: [Amphicra- | nia\* | Dej. ex prt.] {drawer label} [ursina | Philochl. urs. | Dej. Bq. | Columb. 144.] {drawer label} [LECTOTYPE | Amphicrania ursina | Burmeister, 1855 | ♂ | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014].

**Paralectotypes** (n = 2)

COLOMBIA: 1 ♂, ZNSM, labels: [Amphicra- | nia\* | Dej. ex prt.] {drawer label} [ursina | Philochl. urs. | Dej. Bq. | Columb. 144.] {drawer label} [HALLA | ARRIPHICRANIA | URSINA | BURMEISTER] [Clavipalpus | ursinus | (Burmeister) | Det. K. Katovich 2002] [PARALECTOTYPE | Amphicrania ursina | Burmeister, 1855 | ♂ | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014]; 1 ♀, ZNSM, labels: [Amphicra- | nia\* | Dej. ex prt.] {drawer label} [ursina | Philochl. urs. | Dej. Bq. | Columb. 144.] {drawer label} [PARALECTOTYPE | Amphicrania ursina | Burmeister, 1855 | ♀ | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014].

***Pectinosoma*** Arrow, 1913

**Type species**

*Pectinosoma elongata* Arrow, 1913 (designation: monotypy).

**Diagnosis**

Pronotum–scutellum contact slightly sinuous (similar to Fig. 8E); male mesotarsomeres I–IV wider than long and with external projection; internal area of metatarsomere V with spine-like setae; male ventrite V with medial lobe bearing truncate setae in transverse palisade (Fig. 14D–E); female pygidium with sinuous apex (Fig. 14F–G).

**Remarks**

The genera *Ancistrosoma*, *Chariodema*, *Faula*, *Manopus*, *Pectinosoma* and *Pseudopectinosoma* are similar to each other. They have a sinuous pronotum–scutellum contact and separate meso- and metacoxae. In *Ancistrosoma* and *Pectinosoma* the prosternum has a prominent posterior process (simple in *Ancistrosoma* (Fig. 14A); bifid in *Pectinosoma*). Other distinctive characters of *Pectinosoma* are (opposition to 1, *Ancistrosoma*; 2, *Pseudopectinosoma*): pronotum–scutellum contact slightly sinuous (similar to Fig. 8E) (1, 2, strongly sinuous, Fig. 8A); male ventrite V with medial lobe bearing truncate setae in transverse palisade (Fig. 14D–E) (1, ventrite I with an acute process (Fig. 14A); 2, ventrite VI with a raised area); female pygidial anterior margin straight and posterior margin deeply sinuous (Fig. 14F–G) (1, anterior margin sinuous and posterior margin slightly sinuous (Fig. 14B–C); 2, anterior margin straight and posterior margin slightly sinuous). The notes about *Pseudopectinosoma* are based on its original description (Katovich 2011).

***Pectinosoma elongata*** Arrow, 1913

Figs 14D–I, 19K–L

*Pectinosoma elongata* Arrow, 1913: 430.

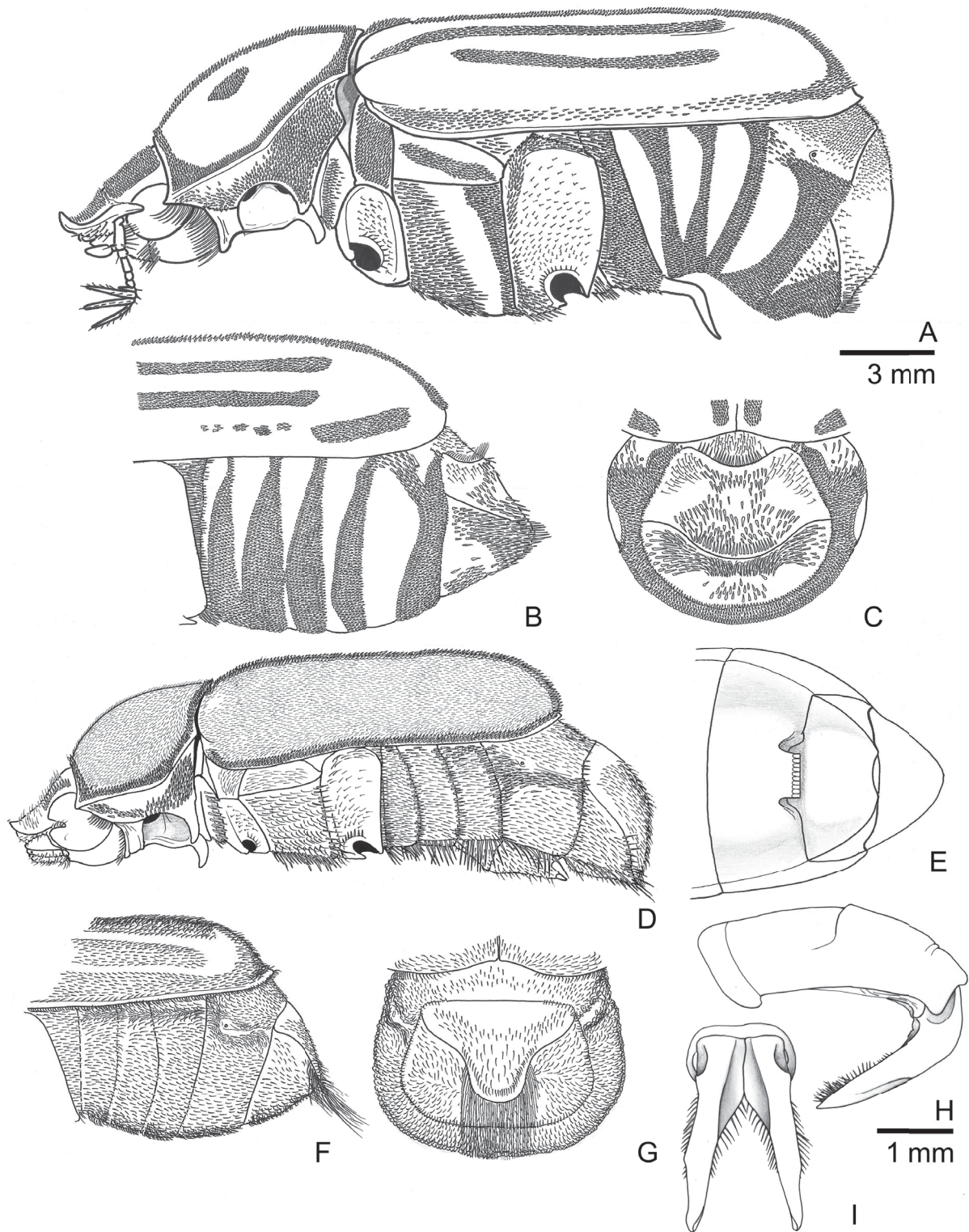
**Note**

*Pectinosoma elongata* was described based on an undetermined number of males.

**Material examined**

**Lectotype** (here designated, Fig. 19K–L)

BRITISH GUYANA: ♂, BMNH, labels: [Type | H.T.] [Roraima | B. Guiana] [Crowley | Bequest. | 1901–78] [Pectinosoma | elongatum | Type Arrow] [LECTOTYPE | Pectinosoma | elongata | Arrow, 1913 | ♂ | des. J. Fuhrmann | F.Z. Vaz-de-Mello, 2014].



**Fig. 14.** A, D. Male habitus, lateral (without some appendages). B–C, F–G. Female abdomen detail (lateral, posterior). E. Male abdomen detail, ventral. H–I. Aedeagus (lateral, parameres apex). A–C. *Ancistrosoma klugii* Curtis, 1835. D–I. *Pectinosoma elongata* Arrow, 1913.

**Paralectotypes** (n = 3)

BRITISH GUYANA: 1 ♂, BMNH, labels: [Roraima | B. Guiana] [Crowley | Bequest. | 1901–78] [PARALECTOTYPE | *Pectinosoma* | *elongata* | Arrow, 1913 | ♂ | des. J. Fuhrmann | F.Z. Vaz-de-Mello, 2014]; 2 ♂♂, BMNH, labels: [Roraima | B. Guiana] [Crowley | Bequest. | 1901–78] [***Pectinosoma* | *elongata* | Arrow | fide K. Katovich 02**] [PARALECTOTYPE | *Pectinosoma* | *elongata* | Arrow, 1913 | ♂ | des. J. Fuhrmann | F.Z. Vaz-de-Mello, 2014].

***Philochloenia*** Dejean, 1833

*Philochloenia* Dejean, 1833: 163.

*Pachycerus* Guérin-Méneville, 1831: fig. 3 (*non* Schoenherr 1823). Type species: *Pachycerus castaneipennis* Guérin-Méneville, 1831 (designation: monotypy).

*Anoplosiagum* Blanchard, 1850: 119. Type species: *Melolontha rufipennis* Fabricius, 1801 (designation: Lacordaire 1856: 264).

*Aulanota* Moser, 1924: 157, **syn. nov.** Type species: *Aulanota sulcipennis* Moser, 1924 (designation: monotypy), (now *Philochloenia armata* **nom. nov.**).

*Hadrocerus* Guérin-Méneville, 1838: 83 (replacement name for *Pachycerus* Guérin-Méneville), **syn. nov.**  
*Anomaloptera* Burmeister, 1855: 22, *nomen nudum*.

*Philochloenia* – Frey 1967: 3 (synonymy with *Plectris*). — Smith & Evans 2005: 40 (synonymy with *Dichelonyx*). — Bousquet & Bouchard 2013: 39 (revalidated).

*Anoplosiagum* – Bousquet & Bouchard 2013: 39 (synonymy with *Philochloenia*).

**Type species**

*Melolontha filitarsis* Germar, 1824 (designation: Chevrolat: 735); junior synonym of *Melolontha rufipennis* Fabricius, 1801 (type species of *Anoplosiagum*).

**Diagnosis**

Clypeal ventral area large (Fig. 12K); pronotal anterior and posterior margins not beaded; prosternum anteriorly concave (Fig. 12K); elytral striae shallowly concave and punctate, five elytral striae present between internal margin and humerus, anterior and posterior margins not beaded and internal and posterointernal margins beaded; metatarsomere V with internoproximal spine-like setae.

**Remarks**

The genus has the pronotum with irregularly distributed large punctures. Some important interspecific variations are as follows: eye small (interocular area about four times wider than dorsal eye width, e.g., *Philochloenia castaneipennis* **comb. nov.**, *P. rufipennis* **comb. nov.**) or large (interocular area about twice width of dorsal eye width, e.g., *P. sulcatula* (Blanchard, 1850) **comb. nov.**); antennae with eight (e.g., *P. armata* **nom. nov.**) or nine (e.g., *P. castaneipennis* **comb. nov.**) antennomeres; protibia with two (e.g., *P. castaneipennis* **comb. nov.**) or three (e.g., *P. armata* **nom. nov.**; *P. rufipennis* **comb. nov.**) external teeth; protibia with (e.g., *P. rufipennis* **comb. nov.**) or without (e.g., *P. castaneipennis* **comb. nov.**, *P. armata* **nom. nov.**) a spur.

*Philochloenia* Dejean, 1833 was an available name with remarkable historical problems of misspelling and misapplication (see Smith & Evans 2005: 41). Bousquet & Bouchard (2013) discussed two type species designations of *Philochloenia*: *Melolontha filitarsis* Germar, 1824 (a synonym of *Melolontha rufipennis*, the type species of *Anoplosiagum*) according to Chevrolat (1847), which made *Philochloenia* the senior synonym of *Anoplosiagum* (current valid classification); and *Melolontha elongata* Fabricius, 1792 (now *Dichelonyx elongatula* Schoenherr, 1817) according to Smith & Evans (2005) which made *Philochloenia* a junior synonym of *Dichelonyx* Harris, 1827 (*Dichelonychini*).

FUHRMANN J. & VAZ-DE-MELLO F.Z., Type series of type species of Macroductylini

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Another type species designation for *Philochloenia* was proposed by Desmarest (1860: 69), but the type species was fixed on an unavailable name: *Philochloenia virescens* Dejean, 1833, *nomen nudum*. Blanchard (1842, 1845, 1850) used this name to describe two species: *Philochlaenia [sic] virescens* Blanchard 1850: 122, a homonym of *Philochlaenia [sic] virescens* Blanchard, 1842 (type species of *Chariodema*; see Blanchard 1850: 117) and a synonym of *Plectris athena* (Burmeister, 1855) (synonymy by Frey 1967: 114; correct name precedence by Evans 2003: 306).

The present study proposes the synonymy of *Aulanota* and *Hadrocerus* with *Philochloenia*.

***Philochloenia armata*** Fuhrmann & Vaz-de-Mello, 2017 nom. nov.  
Figs 12J, 19M–N

*Aulanota sulcipennis* Moser, 1924: 157.

#### Note

*Aulanota sulcipennis* was described based on an undetermined number of males.

#### Etymology

The specific epithet refers to Latin ‘armata’: armed, and alludes to the metatibial ornamentation.

#### Material examined

**Lectotype** (here designated, Fig. 19M–N)

BRAZIL: ♂, ZMHU, labels: [Petropolis | 23.II.99] [Aulanota | sulcipennis | Type Mos] [sulcipennis Mos] [LECTOTYPE | Aulanota | sulcipennis | Moser, 1924 | ♂ | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014].

#### Remarks

The new replacement name *Philochloenia armata* **nom. nov.** is hereby erected for *Aulanota sulcipennis* to avoid the secondary homonymy with *Philochloenia sulcipennis* (Moser, 1918) **comb. nov.** (described as *Anoplosiagum sulcipenne*). See Discussion “Male morphology and nomenclature” (below) for more information about the new synonymy.

***Philochloenia rufipennis*** (Fabricius, 1801) **comb. nov.**  
Fig. 19O–P

*Melolontha rufipennis* Fabricius, 1801: 167

*Melolontha filitarsis* Germar, 1824: 125.

*Anoplosiagum rufipenne* – Guérin-Méneville 1838: 83.

*Melolontha filitarsis* – Blanchard 1850: 119 (synonymy).

#### Note

*Melolontha rufipennis* was described based on an undetermined number of specimens.

#### Material examined

**Lectotype** (here designated, Fig. 19O–P)

BRAZIL: ♂, MNHN, labels: [rufipennis | Brasil “illegible”] [MUSÉUM PARIS | Collection | “illegible”] [Anoplosiagum | !sucatulum | Bl.] [LECTOTYPE ♂ | Melolontha rufipennis | Fabricius, 1801 | des.

J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014] [*Philochloenia* | *rufipennis* ♂ | (Fabricius, 1801) | det. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014].

### Remarks

Most of Fabricius' types are currently housed at Staten Naturhistoriske Museum (Copenhagen, Denmark), but the type series of *Melolontha rufipennis* was part of the Lous Bosc collection, now housed in NMHN (Cambefort 2006). Fabricius' original labels were identified using Horn (1990a, b).

***Philochloenia castaneipennis*** (Guérin-Méneville, 1831) comb. nov.  
Figs 12K, 20A–B

*Pachycerus castaneipennis* Guérin-Méneville, 1831: fig. 3.

*Hadrocerus castaneipennis* – Guérin-Méneville 1838: 83.

### Note

*Pachycerus castaneipennis* was described based on an undetermined number of specimens.

### Material examined

**Lectotype** (here designated, Fig. 20A–B)

BRAZIL: ♂, MNHN, labels: [St. Catherine | Brésil | Durville] [**MUSÉUM PARIS**] [**TYPE**] [*Pachycerus* | *castaneipennis* | Guerin “illegible” | Duperris pl.3 f.8] [*P. castaneipennis* | “illegible” | St. Catherine | Durville] [**LECTOTYPE** ♂ | *Pachycerus castaneipennis* | Guérin-Méneville, 1831 | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014] [*Philochloenia castaneipennis* | (Guérin-Méneville, 1831) ♂ | det. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014].

***Plectris*** LePeletier de Saint-Fargeau & Audinet-Serville, 1828

*Rhizonemus* Dejean, 1836b: 180, *nomen nudum*.

*Anomalochilus* Blanchard, 1850: 123, **syn. nov.** Type species: *Anomalochilus singularis* Blanchard, 1850 (designation: monotypy).

*Demodema* Blanchard, 1850: 121. Type species: *Demodema fallax* Blanchard, 1850 (designation: Lacordaire 1856: 258).

*Demodema* – Katovich 2008: 6 (synonymy).

### Type species

*Plectris tomentosa* LePeletier de Saint-Fargeau & Audinet-Serville, 1828 (designation: monotypy).

### Diagnosis

Labrum deeply emarginate; pronotal anterior and posterior margins not beaded; prosternum with an anterior longitudinal carina; elytral striae indistinct, elytral posterior and posterointernal margins not beaded; metatarsomere I as long as II–IV; metatarsomere VI longer than wide; metatarsomere V with internoproximal spine-like setae (Fig. 4A).

### Remarks

See *Anomonyx* (above). *Plectris* is the biggest and most problematic genus of Macroductylini. The diagnosis provided by the present study or by Katovich (2008) do not include all species, and the review of Frey (1967) did not define the genus clearly. The species richness, taxonomic problems, and

the economic importance (e.g., Roberts 1968; Brill & Abney 2013) of *Plectris* show the urgency for systematic works on the genus.

The present study proposes the synonymy of *Anomalochilus* with *Plectris*, and two species previously placed in *Anomalochilus* are transferred to *Plectris*: *P. pilosella* (Blanchard, 1850) **comb. nov.** and *P. singularis* **comb. nov.**

*Plectris fallax* (Blanchard, 1850)

Fig. 20E–F

*Demodema fallax* Blanchard, 1850: 121.

*Plectris fallax* – Katovich 2008: 6 (*Demodema* synonym of *Plectris*).

**Note**

*Demodema fallax* was described based on an undetermined number of specimens.

**Material examined**

**Lectotype** (here designated, Fig. 20E–F)

BRAZIL: ♂, MNHN, labels: [14 | “illegible”] [MUSÉUM PARIS | BRÉSIL | MINAS-GERAES | DE CASTELNAU 1847] [COTYPE] [Demodema fallax Bl.] [LECTOTYPE ♂ | Demodema fallax | Blanchard, 1850 | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014] [Plectris fallax | (Blanchard, 1850) | det. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014].

**Paralectotype**

BRAZIL: 1 ♂, MNHN, labels: [14 | “illegible”] [MUSÉUM PARIS | BRÉSIL | DE CASTELNAU] [PARALECTOTYPE ♂ | Demodema fallax | Blanchard, 1850 | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014] [Plectris fallax | (Blanchard, 1850) | ♂ | det. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014].

*Plectris singularis* (Blanchard, 1850) **comb. nov.**

Fig. 20C–D

*Anomalochilus singularis* Blanchard, 1850: 123.

**Note**

*Anomalochilus singularis* was described based on an undetermined number of specimens.

**Material examined**

**Lectotype** (Fig. 20C–D)

BRAZIL: ♂, MNHN, labels: [5215 | 34.] [MUSÉUM PARIS | Rio Janeiro | d’Orbigny] [LECTOTYPE ♂ | Anomalochilus singularis | Blanchard, 1850 | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014].

**Paralectotypes**

BRAZIL: 2 ♂♂, MNHN, labels: [MUSÉUM PARIS | d’Orbigny] [PARALECTOTYPE ♂ | Anomalochilus singularis | Blanchard, 1850 | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014].

*Plectris tomentosa* LePeletier de Saint-Fargeau & Audinet-Serville, 1828

Figs 4A, 20G–H

*Plectris tomentosa* LePeletier de Saint-Fargeau & Audinet-Serville, 1828: 369.

## Note

*Plectris tomentosa* was described based on an undetermined number of specimens.

## Material examined

**Lectotype** (here designated, Fig. 20G–H)

BRAZIL: ♂, MNHN, labels: [MUSÉUM PARIS] [P. tomentosa | Lep. St. Farg. et Serv. | Brésil] [LECTOTYPE | *Plectris tomentosa* | LePeletier & Audinet-Serville, 1828 | des. J. Fuhrmann & F.Z. Vaz-de-Mello, 2014].

## Remarks

A specimen at BMNH is labeled as Frey's neotype for *P. tomentosa* (Fig. 22F), but a neotype for this species was never proposed.

## *Pseudoserica* Guérin-Méneville, 1838, revalidated

*Pseudoserica* Guérin-Méneville, 1838: 86.

*Gama* Blanchard, 1850: 118, **syn. nov.** Type species: *Gama grandicornis* Blanchard, 1850 (designation: Lacordaire 1856: 265).

*Harpodactyla* Burmeister, 1855: 17, **syn. nov.** Type species: *Harpodactyla grandicornis* Burmeister, 1855 (designation: Evans 2003: 268).

*Pachylotoma* Blanchard, 1850: 121, **syn. nov.** Type species: *Pachylotoma viridis* Blanchard, 1850 (designation: monotypy).

*Pseudoserica* – Blanchard 1850: 128 (synonymy with *Plectris*).

*Harpodactyla* – Gemminger & Harold 1869: 1411 (synonymy with *Gama*).

*Pachylotoma* – Katovich 2008: 6 (synonymy with *Gama*).

## Type species

*Serica marmorea* Guérin-Méneville, 1831 (designation: monotypy).

## Diagnosis

Clypeal posterior angle partially covering the canthus (Fig. 13A); pronotal anterior margin beaded, posterior margin not beaded and with two acute projections over the anterior elytron–scutellum contact, posterior angle acute (Fig. 13A); prosternum anteriorly concave (similar to Fig. 12K) or an anterior longitudinal carina; protibia with 1–3 external teeth and with or without spur; elytron with posterior margin not beaded; male mesotarsomere I with an internal hook-like spine (Fig. 13B); abdomen with intersegmental membrane VII–VIII concealed.

## Remarks

The genus is recognized by having the posterior pronotal margin with two lateromedial teeth which project over the anterior elytron–scutellum contact. In addition, the male mesotarsomere I has a hook-like spine (Fig. 13B), that also occurs in *Mallotarsus* (Fig. 13C) and part of *Dicrania* (e.g., *D. ebenina*).

The present study revalidates *Pseudoserica*, formerly a synonym of *Plectris*, based on the following characters (opposition to *Plectris*): posterior pronotal margin with two lateromedial teeth over the anterior elytron–scutellum contact (margin straight); male mesotarsomere I with a hook-like spine (without spines); internal area of metatarsomere V without spine-like setae (with spine-like setae).



FUHRMANN J. & VAZ-DE-MELLO F.Z., Type series of type species of Macroductylini

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*Pseudoserica grandicornis* (Blanchard, 1850) comb. nov.

Fig. 20I–J

*Gama grandicornis* Blanchard, 1850: 118.

*Harpodactyla grandicornis* Burmeister, 1855: 18 (different species, with the same epithet, later synonymized).

*Harpodactyla grandicornis* – Gemminger & Harold 1869: 1411 (synonymy).

**Note**

*Gama grandicornis* was described based on an undetermined number of specimens.

**Material examined**

**Lectotype** (here designated, Fig. 20I–J)

BRAZIL: ♂, MNHN, labels: [11 | 44] [MUSÉUM PARIS | Rio | de Castelnau] [Gama | grandicornis, Bl.] [Gama | grandicornis | Blanchard | fide K.Katovich | 03] [LECTOTYPE ♂ | Gama grandicornis | Blanchard, 1850 | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014] [Pseudoserica | grandicornis | (Blanchard, 1850) ♂ | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014].

**Paralectotypes** (n = 3)

BRAZIL: 2 ♂♂, MNHN, labels: [11 | 44] [MUSÉUM PARIS | Rio | de Castelnau] [PARALECTOTYPE ♂ | Gama grandicornis | Blanchard, 1850 | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014] [Pseudoserica | grandicornis | (Blanchard, 1850) ♂ | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014]; 1 ♀, BMNH, labels: [Co- | type] [11 | 44] [MUSÉUM PARIS | Rio | de Castelnau] [1946.181] [Gama | grandicornis Bl. | R. Paulian det.] [PARALECTOTYPE ♀ | Gama grandicornis | Blanchard, 1850 | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014] [Pseudoserica | grandicornis | (Blanchard, 1850) ♀ | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014].

*Pseudoserica marmorea* (Guérin-Méneville, 1831)

Figs 13A–B, D–E, 20M–N

*Serica marmorea* Guérin-Méneville, 1831: fig. 3.

*Pseudoserica marmorea* – Guérin-Méneville 1838: 86.

*Plectris marmorea* – Blanchard 1850: 128 (*Pseudoserica* synonym of *Plectris*).

**Note**

*Serica marmorea* was described based on an undetermined number of specimens.

**Material examined**

**Lectotype** (here designated, Fig. 20M–N)

BRAZIL: ♀, MNHN, labels: [Sta. Cather. | Durville] [MUSÉUM PARIS] [Pseudoserica | marmorea | Guer.] [Plectris | marmorea | Blanch.] [Typus] [P. marmorea | Guerin | Brésil] [LECTOTYPE ♀ | Serica marmorea | Guérin-Méneville, 1831 | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014] [Pseudoserica marmorea | (Guérin-Méneville, 1831) | ♀ | det. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014].

*Pseudoserica viridis* (Blanchard, 1850) comb. nov.

Fig. 20K–L

*Pachylotoma viridis* Blanchard, 1850: 121.

*Gama viridis* – Katovich 2008: 6 (*Pachylotoma* synonym of *Gama*).

## Note

*Pachylotoma viridis* was described based on an undetermined number of specimens.

## Material examined

**Lectotype** (here designated, Fig. 20K–L)

SOUTH AMERICA: 1 ♂, MNHN, labels: [MUSÉUM PARIS] [Pachylotoma | viridis | Blanchard | fide K. Katovich 03] [LECTOTYPE ♂ | Pachylotoma viridis | Blanchard, 1850 | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014] [Pseudoserica viridis | (Blanchard, 1850) ♂ | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014].

## *Rhinaspis* Perty, 1833

*Mallogaster* Dejean, 1833: 162, *nomen nudum*.

*Rhinaspoides* Moser, 1919b: 348. Type species: *Rhinaspoides aeneofusca* Moser, 1919 (designation: monotypy).

*Ulomenes* Blanchard, 1850: 125. Type species: *Ulomenes hypocrita* Blanchard, 1850 (designation: monotypy); synonym of *Rhinaspis fuhrmanni* Smith (2016: 2) (replacement name).

*Hyporhiza* Dejean, 1833: 162. Type species: *Melolontha hypocrita* Mannerheim, 1829 (designation: monotypy).

*Rhinaspoides* – Katovich 2008: 6 (synonymy).

*Ulomenes* – Katovich 2008: 6 (synonymy).

*Hyporhiza* – Bousquet & Bouchard 2013: 37 (synonymy).

## Type species

*Rhinaspis schrankii* Perty, 1833 (designation: monotypy); junior synonym of *Rhinaspis aenea* (Billberg, 1820).

## Diagnosis

Clypeal ventral area strongly widened, posterior angle partially covering the canthus (Fig. 10D–F); pronotal anterior margin beaded, lateral margins crenulate, posterior margin prominent (Fig. 10D–F); prosternum anteriorly concave (similar to Fig. 12K); protibia with three external teeth and with a spur; elytron with three smooth and weakly prominent lines between internal margin and humerus, posterior and posterointernal margins not beaded; abdomen with intersegmental membrane VII–VIII concealed.

## Remarks

The majority of species of *Rhinaspis* are characterized by having the male clypeus anteriorly prominent with a broad, truncate apex (e.g., *Rhinaspis aenea*, Fig. 10D) or a bifid horn (e.g., *Rhinaspis ohausi* Moser, 1921, Fig. 10E), and male and female clypeal posterior angle acute and strongly extended over the canthus. However, some species have a trapezoid or rectangular clypeus (e.g., *Rhinaspis aeneofusca*, Fig. 10F). The structure of the pronotum and the elytron, described in “diagnosis”, are more suitable to distinguish *Rhinaspis* from other Macroductylini genera.

## *Rhinaspis aeneofusca* (Moser, 1919)

Figs 10F–G, J–K, 20O–P

*Rhinaspoides aeneofusca* Moser, 1919: 348.

*Rhinaspis aeneofusca* – Katovich 2008: 6 (*Rhinaspoides* synonym of *Rhinaspis*).

### Note

*Rhinaspoides aeneofusca* was described (Moser 1919b) based on an undetermined number of males and females.

### Material examined

**Lectotype** (here designated, Fig. 200–P)

BRAZIL: ♂, ZMHU, labels: [Santa Leopoldina | Esp. Santo] [Rhinaspoides | aeneofusca | Type Mos.] [LECTOTYPE | Rhinaspoides | aeneofusca | Moser, 1919 ♂ | des. J. Fuhrmann & | F.Z. Vaz de Mello 2014]

**Paralectotypes** (n = 4)

BRAZIL: 2 ♂♂, ZMHU, labels: [Brasilien | São Paulo] [Rhinaspoides | aeneofusca | Moser | fide K, Katovich 02] [PARALECTOTYPE | Rhinaspoides | aeneofusca | Moser, 1919 ♂ | des. J. Fuhrmann & | F.Z. Vaz de Mello 2014]; 1 ♀, ZMHU, labels: [Rhinaspoides | aeneofusca | Type Mos.] [Brasilien | São Paulo] [PARALECTOTYPE | Rhinaspoides | aeneofusca | Moser, 1919 ♀ | des. J. Fuhrmann & | F.Z. Vaz de Mello 2014]; 1 ♀, ZMHU, labels: [Brasilien | São Paulo] [PARALECTOTYPE | Rhinaspoides | aeneofusca | Moser, 1919 ♀ | des. J. Fuhrmann & | F.Z. Vaz de Mello 2014].

*Rhinaspis fuhrmanni* Smith, 2016

Fig. 21A–B

*Ulomenes hypocrita* Blanchard, 1850: 125.

*Rhinaspis fuhrmanni* Smith, 2016: 2 (replacement name).

*Rhinaspis hypocrita* – Katovich 2008: 6 (*Ulomenes* synonym of *Rhinaspis*).

### Note

*Ulomenes hypocrita* was described based on an undetermined number of specimens.

### Material examined

**Lectotype** (here designated, Fig. 21A–B)

BRAZIL: ♀, MNHN, labels: [9 | 43] [Ulomenes | hypocrita, Bl.] [MUSÉUM PARIS | Brésil | Clauneu] [Ulomenes | hypocrita | Blanchard | fide K. Katovich 03] [LECTOTYPE | Ulomenes hypocrita | Blanchard, 1850 ♀ | des. Fuhrmann & | F.Z. Vaz-de-Mello, 2014].

### Remarks

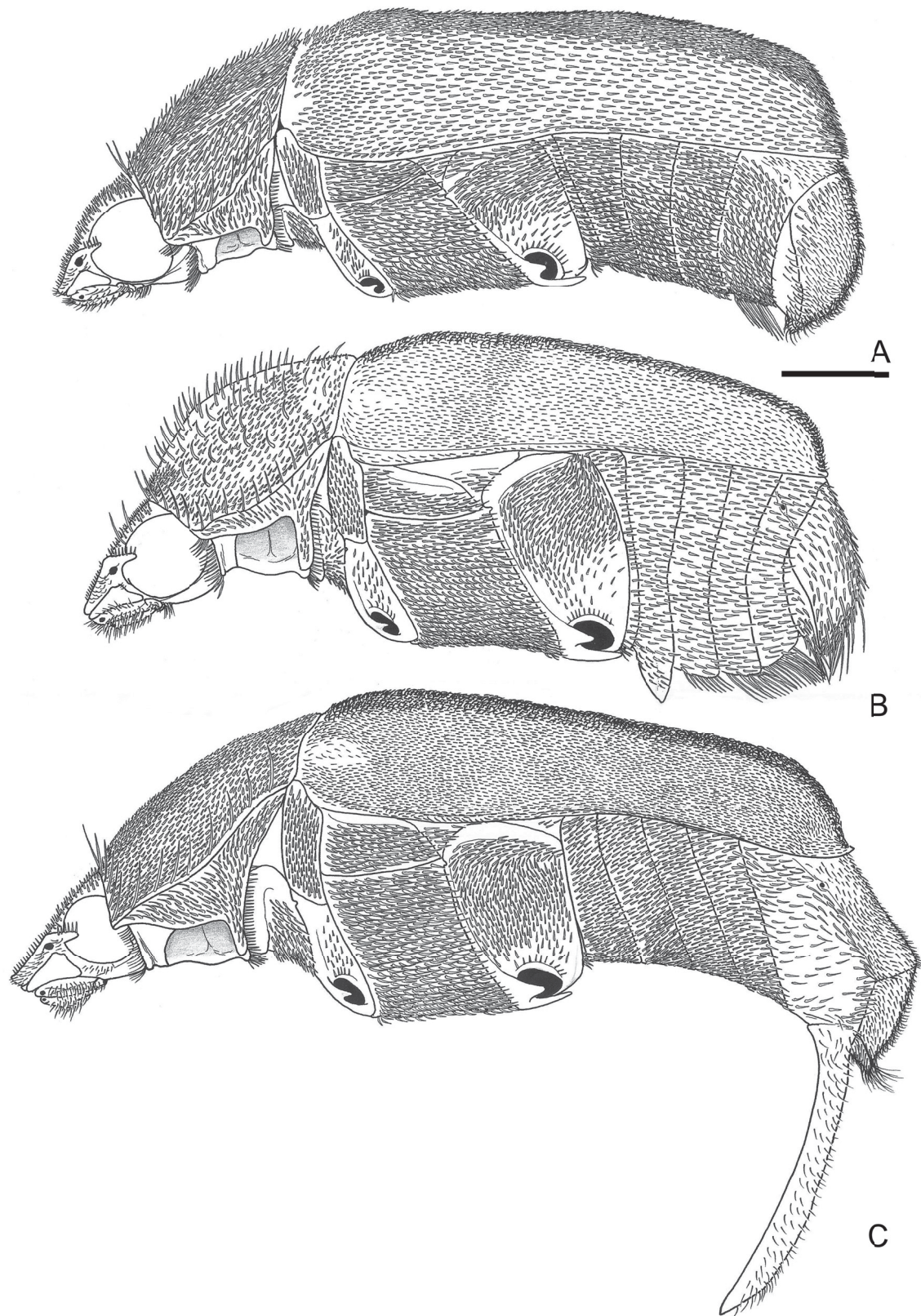
Smith (2016) erected *Rhinaspis fuhrmanni* as a replacement name for *Ulomenes hypocrita* Blanchard (type species of *Ulomenes*) to avoid a secondary homonym with *Rhinaspis hypocrita* (Mannerheim, 1829) (described as *Melolontha hypocrita*, and type species of *Hyporhiza*).

*Schizochelus* Blanchard, 1850

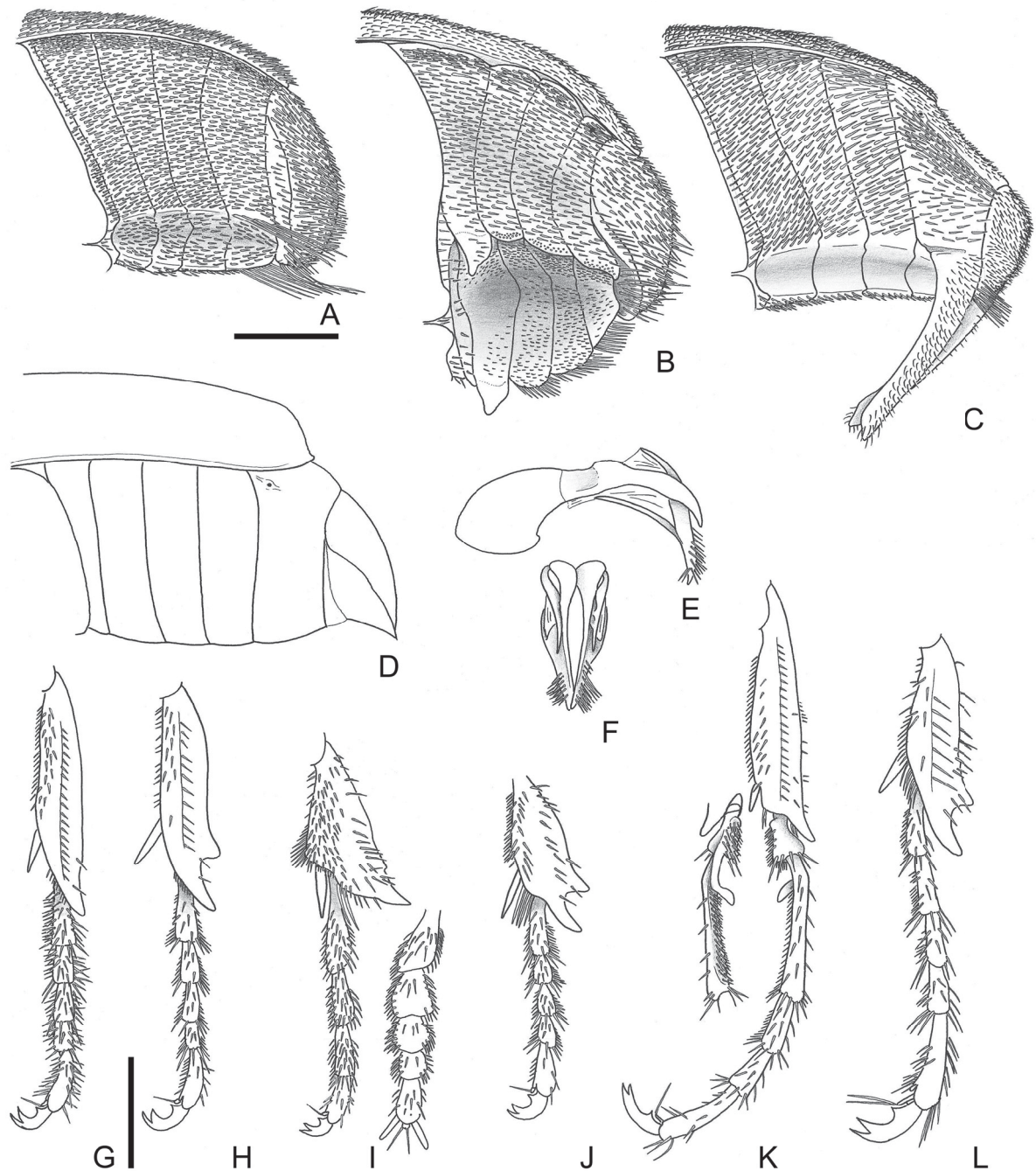
*Gastrohoplus* Moser, 1921: 165, **syn. nov.** Type species: *Gastrohoplus mirabilis* Moser, 1921 (designation: monotypy).

### Type species

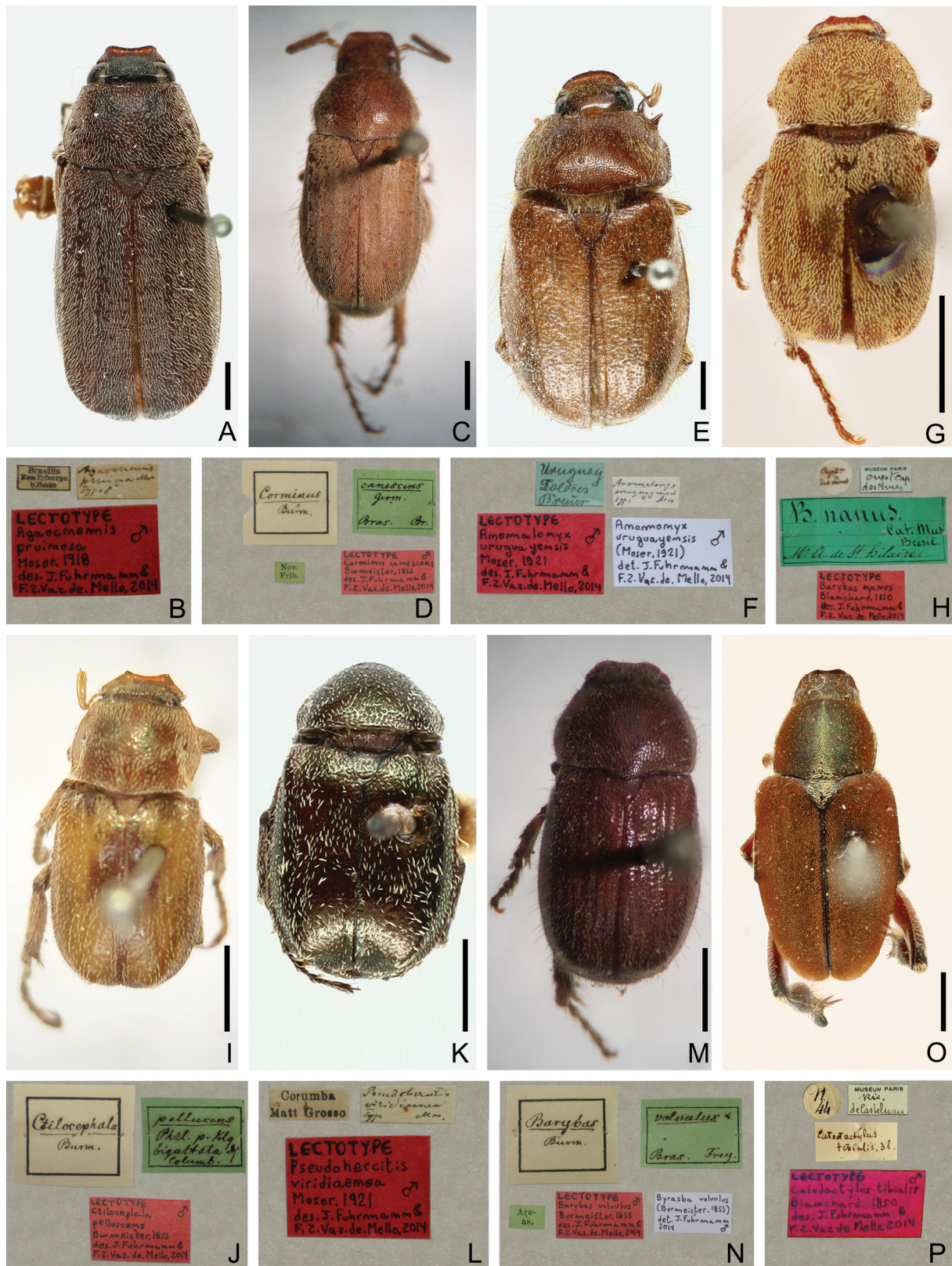
*Schizochelus flavescens* Blanchard, 1850 (designation: Evans 2003: 346).



**Fig. 15.** *Schizochelus* Blanchard, 1850, ♂, habitus, lateral (without some appendages). **A.** *Schizochelus flavescens* Blanchard, 1850. **B.** *Schizochelus bicoloripes* Blanchard, 1850. **C.** *Schizochelus mirabilis* (Moser, 1921) comb. nov. Scale bar = 1 mm.

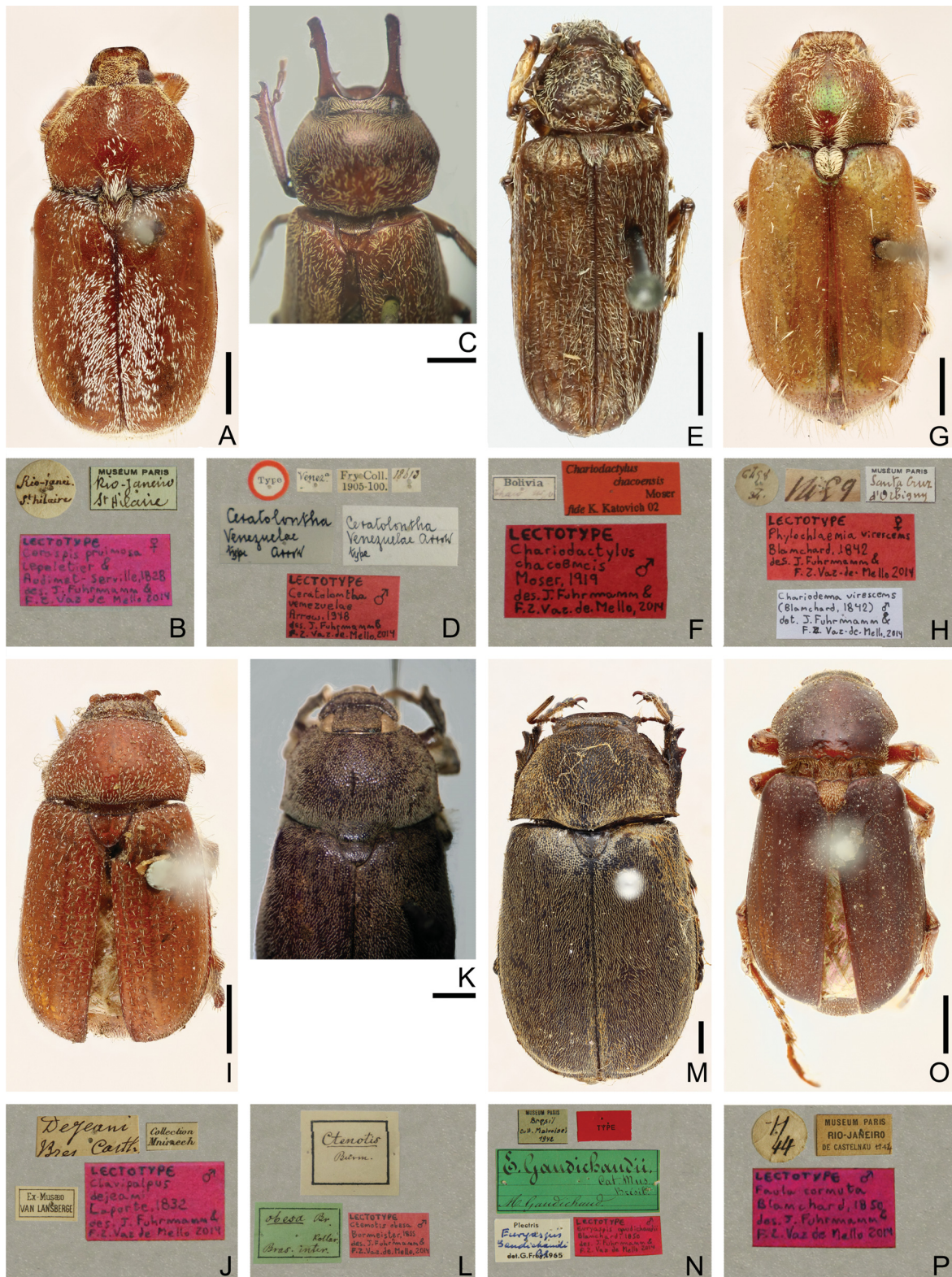


**Fig. 16.** *Schizochelus* Blanchard, 1850. **A–C.** Male abdomen, lateroventral. **D.** Female abdomen, lateral. **E–F.** Aedeagus (lateral, parameres apex). **G–L.** Protibia–tarsus (male, female) (with detail of tarsus: I = dorsal view; K = ventral view). **A, E–H.** *Schizochelus flavescens* Blanchard, 1850. **B, I–J.** *Schizochelus bicoloripes* Blanchard, 1850. **C–D, K–L.** *Schizochelus mirabilis* (Moser, 1921) comb. nov. Scale bars = 1 mm.

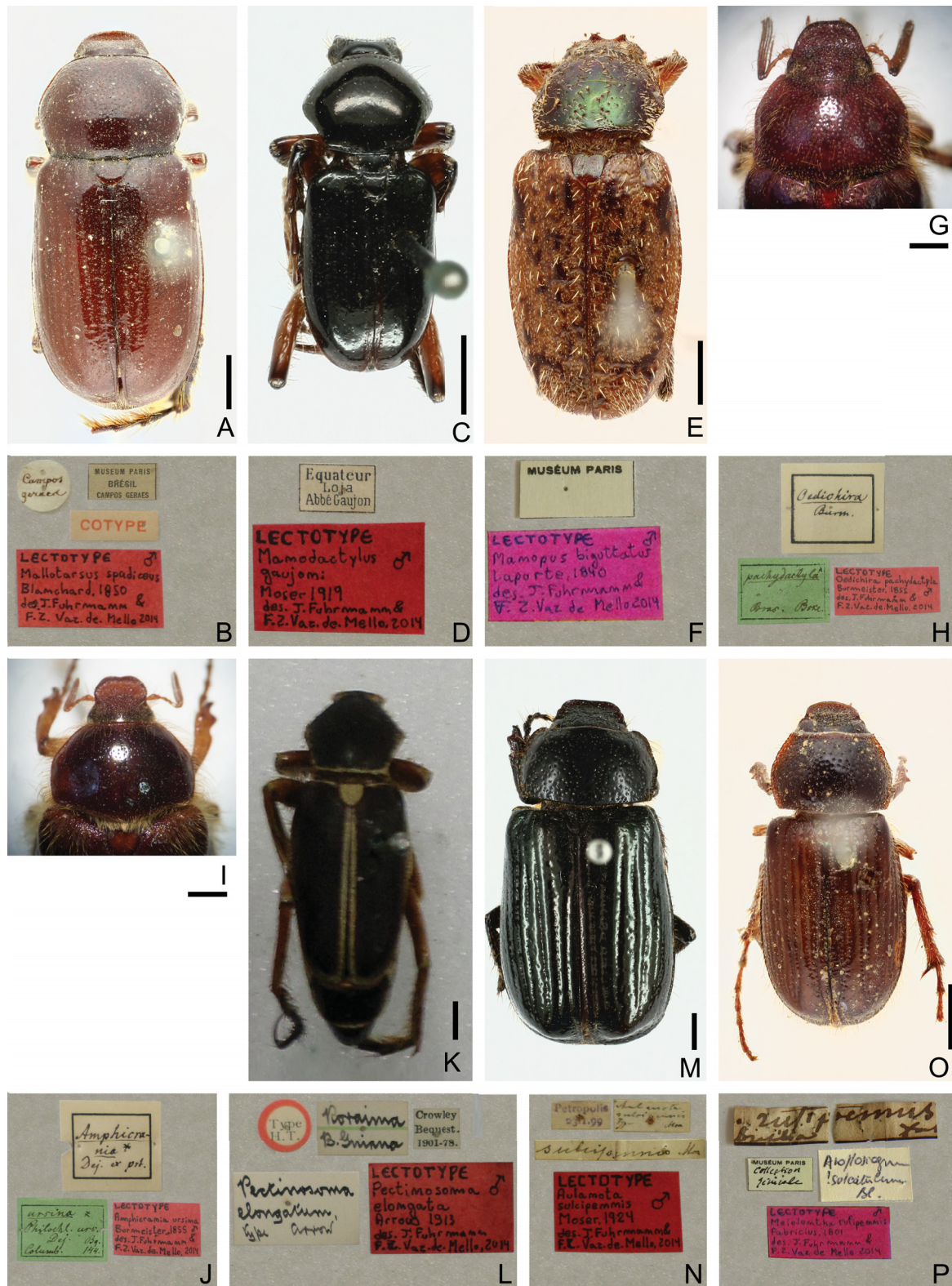


**Fig 17.** Lectotypes (dorsal, labels). A–B. *Agaocnemis pruina* Moser, 1918. C–D. *Corminus canescens* Burmeister, 1855. E–F. *Anomalonyx uruguayensis* Moser, 1921. G–H. *Barybas nana* Blanchard, 1850. I–J. *Ctilocephala pelluscens* Burmeister, 1855. K–L. *Pseudohercitis viridiaenea* Moser, 1921. M–N. *Barybas volvulus* Burmeister, 1855. O–P. *Calodactylus tibialis* Blanchard, 1850. Scale bars = 2 mm.

FUHRMANN J. & VAZ-DE-MELLO F.Z., Type series of type species of Macroductylini



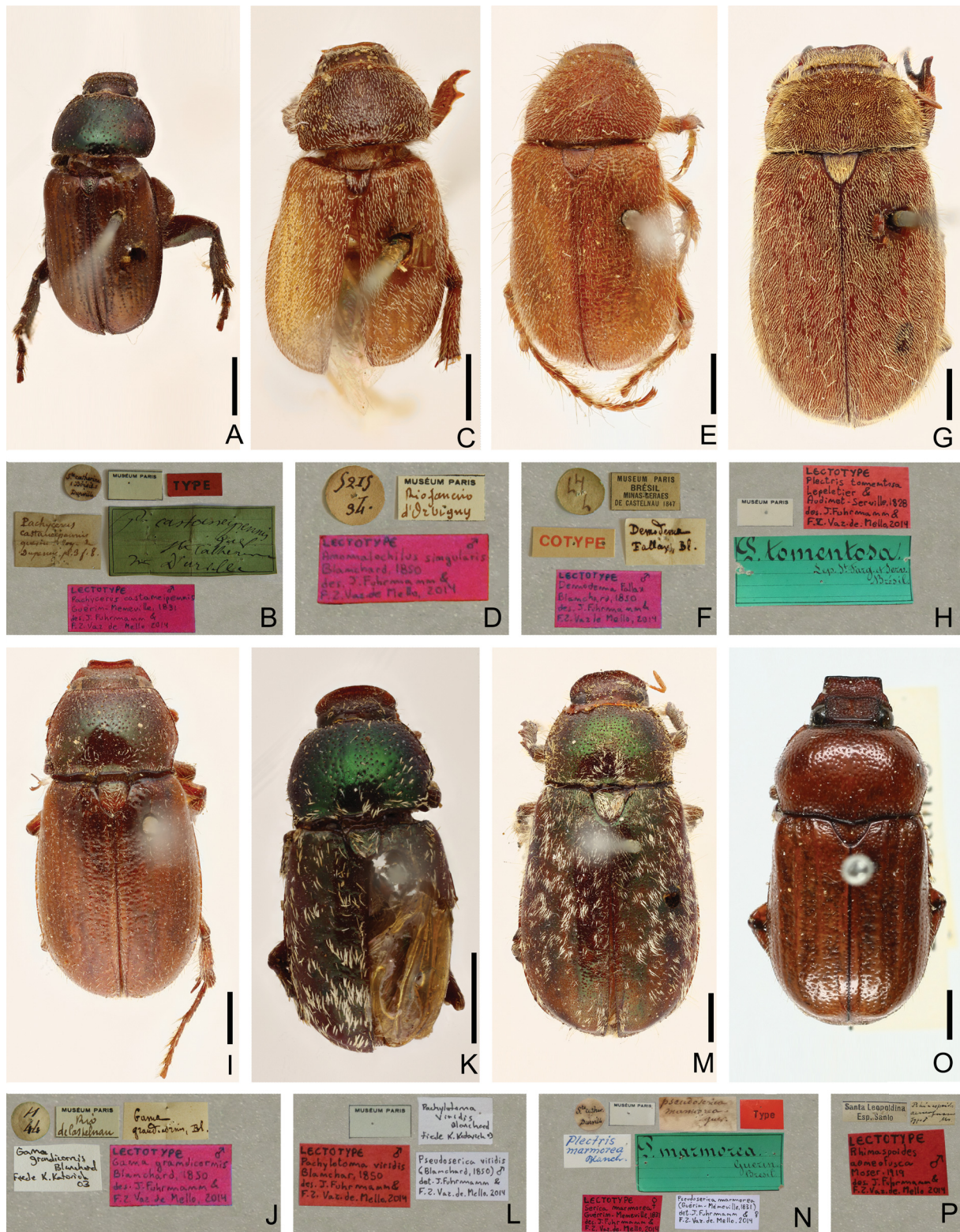
**Fig 18.** Lectotypes (dorsal, labels). A–B. *Ceraspis pruinosa* LePeletier de Saint-Fargeau & Audinet-Serville, 1828. C–D. *Ceratolontha venezuelae* Arrow, 1948. E–F. *Chariodactylus chacoensis* Moser, 1919. G–H. *Phylochlaenia virescens* Blanchard, 1842. I–J. *Clavipalpus dejeani* Laporte, 1832. K–L. *Ctenotis obesa* Burmeister, 1855. M–N. *Euryaspis gaudichaudii* Blanchard, 1850. O–P. *Faula cornuta* Blanchard, 1850. Scale bars = 2 mm.



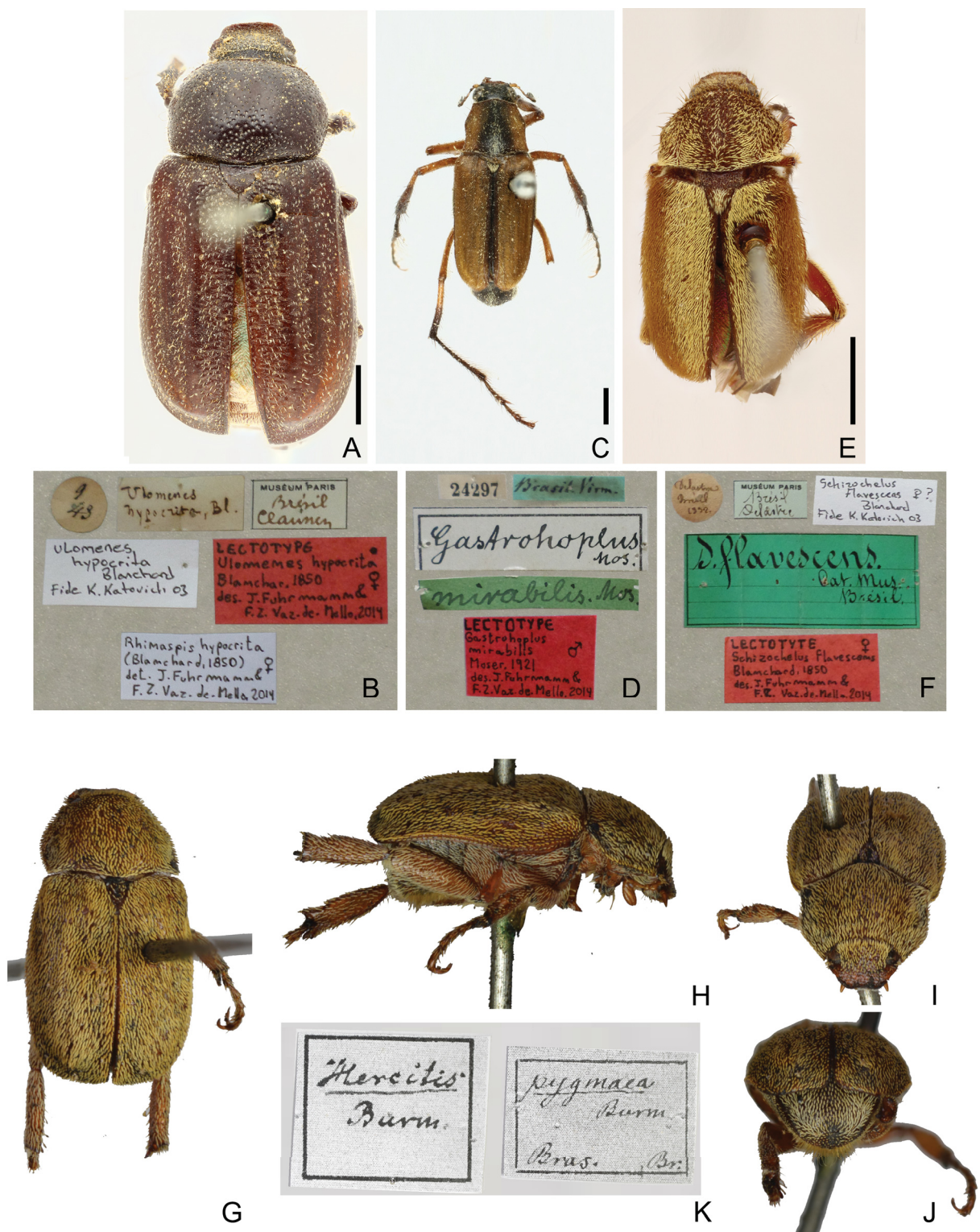
**Fig 19.** Lectotypes (dorsal, labels). A–B. *Mallotarsus spadiceus* Blanchard, 1850. C–D. *Manodactylus gaujoni* Moser, 1919. E–F. *Manopus biguttatus* Conte de Castelnau, 1840. G–H. *Oedichira pachydactyla* Burmeister, 1855. I–J. *Amphicrania ursina* Burmeister, 1855. K–L. *Pectinosoma elongata* Arrow, 1913. M–N. *Aulanota sulcipennis* Moser, 1924. O–P. *Melolontha rufipennis* Fabricius, 1801. Scale bars = 2 mm.



FUHRMANN J. & VAZ-DE-MELLO F.Z., Type series of type species of Macroductylini



**Fig 20.** Lectotypes (dorsal, labels). **A–B.** *Pachycerus castaneipennis* Guérin-Ménéville, 1831. **C–D.** *Anomalochilus singularis* Blanchard, 1850. **E–F.** *Demodema fallax* Blanchard, 1850. **G–H.** *Plectris tomentosa* LePeletier de Saint-Fargeau & Audinet-Serville, 1828. **I–J.** *Gama grandicornis* Blanchard, 1850. **K–L.** *Pachylotoma viridis* Blanchard, 1850. **M–N.** *Serica marmorea* Guérin-Ménéville, 1831. **O–P.** *Rhinaspoides aeneofusca* Moser, 1919. Scale bars = 2 mm.



**Fig 21.** Primary types. A–F. Lectotypes (dorsal, labels). A–B. *Ulomenes hypocrita* Blanchard, 1850. C–D. *Gastrohoplus mirabilis* Moser, 1921. E–F. *Schizochelus flavescens* Blanchard, 1850. G–K. Syntype of *Hercitis pygmaea* Burmeister, 1855 (by Holger Dombrow). G. Dorsal. H. Lateral. I. Frontal. J. Posterior. K. Labels. Scale bars: A, C, E = 2 mm; G–J without scale (specimen about 4–4.2 mm according to original description).

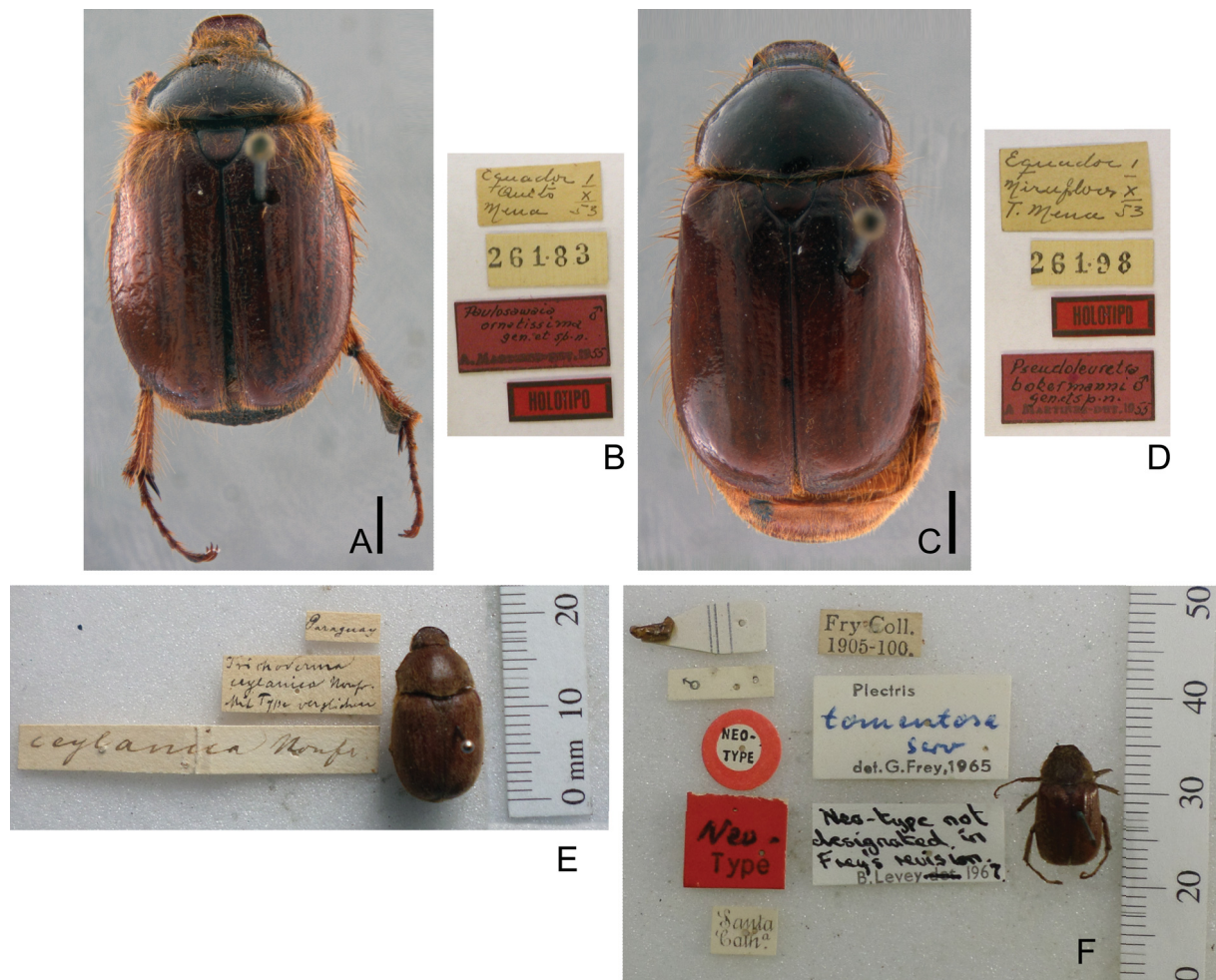
### Diagnosis

Clypeal anteroventral area strongly reduced (Fig. 15, similar to Fig. 11H); pronotal anterior and posterior margins not beaded; prosternum with an anterior longitudinal carina; protibia with 1–2 external teeth (male with tooth II absent or reduced) and with a spur (Fig. 16G–L); male metatibia without spur; male ventrites I–V longitudinally concave (Fig. 16A–C); female abdomen sinuous in lateral view (Fig. 16D); tarsal claws with a proximal tooth (Fig. 16G–L).

### Remarks

The genera *Isonychus* and *Schizochelus* are similar to each other. *Schizochelus* is distinguished as follows (opposition to *Isonychus*): male metatibial spur absent (metatibia with 1–2 spurs); male ventrites I–V with medial concavity (Fig. 16A–C) (without), male ventrite VI straight and with short and sparse setae (straight or laterally enlarged, and with or without lateral comb of long setae); female abdomen sinuous in lateral view (Fig. 16D) (convex).

The present study proposes the synonymy of *Gastrohoplus* with *Schizochelus*, see chapter on “Male morphology and nomenclature” (below) for more information about the new synonymy.



**Fig. 22.** A–D. Holotype, ♂ (dorsal, labels). A–B. *Paulosawaya ornatissima* Martínez & d’Andretta, 1956. C–F. *Pseudoleuretra bokermanni* Martínez & d’Andretta, 1956. E–F. Non-type material. E. *Junkia ceylanica* Nonfried, 1894. F. *Plectris tomentosa* LePeletier de Saint-Fargeau & Audinet-Serville, 1828. Scale bars = 2 mm.

***Schizochelus flavescens*** Blanchard, 1850  
Figs 15A, 16A, E–H, 21E–F

*Schizochelus flavescens* Blanchard, 1850: 89.

**Note**

*Schizochelus flavescens* was described based on an undetermined number of specimens.

**Material examined**

**Lectotype** (here designated, Fig. 21E–F)

BRAZIL: ♀, MNHN, labels: [Delastre | Brasil | 1832] [MUSÉUM PARIS | Brésil | Delastre] [S. flavescens | Cat. Mus. | Brésil] [Schizochelus | flavescens | Blanchard | ♀ ? | fide K. Katovich 03] [LECTOTYPE ♀ | Schizochelus flavescens | Blanchard 1850 | des. J. Fuhrmann & | F.Z. Vaz de Mello 2014].

***Schizochelus mirabilis*** (Moser, 1921) comb. nov.  
Figs 15C, 16C–D, K–L, 21C–D

*Gastrohoplus mirabilis* Moser, 1921: 165.

**Note**

*Gastrohoplus mirabilis* was described based on an undetermined number of males.

**Material examined**

**Lectotype** (here designated, Fig. 21C–D)

BRAZIL: ♂, ZMHU, labels: [24297] [Brasil Virm.] [Gastrohoplus | Mos.] [mirabilis Mos.] [LECTOTYPE | Gastrohoplus | mirabilis | Moser, 1921 | ♂ | des. J. Fuhrmann & | F.Z. Vaz-de-Mello, 2014].

**Key to genera of Macroductylini**

1. Internal area of metatarsomere V with spine-like setae and/or a proximal tubercle or raised carina (Fig. 4A–D) .....2  
– Internal area of metatarsomere V unarmed and never with differentiated spine-like setae, a dense setal comb sometimes present .....17
2. Metatarsus with one claw and without empodium .....*Astaenoplia* Martínez, 1957  
– Metatarsus with two claws and empodium .....3
3. Pronotum–scutellum contact sinuous (Fig. 8A–E) .....4  
– Pronotum–scutellum contact straight .....10
4. Metacoxae subcontiguous .....*Ceraspis* LePeletier de Saint-Fargeau & Audinet-Serville, 1828  
– Metacoxae separate .....5
5. Pronotum–scutellum contact shallowly sinuous (Fig. 8E) .....6  
– Pronotum–scutellum contact deeply sinuous (Fig. 8A–D) .....7
6. Prosternal posterior process raised and bifid; protibial internal angle rounded, female protibia with a spur; male ventrite V with medial lobe bearing truncate setae in a transverse palisade (Fig. 14D–E) .....*Pectinosoma* Arrow, 1913  
– Prosternal posterior process not prominent and rounded; protibial internal angle acute (Fig. 8F), female protibial spur absent; male ventrite V unarmed .....*Manopus* Conte de Castelneau, 1840

FUHRMANN J. & VAZ-DE-MELLO F.Z., Type series of type species of Macroductylini

7. Male ventrite I with a medial spine (Fig. 14A); female pygidial anterior margin sinuous (Fig. 14B–C)	<i>Ancistrosoma</i> Curtis, 1835
– Male ventrite I unarmed; female pygidial anterior margin straight	8
8. Pronotum–scutellum contact acutely sinuous (Fig. 8B)	<i>Chariodema</i> Blanchard, 1850
– Pronotum–scutellum contact roundly sinuous (Fig. 8D); scutellum cordate	9
9. Pronotal posterior angle acutely raised (similar to Fig. 8B); protibia with two external teeth; total length usually less than 20 mm	<i>Pseudopectinosoma</i> Katovich, 2011
– Pronotal posterior angle obtuse or rounded; protibia with 3–4 external teeth; total length usually greater than 20 mm	<i>Faula</i> Blanchard, 1850
10. Pronotal lateral margins crenulate or serrate; mesoscutum with a transverse carina (Fig. 6G); male protarsomere I with an internodistal tooth (Fig. 5A–B)	<i>Barybas</i> Blanchard, 1850
– Pronotal lateral margins straight; mesoscutum without carina; protarsomere I with or without a tooth	11
11. Protibia with three external teeth and with a spur; male metatarsomere I with internal hook-like tooth (Fig. 13C); metafemur with row of spine-like setae (Fig. 13H)	<i>Mallotarsus</i> Blanchard, 1850
– Protibia with 1–3 external teeth and with or without a spur; male metatarsomere I unarmed; metafemur without row of spine-like setae	12
12. Meso- and metatarsal claws simple	13
– Meso- and metatarsal claws bifid	14
13. Dorsum usually with scale-like setae; meso- and metatibiae with an evident medial enlargement (Fig. 7E)	<i>Calodactylus</i> Blanchard, 1850
– Dorsum never with scale-like setae; meso- and metatibiae distally parallel	<i>Dasyus</i> LePeletier de Saint-Fargeau & Audinet-Serville, 1828
14. Metatarsomere I as long as II–IV (Fig. 4A, 4C–D)	15
– Metatarsomere I as long as or shorter than II–III (Fig. 4B)	16
15. Metatarsomere II wider than long (Fig. 4C–D)	<i>Oedichira</i> Burmeister, 1855
– Metatarsomere II at least twice as long as wide (Fig. 4A)	<i>Plectris</i> LePeletier de Saint-Fargeau & Audinet-Serville, 1828
16. Clypeal anteroventral area large and vertically deflected; elytron rugopunctate, striae indistinct	<i>Anomonyx</i> Saylor, 1940
– Clypeal anteroventral area large and horizontal (Fig. 12K); elytral striae punctate	<i>Philochloenia</i> Dejean, 1833
17. Mesoscutum–scutellum limit angulate (similar to Fig. 6G, detail b)	18
– Mesoscutum–scutellum limit not evident (Fig. 6H)	32
18. Protibia lateroproximal margin serrate	<i>Pristerophora</i> Harold, 1869
– Protibia lateroproximal margin straight	19
19. Pronotal posterior margin medially prominent and with a small tooth (Fig. 2A–D)	20
– Pronotal posterior margin unarmed, prominent or not	23
20. Protibial spur present	<i>Hieritis</i> Burmeister, 1855
– Protibial spur absent	21

21. Tarsus short, protarsomeres II–IV wider than long; male protarsomere I with an internodistal acute angle (Fig. 2B) .....	<i>Byrasba</i> Harold, 1869	
– Tarsus long, male protarsomeres I–II longer than wide; protarsomere I sometimes ventrally flattened, but without acute angle (Fig. 2A, 2C) .....		22
22. Male metatibia internodistally flattened (Fig. 2E); female elytron with posterior margin widely beaded (Fig. 1B) .....	<i>Agaocnemis</i> Moser, 1918	
– Male metatibia with an internodistal tooth (Fig. 2G); female elytron with posterior margin finely beaded .....	<i>Hamatoplectris</i> Frey, 1967	
23. Pronotal lateral margins crenulate (Fig. 10D–F, 12A) .....		24
– Pronotal lateral margins straight .....		25
24. Clypeus semicircular, and narrow; pronotal posterior margin widely prominent (Fig. 12A) .....	<i>Euryaspis</i> Blanchard, 1850	
– Clypeus trapezoid or rectangular, that of male of some species with large and acute projections; pronotal posterior margin weakly prominent (Fig. 10D–F) .....	<i>Rhinaspis</i> Perty, 1833	
25. Pronotal posterior margin with two small posterior projections extended over the elytron–scutellum contact (Fig. 13A) .....	<i>Pseudoserica</i> Guérin-Méneville, 1838	
– Pronotal posterior margin straight .....		26
26. Male clypeus with two long horns (Fig. 10B–C); female clypeus deeply emarginate (Fig. 10A); clypeal posterior angle acute and partially covering the canthus ...	<i>Ceratolontha</i> Arrow, 1948	
– Clypeus semicircular, trapezoid or subrectangular, anterior angle variable, but never forming a long horn; clypeal posterior angle extended or not over the canthus, but never acute ...		27
27. Clypeus large, anteroventral area large and horizontal (Fig. 3A), posterior angle partially covering the canthus (Fig. 3B); metafemur with dense short setae and some sparse long setae (Fig. 3C) ...	<i>Alvarinus</i> Blanchard, 1850	
– Clypeus short and with reduced anteroventral area (similar to Fig. 11H) OR clypeus large with posterior angle not extended over the canthus and femur with homogeneous thin setae ...		28
28. Protibia with two external teeth and without spur; metacoxa and metafemur wide, metafemur internal side straight and external side strongly prominent .....		29
– Protibia with 1–4 external teeth and with or without spur; metacoxa and metafemur narrow, metafemur external side straight or weakly prominent .....		30
29. Antennae with 8–10 antennomeres, when antennae with eight antennomeres the pronotum and pygidium have small and sparse punctures (punctures separated by more than twice the puncture diameter) .....	<i>Dicrania</i> LePeletier de Saint-Fargeau & Audinet-Serville, 1828	
– Antenna with eight antennomeres, pronotum and pygidium with large and dense punctures (punctures separated by less than a puncture diameter) .....	<i>Canestera</i> Saylor, 1938	
30. Maxillary palpomere IV distinctly enlarged (Fig. 6A–B); antennomere VI longer than III (Fig. 6A) ...	<i>Clavipalpus</i> Laporte, 1832	
– Maxilla with palpomere IV not enlarged; antennomere III as long as IV (Fig. 6C) or longer than IV .....		31
31. Maxilla with palpomere IV twice as long as the width of palpomere III (Fig. 6C–D) .....	<i>Paulosawaya</i> Martínez & d’Andretta, 1956	
– Maxilla with palpomere IV 1.5 times longer than the width of palpomere III .....	<i>Junkia</i> Dalla Torre, 1913	

FUHRMANN J. & VAZ-DE-MELLO F.Z., Type series of type species of Macroductylini

32. Protibia lateral margins serrate .....	33
– Protibia lateral margins straight .....	34
33. Total length greater than 9 mm, protibial spur present .....	<i>Ptyophis</i> Redtenbacher, 1868
– Total length less than 8 mm, protibial spur absent .....	<i>Extenuoptyophis</i> Smith & Mondaca, 2015
34. Prosternum with two anterior sulci (Fig. 11H) .....	35
– Prosternum anteriorly concave (similar to Fig. 12K), or with longitudinal carina, or without ornamentation .....	37
35. Pronotum as long as wide or longer than wide (Fig. 11C) .....	<i>Macroductylus</i> Dejean, 1821
– Pronotum wider than long .....	36
36. Supraocular area strongly angulate; pronotal disc glabrous (Fig. 11B) ...	<i>Manodactylus</i> Moser, 1919
– Supraocular area slightly angulate; pronotal disc pubescent (Fig. 11A) ...	<i>Chariodactylus</i> Moser, 1919
37. Meso–metaventrite medial contact prominent as a knob between mesocoxae .....	38
– Meso–metaventrite medial contact knob absent or inconspicuous (inconspicuous in <i>Issacaris</i> , <i>Phytholaema</i> , but noted as a 90-degree surface deflection) .....	41
38. Meso–metaventrite knob projecting forward to procoxae ...	<i>Modialis</i> Fairmaire & Germain, 1860
– Meso–metaventrite knob not anteriorly projecting .....	39
39. Protibial spur present .....	<i>Pseudodicrania</i> Gutiérrez, 1950
– Protibial spur absent .....	40
40. Eye large; clypeus broadly parabolic .....	<i>Insimuloissacaris</i> Smith & Mondaca, 2015
– Eye small; clypeus quadrate .....	<i>Neuquenodactylus</i> Smith & Mondaca, 2015
41. Meso–metaventrite medial contact separating the mesocoxae .....	<i>Issacaris</i> Fairmaire, 1889
– Mesocoxae subcontiguous .....	42
42. Clypeal anteroventral area broad; mentum as wide as long; prosternal anterior area narrow, and procoxal cavities and head–pronotum foramen subcontiguous ...	<i>Phytholaema</i> Blanchard, 1851
– Clypeal anteroventral area reduced, and labrum subcontiguous to anterior clypeal margin; mentum evidently longer than wide; prosternal anterior area large, and procoxal cavities distinctly separate from head–pronotum foramen .....	43
43. Head with spine-like setae .....	<i>Compsodactylus</i> Fuhrmann, 2012
– Head without spine-like setae .....	44
44. Protibial spur present; metatibia with two spurs; sometimes dorsal surface covered with scale-like setae .....	45
– Protibial spur absent; male metatibia without spur, female metatibia with 1–2 spurs; dorsal surface never with scale-like setae .....	46
45. Body elongate; male ventrites II–V medially concave (Fig. 16A–C); female abdomen sinuous in lateral view (Fig. 16D) .....	<i>Schizochelus</i> Blanchard, 1850
– Body somewhat wide and oval; male abdomen without concave area; female abdomen simply curved in lateral view .....	<i>Isonychus</i> Mannerheim, 1829
46. Dorsal surface without obvious setal patterns, setae not prominent and evenly distributed .....	<i>Pusiodyctylus</i> Smith, 2008
– Dorsal surface with obvious setal patterns, setae prominent or not evenly distributed .....	<i>Ampliodactylus</i> Smith, 2008

## Discussion

### Male morphology and nomenclature

Some Macroductylini genera are strongly sexually dimorphic, with males displaying remarkable interspecific variation and females with homogeneous morphology (e.g., *Dicrania flavoscutellata* Laporte, 1832, see Frey 1972: fig. 2; *Compsodactylus martinezi* (Frey, 1972), see Fuhrmann 2012). Sometimes conspicuous male characters are used to erect new genera. This procedure can split species, resulting in an unnecessary description of redundant taxa (monotypic genera) (if not artificial taxa, when cladistic analyses are used). A careful study of the females of these species having conspicuous males provides morphological evidence against such taxa splits. Based on this evidence, the present study proposes the synonymy of *Aulanota* with *Philochloenia* and of *Gastrohoplus* with *Schizochelus*; these cases are commented on below.

*Philochloenia armata* **nom. nov.** (= *Aulanota sulcipennis*) has the metatibial apex with a long spine and without spurs (Fig. 12J), otherwise other *Philochloenia* studied (*P. castaneipennis* **comb. nov.**, *P. rufipennis*, *P. sulcatulus*, *P. sulcipennis* **comb. nov.** and two *Philochloenia* spp.) have the metatibial apex without spines and with two spurs. Moser (1924) used the particular characters of *P. armata* **nom. nov.** to describe the monotypic *Aulanota*, and noted the similarity of this genus with *Philochloenia* (as *Anoplosiagum*). The present study uses other characters to define *Philochloenia* (see genus diagnosis and remarks).

Following the present review, *Schizochelus* now includes three species: *S. bicoloripes* Blanchard, 1850, *S. flavescens* and *S. mirabilis* **comb. nov.** Males of these species have peculiar ornamentation of the tibia, tarsus and abdomen (Figs 15, 16G–L), but females present a homogeneous morphology. Despite the male leg and abdominal ornamentation, other male and female characters are used here for generic characterization (see *Schizochelus* diagnosis).

Another example is that of *Rhinaspis aeneofusca*, where the males have the metatibia internodistally flattened (Fig. 10G), a character not found in other *Rhinaspis*. Based on this conspicuous characteristic, Moser (1919b) erected *Rhinaspoides* to include this species, and noted the similarity between *Rhinaspoides* and *Rhinaspis*. Despite the particular male metatibia, Katovich (2008) proposed synonymy of *Rhinaspoides* with *Rhinaspis*, a synonym confirmed by the present study.

### Acknowledgements

Thanks to Dr. Sônia A. Casari (MZSP), Joana Cristovão (BMNH), Andrew Smith (Canadian Museum of Nature, Canada), and two anonymous reviewers for their helpful suggestions; to Ayr Bello for trying the key; to Gabriel Biffi (MZSP) for helping with the photography; Holger Dombrow for helping with the *Hercitis* / *Barybas* taxonomic problem; Mariana A. Cherman (Universidade Federal do Paraná, Brazil) for her comments on *Philochloenia*; Gavin Broad for careful editing of this manuscript; and the curators cited in the material and methods. JF thanks Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES) for grant support at the beginning of this project; Fundação de Amparo à Pesquisa do Estado de São Paulo (FAPESP) (proc. 2011/20001–6) for a doctorate grant. FZVM is a CNPq fellow and part of this work was funded by CNPq (Conselho Nacional de Desenvolvimento Científico e Tecnológico – 304925/2010–1, 202327/2013–2, 302997/2013–0, 405697/2013–9, 484035/2013–4, 400681/2014–5, 306745/2016–0). This research also received support from the Synthesys Project (<http://synthesys3.myspecies.info/>) which is financed by the European Community Research Infrastructure Action under the FP7 (GB-TAF 3855).



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FUHRMANN J. & VAZ-DE-MELLO F.Z., Type series of type species of Macroductylini

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FUHRMANN J. & VAZ-DE-MELLO F.Z., Type series of type species of Macroductylini

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*Manuscript received: 3 May 2016*

*Manuscript accepted: 19 December 2016*

*Published on: 13 September 2017*

*Topic editor: Gavin Broad*

*Desk editor: Kristiaan Hoedemakers*

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Band/Volume: [0350](#)

Autor(en)/Author(s): Fuhrmann Juares, Vaz-De-Mello Fernando Z.

Artikel/Article: [Macrodactylini \(Coleoptera, Scarabaeidae, Melolonthinae\): primary types of type species and taxonomic changes to the generic classification 1-71](#)