A phylogenetic study of the subtribe Dicrepidiina (Elateridae, Elaterinae, Ampedini)

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ABSTRACT. A phylogenetic study of the subtribe Dicrepidiina (Elateridae, Elaterinae, Ampedini). It is presented a cladistic analysis of the Dicrepidiina aiming to test the monophyletism of the subtribe and to establish the relationships among the genera. The subtribe is composed by 36 genera and all of them, except *Asebis*, *Lamononia*, *Neopsephus*, *Semiotopsis* and *Spilomorphus* were included in the analysis. Fifty two species, especially the type-species of each genus were studied: *Achrestus flavocinctus* (Candèze, 1859), *A. venustus* Champion, 1895, *Adiaphorus gracilis* Schwarz, 1901, *A. ponticerianus* Candèze, 1859, *Anoplischiopsis bivittatus* Champion, 1895, *Anoplischius bicarinatus* Candèze, 1859, *A. conicus* Candèze, 1900, *A. haematopus* Candèze, 1859, *A. pyronotus* Candèze, 1859, *Atractosomus flavescens* (Germar, 1839), *Blauta cribraria* (Germar, 1844), *Calopsephus apicalis* (Schwarz, 1903), *Catalamprus angustus* (Fleutiaux, 1902), *Crepidius flabellifer* (Erichson, 1847), *C. resectus* Candèze, 1859, *Cyathodera auripilosus* Costa, 1968, *C. lanugicollis* (Candèze, 1859), *C. longicornis* Blanchard, 1843, *Dayakus angularis* Candèze, 1893, *Dicrepidius ramicornis* (Palisot de Beauvois, 1805), *Dipropus brasilianus* (Germar, 1824), *D. factuellus* Candèze, 1859, *D. laticollis* (Eschscholtz, 1829), *D. pinguis* (Candèze, 1859), *D. schwarzi* (Becker, 1961), *Elius birmanicus* Candèze, 1893, *E. dilatatus* Candèze, 1878, *Heterocrepidius gilvellus* Candèze, 1859, *H. ventralis* Guérin-Méneville, 1838, *Lampropsephus cyaneus* (Candèze, 1878), *Loboederus appendiculatus* (Perty, 1830), *Olophoeus gibbus* Candèze, 1859, *Ovipalpus pubescens* Solier, 1851, *Pantolamprus ligneus* Candèze, 1896, *P. mirabilis* Candèze, 1896, *P. perpulcher* Westwood, 1842, *Paraloboderus glaber* Golbach, 1990, *Prolobodorus crassipes* Fleutiaux, 1912, *Propsephus beniensis* (Candèze, 1859), *P. cavifrons* (Erichson, 1843), *Pseudolophoeus guineensis* (Candèze, 1881), *Rhinopsephus apicalis* (Schwarz, 1903), *Sephilus formosanus* Schwarz, 1912, *S. frontalis* Candèze, 1878, *Singhalenus gibbus* Candèze, 1892, *S. taprobanicus* Candèze, 1859, *Sphenomerus antennalis* Candèze, 1859, *S. brunneus* Candèze, 1865, *Spilus atractomorphus* Candèze, 1859, *S. nitidus* Candèze, 1859, *Stenocrepidius simonii* Fleutiaux, 1891 and *Trielasmus varians* Blanchard, 1846. *Chalcolepidius zonatus* (Hemirhipini, Agrypninae), *Ctenicera silvatica* (Prosternini, Prosterninae), and species of the other subtribes of Ampedini (Elaterinae): *Ampedus sanguineus* (Ampedina), *Melanotus spernendus* (Melanotina) and *Anchastus digittatus* and *Physorhinus xanthocephalus* (Physorhinina) were used as outgroups. The results of the phylogenetic analysis demonstrated that Dicrepidiina, as formerly defined, does not form a monophyletic group. One genus, represented by *Ovipalpus pubescens*, was removed from the subtribe. The subtribe is characterized by presence of lamella under 2nd and 3rd tarsomeres of all legs. Also, it was revealed that the genera *Achrestus*, *Anoplischius*, *Dipropus* and *Propsephus* are not monophyletic. Due to the scarcity of information, all the studied species are redescribed and illustrated.

KEYWORDS. Ampedina; Hemirhipini; Melanotina; Physorhinina; Prosternini.

RESUMO. Estudo filogenético da subtribo Dicrepidiina (Elateridae, Elaterinae, Ampedini). Neste trabalho é apresentada uma análise cladística de Dicrepidiina visando testar o monofiletismo da subtribo e estabelecer as relações entre os gêneros. A subtribo está formada por 36 gêneros e todos, exceto *Asebis*, *Lamononia*, *Neopsephus*, *Semiotopsis* e *Spilomorphus* foram incluídos na análise. Foram estudadas 52 espécies, principalmente as espécies-tipo de cada gênero: *Achrestus flavocinctus* (Candèze, 1859), *A. venustus* Champion, 1895, *Adiaphorus gracilis* Schwarz, 1901, *A. ponticerianus* Candèze, 1859, *Anoplischiopsis bivittatus* Champion, 1895, *Anoplischius bicarinatus* Candèze, 1859, *A. conicus* Candèze, 1900, *A. haematopus* Candèze, 1859, *A. pyronotus* Candèze, 1859, *Atractosomus flavescens* (Germar, 1839), *Blauta cribraria* (Germar, 1844), *Calopsephus apicalis* (Schwarz, 1903), *Catalamprus angustus* (Fleutiaux, 1902), *Crepidius flabellifer* (Erichson, 1847), *C. resectus* Candèze, 1859, *Cyathodera auripilosus* Costa, 1968, *C. lanugicollis* (Candèze, 1859), *C. longicornis* Blanchard, 1843, *Dayakus angularis* Candèze, 1893, *Dicrepidius ramicornis* (Palisot de Beauvois, 1805), *Dipropus brasilianus* (Germar, 1824), *D. factuellus* Candèze, 1859, *D. laticollis* (Eschscholtz, 1829), *D. pinguis* (Candèze, 1859), *D. schwarzi* (Becker, 1961), *Elius birmanicus* Candèze, 1893, *E. dilatatus* Candèze, 1878, *Heterocrepidius gilvellus* Candèze, 1859, *H. ventralis* Guérin-Méneville, 1838, *Lampropsephus cyaneus* (Candèze, 1878), *Loboederus appendiculatus* (Perty, 1830), *Olophoeus gibbus* Candèze, 1859, *Ovipalpus pubescens* Solier, 1851, *Pantolamprus ligneus* Candèze, 1896, *P. mirabilis* Candèze, 1896, *P. perpulcher* Westwood, 1842, *Paraloboderus glaber* Golbach, 1990, *Prolobodorus crassipes* Fleutiaux, 1912, *Propsephus beniensis* (Candèze, 1859), *P. cavifrons* (Erichson, 1843), *Pseudolophoeus guineensis* (Candèze, 1881), *Rhinopsephus apicalis* (Schwarz, 1903), *Sephilus formosanus* Schwarz, 1912, *S. frontalis* Candèze, 1878, *Singhalenus gibbus* Candèze, 1892, *S. taprobanicus* Candèze, 1859, *Sphenomerus antennalis* Candèze, 1859, *S. brunneus* Candèze, 1865, *Spilus atractomorphus* Candèze, 1859, *S. nitidus* Candèze, 1859, *Stenocrepidius simonii* Fleutiaux, 1891 e *Trielasmus varians* Blanchard, 1846. Como grupos externos foram usados *Chalcolepidius zonatus* (Hemirhipini, Agrypninae), *Ctenicera silvatica* (Prosternini, Prosterninae), e algumas espécies de outras subtribos de Ampedini (Elaterinae): *Ampedus sanguineus* (Ampedina), *Melanotus spernendus* (Melanotina) e *Anchastus digittatus* e *Physorhinus xanthocephalus* (Physorhinina). Os resultados da análise filogenética demonstraram que Dicrepidiina, como definida anteriormente, não forma um grupo monofilético. Um gênero, representado por *Ovipalpus pubescens*, foi removido da subtribo. A subtribo está caracterizada pela presença de lamela no 2º e 3º tarsômeros de todas as pernas. Também está evidente que os gêneros *Achrestus*, *Anoplischius*, *Dipropus* e *Propsephus* não são monofiléticos. Devido à falta de informações sobre o grupo, todas as espécies estudadas são redescritas e ilustradas.

PALAVRAS-CHAVE. Ampedina; Hemirhipini; Melanotina; Physorhinina; Prosternini.

The subfamily Elaterinae is composed by 6 tribes: Elaterini, Megapenthini, Pomachilini, Ampedini, Eudicronychini and Odontonychini. The tribe Ampedini is divided into 4 subtribes: Ampedina, Physorhinina, Dicrepidiina and Melanotina (Johnson 2002a).

The subtribe Dicrepidiina is a group very rich in species and recorded from every tropical area of the world. It includes 36 genera and about 1,520 species.They are usually recognized by at least 2nd and 3rd tarsomeres lamellate beneath and frons carinate with nasal plate high. The coloration is not attractive, usually they are brown uniform and pubescent. The notosternal sutures are short, grooved and curved.

In this work it is presented the cladistic analysis of Dicrepidiina aiming to test the monophyletism of the subtribe and to verify the relationships among the genera. It was included as many species as available for each analysed genus, and at least the type-species of each, when possible, was studied.

To increase the knowledge of the group, the historical review and the list of species (except for *Anoplischius*, *Dipropus* and *Propsephus*) of each genus and the redescriptions and illustrations of all studied species are also presented.

Historical review. Lacordaire (1857) divided the "Élatérides" in 8 tribes. He included in the Tribe VII, the "Élatérides Vrais", divided in two groups according to the presence or absence of the frontal carina. The genera with frontal carina, *Piezophilus* Hope, 1842, *Aemidius* Latreille, 1834, *Lobederus* [sic] Guérin-Méneville, 1831, *Heterocrepidius* Guérin-Méneville, 1838, *Atractosomus* Lacordaire, 1857, *Pomachilius* Eschscholtz, 1829, *Physorhinus* Eschscholtz, 1836, *Anchastus* LeConte, 1853, *Brachycrepis* LeConte, 1853, *Monocrepidius* Eschscholtz, 1829, *Pityobius* LeConte, 1853 and *Pedetes* Kirby, 1837 were in the subdivision "Tarses munis de lamelles". He presented a key to genera and stated that these genera were erected based on the number of lamellae of tarsi: the *Trielasmus* Blanchard, 1846 presents the three first tarsomeres lamellate; the *Blauta* LeConte, 1853 also, but the lamellae are from tarsomeres 2-4 [in fact, the tarsi are 4- lamellate]. The majority has two lamellae under tarsomeres 2-3 and Eschscholtz (1829) included all in *Dicrepidius* Eschscholtz, 1829, but there is some American species with triangular nasal plate, opened antennal cavities and flabellate antennae in males that are not congeneric. The *Heterocrepidius* "vrais" are characterized by presence of lamellae under tarsomeres 2-3 of anterior and median tarsi and only tarsomere 3 of posterior tarsi.

Candèze (1859) in "Dicrépidiites" redescribed 6 genera (*Aemidius*, *Atractosomus*, *Dicrepidius*, *Heterocrepidius*, *Loboederus* Guérin-Méneville, 1831, *Piezophyllus* Hope, 1842) and erected 11: *Adiaphorus*, *Anoplischius*, *Crepidius*, *Elius*, *Ischiodontus*, *Olophoeus*, *Pantolamprus*, *Psephus*, *Singhalenus*, *Sphenomerus* and *Spilus*. These genera were separate into two groups according to the shape of borders of mesosternal cavity. He presented identification key to genera and species.

Candèze (1865) erected the genus *Anathesis* and described 7 species belonging to 5 genera.

Candèze (1891) catalogued 25 genera to "Tribu VI. Dicrépidiites", including the 17 genera treated in 1859 (except *Atractosomus*, considered as synonym of *Atractodes* Germar,1839), besides *Anathesis* Candèze, 1865 (later transferred to Agrypninae, Agrypnini), *Coresus* Candèze, 1891 (later transferred to Tetralobinae), *Cyathodera* Blanchard, 1846, *Ovipalpus* Solier, 1851, *Sephilus* Candèze, 1878, *Sossor* Candèze, 1883 (later transferred to Denticollinae, Senodonini), *Tarsalgus* Candèze, 1881 (later transferred to Elaterinae, Eudicronychini) and *Trielasmus*.

Candèze (1893) erected the genus, *Dayakus*, and described 11 species belonged to 6 other genera.

Champion (1894) included in the "Group Dicrepidiini", *Anoplischius*, *Atractosomus*, *Crepidius*, *Dicrepidius*, *Heterocrepidius*, *Ischiodontus*, *Spilus* and two new genera, *Anoplischiopsis* and *Spilomorphus*.

Schwarz (1906) presented a key to 28 genera of Dicrepidiini: *Adiaphorus*, *Aemidius* (later transferred to Elaterinae, Elaterini), *Anoplischiopsis*, *Asebis*, *Atractosomus*, *Crepidius*, *Coresus* (later transferred to Tetralobinae), *Dayakus*, *Dicrepidius*, *Elius*, *Heterocrepidius*, *Ischiodontus*, *Odontonychus* (Candèze, 1896), *Loboederus*, *Olophoeus* (Subgen. *Cyathodera*), *Ovipalpus*, *Pantolamprus*, *Piezophylus* (later transferred to Tetralobinae), *Psephus*, *Rhinopsephus*, *Semiotopsis*, *Singhalenus*, *Sossor* (later transferred to Denticollinae, Senodonini), *Sphenomerus*, *Sephilus*, *Spilomorphus*, *Spilus* and *Stenocrepidius*.

Hyslop (1917) presented a phylogeny of the Elateridae based on larval characters and included the subtribes Elaterina and Dicrepidiina in the tribe Elaterini of the subfamily Elaterinae. He studied the larva of *Ischiodontus oblitus* Candèze and characterized Dicrepidiina by transverse muscular impressions of abdomen obliquely placed upon the tergites.

Schenkling (1925) catalogued 33 genera for the subfamily Dicrepidiinae, including the same genera catalogued by Candèze (1891) except *Dicronychus*, *Tarsalgus*, *Anathesis* and also including *Aemidioides* Fleutiaux, 1922, *Anoplischiopsis*, *Asebis* Candèze, 1894, *Dayakus*, *Odontonychus*, *Proloboderus* Fleutiaux, 1912, *Rhinopsephus* Schwarz, 1906, *Semiotopsis* Candèze, 1887, *Spilomorphus*, *Stenocrepidius* Schwarz, 1902 and *Subathous* Fleutiaux, 1918. Besides, the name *Propsephus* Hyslop 1921, replaced *Psephus* and *Atractosomus* replaced *Atractodes*, both preoccupied, and *Cyathodera* was considered as subgenus of *Anoplischius*.

Fleutiaux (1928) in the study of the elaterids from "Indochine Française", amplified the characterization of the subfamily Dicrepidiinae and presented a generic key to *Elius*, *Singhalenus*, *Sphenomerus* and a new genus, *Lampropsephus*.

Fleutiaux (1935a) included in Dicrepidiinae: *Piezophyllus* (later included in Tetralobini), *Olophoeus*, *Propsephus* and also a new genus, *Eupsephus* (later synonymyzed under *Dayakus*). In this same year (1935b) described *Xantholamprus*, a subgenus to *Pantolamprus*.

Blackwelder (1944) catalogued 15 genera to Dicrepidiina: *Anoplischiopsis*, *Anoplischius*, *Atractosomus*, *Crepidius*, *Dicrepidius*, *Heterocrepidius*, *Ischiodontus*, *Lobaederus* [sic], *Ovipalpus*, *Proloboderus*, *Semiotopsis*, *Spilomorphus*, *Spilus*, *Stenocrepidius* and *Trielasmus*.

Basilewsky (1958) studying the Dicrepidiinae from "Congo Belge", erected two genera, *Catalamprus* and *Calopsephus*, synonymized *Eupsephus* under *Dayakus* and presented a key to 9 genera: *Calopsephus*, *Catalamprus*, *Dayakus*, *Odontonychus* (later transferred to Odontonychini), *Olophoeus*, *Pantolamprus*, *Piezophyllus* (later transferred to Tetralobini), *Propsephus* and *Rhinopsephus*. He followed Dicrepidiinae *sensu* Schwarz (1906) with some modifications.

Van Zwaluwenburg (1959) designated some lectotypes of Pacific Elateridae including some Dicrepidiinae belonged to genera *Sephilus* and *Propsephus*. He also commented about the position of *Sossor*, belonged to subfamily Senodoniinae. According to him, this genus was formerly included in the Dicrepidiinae because of inaccurate description of the tarsal structure, but Fleutiaux (1936) assigned it correctly in Senodoniinae.

Crowson (1960) presented a key to Elateridae subfamilies including also the characters of the tip of hindwing, in Elaterinae with two sclerotisations.

Cobos (1970) studying the "faune du Congo (Brazzville)" included in Dicrepidiinae: *Pantolamprus*, *Dayakus*, *Propsephus*, *Rhinopsephus* and *Calopsephus*.

Girard (1971) in your paper about "Les Coléoptères de Lamto (Côte d`Ivoire)" stated that Dicrepidiina are very common, specially collecting at night. He collected, at light, hundreds of specimens belonged to 4 genera and 25 species, from which 10 new species. He also erected a genus, *Pseudolophoeus*.

Dolin (1975) based on the wing venation, discussed about its significance in the taxonomy of the family and presented a key to subfamilies. He presented a characterization to the subfamily Elaterinae Leach, 1815, based on wing, larva and adult, and included in Dicrepidiini 13 genera: *Anoplischiopsis*, *Anoplischius*, *Crepidius*, *Cyathodera*, *Dicrepidius*, *Heterocrepidius*, *Ischiodontus*, *Loboederus*, *Odontonychus* (later transferred to Odontonychini), *Olophoeus*, *Pantolamprus*, *Propsephus* and *Singhalenus*.

Gurjeva (1974) studying the thoracic structure of click beetles presented a key to subfamilies and characterized and illustrated the thorax of each one. He incorporated in the subfamily Elaterinae 7 tribes including Dicrepidiini with *Dicrepidius*, *Elius*, *Ischiodontus* and *Pantolamprus*. About Dicrepidiini he stated "The last-mentioned tribe is clearly composite".

Smith & Enns (1977) presented a key to subfamilies, tribes and genera of Missouri Elateridae. From Dicrepidiini (Elaterinae) he treated of *Dicrepidius* and *Dipropus*.

Stibick (1979) presented the relationships of the Elateridae subfamilies and tribes, based on adult and larval characters. He included in Elaterinae, besides Dicrepidiini, also Odontonychyni, Ampedini, Megapentini, Physorhinini, Adrastini, Pomachilini, Agriotini and Elaterini and presented a key to these tribes.

Johnson (2002b) presented a classification of the Elateridae genera of Mexico and Central America where he included in the subtribe Dicrepidiina 11 genera: *Achrestus*, *Anoplischiopsis*, *Anoplischius*, *Atractosomus*, *Crepidius*, *Cyathodera*, *Dicrepidius*, *Dipropus*, *Heterocrepidius*, *Spilomorphus* and *Spilus*.

Currently, the subtribe Dicrepidiina is formed by the following genera: *Achrestus*, *Adiaphorus*, *Anoplischiopsis*, *Anoplischius*, *Asebis*, *Atractosomus*, *Blauta*, *Calopsephus*, *Catalamprus*, *Crepidius*, *Cyathodera*, *Dayakus*, *Dicrepidius*, *Dipropus*, *Elius*, *Heterocrepidius*, *Lamononia*, *Lampropsephus*, *Loboederus*, *Neopsephus*, *Olophoeus*, *Ovipalpus*, *Pantolamprus*, *Paralobederus*, *Proloboderus*, *Propsephus*, *Pseudolophoeus*, *Rhinopsephus*, *Semiotopsis*, *Sephilus*, *Singhalenus*, *Sphenomerus*, *Spilomorphus*, *Spilus*, *Stenocrepidius*, *Trielasmus*.

MATERIAL AND METHODS

The material studied belongs to following institutions (curator parenthesized): DZUP: Coleção de Entomologia Pe. J. S. Moure, Departamento de Zoologia, Curitiba, Paraná, Brazil (L. M. Almeida); FSCA: Florida State Collection of Arthropods, Gainesville, U.S.A. (M.C. Thomas); IMLA: Instituto Miguel Lillo, Tucuman, Argentina (S. Aranda); ISNB: Institut Royal des Sciences Naturelles de Belgique, Brussels, Belgium (P. Grootaert); IBSP: Instituto Biológico de São Paulo, São Paulo, Brazil (S. Ide); MNHN: Museum National d'Histoire Naturelle, Paris, France (C. Girard); MZSP: Museu de Zoologia, Universidade de São Paulo, São Paulo, Brazil (S. Casari).

All genera of the subtribe, except *Asebis*, *Lamononia*, *Neopsephus*, *Semiotopsis* and *Spilomorphus* were studied. When possible, at least the type-species of each genera were analysed. The following species were studied: *Achrestus flavocinctus* (Candèze, 1859), *A. venustus* Champion, 1895, *Adiaphorus gracilis* Schwarz, 1901, *A. ponticerianus* Candèze, 1859, *Anoplischiopsis bivittatus* Champion, 1895, *Anoplischius bicarinatus* Candèze, 1859, *A. conicus* Candèze, 1900, *A. haematopus* Candèze, 1859, *A. pyronotus* Candèze, 1859, *Atractosomus flavescens* (Germar, 1839), *Blauta cribraria* (Germar, 1844), *Calopsephus apicalis* (Schwarz, 1903), *Catalamprus angustus* (Fleutiaux, 1902), *Crepidius flabellifer* (Erichson, 1847), *C. resectus* Candèze, 1859, *Cyathodera auripilosus* Costa, 1968, *C. lanugicollis* (Candèze, 1859), *C. longicornis* Blanchard, 1843, *Dayakus angularis* Candèze, 1893, *Dicrepidius ramicornis* (Palisot de Beauvois, 1805), *Dipropus brasilianus* (Germar, 1824), *D. factuellus* Candèze, 1859, *D. laticollis* (Eschscholtz, 1829), *D. pinguis* (Candèze, 1859), *D. schwarzi* (Becker, 1961), *Elius birmanicus* Candèze, 1893, *E. dilatatus* Candèze, 18578, *Heterocrepidius gilvellus* Candèze, 1859, *H. ventralis* Guérin-Méneville, 1838, *Lampropsephus cyaneus* (Candèze, 1878), *Loboederus appendiculatus* (Perty, 1830), *Olophoeus gibbus* Candèze, 1859, *Ovipalpus pubescens* Solier, 1851, *Pantolamprus*

ligneus Candèze, 1896, *P. mirabilis* Candèze, 1896, *P. perpulcher* Westwood, 1842, *Paraloboderus glaber* Golbach, 1990, *Proloboderus crassipes* Fleutiaux, 1912, *Propsephus beniensis* (Candèze, 1859), *P. cavifrons* (Erichson, 1843), *Pseudolophoeus guineensis* (Candèze, 1881), *Rhinopsephus apicalis* (Schwarz, 1903), *Sephilus formosanus* Schwarz, 1912, *S. frontalis* Candèze, 1878, *Singhalenus gibbus* Candèze, 1892, *S. taprobanicus* Candèze, 1859, *Sphenomerus antennalis* Candèze, 1859, *S. brunneus* Candèze, 1865, *Spilus atractomorphus* Candèze, 1859, *S. nitidus* Candèze, 1859, *Stenocrepidius simonii* Fleutiaux, 1891 and *Trielasmus varians* Blanchard, 1846. All these species were redescribed because the majority of them present only the original description, frequently very succinct.

As out groups were used *Chalcolepidius zonatus* Eschscholtz, 1829 (Hemirhipini, Agrypninae) *Ctenicera silvatica* (Van Dyke, 1932)(Prosternini, Prosterninae) and the followings Ampedini (Elaterinae): *Ampedus sanguineus* (Linnaeus, 1758)(Ampedina), *Melanotus spernendus* Candèze, 1873 (Melanotina) and *Anchastus digittatus* LeConte, 1853 and *Physorhinus xanthocephalus* Germar, 1840 (Physorhinina).

In the historical review of each genus it is presented a list of species included in the genus except for *Anoplischius*, *Dipropus* and *Propsephus*, that are formed by, respectively, about 110, 150 and 380 species. The large number of species did not permit to write down all them. Before the species redescriptions is presented the position and the characterization of each genus based on the present analysis. When only one species was studied, the discussion is based on this species that suggests the genus position.

The redescriptions of *Blauta cribraria*, *Loboederus appendiculatus* and *Chalcolepidius zonatus* are very succinct, restricted to characters included in the analysis. A very complete redescription is found, respectively, in Casari (2005, 2004, 2002).

The following abbreviations were used: D (dorsal), ex. (exemplar), F (female), L (lateral), M (male), V (ventral).

Cladistic analysis. Seventy eight characters were selected, most of which are based on external morphology. Multistate characters were used, always being treated as unordered. Fifty two taxa were included in the data matrix as representatives of various groups accepted in Dicrepidiina and six from other subtribes or tribes (out groups).

The matrix (Table 1) was edited by Nexus program, version 0.5.0 (Page 2001) and the missing data were represented by "?" and the innaplicable characters by "-". The trees were conducted using the TNT program (Goloboff *et al*. 2003), and represented through Winclada version 1.00.08 (Nixon 2002), with optimization "unambig changes only". All characters are treated initially as unweighted. The trees were rooted a posteriori (Nixon & Carpenter 1993), in *Chalcolepidius*. The analyses were conducted based on 20000 random addition sequences with 2 trees save per replication. The swapping algorithm used was tree bisection reconnection (TBR).

In a second analysis the characters were weighted using successive weighting, giving the highest weight to those characters which have the highest fit (Goloboff 1993; Goloboff *et al*. 2003). It was tested fits 5, 10, 15, 20, 25, 30, 40 and 50.

Characters.

0. Frons (CI 0.16, RI 0.66: (0) wider than long; (1) longer than wide; (2) as wide as long.
1. Frontal carina (CI 0.66, RI 0.80): (0) complete; (1) absent; (2) incomplete.
2. Anterior margin of frons (CI 0.26, RI 0.42): (0) declivous at middle; (1) rounded; (2) prominent at middle; (3) straight; (4) prominent and rounded at middle.
3. Anterior margin of frons (CI 0.25, RI 0.57): (0) at nasal level; (1) prominent; (2) strongly prominent; (3) fused to nasal; (4) at nasal level at middle.
4. Median anterior region of frons (CI 0.28, RI 0.58): (0) convex; (1) concave; (2) stronlgy convex; (3) grooved at middle; (4) downwards.
5. Nasal (CI 1.00, RI 1.00): (0) present; (1) absent.
6. Ridge of nasal (CI 0.50, RI 0.00): (0) present (Figs. 155, 156); (1) absent.
7. Nasal size (CI 0.37, RI 0.64): (0) wider than long; (1) longer than wide; (2) as wide as long; (3) very narrow, almost absent at middle.
8. Antennae of male (CI 0.31, RI 0.43): (0) filiform (Fig. 5); (1) serrate (Fig. 3); (2) subserrate (Fig. 16); (3) flabellate (Fig. 4); (4) serrate in both sides (Fig. 27); (5) strongly serrate (Fig. 23); (6) serrate wide (Fig. 33).
9. Antennae of female (CI 0.28, RI 0.37): (0) filiform; (1) serrate; (2) subserrate; (3) serrate in both sides; (4) pectinate; (5) serrate wide.
10. Antennomeres shape (CI 1.00, RI 1.00): (0) cylindrical; (1) flattened.
11. Length of scape in relation to eye (CI 0.33, RI 0.00): (0) shorter; (1) same length; (2) longer.
12. Shape of antennomere 2 (CI 1.00, RI 1.00): (0) globular (Fig.3); (1) transverse (Fig. 37).
13. Shape of antennomere 3 of male (CI 0.53, RI 0.50): (0) elongate, cylindrical (Fig. 5); (1) triangular (Fig. 3); (2) subtrapezoidal (Fig. 37); (3) elongate, short (Fig. 11); (4) globular (Fig. 36); (5) elongate, triangular (Fig. 15); (6) flabellate (Fig. 4); (7) triangular and prominent laterally (Fig. 23).
14. Antennomere 3 (CI 0.20, RI 0.20): (0) longer than 4 (Fig. 30); (1) shorter than 4 (Fig. 7); (2) as long as 4 (Fig. 13).
15. Length of antennae of male in relation to hind angles of pronotum (CI 0.18, RI 0.50): (0) until 2.4 antennomeres longer; (1) 2.5-4.4 antennomeres longer; (2) more than 4.5 antennomeres longer; (3) not reaching hind angles apices.
16. Longitudinal carina of antennae (CI 0.50, RI 0.50): (0) present (Fig. 12); (1) absent (Fig.3); (2) incomplete (Fig. 22).
17. Longitudinal smooth band of antennae (CI 1.00, RI 1.00): (0) present; (1) absent.

18. Labrum (CI 0.19, RI 0.30): (0) semielliptical (Fig. 66); (1) semicircular (Figs. 56, 63); (2) subtrapezoidal (Fig. 68); (3) subrectangular (Fig. 65); (4) elliptical narrowed at base (Fig. 58); (5) narrow band-like (Fig. 71).
19. Anterior margin of labrum (CI 0.33, RI 0.27): (0) rounded (Fig. 54); (1) notched at middle (Fig. 56); (2) sinuous (Fig. 92); (3) trapezoidal (Fig. 68); (4) straight (Fig. 65).
20. Mandibles (CI 0.28, RI 0.73): (0) wide (Fig. 101); (1) narrow (Fig. 103); (2) quadrangular (Fig. 137).
21. Mesal area of mandibles (CI 0.41, RI 0.65): (0) with one apical tooth (Fig. 123); (1) with one apical and one subapical tooth near apex (Fig. 101); (2) with one apical and one subapical tooth distant from apex (Fig. 103); (3) with 3 teeth (Fig. 139); (4) with 2 teeth and one small lobe between them (Fig. 120); (5) with one bilobate subapical tooth (Fig. 149).
22. Penicillus (CI 0.50, RI 0.50): (0) long (Fig. 101); (1) reduced (Fig. 137).
23. Tooth at base of left penicillus (CI 1.00, RI 1.00): (0) present (Figs. 116, 117); (1) absent (Fig. 105).
24. Shape of galea (CI 0.83, RI 0.75): (0) brush-like (Fig. 160); (1) brush-like wide (Fig. 162); (2) transverse (Fig. 163); (3) bilobed (Fig. 166); (4) narrow (tongue-like) (Fig. 169); (5) butterfly wing-like (Fig. 175).
25. Setae of galea (CI 0.37, RI 0.52): (0) simple (Fig. 161); (1) spatulate (Fig. 160); (2) short bristle (Fig. 164); (3) long and bristle (Fig. 167); (4) simple and spatulate (Fig. 163); (5) spiniform and spatulate; (6) thick and spatulate.
26. Lacinia (CI 1.00, RI 1.00): (0) striated (Fig. 167); (1) smooth (Fig. 160).
27. Last palpomere (CI 0.25, RI 0.47): (0) securiform (Fig. 160); (1) slightly widened apicad (Fig. 161); (2) ellipticall (Fig. 165); (3) cylindrical (Fig. 174).
28. Pronotum (CI 0.25, RI 0.33): (0) wider than long (Fig. 204); (1) longer than wide (Fig. 216); (2) as long as wide (Fig. 234).
29. Hind angles of pronotum (CI 0.22, RI 0.22): (0) backwardly directed or slightly divergent (Fig. 204); (1) divergent (Fig. 206); (2) apex inwards (Fig. 217).
30. Hind angles of pronotum (CI 1.00, RI 1.00): (0) with posterolateral appendix (Fig. 230); (1) without posterolateral appendix (Fig. 204).
31. Carina of hind angles of pronotum (CI 0.28, RI 0.16): (0) present (Fig. 204); (1) absent (Fig. 208); (2) weak.
32. Number of carina of hind angles of pronotum (CI 1.00, RI 1.00): (0) one carina present (Fig. 204); (1) 2 carinae present (Fig. 210).
33. Prosternal channel (CI 0.14, RI 0.57): (0) absent; (1) present.
34. Prosternal spine (CI 0.30, RI 0.44): (0) with bilobed apex (Fig. 190); (1) with rounded apex (Fig. 194); (2) with subapical lobe (Fig. 189); (3) with apex widened with tooth (Fig. 191); (4) with subapical prominent lobe (nose-like) (Fig. 187); (5) with sharpened apex (Fig. 195); (6) with subapical tooth .
35. Borders of mesosternal cavity (CI 0.50, RI 0.55): (0) declivous; (1) horizontal; (2) horizontal folllowed by declivous; (3) raised and declivous (Fig. 186); (4) slightly declivous followed by strongly declivous.
36. Lateral margin of metacoxal plate (CI 0.50, RI 0.00): (0) strongly narrowed (Fig. 252); (1) slightly narrowed (Fig. 255); (2) widened laterally (Fig. 266).
37. Free margin of metacoxal plate (CI 0.25, RI 0.53): (0) straight (Fig. 270); (1) with small lobe (Fig. 263); (2) with very developed lobe (Fig. 252); (3) with very developed tooth (Fig. 253); (4) with small tooth (Fig. 262); (5) with huge lobe (Fig. 259).
38. Femur (CI 1.00, RI 1.00): (0) normal; (1) widened; (2) very widened.
39. Tibial spurs (IC 0.50, IR 0.50): (0) present; (1) absent.
40. Tibial spurs (CI 0.16, RI 0.56): (0) short; (1) long; (2) very long.
41. Tarsomere 1 (CI 1.00, RI 1.00): (0) normal; (1) very long.
42. Lamella of protarsomere 1 (CI 0.33, RI 0.91): (0) present; (1) absent.
43. Lamella of mesotarsomere 1 (CI 0.33, RI 0.91): (0) present; (1) absent.
44. Lamella of metatarsomere 1 (CI 0.33, RI 0.92): (0) present; (1) absent.
45. Lamella of protarsomere 2 (CI 1.00, RI 1.00): (0) present; (1) absent.
46. Lamella of mesotarsomere 2 (CI 1.00, RI 1.00): (0) present; (1) absent.
47. Lamella of metatarsomere 2 (CI 1.00, RI 1.00): (0) present; (1) absent.
48. Lamella of protarsomere 3 (CI 1.00, RI 1.00): (0) present; (1) absent.
49. Lamella mesotarsomere 3 (CI 1.00, RI 1.00): (0) present; (1) absent.
50. Lamella of metatarsomere 3 (CI 1.00, RI 1.00): (0) present; (1) absent.
51. Lamella of protarsomere 4 (CI 1.00, RI 1.00): (0) present; (1) absent.
52. Lamella of mesotarsomere 4 (CI 1.00, RI 1.00): (0) present; (1) absent.
53. Lamella of metatarsomere 4 (CI 1.00, RI 1.00): (0) present; (1) absent.
54. Claws (CI 1.00, RI 1.00): (0) without teeth; (1) pectinate.
55. Basal setae of claws (CI 1.00, RI 1.00): (0) present; (1) absent.
56. Shape of sternite 8 of male (CI 0.12, RI 0.50): (0) transversal band (Fig. 273); (1) gradually narrowed to apex (Fig. 283).
57. Anterior margin of sternite 8 of male (CI 0.36, RI 0.44): (0) straight (Fig. 273); (1) narrowed and straight (Fig. 285); (2) straight with prominent angles (Fig. 274); (3) notched at middle (Fig. 283); (4) narrowed and notched at middle (Fig. 281); (5) prominent at middle (Fig. 277); (6) contricted and notched at middle (Fig. 279); (7) slightly notched at middle (Fig. 286); (8) rounded (Fig. 293).
58. Distal margin of tergite 9 of male (CI 0.40, RI 0.55): (0)

V-shaped (Fig. 332); (1) strongly notched at middle (Fig. 331); (2) moderately notched at middle (Fig. 337); (3) widely notched at middle (Fig. 335); (4) slightly notched at middle (Fig. 344); (5) rounded (Fig. 340); (6) narrowed notched (Fig. 342).

59. Median region of tergite 9 of male (CI 0.33, RI 0.60): (0) wider than a half of tergite (Fig. 331); (1) very narrow (Fig. 339).
60. Apex of sternite 9 of male (CI 0.42, RI 0.55): (0) gradually narrowed (Fig.319); (1) abruptly narrowed (Fig. 322); (2) slightly narrowed (Fig. 330); (3) triangular (Fig. 320).
61. Aedeagus (CI 0.16, RI 0.23): (0) short and wide (Fig. (Fig. 375); (1) elongate (Fig. 379); (2) narrow and long (Fig. 376).
62. Basal piece (CI 0.33, RI 0.50): (0) short and wide (Fig. 383); (1) shorter than parameres (Fig. 375); (2) longer than parameres (Fig. 376); (3) twice parameres length (Fig. 396).
63. Parameres (CI 0.33, RI 0.50): (0) separated (Fig. 401); (1) fused (Fig. 397).
64. Distal region of parameres (CI 1.00, RI 1.00): (0) with setae (Fig. 396); (1) without setae (Fig. 400).
65. Subapical region of parameres (IC 0.53, IR 0.50): (0) securiform (Fig. 375); (1) slitted (Fig. 394); (2) dilated (boot-like) (Fig. 400); (3) narrowed and rounded (Fig. 441); (4) narrowed and truncate (Fig. 466); (5) slightly securiform (Fig. 397); (6) securiform and slitted (Fig. 405); (7) securiform with tooth (Fig. 407).
66. Median lobe (CI 0.25, RI 0.52): (0) slightly longer than parameres (Fig. 374); (1) moderately longer than parameres (Fig. 378); (2) strongly longer than parameres (Fig. 414); (3) twice parameres length (Fig. 402); (4) 1/3 longer than parameres (Fig. 422).
67. Lateral margins of median lobe (CI 0.46, RI 0.61): (0) almost straight (Fig. 376); (1) strongly constrict at middle (Fig. 392); (2) gradually narrowed to apex (Fig. 386); (3) strongly narrowed at distal half (Fig. 442); (4) slightly narrowed at distal half (Fig. 406); (5) sinuous (Fig. 412); (6) slightly narrowed at middle (Fig. 422); (7) wider at base (Fig. 449).
68. Apex of median lobe (CI 0.20, RI 0.52): (0) narrowed (Fig. 376); (1) rounded (Fig. 374); (2) widely rounded (Fig. 422).
69. Apex of sternite 8 of female (CI 0.50, RI 0.62): (0) prominent and rounded (Fig. 467); (1) truncate (Fig. 485); (2) widely rounded (Fig. 470); (3) notched at middle (Fig. 473).
70. Length of spiculum gastrale X length of sternite 8 of female (CI 0.33, RI 0.46): (0) below 3 times (Fig. 473); (1) 3.0-3.9 times (Fig. 476); (2) 4.0-4.9 times (Fig. 472); (3) 5.0-5.9 times (Fig. 469); (4) above 6 times (Fig. 485).
71. Ovipositor (CI 1.00, RI 1.00): (0) with styli; (1) without styli.
72. Bursa copulatrix (CI 0.25, RI 0.62): (0) without spines; (1) with spines (Fig. 496).
73. Spines of bursa copulatrix (CI 0.75, RI 0.50): (0) forming regular areas (Fig. 503); (1) disposed in irregular way (Fig. 502); (2) covering bursa partially (Fig. 508); (3) disposed in spiral or tubular (Fig. 495).
74. Number of spiny areas of bursa copulatrix (CI 0.66, RI 0.66): (0) 3 areas (Fig. 503); (1) 4 areas (Fig. 504); (2) 5 areas (Fig. 501); (3) 6 areas (Figs. 497, 498); (4) 7 areas (Fig. 507).
75. Spiny areas of bursa copulatrix (CI 1.00, RI 1.00): (0) making star-like (Fig. 496); (1) disposed in narrow very long band (Fig. 495); (2) disposed in band and circles (Fig. 503).
76. Bursa copulatrix (CI 0.66, RI 0.50): (0) rounded (Fig. 503); (1) elongate (Fig. 508); (2) elongate and spiraled (Fig. 495) .
77. Openings of colleterial glands (CI 1.00, RI 1.00): (0) without sclerotized structures; (1) with pieces sclerotized (Fig. 511); (2) with rings sclerotized (Fig. 503) .

Matrix

Table I. Data matrix for Dicrepidiina. (?) missing data; (-) inapplicable characters.

RESULTS

The first analysis, using equally weighted characters produced 11 equally most-parsimonious trees. The strict consensus tree (L 694, CI 28, RI 37) is showed in Fig. 1.

The second analysis was conducted after aplication of the sucessive weighting option according to the maximum value of the fitness. Using fit 5 resulted in four trees and fits from 10-50 produced one tree with different topology of the anterior ones. For the discussions and conclusions it was used the tree representing the common clades from these five trees (Fig.2).

The trees represented by Figs. 1 and 2 demonstrate that the genus *Ovipalpus*, represented by type-species, *O. pubescens*, does not belong to Dicrepidiina and even to Ampedini. It is removed from the subtribe and appears to be closely related to Prosternini (Prosterninae).

The subtribe Dicrepidiina (excluding *Ovipalpus*) (Fig. 2) is a monophyletic group and Physorhinina is the sister group. The subtribe is defined especially by tarsomeres 2 and 3 lamellate in all legs. This result agrees with the characterization commonly used to the subtribe, tarsomeres 2 and 3 lamellate. The tarsomere 3 lamellate (characters 48, 49, 50) usually used to characterize the Physorhinina, represents here the synapomorphies that define the monophyletic group formed by Physorhinina and Dicrepidiina.

The genera *Achrestus*, *Anoplischius*, *Dipropus* and *Propsephus* demonstrated not to be monophyletics. In this work, the number of analysed species of each one is insufficient to establish new genera.

The subtribe, as defined here, is composed by: *Achrestus*, *Adiaphorus*, *Anoplischiopsis*, *Anoplischius*, *Atractosomus*, *Blauta*, *Calopsephus*, *Catalamprus*, *Crepidius*, *Cyathodera*, *Dayakus*, *Dicrepidius*, *Dipropus*, *Elius*, *Heterocrepidius*,

Table I. Data matrix for Dicrepidiina. (?) missing data; (-) inapplicable characters.

Characters	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Chalcolepidius zonatus	0	1	0	0	1	1	-	-	1	1	1	1	0	1	1	3	1	1	3	4	0	0	0	1	0	0
Ctenicera silvatica	0	1	0	0	1	1	-	-	2	2	1	0	0	5	2	0	1	1	0	0	0	4	0	1	0	0
Melanotus spernendus	0	0	1	1	0	0	1	0	2	2	1	0	0	0	1	0	1	1	1	0	1	1	0	1	0	3
Anchastus digittatus	0	0	1	1	0	0	1	0	?	2	1	0	0	?	1	?	1	1	4	0	0	1	0	1	0	1
Physorhinus xanthoceplalus	0	0	1	1	0	0	1	0	2	2	1	0	0	4	1	0	0	1	1	0	0	1	0	1	0	1
Ampedus sanguineus	0	0	1	1	0	0	1	0	2	2	1	0	0	0	1	3	1	1	0	1	0	1	0	1	0	1
Achrestus flavocinctus	0	0	1	2	0	0	1	0	1	1	1	0	0	1	1	0	1	1	0	0	0	1	0	1	0	1
Achrestus venustus	0	0	1	2	0	0	1	1	3	4	1	0	0	6	2	1	1	1	3	0	0	1	0	1	0	1
Adiaphorus gracilis	0	0	1	1	0	0	1	0	0	1	0	0	0	0	1	2	1	1	0	0	1	2	0	1	0	5
Adiaphorus ponticerianus	0	0	1	1	0	0	1	0	0	1	0	0	0	0	1	2	1	1	1	1	1	2	0	1	0	0
Anoplischiopsis bivittatus	0	0	1	1	0	0	1	1	1	1	1	0	0	0	1	0	1	1	0	?	?	0	?	?	?	?
Anoplischius bicarinatus	0	2	2	0	1	0	1	0	1	1	1	0	0	1	1	1	1	1	0	1	1	2	0	1	0	1
Anoplischius conicus	1	0	1	1	1	0	1	0	1	1	1	0	0	1	2	2	1	1	?	?	?	?	?	?	?	?
Anoplischius haematopus	2	2	0	0	1	0	1	0	2	2	1	0	0	1	1	1	1	1	1	1	0	2	0	1	0	1
Anoplischius pyronotus	1	0	1	1	1	0	1	0	2	2	1	0	0	1	2	2	1	1	1	?	?	?	?	?	?	?
Atractosomus flavescens	0	2	3	0	0	0	1	0	1	1	1	0	0	1	1	0	1	1	0	1	0	1	0	1	0	0
Blauta cribraria	1	0	1	1	0	0	1	0	1	1	1	0	0	3	1	0	1	1	3	4	0	2	0	1	0	0
Calopsephus apicalis	2	0	1	2	0	0	1	0	1	2	1	0	0	1	1	1	0	1	1	0	0	1	0	1	1	1
Catalamprus angustus	0	0	1	2	0	0	1	0	?	1	1	0	0	1	2	?	0	1	0	0	0	1	0	1	2	4
Crepidius flabellifer	1	0	1	2	1	0	1	1	3	1	1	0	0	6	1	1	1	1	3	4	0	1	0	0	0	1
Crepidius resectus	1	0	1	2	1	0	1	1	3	1	1	0	0	6	1	1	1	1	0	0	0	1	0	0	0	1
Cyathodera auripilosus	1	0	1	1	1	0	1	2	2	2	1	0	0	1	1	1	1	0	?	?	?	?	?	?	?	?
Cyathodera lanugicollis	1	0	2	1	2	0	1	2	2	2	1	0	0	1	1	1	1	0	2	3	1	2	0	1	0	0
Cyathodera longicornis	1	0	2	1	2	0	1	2	2	2	1	0	0	1	2	1	1	0	0	1	1	2	0	1	0	0
Dayakus angularis	0	0	1	1	1	0	1	0	1	?	1	0	0	1	1	1	1	1	0	0	0	0	0	1	0	2
Dicrepidius ramicornis	1	0	2	0	1	0	0	1	3	1	1	0	0	6	1	1	1	1	5	0	0	1	0	0	0	1
Dipropus brasilianus	1	0	3	2	1	0	1	0	1	?	1	0	0	1	1	1	1	1	3	0	0	1	0	1	0	6
Dipropus factuellus	1	0	1	2	1	0	1	0	1	1	1	0	0	1	1	1	1	1	3	0	0	1	0	1	0	1
Dipropus laticollis	1	0	1	1	0	0	1	0	2	2	1	0	0	1	1	1	1	1	0	0	0	1	0	1	0	1
Dipropus pinguis	1	0	1	1	0	0	1	0	1	1	1	1	0	1	1	?	2	1	?	?	?	?	?	?	?	?
Dipropus schwarzi	1	0	3	1	0	0	1	0	1	?	1	0	0	1	2	1	1	1	0	0	0	1	0	1	0	1
Elius birmanicus	1	0	3	2	0	0	1	0	5	?	1	0	0	7	1	1	1	1	1	0	1	2	0	1	0	0
Elius dilatatus	1	0	1	2	0	0	1	0	1	1	1	0	0	1	1	0	1	1	5	1	1	2	0	1	0	0
Heterocrepidius gilvellus	1	0	1	1	1	0	1	0	2	?	1	0	0	3	1	0	1	1	5	0	1	2	0	1	0	0
Heterocrepidius ventralis	1	0	1	1	1	0	1	0	2	?	1	0	0	0	1	0	1	1	0	0	1	2	0	1	0	0
Lampropsephus cyaneus	0	0	1	1	0	0	1	0	4	3	1	0	0	1	1	3	1	1	1	0	0	1	0	1	3	4
Loboederus appendiculatus	0	0	4	2	3	0	1	2	2	2	1	0	0	1	2	1	1	?	1	0	1	1	1	1	0	0
Olophoeus gibbus	2	0	1	0	0	0	1	0	5	?	1	0	0	1	0	0	1	1	3	0	2	2	1	1	0	0
Ovipalpus pubescens	0	1	3	3	4	1	-	-	1	?	1	0	0	3	1	0	1	1	2	0	1	3	0	1	4	0
Pantolamprus ligneus	0	0	1	1	0	0	1	0	6	?	1	0	0	1	1	0	1	1	1	0	0	1	0	1	3	4
Pantolamprus mirabilis	0	0	1	1	0	0	1	0	?	5	1	0	0	1	1	?	1	1	1	0	0	1	0	1	3	4
Pantolamprus perpulcher	0	0	1	1	0	0	1	0	1	?	1	0	0	1	1	3	1	1	1	0	0	1	0	?	3	4
Paraloboderus glaber	0	0	4	2	3	0	1	0	1	1	1	0	0	1	0	1	1	1	1	0	?	?	?	?	?	?
Proloboderus crassipes	0	0	4	2	3	0	1	0	4	3	1	0	1	2	1	1	1	1	1	0	1	2	0	1	0	0
Propsephus beniensis	1	0	3	2	1	0	1	1	2	?	1	0	0	1	1	0	1	1	5	0	0	1	0	1	0	0
Propsephus cavifrons	1	0	3	2	?	0	1	1	?	1	1	0	0	1	1	?	1	1	0	0	0	1	0	1	0	0
Pseudolophoeus guineensis	0	0	1	0	4	0	1	0	1	1	1	0	0	1	1	1	0	1	0	1	1	5	1	1	0	2
Rhinopsephus apicalis	1	0	1	2	0	0	0	1	1	4	1	0	0	1	1	1	0	1	0	0	0	1	0	1	0	6
Sephilus formosanus	2	0	0	2	0	0	1	1	1	?	1	0	0	1	1	0	1	1	5	0	0	1	0	1	0	0
Sephilus frontalis	1	0	0	2	0	0	1	1	5	1	1	1	0	7	2	0	1	1	0	2	0	1	0	1	0	0
Singhalenus gibbus	1	0	3	1	0	0	1	0	2	2	1	0	0	1	1	0	1	1	0	1	1	2	0	1	0	0
Singhalenus taprobanicus	1	0	3	1	0	0	1	0	2	2	1	0	0	1	1	?	1	1	0	1	1	2	0	1	0	0
Sphenomerus antennalis	1	0	3	1	1	0	1	0	5	1	1	0	0	1	1	0	1	1	5	0	1	2	0	1	5	4
Sphenomerus brunneus	1	0	2	0	0	0	1	0	1	?	1	0	0	1	0	3	1	1	5	0	1	2	0	1	5	4
Spilus atractomorphus	2	0	1	4	1	0	1	3	1	1	1	0	0	1	1	0	1	1	1	0	0	1	0	1	0	0
Spilus nitidus	2	0	1	4	1	0	1	3	1	1	1	0	0	1	1	3	1	1	5	0	0	1	0	1	0	0
Stenocrepidius simoni	2	0	1	0	1	0	1	0	?	?	1	0	0	3	1	?	1	1	5	0	1	2	0	1	0	0
Trielasmus varians	0	2	1	0	1	0	1	3	?	1	1	0	0	1	1	?	1	1	3	0	1	2	0	1	0	0

Table I. Cont.

Characters	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51
Chalcolepidius zonatus	1	0	1	0	1	1	-	1	1	1	0	0	0	1	-	0	1	1	1	1	1	1	1	1	1	1
Ctenicera silvatica	1	0	1	1	1	0	0	0	2	0	0	0	0	0	1	0	1	1	1	1	1	1	1	1	1	1
Melanotus spernendus	0	0	0	0	1	0	0	1	2	0	0	0	0	0	1	0	1	1	1	1	1	1	1	1	1	1
Anchastus digittatus	1	0	0	0	1	1	-	1	2	0	0	3	0	0	2	1	1	1	1	1	1	1	0	0	0	1
Physorhinus xanthoceplalus	1	0	0	0	1	0	0	1	2	3	0	3	0	0	2	1	1	1	1	1	1	1	0	0	0	1
Ampedus sanguineus	1	0	0	0	1	0	0	1	2	0	0	2	0	0	2	0	1	1	1	1	1	1	1	1	1	1
Achrestus flavocinctus	1	0	0	0	1	0	0	0	?	3	0	?	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Achrestus venustus	1	0	0	1	1	0	0	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Adiaphorus gracilis	1	0	1	1	1	0	0	1	1	0	0	1	0	0	0	0	1	1	1	0	0	0	0	0	0	1
Adiaphorus ponticerianus	1	0	1	1	1	0	0	1	1	0	0	1	0	0	0	0	1	1	1	0	0	0	0	0	0	1
Anoplischiopsis bivittatus	1	2	0	0	1	2	0	1	2	0	0	1	0	0	1	0	1	1	1	0	0	0	0	0	0	1
Anoplischius bicarinatus	1	0	0	0	1	0	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Anoplischius conicus	?	0	0	0	1	0	0	1	2	0	0	0	0	0	1	0	1	1	1	0	0	0	0	0	0	1
Anoplischius haematopus	1	0	0	0	1	0	0	1	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1
Anoplischius pyronotus	1	0	0	0	1	0	0	1	0	0	0	3	0	0	1	0	1	1	1	0	0	0	0	0	0	1
Atractosomus flavescens	1	0	0	1	1	1	-	1	3	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Blauta cribraria	1	1	2	0	1	0	0	1	1	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Calopsephus apicalis	1	0	0	0	1	0	0	1	0	0	1	3	0	1	-	0	1	1	1	0	0	0	0	0	0	1
Catalamprus angustus	1	1	0	0	1	0	0	1	3	2	0	3	0	1	-	0	1	1	1	0	0	0	0	0	0	1
Crepidius flabellifer	1	0	0	0	1	0	0	0	2	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Crepidius resectus	1	0	0	0	1	0	0	0	2	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Cyathodera auripilosus	1	0	0	0	1	0	0	1	2	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1
Cyathodera lanugicollis	1	1	0	0	1	0	0	1	2	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1
Cyathodera longicornis	1	1	0	1	1	0	0	1	1	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1
Dayakus angularis	1	0	0	0	1	0	0	0	5	3	1	5	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Dicrepidius ramicornis	1	0	0	1	1	0	0	0	2	2	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Dipropus brasilianus	1	0	0	0	1	0	0	1	1	0	0	3	0	0	0	0	1	1	1	0	0	0	0	0	0	1
Dipropus factuellus	1	0	0	0	1	0	0	1	1	0	0	3	0	0	0	0	1	1	1	0	0	0	0	0	0	1
Dipropus laticollis	1	0	0	2	1	0	0	1	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Dipropus pinguis	1	0	0	0	1	0	0	1	1	0	0	4	0	0	0	0	1	1	1	0	0	0	0	0	0	1
Dipropus schwarzi	1	1	0	0	1	0	0	1	2	0	0	4	0	0	1	0	1	1	1	0	0	0	0	0	0	1
Elius birmanicus	1	1	0	0	1	0	0	1	1	0	0	1	0	0	1	0	0	0	1	0	0	0	0	0	0	1
Elius dilatatus	1	1	0	0	1	0	0	1	1	0	0	1	0	0	1	0	0	0	1	0	0	0	0	0	0	1
Heterocrepidius gilvellus	1	2	0	0	1	2	0	0	2	0	0	2	1	0	1	0	0	0	1	0	0	0	0	0	0	1
Heterocrepidius ventralis	1	2	0	0	1	2	0	0	2	0	0	2	1	0	1	0	0	0	1	0	0	0	0	0	0	1
Lampropsephus cyaneus	1	0	0	0	1	0	0	1	2	4	0	1	0	0	0	0	1	1	1	0	0	0	0	0	0	1
Loboederus appendiculatus	1	0	0	0	0	1	-	1	1	0	0	1	0	0	1	0	1	1	1	0	0	0	0	0	0	1
Olophoeus gibbus	1	2	0	0	1	0	0	1	2	0	0	0	0	0	1	0	1	1	1	0	0	0	0	0	0	1
Ovipalpus pubescens	1	2	0	1	1	0	0	0	2	0	2	0	0	0	1	0	1	1	1	1	1	1	1	1	1	1
Pantolamprus ligneus	1	0	0	0	1	0	0	1	3	3	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Pantolamprus mirabilis	1	0	2	0	1	0	0	1	3	3	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Pantolamprus perpulcher	1	0	2	0	1	0	0	1	3	3	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Paraloboderus glaber	?	1	0	0	1	0	0	0	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Proloboderus crassipes	1	1	0	0	1	0	0	0	1	0	0	0	2	0	1	0	1	1	1	0	0	0	0	0	0	1
Propsephus beniensis	1	0	0	0	1	0	0	1	2	0	0	4	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Propsephus cavifrons	1	0	0	0	1	0	0	1	2	0	0	4	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Pseudolophoeus guineensis	1	3	0	0	1	0	0	0	2	0	0	4	0	0	2	0	1	1	1	0	0	0	0	0	0	1
Rhinopsephus apicalis	1	1	1	0	1	0	0	1	6	0	1	3	0	0	0	0	1	1	1	0	0	0	0	0	0	1
Sephilus formosanus	1	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Sephilus frontalis	1	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Singhalenus gibbus	1	0	1	0	1	0	0	1	1	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Singhalenus taprobanicus	1	0	1	0	1	0	0	1	1	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Sphenomerus antennalis	1	1	1	1	1	1	-	1	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Sphenomerus brunneus	1	1	0	0	1	0	0	1	2	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Spilus atractomorphus	1	0	0	0	1	0	0	1	4	3	0	3	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Spilus nitidus	1	0	0	0	1	0	0	1	4	3	0	3	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Stenocrepidius simoni	1	2	0	1	1	0	0	0	0	0	0	1	0	0	1	0	1	1	1	0	0	0	0	0	0	1
Trielasmus varians	1	1	0	0	1	0	0	0	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1

Table I. Cont.

Characters	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77
Chalcolepidius zonatus	1	1	0	0	1	1	5	0	0	1	1	1	0	1	0	?	1	3	0	1	1	0	0	2	0	2
Ctenicera silvatica	1	1	0	1	0	2	0	0	0	0	0	0	1	2	0	2	0	0	1	0	0	-	-	-	1	0
Melanotus spernendus	1	1	1	1	0	4	1	0	0	0	1	0	0	0	0	2	0	0	0	0	1	2	-	-	1	0
Anchastus digittatus	1	1	0	1	?	?	?	?	?	?	?	?	?	?	?	?	?	0	3	0	1	3	-	1	2	0
Physorhinus xanthoceplalus	1	1	0	1	0	4	0	1	0	0	2	1	0	3	1	3	1	1	4	0	1	3	-	-	1	1
Ampedus sanguineus	1	1	0	1	0	2	1	0	0	0	0	0	0	0	1	0	0	?	?	?	?	?	?	?	?	?
Achrestus flavocinctus	1	1	0	1	0	0	1	0	0	0	1	1	0	0	0	0	1	0	0	0	1	0	3	0	0	0
Achrestus venustus	1	1	0	1	0	0	1	0	0	2	2	1	0	0	2	0	0	0	3	0	0	-	-	-	0	0
Adiaphorus gracilis	1	1	0	1	0	2	0	0	0	1	1	1	0	0	1	2	1	?	?	?	?	?	?	?	?	?
Adiaphorus ponticerianus	1	1	0	1	0	2	0	0	0	1	1	1	0	0	1	2	1	?	?	?	?	?	?	?	?	?
Anoplischiopsis bivittatus	1	1	0	1	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?
Anoplischius bicarinatus	1	1	0	1	0	0	3	0	0	2	1	1	0	0	1	2	1	?	?	?	?	?	?	?	?	?
Anoplischius conicus	1	1	0	1	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?
Anoplischius haematopus	1	1	0	1	0	0	3	0	0	1	1	1	0	0	1	2	1	?	?	?	?	?	?	?	?	?
Anoplischius pyronotus	1	1	0	1	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?
Atractosomus flavescens	1	1	0	1	0	5	2	0	0	0	1	1	0	0	0	2	0	2	1	0	1	0	3	0	0	0
Blauta cribraria	0	0	0	1	0	0	1	0	0	1	1	1	0	0	0	2	0	0	1	0	1	0	3	0	0	0
Calopsephus apicalis	1	1	0	1	0	6	0	1	0	1	1	1	0	0	1	1	1	0	1	0	1	0	2	0	0	0
Catalamprus angustus	1	1	0	1	?	?	?	?	?	?	?	?	?	?	?	?	?	0	2	0	1	1	-	-	0	0
Crepidius flabellifer	1	1	0	1	0	4	2	0	3	1	3	1	0	5	1	0	0	2	3	0	1	0	1	0	0	0
Crepidius resectus	1	1	0	1	0	4	6	0	0	1	3	1	0	5	1	0	0	2	3	0	1	1	-	-	0	0
Cyathodera auripilosus	1	1	0	1	?	?	4	0	1	1	2	1	0	0	3	0	0	?	?	?	?	?	?	?	?	?
Cyathodera lanugicollis	1	1	0	1	1	3	4	0	1	1	2	1	0	0	3	0	0	?	?	?	?	?	?	?	?	?
Cyathodera longicornis	1	1	0	1	1	3	4	0	1	1	2	1	0	6	3	0	0	2	2	0	0	-	-	-	0	0
Dayakus angularis	1	1	0	1	1	1	5	0	0	0	2	1	0	7	0	4	0	?	?	?	?	?	?	?	?	?
Dicrepidius ramicornis	1	1	0	1	1	7	4	0	0	1	3	1	0	5	1	4	0	0	3	0	1	0	1	-	0	0
Dipropus brasilianus	1	1	0	1	1	3	2	0	0	1	1	1	0	0	0	0	1	?	?	?	?	?	?	?	?	?
Dipropus factuellus	1	1	0	1	1	3	1	0	0	0	2	1	0	5	1	5	0	0	2	0	0	-	-	-	0	0
Dipropus laticollis	1	1	0	1	1	3	4	0	0	2	1	1	0	6	2	0	0	0	2	0	0	-	-	-	?	0
Dipropus pinguis	1	1	0	1	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?
Dipropus schwarzi	1	1	0	1	1	1	1	0	0	1	1	1	0	7	1	0	0	?	?	?	?	?	?	?	?	?
Elius birmanicus	1	1	0	1	1	3	1	0	0	1	1	1	0	7	2	0	0	?	?	?	?	?	?	?	?	?
Elius dilatatus	1	1	0	1	1	7	2	0	2	1	1	1	0	7	1	0	0	?	?	?	?	?	?	?	?	?
Heterocrepidius gilvellus	1	1	0	1	0	8	1	1	1	1	2	1	0	0	4	6	2	?	?	?	?	?	?	?	?	?
Heterocrepidius ventralis	1	1	0	1	0	0	1	1	0	1	2	1	0	0	4	0	2	?	?	?	?	?	?	?	?	?
Lampropsephus cyaneus	1	1	0	1	0	0	0	1	1	0	1	1	0	0	1	2	1	0	1	0	1	0	4	0	0	0
Loboederus appendiculatus	1	1	0	1	1	3	4	0	1	1	1	0	0	6	2	6	0	0	1	0	0	-	-	-	0	0
Olophoeus gibbus	1	1	0	1	0	0	2	0	0	0	1	1	0	0	2	2	1	?	?	?	?	?	?	?	?	?
Ovipalpus pubescens	1	1	0	1	1	4	2	0	0	1	0	0	1	2	0	2	1	?	?	?	?	?	?	?	?	?
Pantolamprus ligneus	1	1	0	1	?	?	?	?	?	1	1	1	0	0	0	6	0	?	?	?	?	?	?	?	?	?
Pantolamprus mirabilis	1	1	0	1	?	?	?	?	?	?	?	?	?	?	?	?	?	0	0	0	1	0	2	0	0	0
Pantolamprus perpulcher	1	1	0	1	?	?	?	?	?	1	1	1	0	0	0	6	0	?	?	?	?	?	?	?	?	?
Paraloboderus glaber	1	1	0	1	?	?	?	?	?	1	1	1	0	6	2	0	1	?	?	?	?	?	?	?	?	?
Proloboderus crassipes	1	1	0	1	1	3	4	0	1	1	1	1	0	6	4	0	0	0	1	0	0	-	-	-	0	0
Propsephus beniensis	1	1	0	1	0	0	1	0	0	1	1	1	0	0	0	2	1	?	?	?	?	?	?	?	?	?
Propsephus cavifrons	1	1	0	1	?	?	?	?	?	?	?	?	?	?	?	?	?	2	1	0	1	0	3	0	0	0
Pseudolophoeus guineensis	1	1	0	1	0	0	4	0	0	1	1	1	0	0	0	0	1	0	0	0	0	-	-	-	0	0
Rhinopsephus apicalis	1	1	0	1	0	2	0	1	0	1	1	1	0	0	0	7	1	2	2	0	1	0	2	0	0	0
Sephilus formosanus	1	1	0	1	0	0	1	0	0	1	1	1	0	0	1	0	0	?	?	?	?	?	?	?	?	?
Sephilus frontalis	1	1	0	1	1	3	1	0	0	1	1	1	0	7	1	0	0	0	0	0	1	0	4	0	0	0
Singhalenus gibbus	1	1	0	1	0	2	1	0	0	1	1	1	0	0	1	2	0	2	1	0	1	0	4	0	0	0
Singhalenus taprobanicus	1	1	0	1	0	3	1	0	1	1	1	1	0	0	1	2	0	2	2	0	1	0	4	0	0	0
Sphenomerus antennalis	1	1	0	1	0	2	1	0	2	0	1	1	0	0	2	2	1	?	?	?	?	?	?	?	?	?
Sphenomerus brunneus	1	1	0	1	0	2	1	0	2	1	1	1	0	0	2	2	0	?	?	?	?	?	?	?	?	?
Spilus atractomorphus	1	1	0	1	?	?	?	?	?	?	?	?	?	?	?	?	?	2	1	0	1	0	3	0	0	0
Spilus nitidus	1	1	0	1	0	8	1	0	0	1	1	1	0	0	?	2	?	?	?	?	?	?	?	?	?	?
Stenocrepidius simoni	1	1	0	1	0	8	1	0	0	0	1	1	0	4	2	2	0	?	?	?	?	?	?	?	?	?
Trielasmus varians	1	1	0	1	?	?	?	?	?	?	?	?	?	?	?	?	?	0	2	0	0	-	-	-	0	0

Lampropsephus, *Loboederus*, *Olophoeus*, *Pantolamprus*, *Paralobederus*, *Proloboderus*, *Propsephus*, *Pseudolophoeus*, *Rhinopsephus*, *Sephilus*, *Singhalenus*, *Sphenomerus*, *Spilus*, *Stenocrepidius*, *Trielasmus*. The genera *Asebis*, *Lamononia*, *Neopsephus*, *Semiotopsis* and *Spilomorphus* were not examined, but based on the original descriptions it was possible to indicate that they belong to Dicrepidiina except *Asebis*, that probably belongs to Physorhinina.

The tree (Fig. 2) represents the relationships among the Dicrepidiina genera. One monophyletic group is formed by 22 genera, separated in several groups of genera. The relationships of these groups, the majority defined by homoplastic synapomorphies, are not clear. The same occur with the remainder genera. A more consistent and better resolved topology will be possible, including in the analysis more taxa and more characters, not available at moment.

Dicrepidiina Candèze, 1859

Elatérides vrais (*pars*) Lacordaire, 1857: 137, 167
Dicrépidiites Candèze, 1859: 3, 5; 1891: 49 (cat.)
Dicrepidiini; Champion, 1894: 292; Schwarz, 1906: 4, 59; Heyne & Taschenberg., 1908: 155
Dicrepidiina; Blackwelder, 1944: 297 (cat.).
Dicrepidina Hyslop, 1917: 258 (incorrect stem formation)
Dicripidiinae Fleutiaux, 1919: 5 (incorrect stem spelling).
Dicrepidiinae Fleutiaux, 1919: 38; 1922: 407, 428; Schenkling, 1925: 73 (cat.).

Type genus: *Dicrepidius* Eschscholtz, 1829.

It is characterized by synapomorphies, 45(0) lamella of protarsomere 2 present, 46(0) lamella of mesotarsomere 2 present and 47(0) lamella of metatarsomere 2 present, and by homoplasies, 9(1) antennae of female serrate, 57(0) anterior margin of sternite 8 of male straight and 68(0) apex of median lobe narrowed. Besides, it presents tarsomere 3 lamellate in all legs, character shared with Physorhinina.

Achrestus Candèze, 1869

Anepsius Candèze, 1859: 155, 156 (preoccupied).
Achrestus Candèze, 1869: 122; Candèze, 1891: 64 (cat.); Champion, 1895: 339; Schwarz, 1906: 83; Schenkling, 1925: 99 (cat.); Blackwelder, 1944: 291 (cat.); Costa & Casari-Chen, 1990: 304.

Type-species: *Anepsius flavocinctus* Candèze, 1859, designated by Hyslop, 1921.

Candèze (1859) erected the genus *Anepsius* to 4 new species and included it in "Eudactylites". The genus was characterized specially by tarsomeres slightly widened, 2nd and 3rd lamellate and 4th small, not dilatate. In 1869 he changed the name *Anepsius* to *Achrestus*, because the former was preoccupied with *Anepsius* LeConte, 1851 (Tenebrionidae).

Fleutiaux (1919) changed the name Eudactylini to Pachyderini.

Schenkling (1925) and Blackwelder (1944) included *Achrestus* in Pachyderinae.

Costa & Casari-Chen (1990) transferred *Achrestus* to

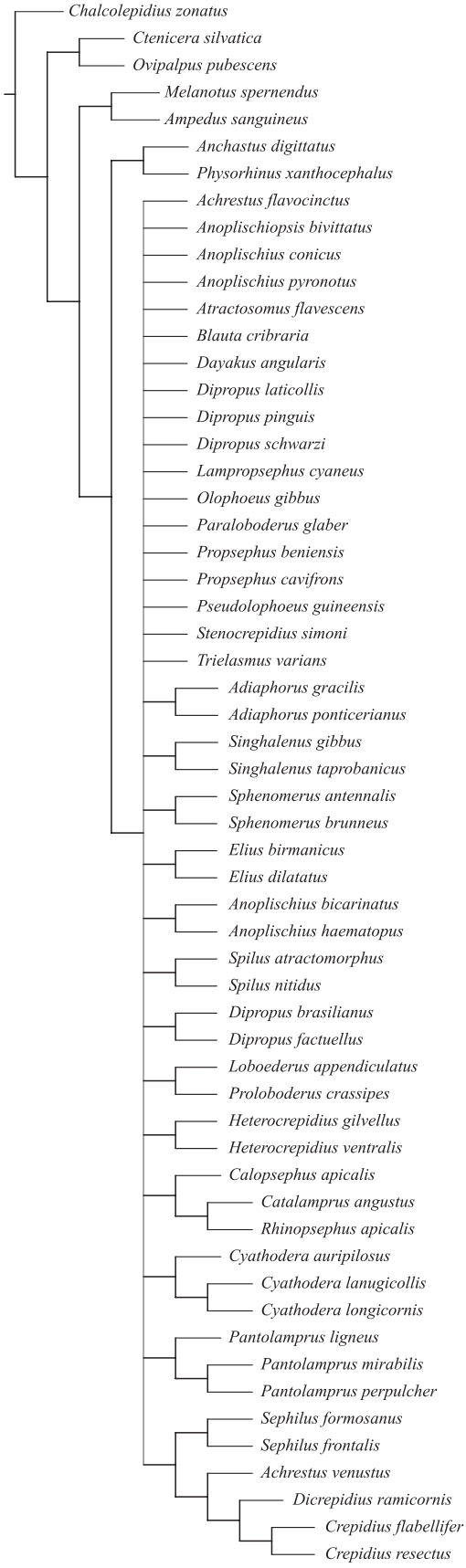


Fig. 1. Consensus tree of 11 equally most parsimonious trees (L 694, CI 28, RI 37). All characters were weighted equally.

Dicrepidiinae. They studied nine species and presented a generic discussion and the redescription of the type-species, *A. flavocinctus* (Candèze, 1859). They concluded that the genus is composed by two characteristic groups, separated specially by body and antennal shapes. In *A. antennalis*, *A. flavocinctus*, *A. marginatus*, *A. ruficollis*, *A. saucius*, *A. suturalis* e *A. trilineatus*, the antennae are serrate in both sexes and the elytra laterally parallel giving more robust appearance. In the remainder species, the antennae are flabellate in male and serrate in female and the elytra narrowed apicad, giving a slender appearance.

The genus is composed by 12 species: *Achrestus antennalis* Schwarz, 1902, *A. flavocinctus* (Candèze, 1859), *A. fulvovittatus* Champion, 1895, *A. lycidioides* (Candèze, 1859), *A marginatus* (Candèze, 1859), *A marginicollis* Fleutiaux, 1902, *A. phyllocerus* (Candèze, 1859), *A ruficollis* Fleutiaux, 1902, *A saucius* (Candèze, 1859), *A suturalis* Schwarz, 1902, *A trilineatus* Schwarz, 1902 and *A venustus* Champion, 1895. It is recorded from Central (Nicaragua, Costa Rica) and South America (Colombia, Venezuela, Guyana, French Guiana, Brazil, Peru and Bolivia).

The present cladistic analysis demonstrates that the studied *Achrestus* species do not form a monophyletic group. This result agrees with Costa & Casari-Chen (1990) that recognized two groups of species in this genus. A new genus was not established because the number of examined species is not sufficient to do it, considering the size of the genus. *Achrestus flavocinctus*, the type-species, is the sister-group of *Dayakus angularis*, and is characterized by homoplasies, 3(2) anterior margin of frons strongly prominent, 40(0) tibial spurs short and 68(1) apex of median lobe rounded. *Achrestus venustus* is the sister-group of ((*Dicrepidius ramicornis*)(*Crepidius*)) and is characterized by homoplasies, 0(0) frons wider than long, 9(4) antennae of female pectinate, 14(2) antennomere 3 as long as 4, 61(2) aedeagus narrow and long, 66(2) median lobe strongly longer than parameres and 72 (0) bursa copulatrix with spines.

Achrestus flavocinctus (Candèze, 1859)
(Figs. 3, 54, 101, 186, 187, 204, 273, 312, 331, 374, 375, 467, 496).

Anepsius flavocinctus Candèze, 1859: 157; 1891: 64 (cat.).
Achrestus flavocinctus; Schenkling, 1925: 99 (cat.); Blackwelder, 1944: 291; Costa & Casari, 1990: 304.

Length: 10.5-14.5 mm. General integument dark-brown and yellow; frons dark-brown with median anterior triangular yellow spot; prothorax yellow with a median large dark-brown spot, narrower on anterior half and two lateromedian spots reaching hypomera; meso-, metathorax, scutellum and elytra dark-brown; elytra with sutural short yellow band behind scutellum; legs clearer than general integument; coxae and trochanters yellow; antennae dark-brown or black. Pubescence moderately dense and long; yellowish on yellow integument and brownish on dark-brown. Frons carinate, wider than long, concave at middle near anterior margin in a triangular area; anterior margin prominent and surpassing nasal; punctuation small and dense. Nasal wider than long. Antennae (Fig. 3) with 11 antennomeres; in male 1.5 antennomere longer than hind angles of pronotum; slightly serrate in both sexes; scape shorter than eye; 2nd antennomere globular, 3rd triangular elongate, shorter than 4th, last narrowed at apex. Labrum (Fig. 54) semielliptical with long setae. Mandibles (Fig. 101) robust, with one apical and one subapical tooth; penicillus formed by short setae disposed in whole mesal area; molar area well developed; dorsal region with carina and moderadely long setae. Maxillae: galea with spatulate setae; last palpomere securiform. Labium: prementum with setae in front of palpi; postmentum with two long setae and several moderately short. Pronotum (Fig. 204) wider than long, narrowed anteriad; strongly convex; lateral margins carinate; anterior margin strongly notched; hind angles long, backwards, carinate; median basal tubercle indistinct; punctuation small and dense. Prosternal channel absent. Prosternal spine (Fig. 187) with narrowed apex and subapical lobe or not. Borders of mesosternal (Fig. 186) cavity raised at base and vertical. Metacoxal plate normal, moderately narrowed laterally; free margin straight or with small lobe. Tibial spurs small; tarsomeres 1-3 lamellate beneath. Scutellum elongate with posterior margin rounded. Elytra convex; striae punctuate and grooved; interstices equal and flat.

Male. Tergite 8 (Fig. 312) subtriangular with distal margin rounded; punctuate and marginate by setae; clothed with microtrichiae. Sternite 8 (Fig. 273) transverse, translucent with sclerotized transverse narrow band near base; anterior margin straight with rounded angles; setae concentrate near angles. Sternite 9: distal half gradually narrow to apex and setous. Tergite 9 (Fig. 331) strongly notched at middle; punctuate with setae concentrate near angles; tergite 10 longer than 9 with distal margin rounded; with lateral setae at distal half. Aedeagus (Figs. 374, 375) short and wide; basal piece as long as parameres; parameres fused ventrally; median lobe narrow, slightly longer than parameres; apex of parameres securiform with external margin rounded.

Female. Tergite 8 subtrapezoidal, densely setous. Sternite 8 (Fig. 467) subpentagonal with short setae longer at margins and more concentrate near middle; spiculum gastrale 2.84 times sternite length. Ovipositor with stylus; bursa copulatrix (Fig. 496) with 6 spiny areas, some disposed star-like.

Material examined. GUYANA. Ex-coll. Fleutiaux, 1 ex. (MNHN). FRENCH GUIANA. [Saint Laurent du] Maroni, ex-coll. Le Moult, 1 ex. (MNHN); Kourou, 1 ex. (MHNH). BRAZIL. Pará: Mocambo, 1 M (MZSP); P. Museu, 1 F (MZSP).

Achrestus venustus Champion, 1895
(Figs. 4, 102, 188, 205, 376, 377, 468).

Achrestus venustus Champion, 1895: 340; Fleutiaux, 1902**:** 114; Schenkling, 1925: 100 (cat.); Blackwelder, 1944: 291 (cat.).
Achrestus lamellicornis Schwarz, 1902: 140; Fleutiaux, 1907: 162**.**

Length: 10.0-13.5 mm. General integument black or dark-brown and yellow; frons black with median anterior triangular

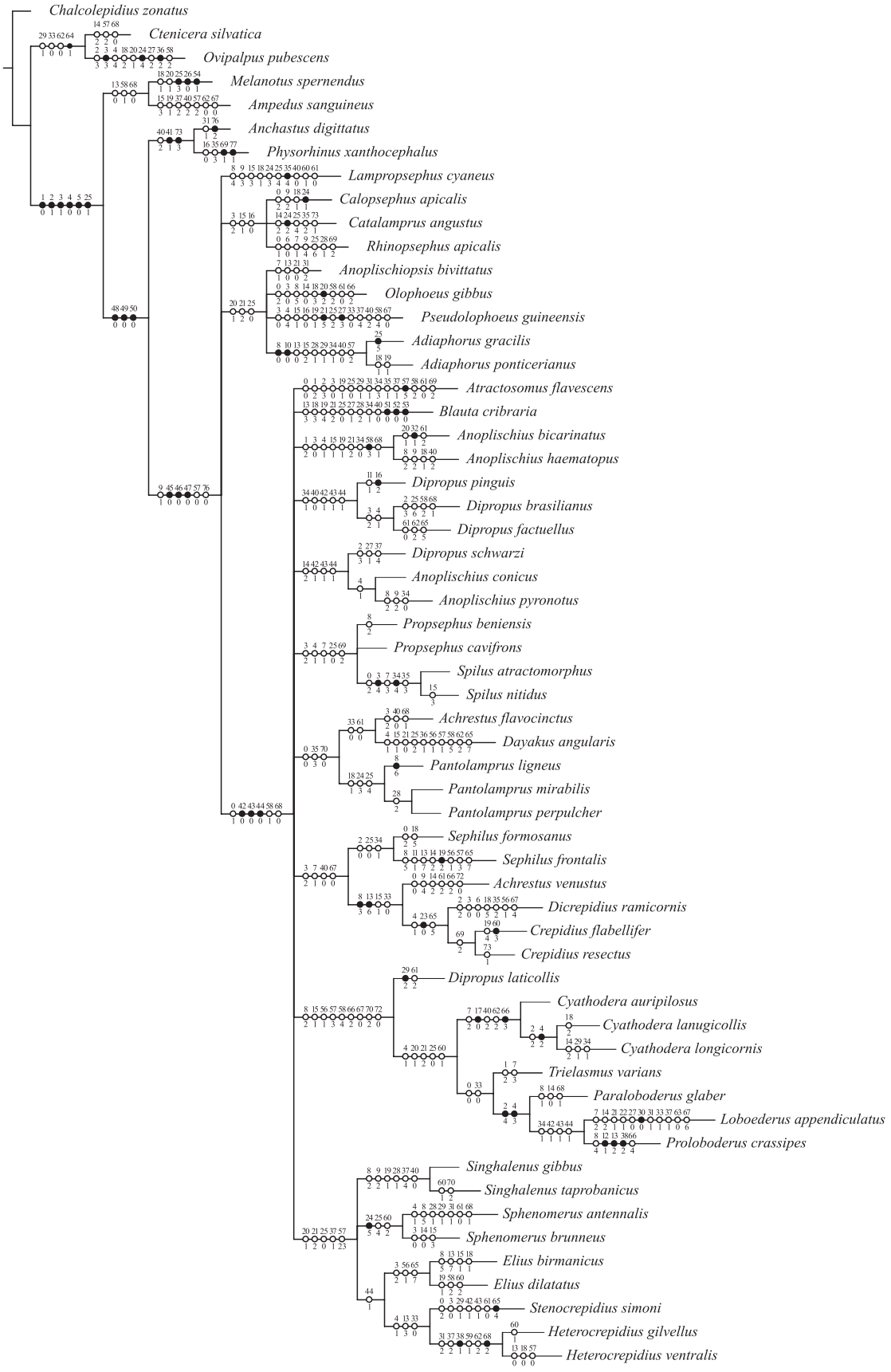


Fig. 2. Tree representing the common clades among five trees calculate with fits 5-50. (open circles = homoplasies; black circles = synapomorphies).

spot yellow; pronotum black with 3 narrow longitudinal yellow bands: one median and 2 lateral; hypomera dark-brown with margins yellow; prosternum yellow except prosternal spine dark-brown; elytra with a yellow spot each anterior angle and a transversal band near distal third; scutellum yellow bordered black; remainder areas including antennae dark-brown. Pubescence dense and long, accompanying integument color. Frons carinate, wider than long, wider frontally; concave medioanteriorly in a triangular area; anterior margin prominent and surpassing nasal; punctuation moderately coarse and dense. Nasal longer than wide. Antennae (Fig. 4) with 11 antennomeres; flabellate in male and pectinate in female; in male 3.5 antennomeres longer than hind angles of pronotum; scape shorter than eye; 2nd antennomere globular, 3rd with lateral appendix, as long as 4th, last with rounded apex. Labrum subrectangular with anterior angles rounded and long setae. Mandibles (Fig. 102) robust, with one apical and one subapical tooth; penicillus formed by short setae disposed in whole mesal area; molar area well developed; dorsal region with carina and moderadely long setae. Maxillae: galea with spatulate and spiniform setae; last palpomere securiform. Labium: prementum with setae in front of palpi; postmentum with two long setae and several moderately short. Pronotum (Fig. 205) wider than long, narrowed anteriad and at hind angles base; strongly convex; lateral margins incompletely carinate; anterior margin slightly notched; hind angles divergent and carinate; median basal tubercle flat; punctuation moderately coarse and very dense, sparser on yellow integument. Prosternal channel absent. Prosternal spine (Fig. 188) sharpened with subapical lobe. Borders of mesosternal cavity declivous. Metacoxal plate moderately narrowed laterally; free margin with small lobe. Tibial spurs small; tarsomeres 1-3 lamellate beneath. Scutellum elongate, narrowed apicad. Elytra convex; striae punctuate and grooved; interstices, flat, equal and punctuate.

Male. Tergite 8 elongate with distal margin rounded; punctuate and marginate by setae; clothed with microtrichiae. Sternite 8 transverse with anterior angles rounded; translucent in irregular area on basal half; setae concentrate on distal half. Sternite 9: distal half gradually narrow to apex and setous. Tergite 9 strongly notched at middle; punctuate with setae concentrate near angles; tergite 10 longer than 9 with distal margin rounded; with lateral setae at distal half. Aedeagus (Figs. 376, 377) long and narrow; basal piece longer than parameres; parameres fused ventrally; median lobe almost straight, constricted at apex, longer than parameres; apex of parameres securiform with external margin rounded.

Female. Tergite 8 elongate, slightly narrowed apicad, setous. Sternite 8 (Fig. 468) elongate, distal half gradually narrowed apicad; short specially on distal half; spiculum gastrale 5 times sternite length. Ovipositor with stylus; bursa copulatrix membranous, without spines.

Material examined. BRAZIL. Rondônia: Vilhena, 1 M, 1 F (DZUP). Amazonas: Benjamin Constant, 1 F (MZSP). Goiás. Jataí, 2 exs (MNHN). São Paulo: Castilho, margem esquerda do rio Paraná, 1 M (MZSP). Peru. Cumbase, ex-coll. Fleutiaux, 1 ex. (MNHN). Bolivia. Santa Cruz, 1 ex. (MNHN).

Adiaphorus Candèze, 1859

Adiaphorus Candèze, 1859: 9, 47; 1891: 57 (cat.); Schwarz, 1906: 60, 71; Schenkling, 1925: 83 (cat.).

Type-species: *Adiaphorus gracilicornis* Candèze, 1859, designated by Hyslop, 1921.

Candèze (1859) erected *Adiaphorus* to two species from East Indies and included it in "Dicrépidiites".

Candèze (1891) catalogued 3 species to this genus; Schenkling (1925) catalogued 6.

Schwarz (1906) included 6 species into the genus.

Fleutiaux (1942) described *A. malaisei*.

Vats & Chauhan (1992) described two new species from North India.

The genus is composed by 9 species: *Adiaphorus elevatus* Vats & Chauhan, 1992, *A. gracilicornis* Candèze, 1859, *A. gracilis* Schwarz, 1901, *A. levisus* Vats & Chauhan, 1992, *A. malaisei* Fleutiaux, 1942, *A. modestus* Candèze, 1892, *A. parallelus* Schwarz, 1901, *A. ponticerianus* Candèze, 1859(=*Elius rufus* Schwarz, 1902, =*Adiaphorus rufus* Schwarz, 1906) and *A. punctatus* Duviv., 1890. It is recorded from India and Sri Lanka.

The *Adiaphorus* species included in this analysis form a monophyletic group. It makes a polytomy with *Anoplischiopsis bivittatus*, *Olophoeus gibbus* and *Pseudolophoeus guineensis*. It is characterized by synapomorphies, 8(0) antennae of male filiform and 10(0) antennomeres cylindrical, and by homoplasies, 13(0) 3rd antennomere of male elongate, cylindrical, 15(2) antennae of male more than 4.5 antennomeres longer than hind angles of pronotum, 28(1) pronotum longer than wide, 29(1) hind angles of pronotum divergent, 34(1) prosternal spine with rounded apex, 40(0) tibial spurs short and 57(2) anterior margin of sternite 8 of male straight with prominent angles.

Adiaphorus gracilis Schwarz, 1901
(Figs. 5, 55, 103, 332, 378, 379).

Adiaphorus gracilis Schwarz, 1901: 22; Schenkling, 1925: 83 (cat.).

Length: 7.5-9.0 mm. General integument brown; elytra brownish-yellow with lateral band brown, 4 interstices wide; legs clearer than general integument. Pubescence yellowish, moderately long and dense. Frons carinate, wider than long, convex; anterior margin wide, surpassing nasal; punctuation small and dense. Nasal wider than long. Antennae (Fig. 5) with 11 antennomeres; in male 5.2 antennomeres longer than hind angles of pronotum; filiform, cylindrical; scape shorter than eye; 2nd antennomere globular, 3rd elongate, shorter than 4th, last with rounded apex. Labrum (Fig. 55) semielliptical with long setae. Mandibles (Fig. 103) narrow, with one apical and one small subapical tooth; penicillus formed by short setae disposed in whole mesal area; dorsal region with carina and moderadely long setae. Maxillae: galea with simple setae; last palpomere slightly widened apicad. Labium: prementum with

setae in front of palpi disposed in 2 inclined rows; postmentum with 2 long and several moderately short setae. Pronotum strongly longer than wide, almost subrectangular; strongly convex; anterior margin almost straight; lateral carina not visible dorsally; hind angles divergent and carinate; median basal tubercle flat; punctuation small and dense. Prosternal channel short. Prosternal spine with rounded apex. Borders of mesosternal cavity declivous. Metacoxal plate strongly narrowed laterally; free margin with small lobe. Tibial spurs small; tarsomeres 2-3 lamellate beneath. Scutellum elongate, triangular. Elytra convex; striae coarsely punctuate; interstices equal and slightly convex.

Male. Tergite 8 elongate with distal margin rounded; punctuate and marginate by setae; clothed with microtrichiae. Sternite 8 transverse with anterior angles prominent; translucent except narrow lateral band yellow. Sternite 9: distal half gradually narrow to apex and setous. Tergite 9 (Fig. 332) strongly notched at middle (V-shaped); sparsely punctuate with moderately long setae concentrate near angles; tergite 10 shorter than 9 with setae near apex. Aedeagus (Figs. 378, 379): basal piece shorter than parameres; parameres fused ventrally; median lobe narrow, gradually narrowed apicad, apex rounded, slightly longer than parameres; apex of parameres cuneiform, notched at base.

Material examined. SRI LANKA. (Ceylon) Kandy 2 exs (MNHN)

Adiaphorus ponticerianus Candèze, 1859
(Figs. 56, 104, 206, 274, 333, 380, 381).

Adiaphorus ponticeranus Candèze, 1859: 48; 1891: 57 (cat.); Schenkling, 1925: 83 (cat.).
Elius rufus Schwarz, 1902: 223.
Adiaphorus rufus; Schwarz, 1906: 72.

Length: 10.5-11.0 mm. General integument yellowish-brown; antennae sometimes darker and legs clearer than general integument. Pubescence yellowish, thin, moderately long and dense. Frons carinate, longer than wide, convex; anterior margin wide, surpassing nasal; punctuation small and dense. Nasal wider than long. Antennae with 11 antennomeres; in male 5.5 antennomeres longer than hind angles of pronotum; filiform, cylindrical; scape shorter than eye; 2nd antennomere globular, 3rd elongate, shorter than 4th, last with rounded apex. Labrum (Fig. 56) semicircular, notched at middle, with long setae. Mandibles (Fig. 104) narrow, with one apical and one small subapical tooth; penicillus formed by short setae disposed in whole mesal area; dorsal region with carina and moderadely long setae. Maxillae: galea with simples etae; last palpomere slightly widened at apex. Labium: prementum with setae in front of palpi disposed in 2 transverse rows; postmentum with 2 long and several moderately short setae. Pronotum (Fig. 206) strongly longer than wide, almost subrectangular; strongly convex; anterior margin almost straight; lateral carina not visible dorsally; hind angles strongly divergent and carinate; median basal tubercle flat; punctuation small and dense. Prosternal channel short. Prosternal spine with rounded apex. Borders of mesosternal cavity declivous. Metacoxal plate strongly narrowed laterally; free margin with small lobe. Tibial spurs small; tarsomeres 2-3 lamellate beneath. Scutellum elongate, triangular. Elytra convex; striae coarsely punctuate; interstices equal and slightly convex.

Male. Tergite 8 elongate with distal margin rounded; punctuate and marginate by setae; clothed with microtrichiae. Sternite 8 (Fig. 274) transverse with anterior angles prominent; translucent except narrow lateral yellow band. Sternite 9: distal half gradually narrow to apex and setous. Tergite 9 (Fig. 333) strongly notched at middle; sparsely punctuate with moderately long setae concentrate near angles; tergite 10 shorter than 9 with some very short setae. Aedeagus (Figs. 380, 381): basal piece shorter than parameres; parameres fused ventrally; median lobe narrow, gradually narrowed apicad, slightly longer than parameres with rounded apex; apex of parameres cuneiform, notched at base.

Material examined. INDIA. Fraserpet [Kushalnagar], 2 exs (MNHN); Madura 3 exs (MNHN); Shembaganur 10 exs. (MNHN). Nilguiri Hills, 6 exs (MNHN). Locality not found: Indi ohury 1 (MNHN).

Anoplischiopsis Champion, 1895

Anoplischiopsis Champion, 1895: 301; Schwarz, 1906: 59, 69; Schenkling, 1925: 81 (cat.); Blackwelder, 1944: 298 (cat.).

Type-species: *Anoplischiopsis bivittatus* Champion, 1895, designated by Hyslop, 1921.

Champion (1895) erected *Anoplischiopsis* to 6 new species from Central America and also *Ischiodontus crocicollis* Candèze, 1859 from Colombia. He presented a key for Central-American species.

Schwarz (1906) included 7 species into the genus.

Schenkling (1925) and Blackwelder (1944) catalogued 8 species to *Anoplischiopsis* and did not include *Ischiodontus crocicollis*.

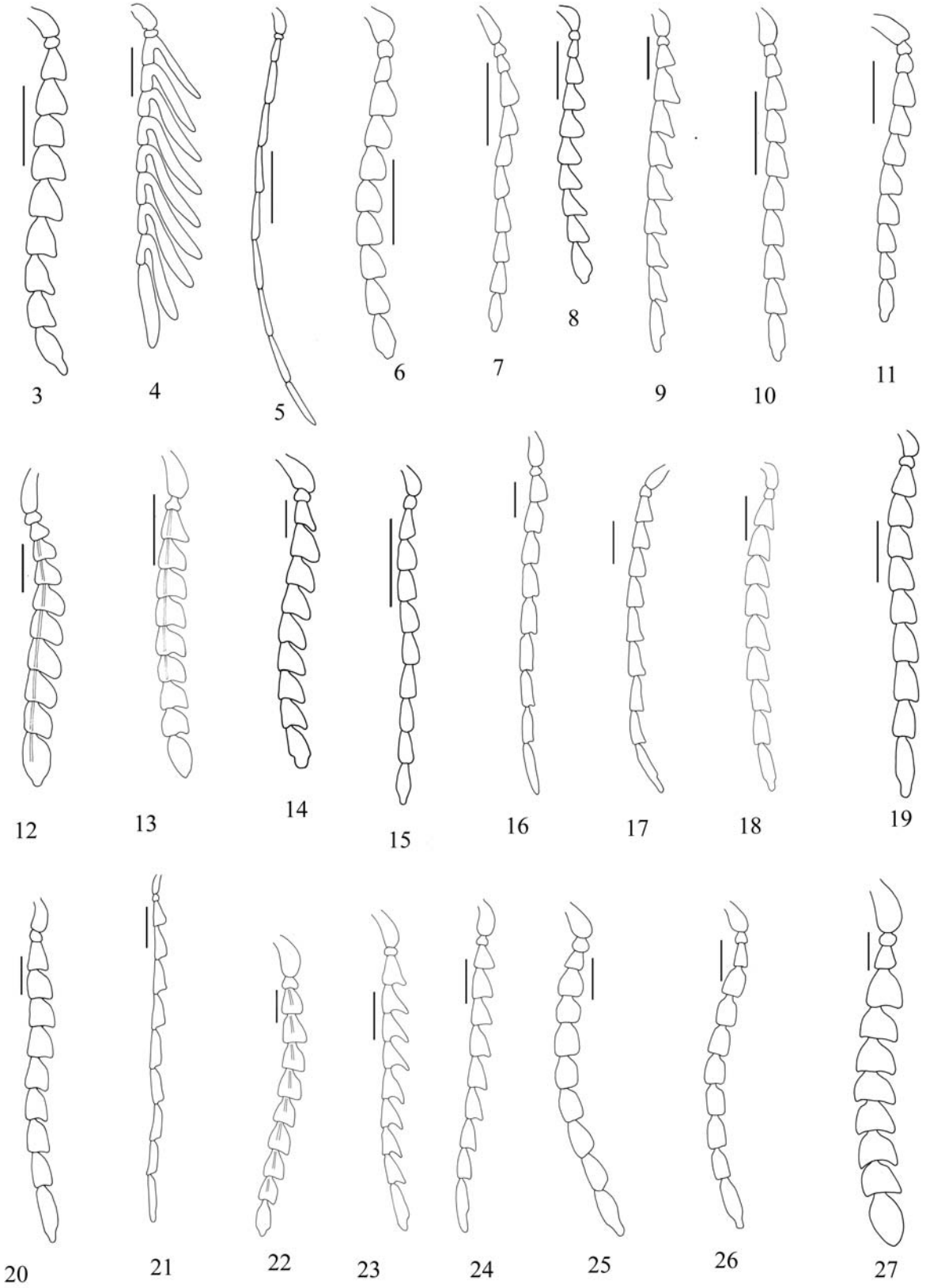
The genus *Anoplischiopsis* is composed by 9 species: *A. basimaculatus* Champion, 1895, *A. bivittatus* Champion, 1895, *A. crocicollis* (Candèze, 1859), A. *divisa* Schwarz, 1898, *A. flavovittatus* Champion, 1895, *A. fuscipennis* Champion, 1895, *A. lineatocollis* Champion, 1895, *A. luteus* Champion, 1895 and A. *trinotaus* Champion, 1896. It is recorded from North America (Mexico) and Central America (Nicaragua, Costa Rica, Panama).

Anoplischiopsis bivittatus forms a polytomy with *Olophoeus gibbus*, *Pseudolophoeus guineensis* and *Adiaphorus*. It is characterized especially by homoplasies, 7(1) nasal longer than wide, 13(0) antennomere 3 of male elongate, cylindrical, 21(0) mesal area of mandibles with one apical tooth and 31(2) carina of hind angles of pronotum weak.

Anoplischiopsis bivittatus Champion, 1895
(Figs. 8, 209).

Anoplischiopsis bivittatus Champion, 1895: 301; Schenkling, 1925: 81 (cat.)

Length: 6.8-7.3 mm. General integument brownish with legs,



Figs. 3-27. Antenna: 3, *Achrestus flavocinctus*; 4, *Achrestus venustus*; 5, *Adiaphorus gracilis*; 6, *Ampedus sanguineus*; 7, *Anchastus digittatus*; 8, *Anoplischiopsis bivittatus*; 9, *Anoplischius bicarinatus*; 10, *Atractosomus flavescens*; 11, *Blauta cribraria*; 12, *Calopsephus apicalis*; 13, *Catalamprus angustus*; 14, *Chalcolepidius zonatus*; 15, *Ctenicera silvatica*; 16, *Cyathodera lanugicollis*; 17, *Cyathodera longicornis*; 18, *Dayakus angularis*; 19, *Dipropus brasilianus*; 20, *Dipropus factuellus*; 21, *Dipropus laticollis*; 22, *Dipropus pinguis*; 23, *Elius birmanicus*; 24, *Elius dilatatus*; 25, *Heterocrepidius gilvellus*; 26, *Heterocrepidius ventralis*; 27, *Lampropsephus cyaneus*. Bars = 1 mm.

hind angles of pronotum and a longitudinal band on elytra yellowish; band of elytra 2.5 interstices wide and 2/3 of elytral length. Pubescence thin, long and dense, accompanying integument color. Frons carinate, wider than long; convex; anterior margin slightly rounded, not surpassing nasal; punctuation moderately coarse and dense. Nasal very narrow, much wider than long. Antennae (Fig. 8) with 11 antennomeres, strongly serrate; in male 2 antennomeres longer than hind angles of pronotum; scape shorter than eye; 2nd antennomere globular; 3rd cylindrical, elongate, shorter than 4th; last with narrowed apex. Labrum semielliptical with long setae. Mandibles with apical tooth. Last palpomere maxillar ovalar. Pronotum (Fig. 209) wider than long, narrowed anteriad; moderately convex on anterior 2/3, declivous on basal 1/3; lateral margins incompletely carinate; anterior margin notched; hind angles backwardly directed and weakly carinate; median basal tubercle flat, preceeded by carina; punctuation moderately coarse and dense on anterior half and small and sparser on basal half. Prosternal channel long. Prosternal spine with subapical lobe. Borders of mesosternal cavity narrow and declivous. Metacoxal plate moderately narrowed laterally; free margin with small lobe. Tibial spurs long; tarsomeres 2-3 lamellate beneath. Elytra moderately convex, slightly narrowed on distal half; striae coarsely punctuate and grooved; interstices slightly convex.

Material examined. COSTA RICA. Turrialba, ex-coll. Fleutiaux, 3 exs (MNHN). PANAMA. Chiriqui: Volcan de Chiriqui, 25-4000 ft, Champion, 1 ex. (ISNB); B.C.A. Col. III(1), 1 ex (MNHN).

Anoplischius Candèze, 1859

Anoplischius Candèze, 1859: 9, 45; 1891: 57 (cat.); Champion, 1895: 305; Schwarz, 1906: 59, 66; Fleutiaux, 1907: 174; Schenkling, 1925: 78 (cat.); Blackwelder, 1944: 297 (cat.).
Dipropus (*pars*) Germar, 1839: 215; Lacordaire, 1857: 172.
Heterocrepidius (*pars*) Lacordaire, 1857: 170.
Oxycleidius Eschscholtz, 1836: tab.

Type-species: *Anoplischius pallidipes* Candèze, 1859, designated by Hyslop, 1921.

Candèze (1859) erected *Anoplischius* to included 39 new species, one removed from *Cyathodera* and one from *Dicrepidius*, totalizing 41 species. He divided the genus in 4 sections according to the length and structures of antennae, and the shapes of prothorax and nasal plate.

Candèze (1891) considered *Dipropus* Germar (*pars*) as synonym of *Anoplischius*. He catalogued 54 American species except one, *A. laminatus* Candèze, 1859, from Ceylon. He separated the species in three groups based on: a) antennae shorter than half of body length; b) antennae very long and c) hind angles of pronotum straight or curved inward bearing strong carina.

Champion (1895) described 8 new species.

Schwarz (1906) included into the genus, 94 species divided in three groups and 3 species in the subgenus *Cyathodera*.

Fleutiaux (1907) recharacterized the genus and stated that it comprehends 90 species. He also decribed *Anoplischius candezei* based on one specimen named as "*Ovipalpus* (*Anoplischius*) *pubescens* Solier".

Hyslop (1921) designated *Anoplischius pallidipes* Candèze as the type species of the genus.

Schenkling (1925) catalogued 102 species to this genus including 3 of subgenus *Cyathodera*.

Blackwelder (1944) catalogued 101 species to genus.

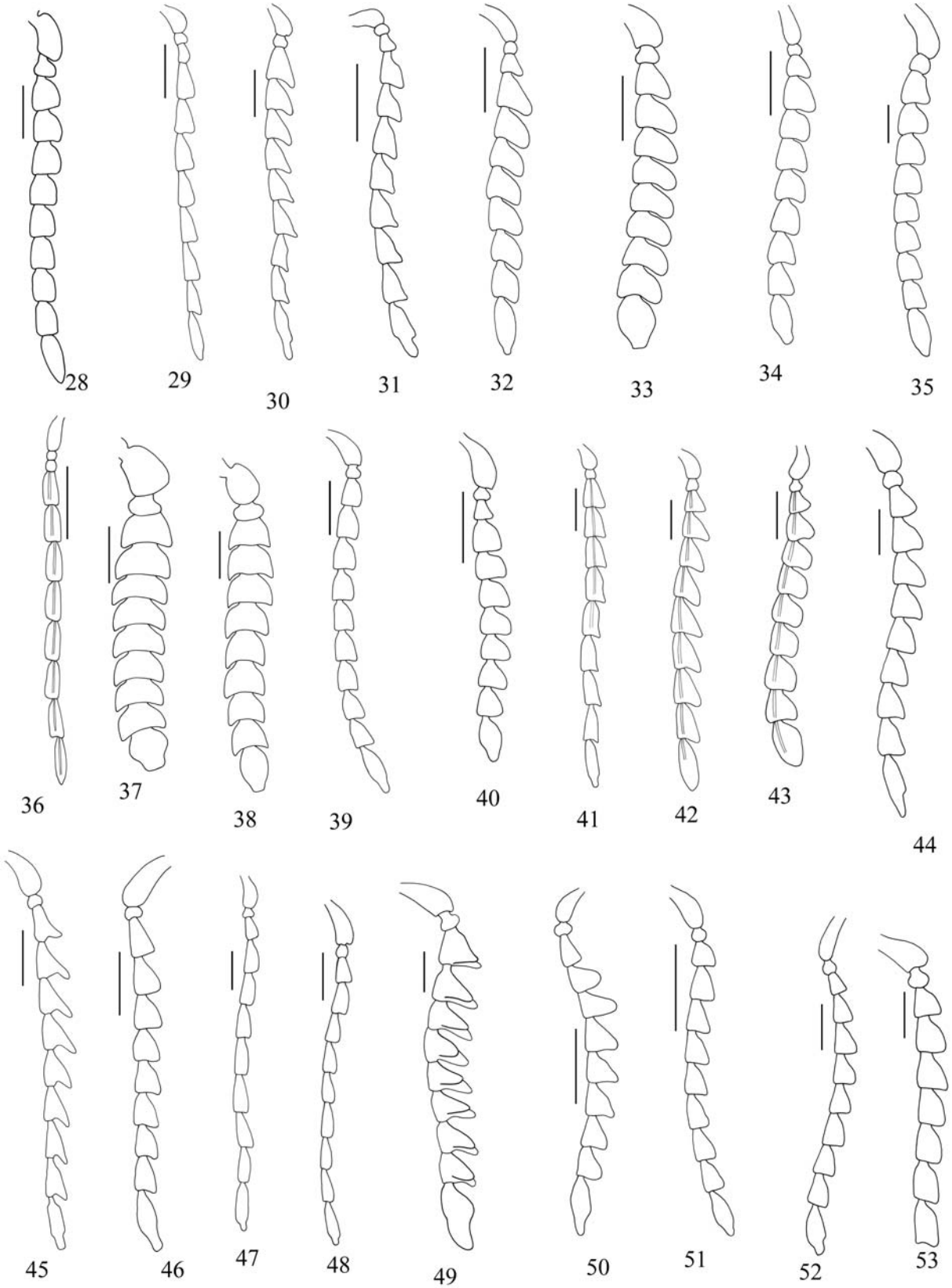
The genus *Anoplischius* is composed by about 110 species. It is recorded from North America (Mexico), Central America (Belize, Guatemala, Nicaragua, Panama), Antilles (Cuba, Hispaniola, Guadeloupe), South America (Colombia, Venezuela, Guyana, French Guiana, Brazil, Ecuador, Peru, Bolivia, Chile, Argentina).

The *Anoplischius* species included in this analysis do not form a monophyletic group. The group ((*A.bicarinatus*)(*A. haematopus*)) is characterized by sinapomorphy 58(3) distal margin of tergite 9 of male widely notched at middle and by homoplasies, 1(2) frontal carina incomplete, 3(0) anterior margin of frons at nasal level, 4(1) median anterior region of frons concave, 15(1) antennae of male 2.5-4.4 antennomeres longer than hind angles of pronotum, 19(1) anterior margin of labrum notched at middle, 21(2) mesal area of mandibles with one apical and one subapical tooth distant of apex, 34(0) prosternal spine with bilobed apex and 68(1) apex of median lobe rounded. It belongs to a polytomy formed by some genera and several groups of genera. The group ((*A. conicus*)(*A. pyronotus*)) is characterized by homoplasy, 4(1) median anterior region of frons concave. It is the sister-group of *Dipropus schwarzi* and also belongs to the anterior polytomy. The type-species of this genus was not studied and the species analysed are insufficient to establish a new genus.

Anoplischius bicarinatus Candèze, 1859
(Figs. 9, 59, 109, 190, 210, 335, 384, 385).

Anoplischius bicarinatus Candèze, 1859: 62; 1891: 58 (cat.); Schenkling, 1925: 78 (cat.); Blackwelder, 1944: 297 (cat.).

Length: 19-22 mm. General integument reddish-brown with antennae and legs clearer. Pubescence yellowish, very long, thin and moderately dense. Frons incompletely carinate, wider than long, concave medioanteriorly; anterior margin not prominent; punctuation moderately coarse and dense. Nasal wider than long. Antennae (Fig. 9) with 11 antennomeres; in male 3 antennomeres longer than hind angles of pronotum; serrate; scape shorter than eye; 2nd antennomere globular, 3rd triangular, shorter than 4th, last narrowed at apex. Labrum (Fig. 59) semielliptical, notched at middle, with long setae. Mandibles (Fig. 109) narrow with one apical and one subapical tooth; penicillus formed by short setae disposed in whole mesal area; molar area well developed; dorsal region with carina and moderadely long setae. Maxillae: galea with spatulate setae; last palpomere securiform. Labium: prementum with setae in front of palpi; postmentum with two long setae and many moderately short. Pronotum (Fig. 210) wider than long, strongly convex frontally; convexity decreasing basad; lateral margins carinate; anterior margin slightly prominent at middle;



Figs. 28-53. Antenna: 28, *Loboederus appendiculatus*; 29, *Melanotus spernendus*; 30, *Olophoeus gibbus*; 31, *Ovipalpus pubescens*; 32, *Pantolamprus ligneus*; 33, *Pantolamprus mirabilis*; 34, *Pantolamprus perpulcher*; 35, *Paraloboderus glaber*; 36, *Physorhinus xanthocephalus*; 37, 38, *Prolobodorus crassipes* (F, M); 39, *Propsephus beniensis*; 40, *Propsephus cavifrons*; 41, *Pseudolophoeus guineensis*; 42, 43, *Rhinopsephus apicalis* (M, F); 44, *Sephilus formosanus*; 45, 46, *Sephilus frontalis* (M, F); 47, *Singhalenus gibbus*; 48, *Singhalenus taprobanicus*; 49, *Sphenomerus antennalis*; 50, *Sphenomerus brunneus*; 51, *Spilus atractomorphus*; 52, *Spilus nitidus*; 53, *Trielasmus varians*. Bars = 1 mm.

hind angles backwardly directed, bicarinate; median basal tubercle indistinct; punctuation coarse and dense. Prosternal channel long. Prosternal spine (Fig. 190) with bilobed apex. Borders of mesosternal cavity narrow and declivous. Metacoxal plate strongly narrowed laterally; free margin straight. Tibial spurs long; tarsomeres 1-3 lamellate beneath. Scutellum elongate, narrowed apicad; distal margin rounded. Elytra convex, slightly narrowed at apex; striae grooved at base, marked by weak punctuation; interstices convex at base and near apex; remainder area flat.

Male. Tergite 8 elongate, subtriangular, with short setae on distal half; clothed with microtrichiae. Sternite 8 translucent, slightly sclerotized laterally and in a small transverse median basal area; anterior margin straight and anterior angles rounded; setae more concentrate near angles. Sternite 9: distal half slightly narrowed apicad; short setae on distal half. Tergite 9 (Fig. 335) widely notched at middle; setae moderately long laterally, near angles; tergite 10 wide, longer than 9, with setae near margins. Aedeagus (Figs. 384, 385): short and wide; basal piece shorter than parameres; parameres fused ventrally; median lobe narrowed apicad.

Material examined. BRAZIL. Goiás: Campinas, 2 exs (MZSP); Vianópolis, 1 ex. (MZSP). São Paulo: São Paulo (Ipiranga), 1 ex. (MZSP); St. Paul; coll. Chevrolat; bicarinatus Cand. Type; *Anoplischius bicarinatus* Cand. Type Fleutiaux (MNHN).

Anoplischius conicus Candèze, 1900

Anoplischius conicus Candèze, 1900: 8; Schenkling, 1925: 78 (cat.); Blackwelder, 1944: 297 (cat.).

Length: 10.5-12.0 mm. General integument bright, dark-brown and yellowish: head dark-brown, prothorax and legs yellow; antennae brownish; anterior half of elytra yellow; remainder areas dark-brown. Pubescence long, yellow and moderately dense. Frons carinate, longer than wide; slightly grooved longitudinal medially and near anterior margin; anterior margin rounded, surpassing nasal; punctuation moderately coarse and sparse. Nasal wider than long. Antennae with 11 antennomeres; in male very long, 5.25 antennomeres longer than hind angles of pronotum; serrate in both sexes; scape shorter than eye; 2nd antennomere globular; 3rd triangular, as long as 4th; last with narrowed apex. Labrum semicircular with long setae. Maxillae: last palpomere securiform. Pronotum wider than long, narrowed anteriorly and at hind angles base; slightly convex; lateral margins incompletely carinate; anterior margin U-shaped; hind angles backwardly directed and carinate; median basal tubercle flat; punctuation small and sparse. Prosternal channel present. Prosternal spine with subapical lobe. Borders of mesosternal cavity slightly declivous, almost horizontal. Metacoxal plate strongly narrowed laterally; free margin straight. Tibial spurs long; tarsomeres 2-3 lamellate beneath. Scutellum pentagonal with posterior margin rounded. Elytra gradually narrowed apicad; striae distinct only at base; interstices convex at base.

Material examined. BOLIVIA. Coroico, ex-coll. Fleutiaux, 1 ex. (MNHN); S. Antonia, ex-coll. Fleutiaux, 1 ex. (MNHN).

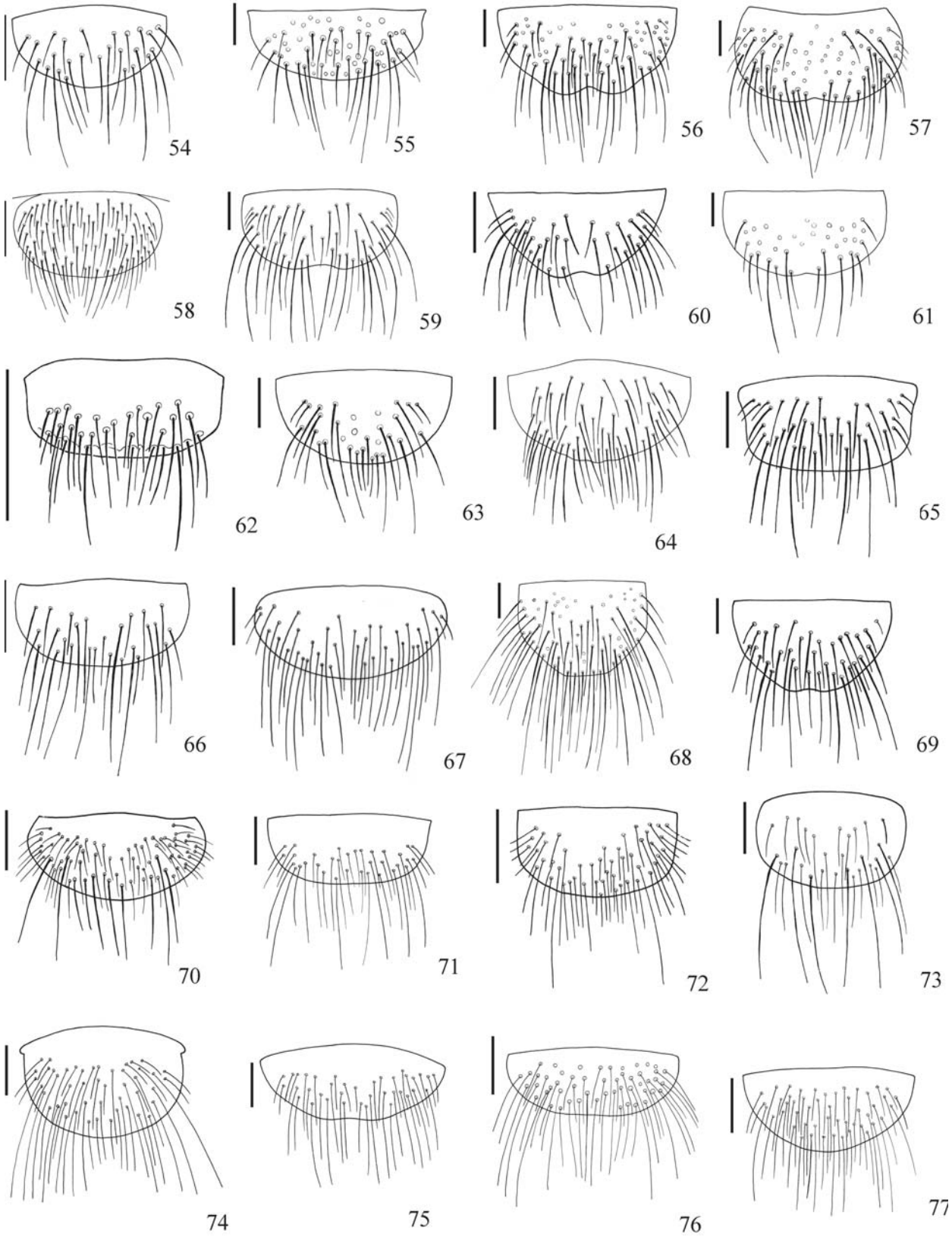
Anoplischius haematopus Candèze, 1859
(Figs. 60, 110, 211, 276, 313, 336, 386, 387).

Anoplischius haematopus Candèze, 1859: 64; 1891: 58 (cat.); Heyne & Taschenberg, 1908: 156; Schenkling, 1925: 79 (cat.); Blackwelder, 1944: 298 (cat.).

Length: 23-30 mm. General integument reddish dark-brown; legs and antennae clearer. Pubescence yellowish, long and moderately long. Frons incompletely carinate, as long as wide, slightly concave medioanteriorly; anterior margin not prominent; punctuation moderately coarse and dense. Nasal wider than long. Antennae with 11 antennomeres; in male 3 antennomeres longer than hind angles of pronotum; subserrate in both sexes; scape shorter than eye; 2nd antennomere globular, 3rd triangular elongate, shorter than 4th, last narrowed at apex. Labrum (Fig. 60) semicircular; anterior margin excavate at middle; with long setae. Mandibles (Fig. 110) wide with one apical and one subapical rounded tooth; penicillus formed by short setae disposed in whole mesal area; molar area well developed; dorsal region with carina and moderadely long setae. Maxillae: galea with spatulate setae; last palpomere securiform. Labium: prementum with setae in front of palpi; postmentum with two long setae and many moderately short. Pronotum (Fig. 211) wider than long, strongly convex frontally; convexity decreasing basad; lateral margins carinate; anterior margin slightly prominent at middle; hind angles backwardly directed with weak carina; median basal tubercle indistinct; punctuation moderately coarse, dense and heterogeneous. Prosternal channel long. Prosternal spine with apex bilobed. Borders of mesosternal cavity narrow and declivous. Metacoxal plate strongly narrowed laterally; free margin straight. Tibial spurs very long; tarsomeres 1-3 lamellate beneath. Scutellum subpentagonal elongate. Elytra convex, gradually narrowed to apex with sutural spine; striae marked by punctuation; interstices slightly convex.

Male. Tergite 8 (Fig. 313) elongate, narrowed to apex; with short setae on distal half; clothed with microtrichiae. Sternite 8 (Fig. 276) transverse with anterior angles rounded; translucent with a transverse basal sclerite and irregular darker lateral bands; setae more concentrate near lateral margins. Sternite 9: distal half gradually narrowed to apex; setous on distal half. Tergite 9 (Fig. 336) widely notched at middle; moderately long setae laterally near angles; tergite 10 longer than 9, wide with setae near margins. Aedeagus (Figs. 386, 387) narrow; basal piece shorter than parameres; parameres fused ventrally; median lobe narrow, slightly longer than parameres, narrowed to apex; apex of parameres securiform.

Material examined. BRAZIL. Goiás: Vianópolis, 1 ex. (MZSP). São Paulo: São Paulo, 1 ex. (MZSP); (Ipiranga), 1 ex. (MZSP). Without locality: 2 exs. (MZSP).



Figs. 54-77. Labrum: 54, *Achrestus flavocinctus*; 55, *Adiaphorus gracilis*; 56, *Adiaphorus ponticerianus*; 57, *Ampedus sanguineus*; 58, *Anchastus digittatus*; 59, *Anoplischius bicarinatus*; 60, *Anoplischius haematopus*; 61, *Atractosomus flavescens*; 62, *Blauta cribraria*; 63, *Calopsephus apicalis*; 64, *Catalamprus angustus*; 65, *Crepidius flabellifer*; 66, *Crepidius resectus*; 67, *Ctenicera silvatica*; 68, *Cyathodera lanugicollis*; 69, *Cyathodera longicornis*; 70, *Dayakus angularis*; 71, *Dicrepidius ramicornis*; 72, *Dipropus brasilianus*; 73, *Dipropus laticollis*; 74, *Elius birmanicus*; 75, *Elius dilatatus*;76, *Heterocrepidius gilvellus*; 77, *Heterocrepidius ventralis*. Bars = 2 mm except fig. 62 = 5 mm.

Anoplischius pyronotus Candèze, 1859

Anoplischius pyronotus Candèze, 1859: 71; 1891: 58 (cat.); Schenkling, 1925: 80 (cat.); Blackwelder, 1944: 298 (cat.).

Length: 8-9 mm. General integument brown with prothorax yellow. Pubescence yellowish and moderately long and dense. Frons carinate, longer than wide, concave at middle near anterior margin; anterior margin rounded and prominent, surpassing nasal; punctuation coarse and dense. Nasal wider than long. Antennae with 11 antennomeres; in male 4.5 antennomeres longer than pronotum; subserrate in both sexes; scape shorter than eye; 2nd antennomere globular; 3rd triangular as long as 4th. Labrum semicircular with long setae. Maxillae: last palpomere securiform. Pronotum wider than long, gradually narrowed anteriad; lateral margins carinate; anterior margin almost straight; hind angles backwardly directed and carinate; median basal tubercle flat; punctuation moderately coarse and dense. Prosternal channel present. Prosternal spine with bilobed apex. Borders of mesosternal cavity declivous. Metacoxal plate strongly narrowed laterally; free margin with a tooth. Tibial spurs present, moderately long; tarsomeres 2-3 lamellate beneath. Scutellum elongate, triangular. Elytra convex, narrowed on distal 2/3; striae grooved and punctuate; interstices punctuate and flat.

Material examined. CUBA. Ex-coll. Fleutiaux, 1 ex. (MNHN). Without locality; ex-coll. Fleutiaux, 1 ex. (MNHN).

Asebis Candèze, 1894

Asebis Candèze, 1894: 487; Schwarz, 1906: 59, 73: Schenkling, 1925: 84 (cat.).

Type-species: *Asebis modiglianii* Candèze, 1894, by monotypy.

Candèze (1894) erected *Asebis* based on one specimen "aux bords du lac de Toba" (Sumatra). According to him this genus is near *Heterocrepidius*. It presents 3rd tarsomere lamellate and 4th very small. Based on tarsi it would be placed into the tribe "Physorhinites", but, the flat frontal shape and the metacoxal plates strongly narrowed and, at the end, the *fascies*, put it into the Indian "Dicrépidiites", despite of tarsi similar to *Anchastus* (Physorhinina).

The genus *Asebis*, monotypical, is recorded from Sumatra.

No specimen of *Asebis* was examined but, as already observed by Candèze, the presence of tarsomere 3 lamellate indicates that this genus belongs to Physorhinina.

Atractosomus Lacordaire, 1857

Atractosomus Lacordaire, 1857: 167, 173; Candèze, 1859: 10, 132; Champion, 1895: 297; Schwarz, 1906: 59, 75; Schenkling, 1925: 86 (cat.); Blackwelder, 1944: 299 (cat.).
Atractodes Germar, 1839: 219 (preocc.); Candèze, 1891: 63 (cat.).

Type-species: *Atractodes flavescens* Germar, 1839, designated by Hyslop, 1921.

Lacordaire (1857) presented a new name to *Atractodes* Germar, 1839 that was preoccupied in Hymenoptera. He also redescribed the genus and stated about the horizontal shape of mesosternum and the prosternal spine straight, characteristics of the genus. The genus was formed only by *A. flavescens* (Germar, 1839).

Candèze (1859) redescribed the genus, described 14 new species, presented a key for 15 species and divided it in two sections according to the length of third antennal segment. According to him, Germar (1839) included several species with mesosternum not horizontal, which form the second division. The genus formed by Lacordaire (1857) excludes all species with mesostenum declivous and not corresponds exactly to characters from Germar (*l.c.*). At the footnote, he stated that some species present a median small tooth at border of hind coxa, but he did not give many importance to this character as he gave in other genera, because *Atractosomus* is well defined by mesosternal shape.

Candèze (1891) considered *Atractosomus* as synonym of *Atractodes*. He catalogued 19 species to this genus, separated into two groups according to 3rd antennomere length.

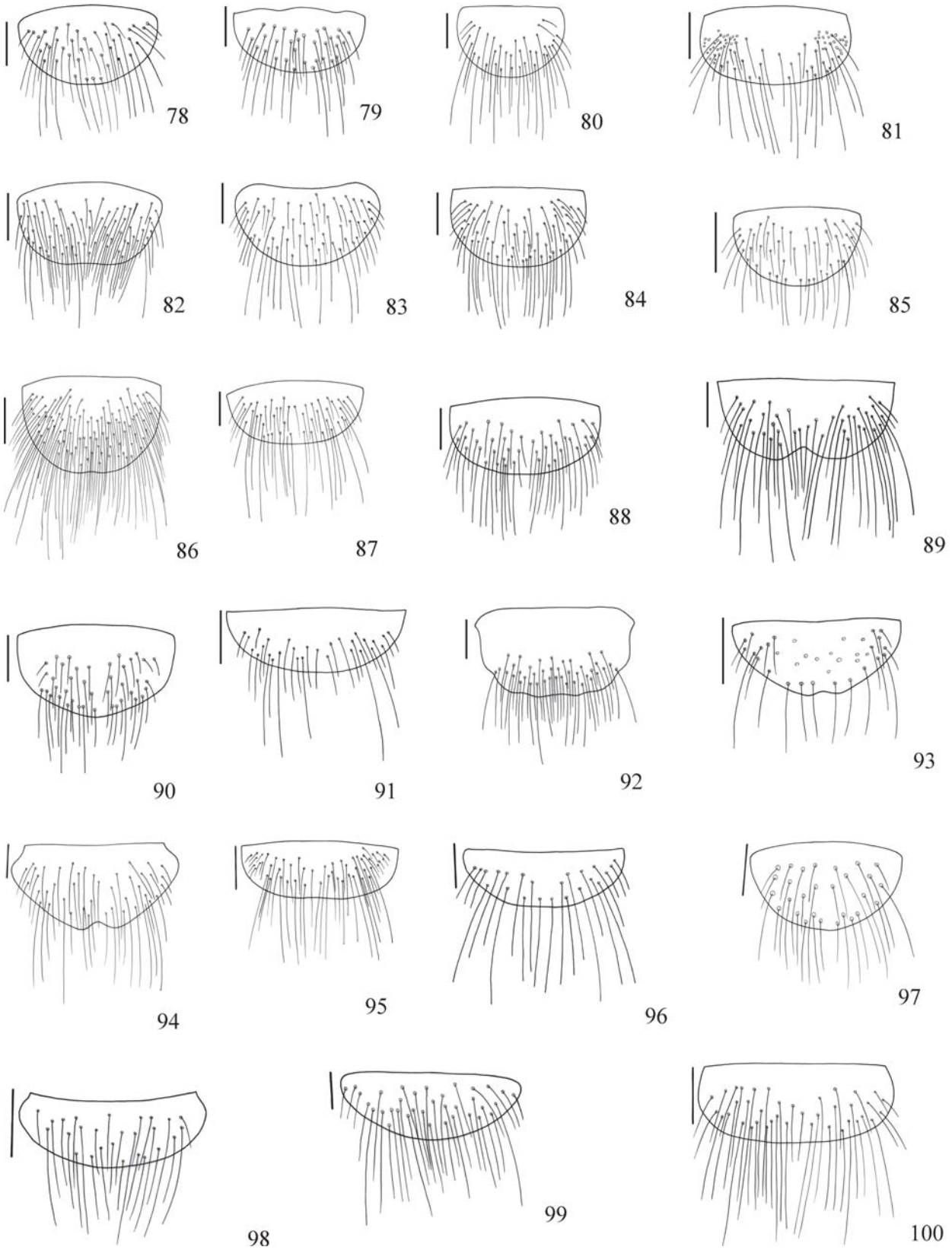
Champion (1895) described 4 species, *A. cribricollis*, *A. curticollis*, *A. fusiformis*, and *A. mucronatus*, from Central America. According to him the genus was composed by 21 species, from tropical America.

Schwarz (1906) included 31 species into the genus.

Schenkling (1925) and Blackwelder (1944) catalogued 31 species to this genus.

The genus *Atractosomus* is formed by 31 species: *A. angustus* Schwarz, 1904, *A. arcuatus* Candèze, 1859 (=*Atractodes arcuatus* Candèze, 1891), *A. atricornis* (Erichson, 1848), *A auricomus* Candèze, 1859, *A. carinatus* Candèze, 1859, *A. castaneus* Candèze, 1896, *A. cayennensis* Candèze, 1859, *A. colombicus* Fleutiaux, 1891, *A. conicicollis* Candèze, 1859, *A. corax* Candèze, 1859 (= *Atractodes corax* Candèze, 1891), *A. cratonychoides* Candèze, 1859, *A. cribricollis* Champion, 1895, *A. curticollis* Champion, 1895, *A. dimidiatus* Lucas, 1859, *A. ferrugineus* Candèze, 1859, *A. flavescens* (Germar, 1839), *A. flavipes* (Candèze, 1878), *A. fusiformis* Champion, 1895, *A. illinitus* (Candèze, 1893), *A. infumatus* Candèze, 1859, *A. luteipennis* (Candèze, 1878), *A. mucronatus* Champion, 1895, *A. nigerrimus* Schwarz, 1900, *A. oertzeni* Schwarz, 1902, *A. pedestris* Schwarz, 1904, *A. plebejus* Candèze, 1859, *A. rhomboidalis* Candèze, 1859, *A. robustus* Candèze, 1859, *A. rubidus* Candèze, 1859, *A. tabularius* Candèze, 1859, *A. testaceipennis* Schwarz, 1904. It is recorded from North America (Mexico), Central America (Guatemala, Nicaragua, Panama), South America (Colombia, Venezuela, Guyana, French Guiana, Brazil, Ecuador).

Atractosomus flavescens is characterized by synapomorphy, 57(5) anterior margin of sternite 8 of male prominent at middle, and by homoplasies, 0(0) frons wider than long, 1(2) frontal carina incomplete, 2(3) anterior margin of frons straight, 3(0) anterior margin of frons at nasal level, 19(1) anterior margin of labrum notched at middle, 25(0) setae



Figs. 78-100. Labrum: 78, *Lampropsephus cyaneus*; 79, *Loboederus appendiculatus*; 80, *Melanotus spernendus*; 81, *Olophoeus gibbus*; 82, *Ovipalpus pubescens*; 83, *Pantolamprus mirabilis*; 84, *Pantolamprus perpulcher*; 85, *Physorhinus xanthocephalus*; 86, *Prolobodorus crassipes*; 87, *Propsephus beniensis*; 88, *Propsephus cavifrons*; 89, *Pseudolophoeus guineensis*; 90, *Rhinopsephus apicalis*; 91, *Sephilus formosanus*; 92, *Sephilus frontalis*; 93, *Singhalenus gibbus*; 94, *Singhalenus taprobanicus*; 95, *Sphenomerus antennalis*; 96, *Sphenomerus brunneus*; 97, *Spilus atractomorphus*; 98, *Spilus nitidus*; 99, *Stenocrepidius simoni*; 100, *Trielasmus varians*. Bars = 2 mm.

of galea simple, 29(1) hind angles of pronotum divergent, 31(1) carina of hind angles of pronotum absent, 34(3) prosternal spine with apex widened with tooth, 35(1) borders of mesosternal cavity horizontal, 37(1) free margin of metacoxal plate with small lobe, 58(2) distal margin of tergite 9 of male moderately notched at middle, 61(0) aedeagus short and wide and 69(2) apex of sternite 8 of female widely rounded. It belongs to a monophyletic group formed by a large polytomy that includes some genera and several groups of genera.

Atractosomus flavescens (Germar, 1839)
(Figs. 10, 61, 191, 212, 277, 337, 388, 389, 470, 497-499).

Atractodes flavescens Germar, 1839: 219; Candèze, 1891: 63 (cat.).
Atractosomus flavescens; Candèze, 1859: 135; Schenkling, 1925: 86 (cat.); Blackwelder, 1944: 299 (cat.).

Length: 11.5-17.0 mm. General integument yellowish dorsally and brownish ventrally. Pubescence yellowish, moderately long and dense. Frons incompletely carinate, wider than long, slightly convex; punctuation moderately fine and dense. Nasal declivous, wider than long. Antennae (Fig. 10) with 11 antennomeres; in male 2 antennomeres longer than hind angles of pronotum; serrate in both sexes; scape shorter than eye; 2nd antennomere globular, 3rd triangular elongate, shorter than 4th; last narrowed at apex. Labrum (Fig. 61) semielliptical; anterior margin notched at middle; with long setae. Mandibles wide with one apical and one subapical tooth; penicillus formed by short setae disposed in whole mesal area; molar area well developed; dorsal region with carina and moderately long setae. Maxillae: galea with simple setae; last palpomere securiform. Labium: prementum with long setae in front of palpi; postmentum with two long setae and many moderately short. Pronotum (Fig. 212) wider than long, narrowed anteriad; flat; moderately convex anteriorly; lateral margins carinate; anterior slightly prominent at middle, almost straight; hind angles divergent and not carinate at middle; median basal tubercle indistinct; punctuation small and dense. Prosternal channel short. Prosternal spine (Fig. 191) widened apicad, with subapical tooth. Borders of mesosternal cavity raised and horizontal. Metacoxal plate normal, narrowed laterally; free margin with small lobe. Tibial spurs long; tarsomeres 1-3 lamellate beneath. Scutellum subtriangular and elongate. Elytra convex, narrowed on distal third; striae punctuated and grooved; interstices equal and flat.

Male. Tergite 8 wider than long, slightly narrowed to apex; anterior margin rounded; punctuate and setous laterally; clothed with microtrichiae. Sternite 8 (Fig. 277) translucent; anterior margin slightly prominent at middle; setae more concentrate near margins. Sternite 9: distal half gradually narrowed to apex; distal half punctuate and setous. Tergite 9 (Fig. 337) moderately notched at middle; punctuate with some setae near angles; tergite 10 longer than 9 with distal margin rounded; punctuate and setous on distal half. Aedeagus (Figs. 388, 389) short and wide; basal piece slightly shorter than parameres; parameres fused ventrally; median lobe slightly narrowed to apex, slightly longer than parameres, constricted at apex; apex of parameres securiform.

Female. Tergite 8 subtriangular, punctuated with setae near margins. Sternite 8 (Fig. 470) with anterior margin rounded; punctuated with row of marginal setae on distal half; spiculum gastrale 3.27 times sternite length. Ovipositor with stylus; bursa copulatrix (Figs. 497-499) with 6 spiny areas; some areas with spines disposed star-like.

Material examined. BRAZIL. Rio de Janeiro: Serra Macahé, 1 ex. (MZSP); Teresópolis, 1 ex. (MNHN). São Paulo: Alto da Serra, 2 exs. (MZSP); (Estação Biológica de Paranapiacaba), 1 ex. (MZSP); Cajuru, 1 ex.(MZSP); Campos do Jordão, 1 ex. (MZSP); Paranapiacaba, 1 ex. (MZSP); Salesópolis (Estação Biológica de Boracéia), 3 exs. (MZSP); São Paulo, 1 ex. (MZSP); (Ipiranga), 2 exs. (MZSP); (Jabaquara), 1 ex. (MZSP); Serra da Cantareira, 1 ex. (MZSP). Santa Catarina: Nova Teutônia, 3 exs. (MZSP); Rio Vermelho, 7 exs. (MZSP).

Blauta LeConte, 1853

Blauta LeConte, 1853: 472; Candèze, 1859: 416, 489; 1891: 94 (cat.); Schwarz, 1906: 110, 121; Schenkling, 1925: 163 (cat.); Brown, 1936: 251; Casari, 2005: 448.
Aphanobius Eschscholtz, 1829: 33.

Type-species: *Ampedus cribrarius* Germar, 1844, by monotypy.

Leconte (1853) erected the genus *Blauta* to include *B. cauta*. Candèze (1859) transferred *Ampedus cribarius* Germar, 1844 to *Blauta* and synonymized *B. cauta* LeConte, 1853 under *B. cribraria*.

Schenkling (1925) included *Blauta*, monotypical, in the subfamily Elaterinae.

Brown (1936) described *Blauta falli*.

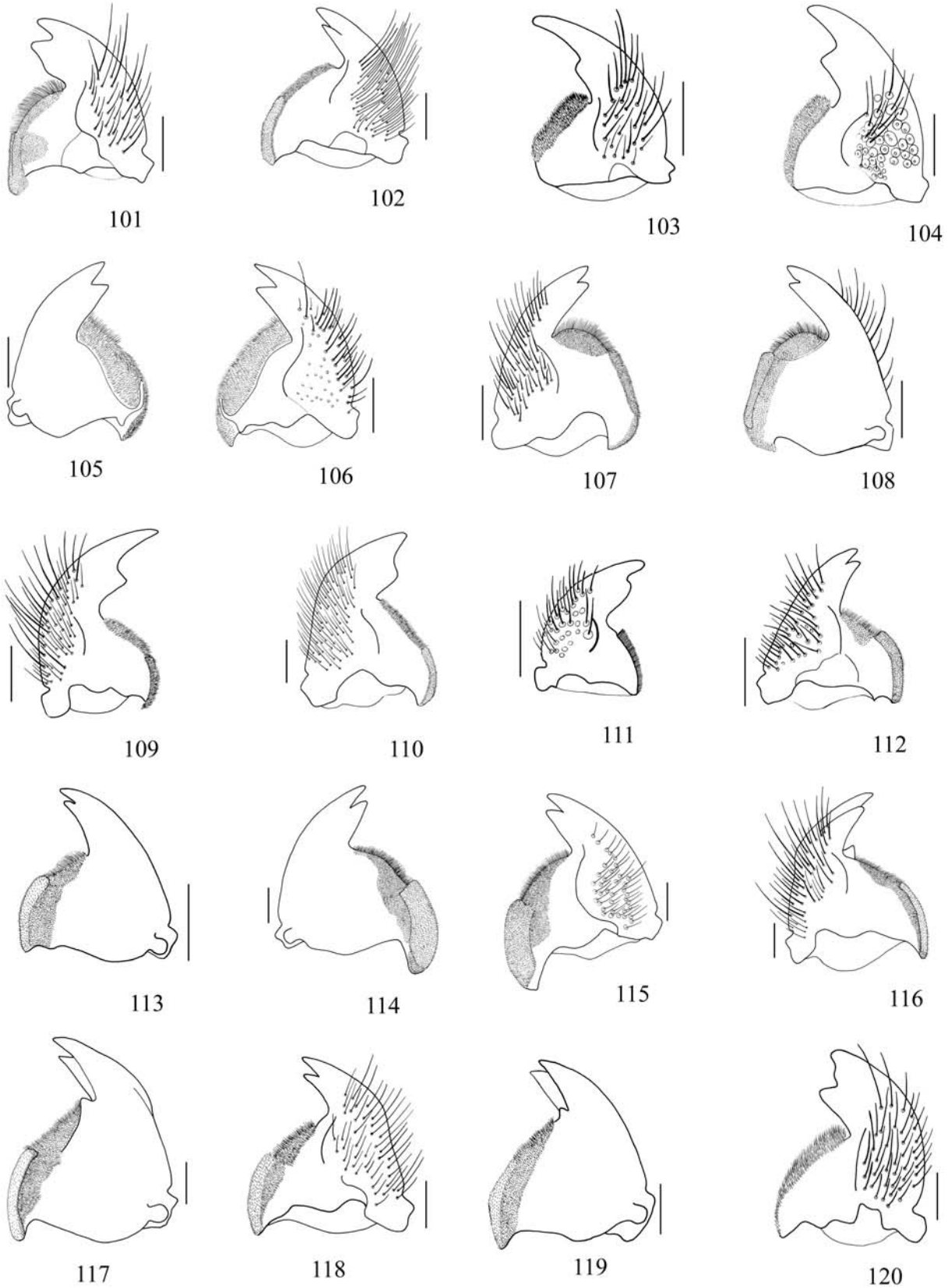
Stibick (1979) included the genus in Dicrepidiini. Casari (2005) presented a revision of the genus *Blauta*.

The genus *Blauta* is formed by 2 species: *B. cribaria* (Germar, 1844) and *B. falli* Brown, 1936. It is recorded from United States (North Carolina, Mississipi, Alabama, Georgia, South Carolina, Florida).

Blauta cribraria is characterized by synapomorphies, 51(0) lamella of protarsomere 4 present, 52(0) lamella of mesotarsomere 4 present and 53 (0) lamella of metatarsomere 4 present, and by homoplasies, 13(3) antennomere 3 of male elongate, short, 18(3) labrum subrectangular, 19(4) anterior margin of labrum straight, 21(2) mesal area of mandibles with one apical and one subapical tooth distant from apex, 25(0) setae of galea simple, 27(1) last palpomere slightly widened apicad, 28(2) pronotum as long as wide, 34(1) prosternal spine with rounded apex and 40(0) tibial spurs short. It belongs to a monophyletic group formed by a large polytomy that includes some genera and several groups of genera.

Blauta cribraria (Germar, 1844)
(Figs. 11, 62, 111, 161, 177, 254, 278, 314, 319, 338, 390, 391, 471, 500).

Ampedus cribarius Germar, 1844: 178.
Blauta cribraria; Candèze, 1859: 490; Schenkling, 1925: 163 (cat.); Casari 2005: 450.



Figs. 101-120. Mandible: 101, *Achrestus flavocinctus* (D); 102, *Achrestus venustus* (D); 103, *Adiaphorus gracilis* (D); 104, *Adiaphorus ponticerianus* (D); 105, 106, *Ampedus sanguineus* (V, D); 107, 108, *Anchastus digittatus* (D, V); 109, *Anoplischius bicarinatus* (D); 110, *Anoplischius haematopus* (D); 111, *Blauta cribraria* (D); 112, 113, *Calopsephus apicalis* (D, V); 114, 115, *Catalamprus angustus* (V, D); 116, 117, *Crepidius flabellifer* (D, V); 118, 119, *Crepidius resectus* (D, V); 120, *Ctenicera silvatica* (D). Bars = 2 mm.

Length: 9-16 mm. Frons carinate, longer than wide; anterior margin rounded and surpassing nasal; convex. Nasal wider than long. Antennae (Fig. 11) with 11 antennomeres; in male 2.2 antennomeres longer than hind angles of pronotum; serrate in both sexes; scape shorter than eye; 2nd antennomere globular, 3rd elongate, short, shorter than 4th; last narrowed at apex. Labrum (Fig. 62) subrectangular with fore angles rounded, with long setae. Mandibles (Fig. 111) robust with one apical and one subapical tooth; penicillus formed by short setae disposed in whole mesal area; dorsal region with carina and moderately long setae. Maxillae (Fig. 161): galea with simple setae; last palpomere slightly widened at apex. Labium (Fig. 177): prementum with long setae in front of palpi; postmentum with two long setae and many moderately short. Pronotum longer than wide, narrowed anteriad; strongly convex; lateral margins incompletely carinate; anterior margin almost straight; hind angles slightly divergent and carinate; median basal tubercle transverse and flattened; punctuation moderately coarse and dense. Prosternal channel present. Prosternal spine with apex rounded. Borders of mesosternal cavity narrow between mesocoxae and declivous. Metacoxal plate (Fig. 254) strongly narrowed laterally; free margin with tooth near middle. Tibial spurs present; tarsomeres 1-4 lamellate beneath.

Male. Tergite 8 (Fig. 314) wider than long, with distal margin rounded; translucent in a narrow basal area; partially clothed with moderately long setae; clothed with microtrichiae. Sternite 8 (Fig. 278) band-like with fore angles rounded; translucent except a narrow transverse basal sclerite and 3 rounded and irregular bands near distal margin; setae more concentrate near angles. Sternite 9 (Fig. 319): distal half gradually narrowed to apex and setous. Tergite 9 (Fig. 338) strongly notched at middle, V-shaped; punctuate with setae near lateral margins; tergite 10 slightly longer than 9, punctuate near base and setous on distal 2/3. Aedeagus (Figs. 390, 391): basal piece shorter than parameres; parameres fused ventrally; median lobe slightly longer than parameres,wider near base, with constricted apex; apex of parameres securiform.

Female. Sternite 8 (Fig. 471) elongate, narrowed at apex; setous; spiculum gastrale 3.25 times sternite length. Ovipositor with stylus; bursa copulatrix (Fig. 500) with 6 spiny areas; some areas with spines disposed star-like.

Material examined. UNITED STATES OF AMERICA. North Carolina: Moore Co., Southern Pines, 1 M (FSCA). South Carolina: Anderson and Pickens Cos., Clemson College, 1 M (MZSP). Mississipi: Forrest Co., Hattiesburg, 2 M (FSCA), Camp Shelby, nr. Hattiesburg, 1 M (MZSP). Alabama: Mobile Co., Mobile, 3 M, 1 F (FSCA). Georgia: Lowndes Co., 3 M (FSCA), 1 M (MZSP). Florida: Alachua Co., 1 M (FSCA), Gainesville, 3 M (FSCA), Pine Hills Estates, Gainesville, 1 M (FSCA); Columbia Co., Lake City, 1 M (FSCA); Escambia Co., Pensacola, 1 M, 1 F (FSCA); Indian River Co., 1 M (FSCA); Leon Co., Tall Timbers, 1 M (FSCA); Marion Co., Ocala, 1 F (FSCA); Osceola Co., 1 M (FSCA); Putman Co., Weems Property, Red Water Lake, 1 M (FSCA).

Calopsephus Basilewsky, 1958

Calopsephus Basilewsky, 1958: 472; Girard, 2003a: 461.

Type-species: *Psephus apicalis* Schwarz, 1903, by monotypy.

Basilewsky (1958) erected *Calopsephus* to *Rhinopsephus apicalis* (Schwarz, 1903). He also considered *Ischiodontus melanoxanthoides* Fleutiaux, 1906 as synonym of *C. apicalis*.

Cobos (1970) recorded *C. apicalis* from Republic of Congo [Congo-Brazzaville].

Girard (2003a) commented the presence of antennomeres with smooth longitudinal carina and strong sexual dimorfism in this genus. He recorded *C. apicalis* to Nimba.

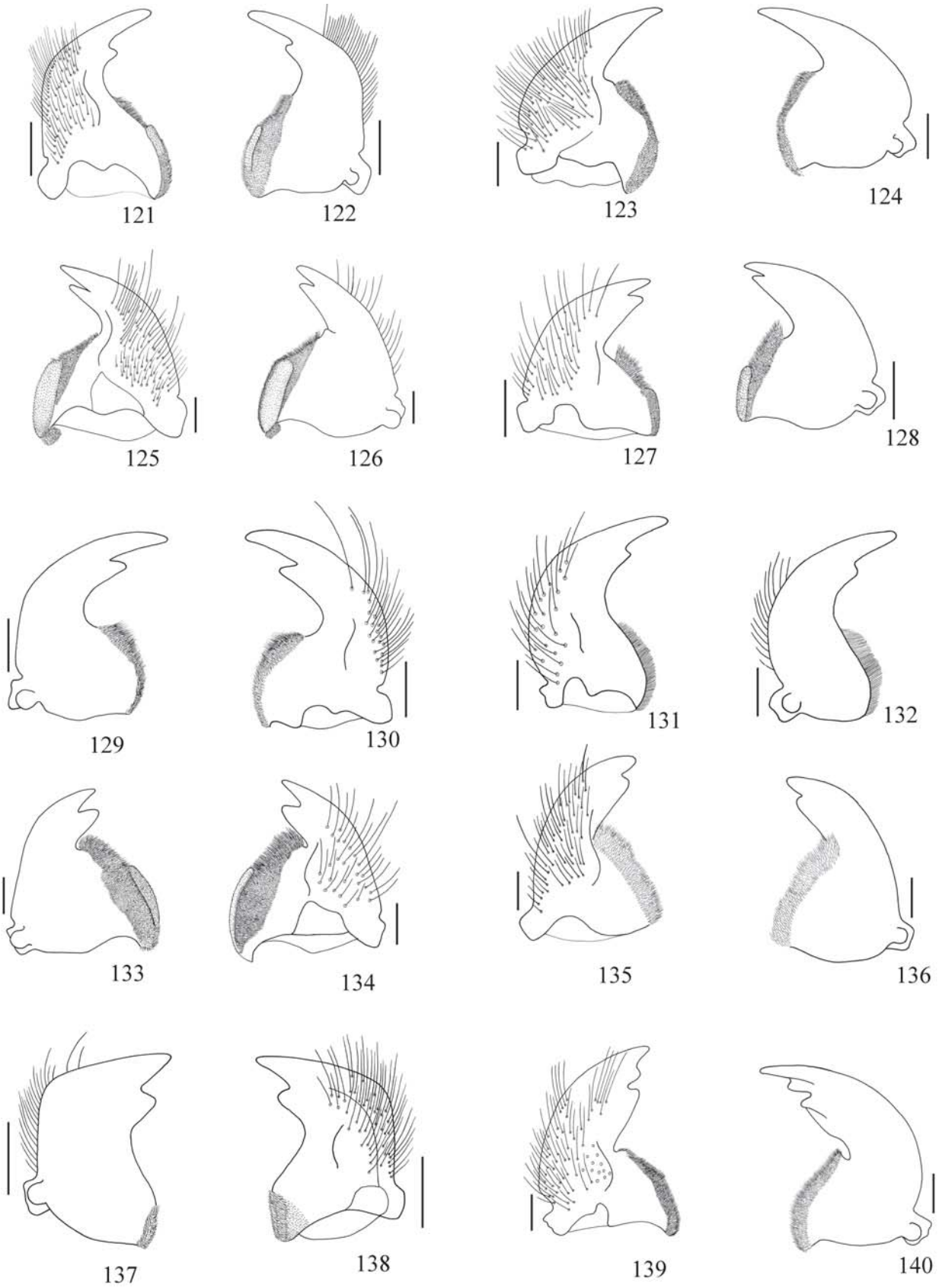
The genus *Calopsephus*, monotypical, is recorded from Africa: Mount Nimba (borders of Guinea, Liberia, Ivory Coast), Ivory Coast, Nigeria, Cameroon, Central African Republic, Gabon, Congo, Democratic Republic of Congo.

Calopsephus apicalis is characterized by a synapomorphy, 24(1) galea brush-like wide and by homoplasies, 0(2) frons as wide as long, 9(2) antennae of female subserrate and 18(1) labrum semicircular. It belongs to a tricotomy together with *Catalamprus angustus* and *Rhinopsephus apicalis*.

Calopsephus apicalis (Schwarz, 1903)
(Figs. 12, 63, 112, 113, 162, 178, 213, 255, 279, 339, 392, 393, 501).

Psephus apicalis Schwarz, 1903: 48
Rhinopsephus apicalis; Schwarz, 1906: 82; Schenkling, 1925: 98 (cat.).
Ischiodontus melanoxanthoides Fleutiaux, 1906; Basilewski, 1958: 472 (syn.).

Length: 8-10 mm. General integument dark-brown; pronotum yellow or brownish-yellow with longitudinal median band dark-brown, narrowed basad; hypomera bordered by narrow yellow band; elytra yellow with distal third dark-brown. Pubescence long, moderately thick, accompanying integument color. Frons carinate, as wide as long, wider anteriorly; convex and very prominent anteriorly; punctuation moderately coarse and dense. Nasal wider than long, with two longitudinal carina. Antennae (Fig. 12) with 11 antennomeres; in male 2.5 antennomeres longer than hind angles of pronotum; serrate in male, slightly serrate in female; scape shorter than eye; 2nd antennomere globular, 3rd triangular, shorter than 4th; last narrowed at apex; antennomeres 3-11 with longitudinal carina. Labrum (Fig. 63) semicircular, with long setae. Mandibles (Figs. 112, 113) robust with one apical and one subapical tooth; penicillus formed by short setae disposed in whole mesal area; molar area well developed; dorsal region with carina and moderately long setae. Maxillae (Fig. 162): galea brush-like wide with spatulate setae; last palpomere securiform. Labium (Fig. 178): prementum with long setae in front of palpi; postmentum with two long setae and many moderately short [marked by punctures]. Pronotum (Fig. 213) wider than long, narrowed anteriad; strongly convex; convexity decreasing basad; lateral margins carinate; anterior margin straight; hind angles backwardly directed and carinate; median basal tubercle flat; punctuation moderately coarse and dense. Prosternal channel short. Prosternal spine with bilobed apex. Borders of mesosternal cavity declivous. Metacoxal plate (Fig. 255) slightly narrowed laterally; free margin with well developed tooth. Tibial spurs absent; tarsomeres 2-3 lamellate beneath.



Figs. 121-140. Mandible: 121, 122, *Cyathodera longicornis* (D, V); 123, 124, *Dayakus angularis* (D, V); 125, 126, *Dicrepidius ramicornis* (D, V); 127, 128, *Dipropus schwarzi* (D, V); 129, 130, *Heterocrepidius gilvellus* (V, D); 131, 132, *Heterocrepidius ventralis* (D, V); 133, 134, *Lampropsephus cyaneus* (V, D); 135, 136, *Melanotus spernendus* (D, V); 137, 138, *Olophoeus gibbus* (V, D); 139, 140, *Ovipalpus pubescens* (D, V). Bars = 2 mm.

Scutellum elongate with posterior angles rounded; posterior margin notched or not at middle. Elytra slightly convex, slightly narrowed apicad; striae punctuate and grooved; interstices convex and unequal.

Male. Tergite 8 as wide as long, with anterior margin rounded; punctuate and marginate by setae; clothed with microtrichiae. Sternite 8 (Fig. 279) translucent except two lateral longitudinal bands; anterior margin narrowed and slightly notched at middle; setae more concentrate laterally. Sternite 9: distal half gradually narrowed to apex; distal third setous. Tergite 9 (Fig. 339) strongly notched at middle, V-shaped; punctuate with some setae near angles; tergite 10 longer than 9 with some setae. Aedeagus (Figs. 392, 393): basal piece as long as parameres, prominent at base; parameres fused ventrally; median lobe slightly longer than parameres, strongly narrowed at middle and at apex; apex of parameres securiform.

Female. Tergite 8 elongate, narrowed on distal third; punctuated and setous. Sternite 8 elongate, narrowed on distal half; setous; spiculum gastrale 3.30 times sternite length. Ovipositor with stylus; bursa copulatrix (Fig. 501) with 5 spiny areas; some areas with spines disposed star-like.

Material examined. CENTRAL AFRICAN REPUBLIC. La Maboké, 12 exs. (MNHN). NIGERIA. Fakalé, 3 exs (MNHN). IVORY COAST. Bingerville, Test Cacaoyen, 1 ex. (MNHN); Ferkessédougou, 1 ex. (MNHN). CAMEROON. Akonolinga, 1 ex. (MNHN); Evindissi, 2 exs (MNHN); Fegmimbang, Test Cacao, 1 ex. (MNHN); Ngoumou, 1 ex. (MNHN); Nkobang, Test Cacao, 1 ex. (MNHN); Nkolmesseng, 1 ex. (MNHN); Ukolbisson, 1 ex. (MNHN). GABON. Mvoum, Montagne de Sable, 1 ex. (MNHN); Ogooué, N´Gomo, 1 ex. (MNHN); Oyem, 1 ex. (MNHN). CONGO. Mbila (Mts du Chaillu), 1 ex. (MNHN).

Catalamprus Basilewsky, 1958

Catalamprus Basilewsky, 1958: 374; Girard, 2003a:462.

Type-species: *Pantolamprus angustus* Fleutiaux, 1902, by original designation.

Basilewsky (1958) erected *Catalamprus* to segregate two species from *Pantolamprus: P. angustatus* and *P. antennalis*. He also presented a key to the two species.

Girard (2003a) commented the similarity of this genus with *Pantolamprus*, and recorded *C. angustus* to Nimba.

The genus *Catalamprus* is formed by 2 species: *C. angustus* (Fleutiaux, 1902) and *C. antennalis* (Fleutiaux, 1935). It is recorded from Central African Republic, Gabon and Democratic Republic of the Congo.

Catalamprus angustus is characterized by a synapomorphy, 24(2) galea transverse, and by homoplasies, 14(2) antennomere 3 as long as 4, 25(4) setae of galea simple and spatulate, 35(2) borders of mesosternal cavity horizontal followed by declivous and 73(1) spines of bursa copulatrix disposed in irregularly way. It belongs to a tricotomy together with *Calopsephus apicalis* and *Rhinopsephus apicalis*.

Catalamprus angustus (Fleutiaux, 1902)
(Figs. 13, 64, 114, 115, 163, 192, 214, 256, 472, 502).

Pantolamprus angustus Fleutiaux, 1902:137; Schenkling, 1925: 74 (cat.).
Catalamprus angustus; Basilewsky, 1958: 374.

Length: 11-15 mm. General integument brown or dark-brown; dorsal region darker and with blue metallic shine; antennae dark-brown; legs brownish. Pubescence black, long, fine and bristle. Frons carinate, wider than long, wider and prominent anteriorly, surpassing nasal; convex with a concavity near anterior margin; punctuation moderately coarse and sparse. Nasal wider than long. Antennae (Fig. 13) of female with 11 antennomeres; serrate; scape shorter than eye; 2nd antennomere globular, 3rd triangular, as long as 4th; last elliptical; antennomeres 3-8 with longitudinal carina. Labrum (Fig. 64) semielliptical, with long setae distributed in whole surface. Mandibles (Figs. 114, 115) robust with one apical and one subapical tooth; penicillus formed by short setae disposed in whole mesal area; molar area well developed; dorsal region with carina and moderately long setae. Maxillae (Fig. 163): galea wider than long, with a particular shape, bearing setae simple and long and setae spatulate; last palpomere widened to apex. Labium: prementum with long setae near middle, in front of palpi; postmentum with two long setae and several moderately short. Pronotum (Fig. 214) wider than long, narrowed anteriorly and near hind angles base; roundly convex; lateral margins carinate; anterior margin straight; hind angles long, slightly divergent and carinate; median basal tubercle flat; punctuation moderately coarse and sparse. Prosternal channel short. Prosternal spine (Fig. 192) widened to apex with subapical lobe. Borders of mesosternal cavity horizontal at basal third and vertical distally. Metacoxal plate (Fig. 256) strongly narrowed laterally; free margin with well developed tooth. Tibial spurs absent; tarsomeres 2-3 lamellate beneath. Scutellum elongate; distal half wider with margin rounded. Elytra convex, narrowed on distal fourth; striae coarsely punctuate; interstices unequal and flat.

Female. Tergite 8 elongate, subtriangular; punctuate and setous. Sternite 8 (Fig. 472) elongate, narrowed on distal half; partially setous; spiculum gastrale 4.15 times sternite length. Ovipositor with stylus; bursa copulatrix (Fig. 502) with spines and sclerotized plates of varied sizes and disposed in irregular way.

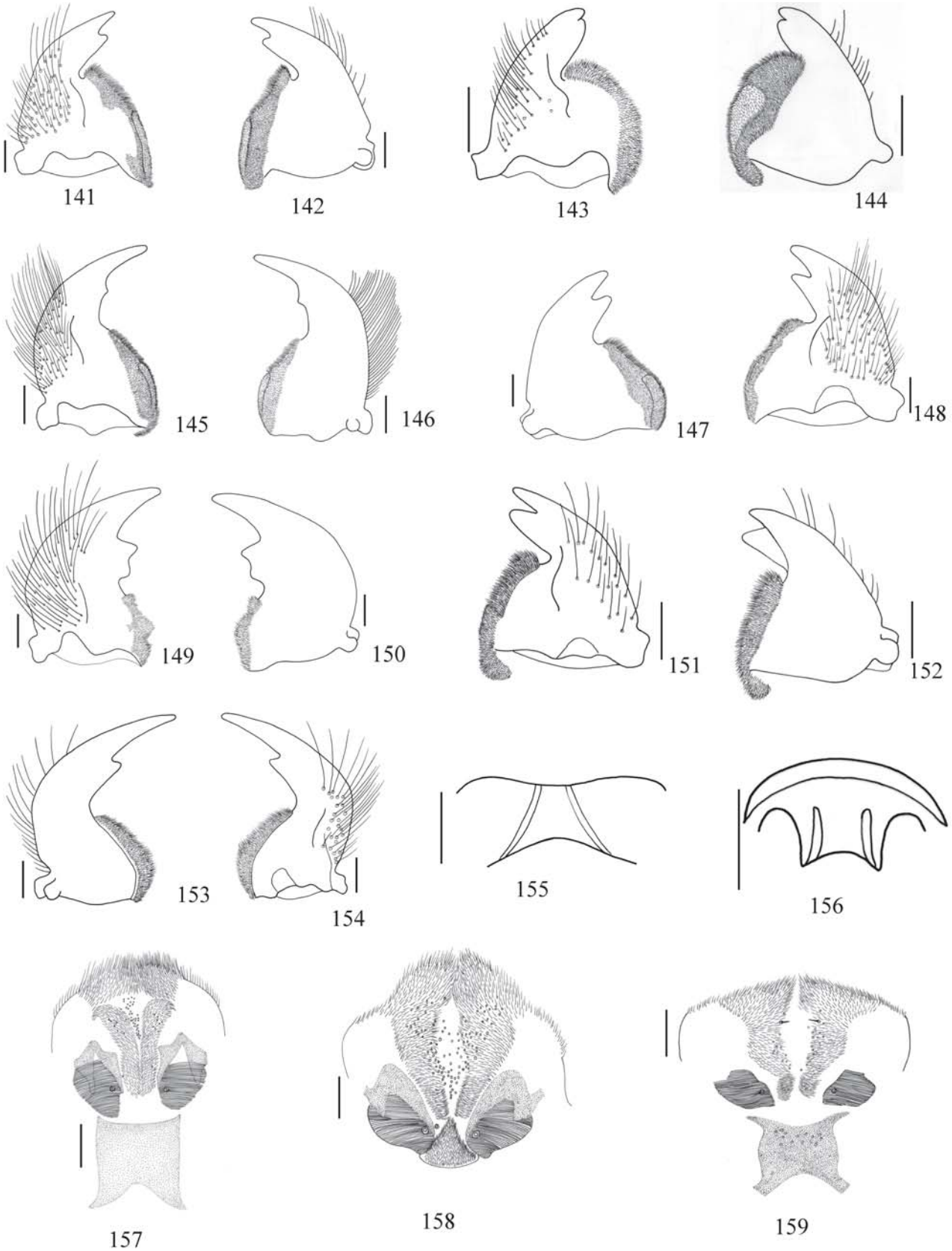
Material examined. CENTRAL AFRICAN REPUBLIC. La Maboké, 1ex. (MNHN). GABON. Oyem, 1 ex. (MNHN).

Crepidius Candèze, 1859

Crepidius Candèze, 1859: 9; 1891: 60 (cat.); Champion, 1895: 316; Schwarz, 1906: 59, 64; Schenkling, 1925: 76 (cat.); Blackwelder, 1944: 297 (cat.); Golbach, 1994: 25.
Dicrepidius Erichson 1847: 77; Dejean, 1833: 96.
Heterocrepidius (*pars*) Lacordaire 1857: 170.

Type-species: *Crepidius resectus* Candèze, 1859, designated by Hyslop,1921.

Candèze (1859) erected the genus *Crepidius* for seven new species, *C. cuneiformis* (Cayenne), *C. emarginatus* (Brazil), *C. ophthalmicus* (Brazil), *C. pubescens* (Brazil – RJ), *C.*



Figs. 141-159. Mandible: 141, 142, *Pantolamprus perpulcher* (D, V); 143, 144, *Physorhinus xanthocephalus* (D, V); 145, 146, *Prolobodorus crassipes* (D, V); 147, 148, *Propsephus beniensis* (V, D); 149, 150, *Pseudolophoeus guineensis* (D, V); 151, 152, *Spilus nitidus* (D, V); 153, 154, *Trielasmus varians* (V, D). Nasal: 155, *Dicrepidius ramicornis*; 156, *Rhinopsephus apicalis*. Epipharynx: 157, *Propsephus cavifrons*; 158, *Singhalenus gibbus*; 159, *Trielasmus varians*. Bars = 2 mm, except figs. 154, 156 = 0.5 mm and fig. 162 = 1 mm.

resectus (Brazil), *C. rhipiphorus* (Guadaloupe) and *C. saundersii* (Bords de l'Amazone), and two removed from genus *Dicrepidius*, *D. castaneus* Blanchard, 1843 (Brazil, Uruguay, Bolivia) and *D. flabellifer* Erichson, 1847 (America Equatorial). He divided the genus into two groups according to shape of frons and only *C. ophthalmicus* was included into the first section.

Candèze (1891) catalogued 9 species to this genus.

Candèze (1900) described *C. ornatus* from Peru.

Schwarz (1906) included 15 species into the genus.

Schenkling (1925) and Blackwelder (1944) catalogued, besides the Candèze's species, also *C. blepharipes* Schwarz, 1900, *C. cuneipennis* Schwarz, 1906, *C. flavipes* Champion, 1897, *C. ornatus* Candèze, 1900, *C. resplendidus* Champion, 1895, totalizing 14 species.

The genus *Crepidius* is formed by 14 species: *C. blepharipes* Schwarz, 1900, *C. castaneus* Blanchard, 1843, *C. cuneiformis* Candèze, 1859, *C. cuneipennis* Schwarz, 1906, *C. emarginatus* Candèze, 1859, *C. flabellifer (*Erichson, 1847), *C. flavipes* Champion, 1897, *C. ophthalmicus* Candèze, 1859, *C. ornatus* Candèze, 1900, *C. pubescens* Candèze, 1859, *C. replendens* Champion, 1895, *C. resectus* Candèze, 1859, *C. rhipiphorus* Candèze, 1859 (= *Ischiodontus convexus* Felutiaux & Sallé, 1890), *C. saundersii* Candèze, 1859. It is recorded from North America (Mexico), Central America (Guatemala, Nicaragua), Antilles (Guadeloupe, St Vicente), South America (French Guiana, Brazil, Ecuador, Peru, Bolivia, Argentina, Peru, Uruguay).

The *Crepidius* species included in this analysis form a monophyletic group. It is characterized by one homoplasy, 69(2) apex of sternite 8 of female widely rounded. It is the sister-group of *Dicrepidius ramicornis*.

Crepidius flabellifer (Erichson, 1847)
(Figs. 65, 116, 117, 193, 215, 257, 281, 320, 341, 396, 397, 474, 504).

Dicrepidius flabellifer Erichson, 1847: 77.
Crepidius flabellifer; Candèze, 1859: 82; Schenkling, 1925: 76 (cat.); Blackwelder, 1944: 297(cat.).

Length: 13-18 mm. General integument reddish-brown with lateral band on elytra and ususally on pronotum, dark-brown. Pubescence fine, long, yellowish, bristle and moderately dense. Frons carinate, longer than wide, flat with anterior concavity; anterior margin wider and prominent, surpassing nasal; punctuation moderately coarse and sparse. Nasal longer than wide. Antennae with 11 antennomeres; in male 3.2 antennomeres longer than hind angles of pronotum; flabellate in male, serrate in female; scape shorter than eye; 2nd antennomere globular, 3rd with lateral appendix, shorter than 4th, shorter in female; last with narrowed apex. Labrum (Fig. 65) subrectangular with anterior angles rounded; with long setae. Mandibles (Figs. 116, 117) robust with one apical and one subapical tooth; penicillus formed by short setae disposed in whole mesal area; molar area well developed; ventral region with small tooth at base of penicillus; dorsal region with carina and moderately long setae. Maxillae: galea with spatulate setae; last palpomere securiform. Labium: prementum with long setae in front of palpi; postmentum with two long setae and many moderately short. Pronotum (Fig. 215) wider than long, slightly narrowed anteriad; slightly convex; lateral margins straight and incompletely carinate; anterior margin straight; hind angles long, backwardly directed and carinate; median basal tubercle flat; punctuation moderately coarse and dense, except transverse basal band, sparse. Prosternal channel absent. Prosternal spine (Fig. 193) with narrowed apex and subapical lobe. Borders of mesosternal cavity declivous. Metacoxal plate (Fig. 257) strongly narrowed laterally; free margin with well developed tooth. Tibial spurs short; tarsomeres 1-3 lamellate beneath. Scutellum elongate with posterior margin narrower and rounded. Elytra slightly convex, narrowed apicad; striae marked by coarse punctures; interstices equal and flat.

Male. Tergite 8 as long as wide, slightly narrowed to apex; punctuate and marginate by setae; clothed with microtrichiae. Sternite 8 (Fig. 281) translucent at middle and laterally on basal half; anterior margin narrower and strongly notched at middle; setae more concentrate near anterior margin. Sternite 9 (Fig. 320): distal half gradually narrowed to apex; apex very narrowed, triangular; distal third setous. Tergite 9 (Fig. 341) moderately notched at middle; punctuate with setae near anterior angles; tergite 10 slightly longer than 9, punctuate and setous lateromedially. Aedeagus (Figs. 396, 397): basal piece much longer than parameres; parameres fused ventrally, moderately longer than median lobe; median lobe slightly narrowed near middle and constricted at apex; apex of parameres narrow and securiform.

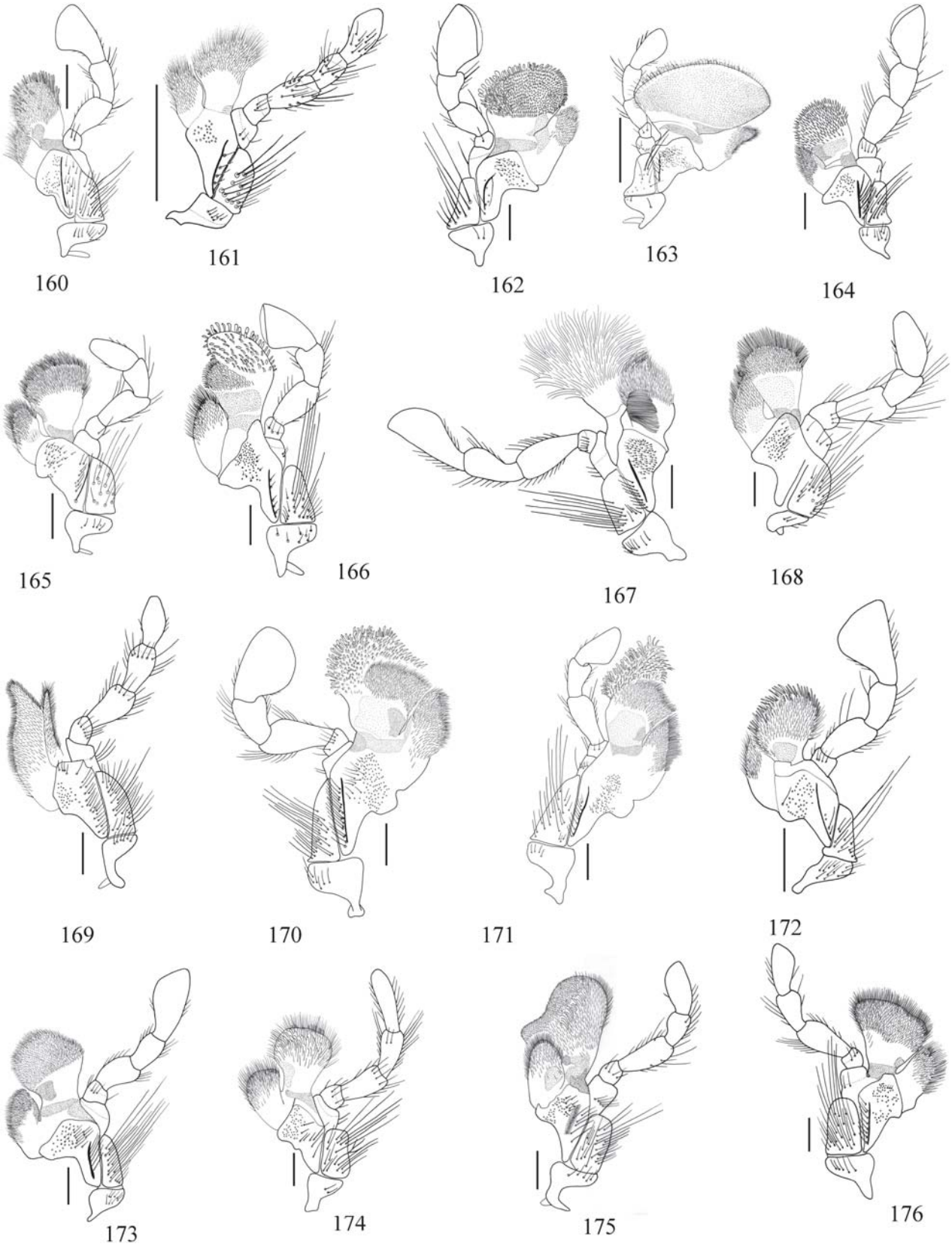
Female. Tergite 8 elongate, subtriangular and setous. Sternite 8 (Fig. 474) elongate, slightly narrowed to apex; setous; spiculum gastrale 6.30 times sternite length. Ovipositor with stylus; bursa copulatrix (Fig. 504) with 4 small spiny areas, disposed star-like.

Material examined. BRAZIL. Rio de Janeiro: Itatiaia, 1 ex. (MZSP). São Paulo: Botucatu, 12 exs. (MZSP); São Bernardo, 1 ex. (MZSP); São Paulo, 1 ex. (MZSP); (Ipiranga), 1 ex. (MZSP). Paraná: Ponta Grossa, 1 ex. (MZSP); Rolândia, 1 ex. (MZSP). Santa Catarina: Rio Vermelho, 2 exs. (MZSP).

Crepidius resectus Candèze, 1859
(Figs. 66, 118, 119, 258, 321, 342, 398, 399, 475, 505).

Crepidius resectus Candèze, 1859: 84; Schenkling, 1925: 76 (cat.); Blackwelder, 1944: 297 (cat.).

Length: 13-16 mm. General integument reddish-brown clear; legs slightly clear. Pubescence fine, long, yellowish and bristle. Frons carinate, longer than wide, flat; wider and prominent anteriorly, surpassing nasal; punctuation moderately coarse and sparse. Nasal longer than wide. Antennae with 11 antennomeres; in male 3.7 antennomeres longer than hind angles of pronotum; flabellate in male, serrate in female; scape shorter than eye; 2nd antennomere globular, 3rd triangular, shorter than 4th, with lateroposterior appendix, shorter in female; last with narrowed apex. Labrum (Fig. 66) semielliptical,



Figs. 160-176. Maxilla: 160, *Ampedus sanguineus*; 161, *Blauta cribraria*; 162, *Calopsephus apicalis*; 163, *Catalamprus angustus*; 164, *Dayakus angularis*; 165, *Heterocrepidius gilvellus*; 166, *Lampropsephus cyaneus*; 167, *Melanotus spernendus*; 168, *Olophoeus gibbus*; 169, *Ovipalpus pubescens*; 170, *Pantolamprus mirabilis*; 171, *Pantolamprus perpulcher*; 172, *Physorhinus xanthocephalus*; 173, *Prolobodorus crassipes*; 174, *Pseudolophoeus guineensis*; 175, *Sphenomerus antennalis*; 176, *Sphenomerus brunneus*. Bars = 1 mm, except fig. 161 = 5 mm.

with long setae. Mandibles (Figs. 118, 119) robust with one apical and one subapical tooth; penicillus formed by short setae disposed in whole mesal area; molar area well developed; left mandible with small ventral tooth at base of penicillus; dorsal region with carina and moderately long setae. Maxillae: galea with spatulate setae; last palpomere securiform. Labium: prementum with long setae in front of palpi; postmentum with two long setae and many moderately short [marked by punctures]. Pronotum wider than long, slightly narrowed anteriad; slightly convex; lateral margins incompletely carinate; anterior margin straight; hind angles backwardly directed and carinate; median basal tubercle flat; punctuation moderately coarse and sparse. Prosternal channel absent. Prosternal spine with narrowed apex and subapical lobe. Borders of mesosternal cavity declivous. Metacoxal plate (Fig. 258) strongly narrowed laterally; free margin with well developed tooth. Tibial spurs short; tarsomeres 1-3 lamellate beneath. Scutellum elongate with posterior margin narrower and rounded. Elytra slightly convex, narrowed apicad; striae marked by coarse punctuation; interstices equal and flat.

Male. Tergite 8 elongate, subtriangular, punctuate and marginate by setae; clothed with microtrichiae. Sternite 8 translucent at middle and laterally on basal half; anterior margin narrower and slightly notched at middle; setae more concentrate near margins. Sternite 9 (Fig. 321): distal half gradually narrowed to apex; distal third setous. Tergite 9 (Fig. 342) strongly notched at middle, V-shaped; punctuate; tergite 10 shorter than 9 and punctuate. Aedeagus (Figs. 398, 399): basal piece much longer than parameres; parameres fused ventrally; median lobe almost straight, narrowed at apex and slightly longer than parameres; apex of parameres narrow and securiform.

Female. Tergite 8 elongate, subtriangular and setous. Sternite 8 (Fig. 475) elongate, slightly narrowed on distal half; setous; spiculum gastrale 4.70 times sternite length. Ovipositor with stylus; bursa copulatrix (Fig. 505) with 4 small spiny areas.

Material examined. BRAZIL. São Paulo: Botucatu, 2 exs. (MZSP).

Cyathodera Blanchard, 1843

Cyathodera Blanchard, 1843: 130; Candèze, 1891: 57 (cat.); *Anoplischius* (*Cyathodera*); Schenkling, 1925: 81 (cat.).
Anoplischius; Candèze, 1859: 76.

Type-species: *Cyathodera longicornis* Blanchard, 1843, by monotypy.

Blanchard (1843) erected the genus *Cyathodera* to *C.longicornis*, based on one specimen collected "près de Santa-Ana, dans la province de Chiquitos".

Candèze (1859) synonymyzed the genus under *Anoplischius*; the species of *Cyathodera* corresponds to section IV of *Anoplischius*.

Candèze (1891) raised it to genus, and catalogued two species: *C. lanugicollis* (Candèze, 1859) and *C. longicornis* Blanchard, 1843.

Champion (1895) followed Candèze, 1859.

Schwarz (1906), Schenkling (1925) and Blackwelder (1944) considered *Cyathodera* a subgenus of *Anoplischius*.

Costa (1968) described *Anoplischius* (*Cyathodera*) *auripilosus* and stated that after studying some characters of some species from two subgenera, it appears that they are two different genera.

Golbach (1994) considered *Cyathodera* as a valid genus.

The genus *Cyathodera* is formed by 4 species: *C. auripilosus* Costa, 1968, *C. lanugicollis* (Candèze, 1859), *C. longicornis* Blanchard, 1843 and *C. spinipennis* Schwarz, 1902. It is recorded from Central America (Nicaragua, Panama) and South America (Guyana, Suriname, French Guiana, Brazil, Ecuador, Peru).

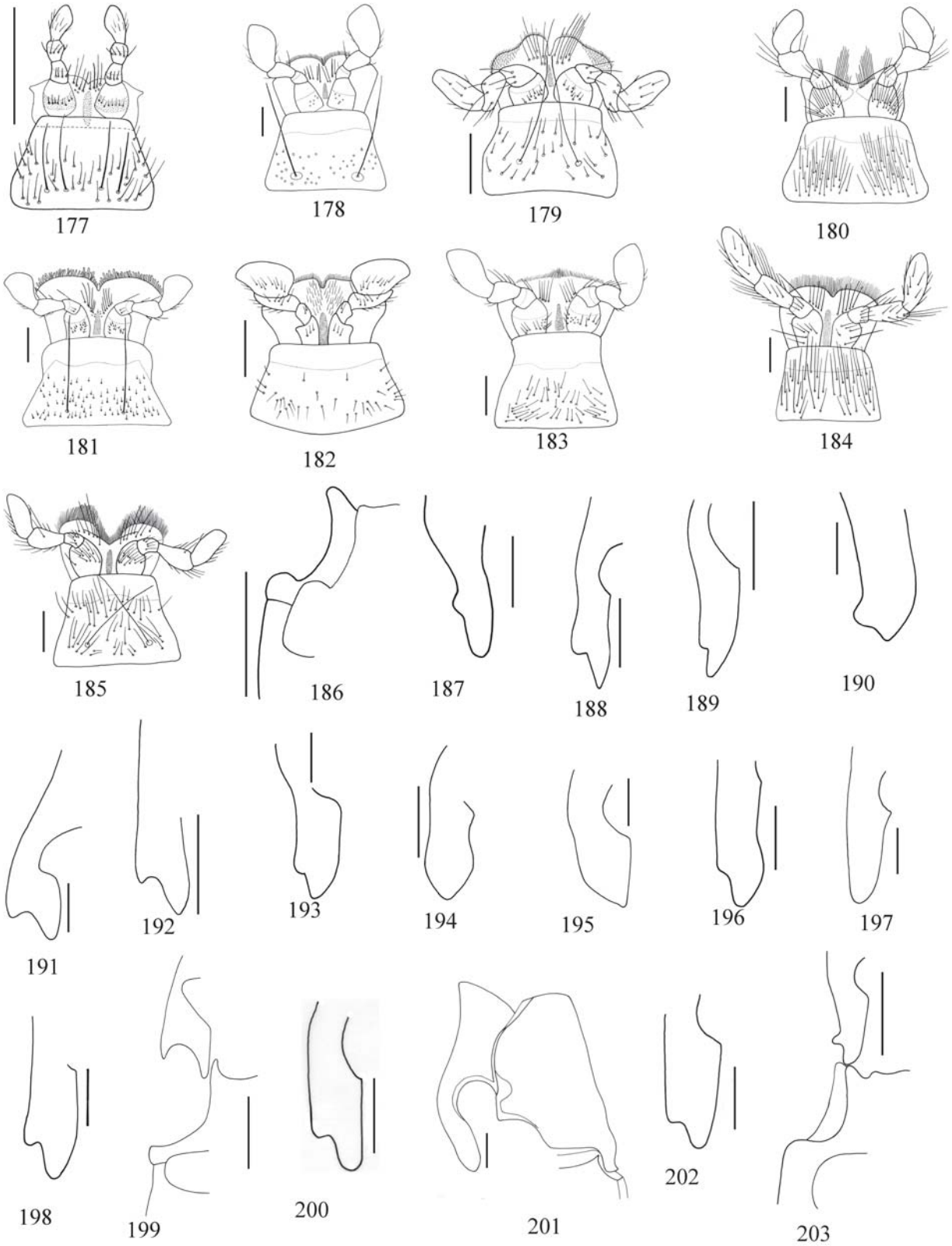
The *Cyathodera* species included in this analysis form a monophyletic group. It is characterized by synapomorphies, 17(0) longitudinal smooth band on antennae present and 66(3) median lobe twice parameres lenght, and by homoplasies, 7(2) nasal as wide as long, 40(2) tibial spurs very long and 62(2) basal piece longer than parameres. It is the sister-group of (*Trielasmus varians* (*Paraloboderus glaber* ((*Loboederus appendiculatus*)(*Proloboderus crassipes*)))).

Cyathodera auripilosus Costa, 1968

Anoplischius (*Cyathodera*) *auripilosus* Costa, 1968:161.

Length: 14-17 mm. General integument reddish-brown; antennae brown. Pubescence ferruginous, very long and dense; longer on lateral margins of pronotum and leytra. Frons carinate, longer than wide, concave medioanteriorly; anterior margin rounded, prominent surpassing nasal; punctuation moderately coarse and dense, sparser at middle. Nasal as wide as long. Antennae with 11 antennomeres; in male 3.5 antennomeres longer than hind angles of pronotum; subserrate in both sexes; scape shorter than eye; 2nd antennomere globular, 3rd triangular, same shape and shorter than 4th, last narrowed at apex; antennomeres with longitudinal smooth band. Pronotum wider than long, slight- and irregularly convex, narrowed anteriorly; with longitudinal median grooves; anterior margin prominent at middle; hind angles long, carinate, backwardly directed; median basal tubercle indistinct; punctuation small and dense. Prosternal channel long. Prosternal spine with subapical lobe. Borders of mesosternal cavity narrow and declivous. Metacoxal plate strongly narrowed laterally; free margin straight. Tibial spurs very long; tarsomeres 1-3 lamellate beneath. Scutellum triangular elongate. Elytra convex, slightly narrowed apicad with sutural small spine; striae coarsely punctuate; interstices equal and flat, convex near base.

Male. Sternite 9: distal third abruptly narrowed to apex; setous near margins and at apex. Tergite 9 slightly notched at middle; punctuate; tergite 10 longer than 9. Aedeagus elongate; basal piece longer than parameres; parameres fused ventrally; median lobe very long, straight, constricted at apex; subapical region of parameres slitted.



Figs. 177-203. Labium: 177, *Blauta cribraria*; 178, *Calopsephus apicalis*; 179, *Heterocrepidius gilvellus*; 180, *Ovipalpus pubescens*; 181, *Pantolamprus perpulcher*; 182, *Physorhinus xanthocephalus*; 183, *Proloboderus crassipes*; 184, *Pseudolophoeus guineensis*; 185, *Sphenomerus antennalis*. Borders of mesosternal cavity: 186, *Achrestus flavocinctus*. Prosternal spine: 187, *Achrestus flavocinctus*; 188, *Achrestus venustus*; 189, *Ampedus sanguineus*; 190, *Anoplischius bicarinatus*; 191, *Atractosomus flavescens*; 192, *Catalamprus angustus*; 193, *Crepidius flabellifer*; 194, *Cyathodera longicornis*; 195, *Dayakus angularis*; 196, *Dipropus laticollis*; 197, *Elius dilatatus*; 198, *Lampropsephus cyaneus*; 200, *Physorhinus xanthocephalus*; 202, *Sphenomerus brunneus*. Borders of mesosternal cavity and prosternal spine: 199, *Pantolamprus perpulcher*; 203, *Spilus atractomorphus*. Prothorax (lateral): 201, *Proloboderus crassipes*. Bars = 0.5 mm, except fig. 177 = 5 mm, figs. 178-185 = 2 mm, figs. 186, 192, 194, 199, 203 = 1 mm.

Material examined. BRAZIL. Goiás: Dianópolis, 11-14.I.1962, J. Bechyné, 1 paratype (MZSP). Minas Gerais: Morro da Garça, 18-20.X.1964, Exp. Dep. Zoologia, 1 paratype (MZSP); Unaí (Faz. Bolivia), 22-24.xX.1964, Exp. Dep. Zoologia, holotype, 2 paratypes (MZSP).

Cyathodera lanugicollis (Candèze, 1859) (Figs. 16, 68, 217, 283, 322, 344, 402, 403).

Anoplischius lanugicollis Candèze, 1859: 77
Anoplischius (*Cyathodera*) *lanugicollis*; Schenkling, 1925: 81 (cat.); Blackwelder, 1944: 298 (cat.).
Cyathodera lanugicollis; Candèze, 1891: 57 (cat.); Champion, 1895: 304; Heyne & Taschenberg, 1908: 156.

Length: 22-25 mm. General integument reddish dark-brown. Pubescence yellowish-white, long, fine and dense. Frons carinate, longer than wide, concave longitudinal medially; anterior margin prominent at middle and surpassing nasal; punctuation coarse and dense. Nasal as wide as long. Antennae (Fig. 16) with 11 antennomeres; in male 3.5 antennomeres longer than hind angles of pronotum; subserrate; scape shorter than eye; 2nd antennomere globular, 3rd triangular elongate, shorter than 4th, last elliptical; antennomeres with longitudinal median smooth band. Labrum (Fig. 68) subtrapezoidal with long setae. Mandibles narrow with one apical and one subapical tooth; penicillus formed by short setae disposed in whole mesal area; molar area well developed; dorsal region with carina and moderately long setae. Maxillae: galea with simple setae; last palpomere slightly widened to apex. Labium: prementum with setae in front of palpi; postmentum with two long setae and many moderately short. Pronotum (Fig. 217) wider than long, slight- and irregularly convex, narrowed anteriorly; with longitudinal median grooves; anterior margin U-shaped; hind angles carinate, backwardly directed with apex inwardly; median basal tubercle indistinct; punctuation coarse and dense. Prosternal channel long. Prosternal spine with subapical lobe. Borders of mesosternal cavity narrow and declivous. Metacoxal plate strongly narrowed laterally; free margin straight. Tibial spurs very long; tarsomeres 1-3 lamellate beneath. Scutellum subpentagonal with posterior margin rounded. Elytra convex, narrowed apicad; striae coarsely punctuate and grooved; interstices convex and equal.

Male. Tergite 8 elongate, slightly narrowed apicad; anterior margin prominent at middle; punctuate and marginate by setae; clothed with microtrichiae. Sternite 8 (Fig. 283) translucent, darker in a W-shaped area; anterior margin strongly notched at middle; anterior angles rounded; setae distributed irregularly, more concentrate near margins. Sternite 9 (Fig. 322): distal third abruptly narrow to apex; setous near margins and at apex. Tergite 9 (Fig. 344) slightly notched at middle; punctuate; tergite 10 longer than 9; punctuated. Aedeagus (Figs. 402, 403) elongate; basal piece longer than parameres; parameres fused ventrally; median lobe very long, straight, constricted at apex; apex of parameres spatuliform.

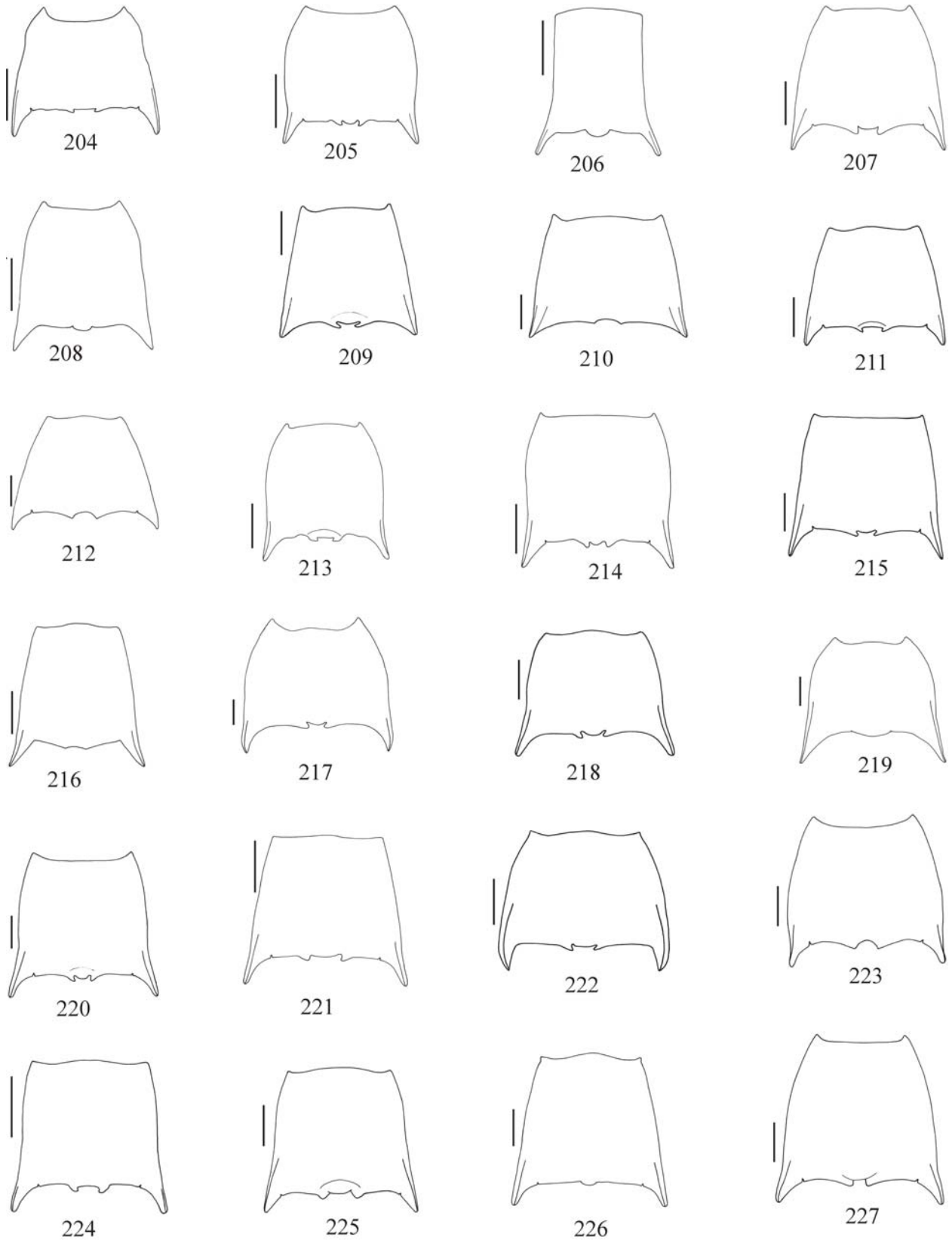
Material examined. SURINAME. Ex-coll. Fleutiaux, 1 ex (MNHN). FRENCH GUIANA. Gourdonville, ex-coll. Le Moult, 1 ex. (MNHN); Saint Laurent du Maroni, ex- coll. Le Moult, 1 ex. (MNHN).

Cyathodera longicornis Blanchard, 1843 (Figs. 17, 69, 121, 122, 194, 218, 284, 323, 345, 404, 405, 477).

Cyathodera longicornis Blanchard, 1843: 130; Candèze, 1891:57 (cat.).
Anoplischius longicornis; Candèze, 1859: 76.
Anoplischius (*Cyathodera*) *longicornis*; Schenkling, 1925:81 (cat.); Blackwelder, 1944: 298.

Length: 23-36 mm. General integument from dark-brown to reddish dark-brown; pronotum, antennae and legs slightly darker. Pubescence long, very dense and yellowish; on elytra, denser on lower interstices giving to elytra a stripped appearance. Frons carinate, longer than wide, concave in a longitudinal median area; anterior margin prominent at middle and surpassing nasal; punctuation coarse and sparse. Nasal as wide as long. Antennae (Fig. 17) with 11 antennomeres; in male 4.2 antennomeres longer than hind angles of pronotum; subserrate in both sexes; scape shorter than eye; 2nd antennomere globular, 3rd triangular elongate, as long as 4th, last narrowed at apex; antennomeres with longitudinal smooth band. Labrum (Fig. 69) semielliptical with anterior margin notched at middle and with long setae. Mandibles (Figs. 121, 122) narrow with one apical and one subapical tooth; penicillus formed by short setae disposed in whole mesal area; molar area well developed; dorsal region with carina and moderadely long setae. Maxillae: galea with simple setae; last palpomere slightly widened to apex. Labium: prementum with setae in front of palpi; postmentum with two long setae and many moderately short. Pronotum (Fig. 218) wider than long, slight- and irregularly convex; with 3 longitudinal grooves: a longitudinal median longer and one shorter near each hind angle; lateral margins carinate; anterior prominent at middle; hind angles long, divergent and carinate; median basal tubercle indistinct; punctuation coarse, sparse, irregularly distributed. Prosternal channel long. Prosternal spine (Fig. 194) with narrowed and rounded apex. Borders of mesosternal cavity narrow and declivous. Metacoxal plate strongly narrowed laterally; free margin almost straight. Tibial spurs very long; tarsomeres 1-3 lamellate beneath. Scutellum elongate, narrowed apicad; apex rounded. Elytra convex, slightly narrowed apicad; apex with sutural spine; striae coarsely punctuate, grooved at base; interstices equal in width; 1, 3, 5, 7, flat; 2, 4, 6, convex.

Male. Tergite 8 elongate with anterior margin rounded; punctuate and marginate by setae; clothed with microtrichiae. Sternite 8 (Fig. 284) translucent in a median basal area; anterior margin strongly notched at middle; anterior angles rounded; setae distributed irregularly, more concentrate near angles. Sternite 9 (Fig. 323): distal third abruptly narrow to apex; punctuate and setous near apex. Tergite 9 (Fig. 345) moderately notched at middle; punctuate; tergite 10 longer than 9 with distal margin straight; punctuated. Aedeagus (Figs. 404, 405) elongate; basal piece longer than parameres;



Figs. 204- 227. Pronotum: 204, *Achrestus flavocinctus*; 205, *Achrestus venustus*; 206, *Adiaphorus ponticerianus*; 207, *Ampedus sanguineus*; 208, *Anchastus digittatus*; 209, *Anoplischiopsis bivittatus*; 210, *Anoplischius bicarinatus*; 211, *Anoplischius haematopus*; 212, *Atractosomus flavescens*; 213, *Calopsephus apicalis*; 214, *Catalamprus angustus*; 215, *Crepidius flabellifer*; 216, *Ctenicera silvatica*; 217, *Cyathodera lanugicollis*; 218, *Cyathodera longicornis*; 219, *Dayakus angularis*; 220, *Dicrepidius ramicornis*; 221, *Dipropus brasilianus*; 222, *Dipropus laticollis*; 223, *Dipropus pinguis*; 224, *Dipropus schwarzi*; 225, *Elius birmanicus*; 226, *Elius dilatatus*; 227, *Lampropsephus cyaneus*. Bars = 1 mm.

parameres fused ventrally; median lobe very long, narrow, much longer than parameres, narrowed at base and constricted at apex; apex of parameres spatuliform, slitted subapically.

Female. Tergite 8 elongate with anterior margin rounded; setous near margins. Sternite 8 (Fig. 477) rounded, clothed with short setae; spiculum gastrale 4.14 times sternite length. Ovipositor with stylus; bursa copulatrix without spines or sclerotized pieces.

Material examined. BRAZIL. Amazonas: Itacoatiara, 1 ex. (MZSP). Ceará: Carquejo, 2 exs. (MZSP). Goiás: Arauna (Rio Araguaia), 1 ex. (MZSP); Colinas do Sul (Serra da Mesa) (14o 01´S 48o 12´W), 1 ex. (MZSP); Jataí, ex-coll. Fleutiaux, 1 ex. (MNHN); (Faz. Nova Orlândia), 2 exs. (MZSP); Km 42, Rodovia Brasília-Goiânia, 1 ex. (MZSP). Mato Grosso: Bodoquena, 1 ex. (MZSP); Guaicurus, 1 ex. (MZSP); Rondonópolis, 1 ex. (MZSP); Salobra, Instituto Oswaldo Cruz, Zona N.O.B. 7 exs. (MZSP); Três Lagoas, 1 ex. (MZSP). Bahia: ex-coll. Fleutiaux, 1 ex. (MNHN); Maracas (Faz. Inácio), 6 exs. (MZSP); Nova Conquista, 4 exs.(MZSP). Pernambuco: Jaboatão, 1 ex.; Porto Alegre, 1 ex.; Recife, 1 ex. (MZSP). Minas Gerais: Buritis (Ribeirão Confins), 1 ex. (MZSP); Morro da Garça, 1 ex. (MZSP); Passos, 2 exs. (MZSP); Pedra Azul, 1 ex. (MZSP); Uberaba, ex-coll. Fleutiaux, 1 ex. (MNHN); Unaí (Faz. Bolívia), 1 ex. (MZSP); Viçosa, 1 ex. (MZSP). Rio de Janeiro: Parque Nacional do Itatiaia, 4 exs. (MZSP). São Paulo: Alto da Serra, 2 exs. (MZSP); Barueri, 7 exs. (MZSP); Batatais, 1 ex. (MZSP); Botucatu, 25 exs. (MZSP); Cajuru (Cassia dos Coqueiros), 1 ex. (MZSP); Campinas, 1 ex. (MZSP); Dois Córregos, 1 ex. (MZSP); Estac. R. d. S. – E.S.P., 2 exs. (MZSP); Itu, 2 exs.(MZSP); Itu (Faz. Pau d´Alho), 2 exs. (MZSP); Jundiaí, 2 exs. (MZSP); Pindamonhangaba (Eugênio Lefreve), 2 exs.(MZSP); Piracicaba, 4 exs. (MZSP); Pirassununga, 1 ex. (MZSP); Rio Claro, 1 ex. (MZSP); Santo André, 2 exs. (MZSP); São Bernardo, 1 ex. (MZSP); São Paulo, 2 exs. (MZSP); São Paulo (Ipiranga), 10 exs. (MZSP); São Paulo (Jabaquara), 2 exs. (MZSP); Sorocaba, 1 ex. (MZSP); Suzano, 2 exs.(MZSP). BOLIVIA. Santa Cruz: Buenavista, 2 exs. (MZSP).

Dayakus Candèze, 1893

Dayakus Candèze, 1893: 22; Schwarz, 1906: 59, 63; Schenkling, 1925: 76 (cat.); Cobos, 1970: 45.
Eupsephus Fleutiaux, 1935a: 204; 1935b: 305; Basilewsky, 1958: 379 (syn.).

Type-species: *Dayakus angularis* Candéze, 1893 designated by monotypy.

Candèze (1893) erected *Dayakus* to *D. angularis* from Borneo.

Schenkling (1925) catalogued one species to this genus.

Fleutiaux (1935a) erected *Eupsephus* to two new species, *E. dilaticollis* from Kenya and *E. bisulcatus* from Tanzania.

Basilewsky (1958) synonymized *Eupsephus* Fleutiaux under *Dayakus*, redescribed the genus and *D. angularis* Candèze, 1895 and considered *D. congoensis* Fleutiaux, 1935 as synonym of the latter. He also transferred *Eupsephus dilaticollis* Fleutiaux and *E. bisulcatus* Fleutiaux to *Dayakus*. He illustrated the aedeagus of *D. angularis*.

Cobos (1970) described two new species, *D. villiersi* and *D. basilewskyi*. He also presented an identification key to the 5 species described until that momment.

Girard (1971) presented a new combination of one species belonged to *Psephus*: *Dayakus capillatus* (Candèze, 1889).

The genus *Dayakus* is formed by 6 species: *D. angularis* Candèze, 1893 (=*Eupsephus congoensis* Fleutiaux), *D. basilewskyi* Cobos, 1970, *D. bisulcatus* (Fleutiaux, 1935), *D. capillatus* (Candèze, 1889), *D. dilaticollis* (Fleutiaux, 1935), *D. villiersi* Cobos, 1970. It is recorded from Democratic Republic of Congo, Kenya, Tanzania and Borneo.

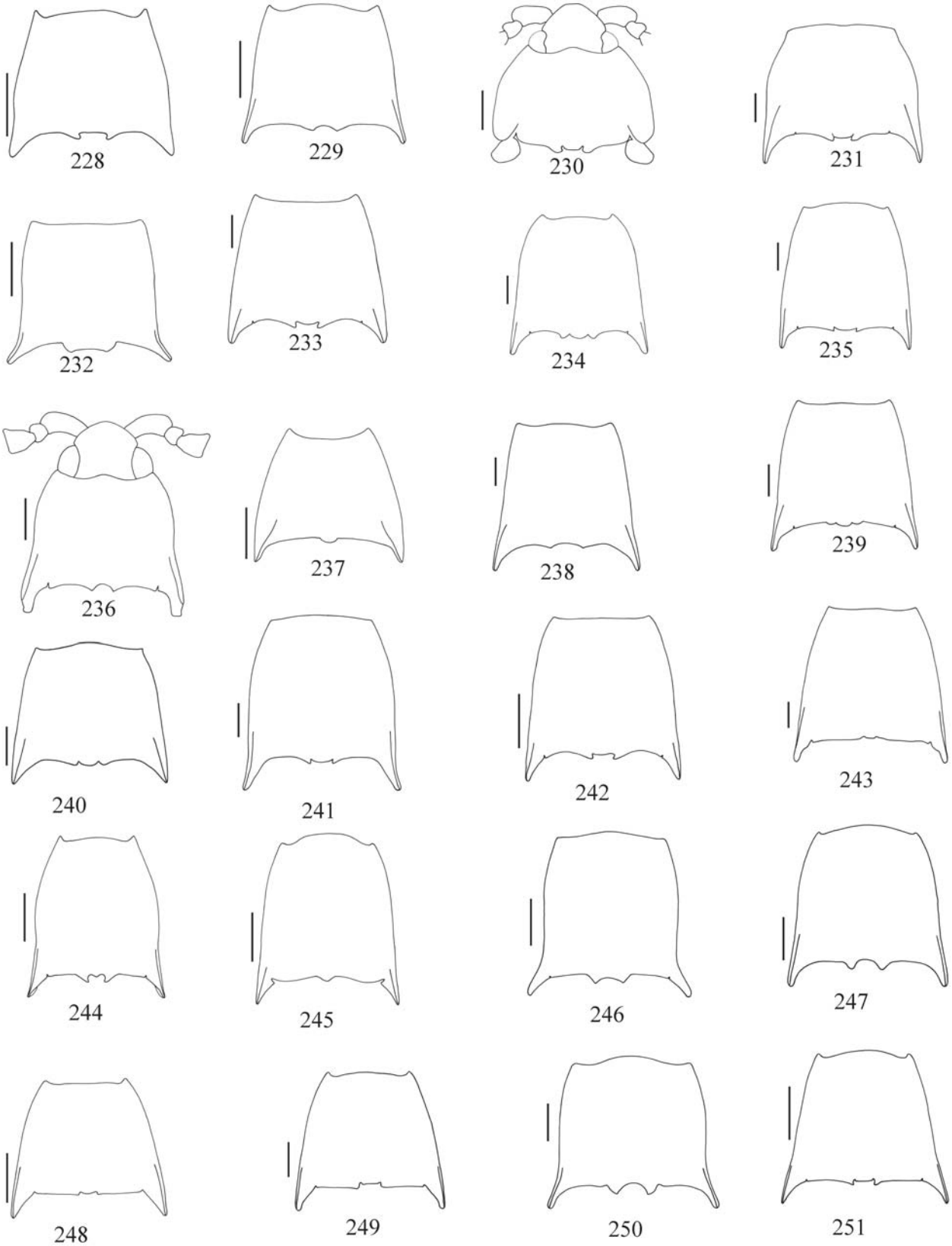
Dayakus angularis is characterized by homoplasies, 4(1) median anterior region of frons concave, 15(1) antennae of male 2.5-4.4 antennomeres longer than hind angles of pronotum, 21(0) mesal area of mandibles with one apical tooth, 25(2) setae of galea short bristle, 36(1) lateral margin of metacoxal plate slightly narrowed, 56(1) sternite 8 of male gradually narrowed to apex, 57(1) anterior margin of sternite 8 of male narrowed and straight, 58(5) distal margin of tergite 9 of male rounded, 62(2) basal piece longer than parameres and 65(7) subapical region of parameres securiform with tooth. It is the sister-group of *Achrestus flavocinctus*.

Dayakus angularis Candèze, 1893
(Figs. 18, 70, 123, 124, 164, 195, 219, 259, 285, 346, 406, 407).

Dayakus angularis Candèze, 1893: 22; Schenkling, 1925: 76 (cat.).

Length: 14.0-14.5 mm. General integument reddish-brown. Pubescence golden, long and very dense. Frons carinate, wider than long, prominent and declivous medioanteriorly, not surpassing nasal; punctuation thin and dense. Nasal wider than long. Antennae (Fig. 18) with 11 antennomeres; in male 2.5 antennomeres longer than hind angles of pronotum; serrate; scape shorter than eye; 2nd antennomere globular, 3rd triangular, shorter than 4th, last narrowed at apex. Labrum (Fig. 70) semielliptical, with long setae. Mandibles (Figs. 123, 124) with one apical tooth; penicillus formed by short setae disposed in whole mesal area; dorsal region with carina and moderately long setae. Maxillae (Fig. 164): galea with thick short setae, giving a bristle appearance; last palpomere securiform. Labium: prementum with setae in front of palpi; postmentum without two long setae and with many moderately short. Pronotum (Fig. 219) wider than long, narrowed anteriorly; lateral margins incompletely carinate; anterior margin straight; hind angles very wide, backwardly directed and carinate; median basal tubercle indistinct with posterior margin raised; punctuation small and dense. Prosternal channel absent. Prosternal spine (Fig. 195) with sharpened apex. Borders of mesosternal cavity raised and declivous. Metacoxal plate (Fig. 259) slightly narrowed laterally; free margin with well developed lobe. Tibial spurs long; tarsomeres 1-3 lamellate beneath. Scutellum subtriangular elongate, with posterior margin rounded. Elytra narrower than pronotum, slightly convex and slightly narrowed apicad; striae grooved; interstices flat and equal.

Male. Tergite 8 wider than long, slightly narrowed to apex; anterior margin rounded; punctuate and setous near margins and at apex. Sternite 8 (Fig. 285) translucent in a median basal area; wider than long and trapezoidal; anterior margin narrow and straight; anterior angles rounded; setae denser on distal half. Sternite 9: distal half gradually narrowed to apex; apical third setous. Tergite 9 (Fig. 346) almost straight



Figs. 228-251. Pronotum: 228, *Heterocrepidius gilvellus*; 229, *Heterocrepidius ventralis*; 230, *Loboederus appendiculatus*; 231, *Olophoeus gibbus*; 232, *Ovipalpus pubescens*; 233, *Pantolamprus ligneus*; 234, *Pantolamprus mirabilis*; 235, *Pantolamprus perpulcher*; 236, *Paraloboderus glaber*; 237, *Physorhinus xanthocephalus*; 238, *Propsephus beniensis*; 239, *Propsephus cavifrons*; 240, *Pseudolophoeus guineensis*; 241, *Rhinopsephus apicalis*; 242, *Sephilus formosanus*; 243, *Sephilus frontalis*; 244, *Singhalenus gibbus*; 245, *Singhalenus taprobanicus*; 246, *Sphenomerus antennalis*; 247, *Sphenomerus brunneus*; 248, *Spilus atractomorphus*; 249, *Spilus nitidus*; 250, *Stenocrepidius simoni*; 251, *Trielasmus varians*. Bars = 1 mm.

medioanteriorly; coarsely punctuate; tergite 10 small, shorter than 9, punctuated and with setae near apex. Aedeagus (Figs. 406, 407) elongate; basal piece longer than parameres; parameres fused ventrally; median lobe slightly longer than parameres, widened near base and constricted at apex; apex of parameres with subapical tooth preceded by lobe.

Material examined. DEMOCRATIC REPUBLIC OF CONGO. (Congo Belge) Kinda Katanga. 5 exs. (MNHN); Lubumbashi (Elisabethville), 1 ex. (MNHN).

Dicrepidius Eschscholtz, 1829

Dicrepidius Eschscholtz, 1829: 31: Candèze, 1859: 10, 144; 1891: 64 (cat.); Champion, 1894: 293; Schwarz, 1906: 59, 74; Blatchley, 1910: 719, 729; Schenkling, 1925: 85 (cat.); Blackwelder, 1944: 298 (cat.).

Type-species: *Elater ramicornis* Palisot de Beauvois, 1805, designated by Hyslop, 1921.

Eschscholtz (1829) erected *Dicrepidius* for 5 species from Brazil: *D. pectinicornis* (Rio de Janeiro), *D. laticollis* (Bahia), *D. abdominalis* (Rio de Janeiro), *D. marginellus* (Rio de Janeiro), *D. conicollis* (Bahia).

Candèze (1859) redescribed the genus and described 3 species (*D. corvinus*, *D. palmatus*, *D. thoracicus*). The genus was formed by 8 species. After treating the genus *Dicrepidius*, just before the "sous-tribu II. Eudactylites", he included: "Plusiers espèces qui doivent probablement rentrer dans la sous-tribu actuelle me sont restées inconnues. Je reproduis ci-dessous leur description." He included *Dicrepidius abdominalis* Eschscholtz, 1829 [later transferred to *Ischiodontus*], *D. anguinus* Erichson, 1847 [later transferred to *Anoplischius*], *D. atricornis* Erichson, 1848 [later transferred to *Atractosomus*], *D. conicollis* Eschscholtz, 1829 [later transferred to *Ischiodontus*], *D. fuscescens* Blanch., 1837 [later transferred to *Ischiodontus*], *D. ferreus* Le Conte, 1853 [later transferred to *Ischiodontus*], *D. macullicolis* Blanchard, [later transferred to *Anoplischius*], *D. marginellus* Eschscholtz, 1829 [later tranferred to *Ischiodontus*], *D. porosus* Erichson, 1848 [later transferred to *Ischiodontus*], *D. planicollis* Erichson, 1847 [later transferred to *Anoplischius*], *D. simplex* LeConte, 1857 [later transferred to *Ischiodontus*], *D. soleatus* Say, 1836 [later transferred to *Ischiodontus*], *D. unicolor* Blanch., 1843 [later transferred to *Ischiodontus*], *Hemicrepidius ruficollis* Blanch., 1843[later transferred to *Ischiodontus*] and *Trielasmus varians* Blanch., 1843 [kept in *Trielasmus*].

Candèze (1891) catalogued 5 species to this genus.

Champion (1895) described two new species, *D. politus* and *D. serraticornis*. He also redescribed *D. ramicornis* Beauv.and *D. corvinus* Candèze.

Schwarz (1906) included 10 species into the genus.

Hyslop (1921) designated *Dicrepidius pectinicornis* Eschscholtz, 1829 as type species of this genus. According to him, Gemminger and Harold (1869) reduced the type to synonymy under *Dicrepidius ramicornis* Palisot de Beauvois, 1805.

Schenkling (1925) catalogued 10 species to this genus.

Blackwelder (1944) catalogued 9 species to this genus.

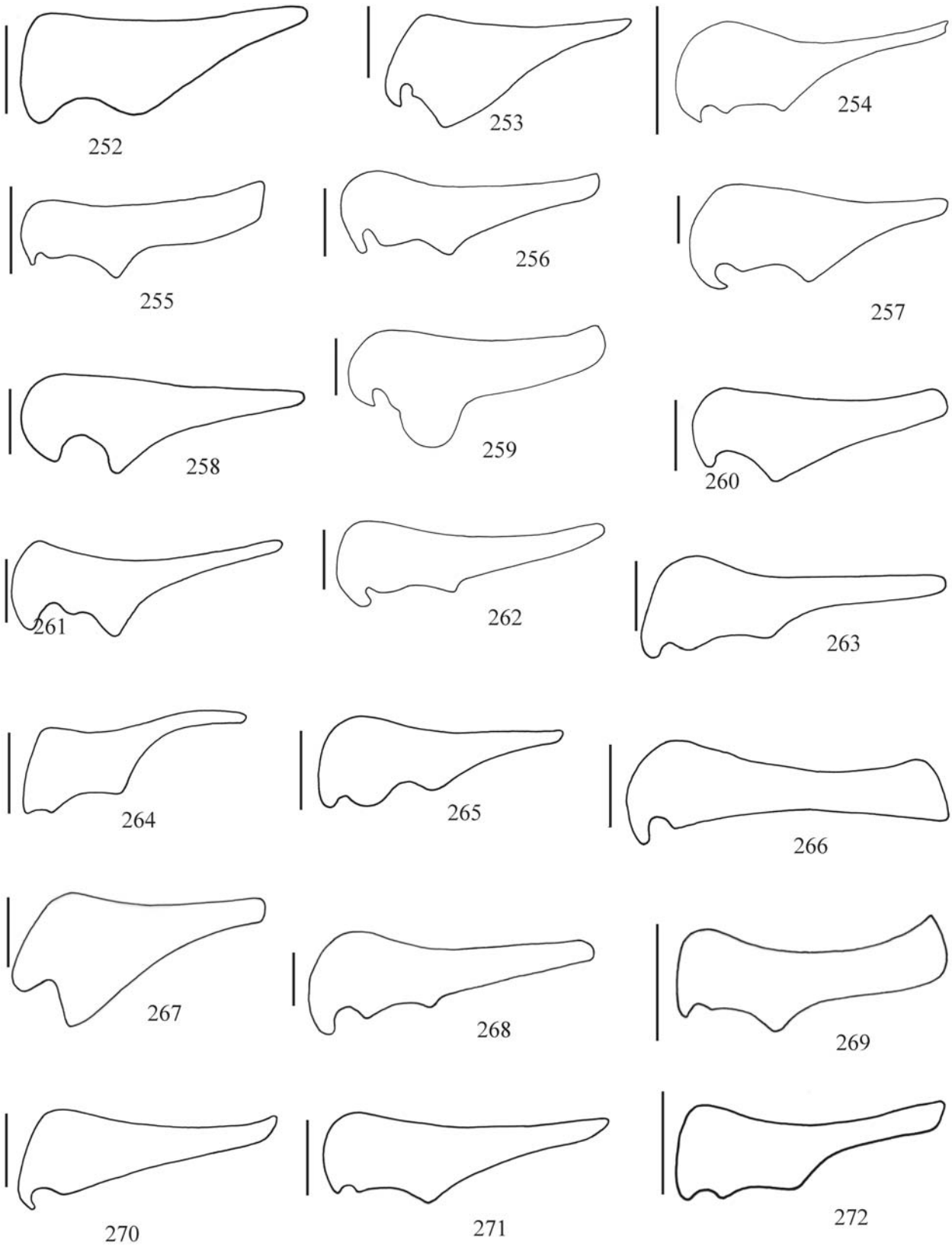
The genus *Dicrepidius* is formed by 11 species: *D. cavifrons* Candèze, 1881, *D. corvinus* Candèze, 1859, *D. distinctus* Fleutiaux, 1911, *D. elegans* Fleutiaux & Sallé 1889, *D. ignotus* Fleutiaux & Sallé 1889, *D. insularis* Champion, 1897, *D. palmatus* Candèze, 1859, *D. politus* Champion, 1894, *D. ramicornis* (Palisot Beauvois 1805), (= *D. pectinicornis* Esch., 1829, = *Elater ceramboides* Sturm, 1826), *D. serraticornis* Champion, 1894, *D. thoracicus* Candèze, 1859. It is recorded from North America (United States (Arizona, Texas, Indiana, South Carolina), Mexico), Central America (Guatemala, Belize, Nicaragua, Panama), Antilles (Cuba, Guadeloupe, St Vicent, Grenada), South America (Colombia, Brazil, Argentina).

Dicrepidius ramicornis is characterized by homoplasies, 2(2) anterior margin of frons prominent at middle, 3(0) anterior margin of frons at nasal level, 6(0) ridge of nasal present, 18(5) labrum narrow band-like, 36(2) lateral margin of metacoxal plate widened laterally, 56(1) sternite 8 of male gradually narrowed at apex and 67(4) lateral margins of median lobe slightly narrowed at distal half. It is the sister-group of *Crepidius*.

Dicrepidius ramicornis (Palisot de Beauvois 1805) (Figs. 71, 125, 126, 155, 220, 260, 286, 347, 408, 409, 478, 506).

Elater ramicornis Palisot de Beauvois 1805: 21.
Dicrepidius ramicornis; Germar, 1839: 214; Jacquelin Du Val, 1857: 69; Candèze, 1859: 144; Chevrolat, 1867: 600; Fleutiaux & Sallé, 1889: 409; Champion, 1894: 293; Heyne & Taschenberg, 1908: 156; Fleutiaux, 1911: 251; Schenkling, 1925: 85 (cat.); Blackwelder, 1944: 298 (Cat.).
Dicrepidius pectinicornis Esch., 1829: 31; Gemminger & Harold, 1869: 1605 (syn.)
Elater ceramboides Sturm, 1826: 135.

Length: 15.5-25.5 mm. General integument reddish-brown. Pubescence yellowish, fine, moderately long and moderately dense. Frons carinate, longer than wide, convex; anterior margin prominent at middle; punctuation fine and dense. Nasal (Fig. 155) wider than long, with two inclined ridges. Antennae with 11 antennomeres; in male 2.5 antennomeres longer than hind angles of pronotum; flabellate in male, serrate in female; scape shorter than eye; 2nd antennomere globular, 3rd with lateral appendix, shorter than 4th, short in female; last narrowed at apex. Labrum (Fig. 71) like narrow band, with long setae on distal half. Mandibles (Figs. 125, 126) wide with one subapical tooth; with one small tooth at beginning of penicillus; penicillus formed by short setae disposed in whole mesal area; molar area well developed; dorsal region with carina and moderately long setae. Maxillae: galea with spatulate setae; last palpomere securiform. Labium: prementum with long setae in front of palpi; postmentum with two long setae and some moderately short. Pronotum (Fig. 220) slightly wider than long, slightly narrowed anteriorly; moderately convex; lateral margins carinate; anterior margin slightly notched; hind angles slightly divergent and carinate; median basal tubercle flat;



Figs. 252-272. Placa metacoxal: 252, *Ampedus sanguineus*; 253, *Anchastus digittatus*; 254, *Blauta cribraria*; 255, *Calopsephus apicalis*; 256, *Catalamprus angustus*; 257, *Crepidius flabellifer*; 258, *Crepidius resectus*; 259, *Dayakus angularis*; 260, *Dicrepidius ramicornis*; 261, *Dipropus brasilianus*; 262, *Dipropus pinguis*; 263, *Elius birmanicus*; 264, *Heterocrepidius gilvellus*; 265, *Heterocrepidius ventralis*; 266, *Ovipalpus pubescens*; 267, *Physorhinus xanthocephalus*; 268, *Propsephus beniensis*; 269, *Rhinopsephus apicalis*; 270, *Sephilus formosanus*; 271, *Spilus atractomorphus*; 272, *Stenocrepidius simoni*. Bars = 1 mm.

punctuation moderately coarse and moderately dense. Prosternal channel absent. Prosternal spine with subapical tooth. Borders of mesosternal cavity horizontal and declivous. Metacoxal plate (Fig. 260) strongly narrowed laterally; free margin with well developed tooth. Tibial spurs short; tarsomeres 1-3 lamellate beneath. Scutellum elongate with posterior margin rounded. Elytra convex, narrowed apicad; striae grooved at base, marked by coarse punctures; interstices narrow, equal and flat, except basal region convex.

Male. Tergite 8 elongate, slightly narrowed to apex; anterior margin rounded; marginate by setae; clothed with microtrichiae. Sternite 8 (Fig. 286) trapezoidal, translucent in a median basal area; anterior margin slightly notched at middle; setae distributed on distal half. Sternite 9: distal half gradually narrow to apex; setous near apex. Tergite 9 (Fig. 347) slightly notched at middle; punctuate with some setae near angles; tergite 10 as long as 9, punctuate and with some setae laterally. Aedeagus (Figs. 408, 409) elongate; basal piece much longer than parameres; parameres fused ventrally; median lobe moderately longer than parameres, narrowed near base and at apex; apex of parameres cuneiform.

Female. Tergite 8 elongate, abruptly narrowed on distal third; anterior margin narrow with rounded angles; setae irregularly distributed. Sternite 8 (Fig. 478) elongate, narrowed to apex; short setae on distal half; marginal setae longer; spiculum gastrale 5.18 times sternite length. Ovipositor with stylus; bursa copulatrix (Fig. 506) with 4 spiny areas; spines forming continuing areas.

Material examined. BRAZIL. Minas Gerais: 1 ex. (MNHN). São Paulo: 1 ex. (MZSP); Botucatu, 2 exs. (MZSP). Santa Catarina: Canoinhas, 1 ex. (MZSP); Mafra, 1 ex. (MNHN); Pinhal, 1 ex. (MZSP); Rio Vermelho, 1 ex. (MZSP); Timbó, 1 ex. (MZSP).

Dipropus Germar, 1839

Dipropus Germar, 1839: 216.
Dipropus (*pars*); Candèze, 1859: 49, 90; Schenkling, 1925: 78, 88 (cat.) (syn. *Anoplischius* and *Ischiodontus*).
Ischiodontus Candèze, 1859: 10, 90; 1891: 60 (cat.); Champion, 1895: 316; Schwarz, 1906: 61, 76; Blatchley, 1910: 719, 729; Schenkling, 1925: 88 (cat.); Blackwelder, 1944: 299 (cat.); Arnett, 1962: 505 (syn.).
Atractodes (*pars*) Germar, 1839: 220, 221.
Heterocrepidius Lacordaire, 1857: 170.
Tricrepidius Motschulsky, 1859: 366.

Type-species: *Elater pexus* Germar, 1824, designated by Hyslop, 1921.

Germar (1839) erected the genus *Dipropus* to three species from Brazil: *Elater brasilianus* Germar, 1824, *E. pexus* Germar, 1824 and *Dicrepidius laticollis* Eschscholtz, 1829.

Candèze (1859) erected *Ischiodontus* to 63 species, from tropical region of America and Africa. He presented a key and descriptions for all species. According to him, the uniformity of the genus makes the specific characterization very difficult. He considered *Dipropus* as synonym of *Anoplischius* and *Ischiodontus*. The species that originally were included into *Dipropus* are now *Anoplischius laticollis*, *Ischiodontus brasilianus* and *I. pexus*.

Candèze (1891) catalogued 68 species separated into two groups according to the size of 3rd antennomere.

Champion (1895) treating of *Ischiodontus*, described 24 species and stated that this genus contain 70 described species, all American, from Southern United States to Uruguay, except *I. hawaiensis* Candèze, introduced to Sandwich Island. Of this number, 65 are from tropical America, three of these inhabiting the Antilles. He presented a key where some items are for more than one species, following the Candèze's idea of difficulties in identifying the species.

Schwarz (1906) included 113 species in *Ischiodontus*.

Hyslop (1921) designated *Ischiodontus pinguis* Candèze, 1859 as type species of the *Ischiodontus* and *Elater pexus* Germar, 1824 as type species of *Dipropus*.

Schenkling (1925) followed Candèze (1859) and catalogued 124 species to *Ischiodontus*.

Fall (1925) described *Ischiodontus granulosus* from Palm Beach, Florida.

Blackwelder (1944) catalogued 123 species to *Ischiodontus*.

Becker (1961) gave a new name, *Ischiodontus schwarzi*, to *I. parallelus* Schwarz, 1906 and designated the Lectotype.

Arnett (1962) synonymyzed *Ischiodontus* Candèze, 1859 under *Dipropus* Germar, 1839, without references about the species included in the genus.

Chassain (1979) studying the faune from "Antilles Françaises" synonymized *Ischiodontus convexus* Fleutiaux & Sallé, 1890 under *Crepidius rhipihorus* Candèze, 1859.

Suzuki (1988) recorded *Ischiodontus hawaii* from Chiba Prefecture (Central Japan).

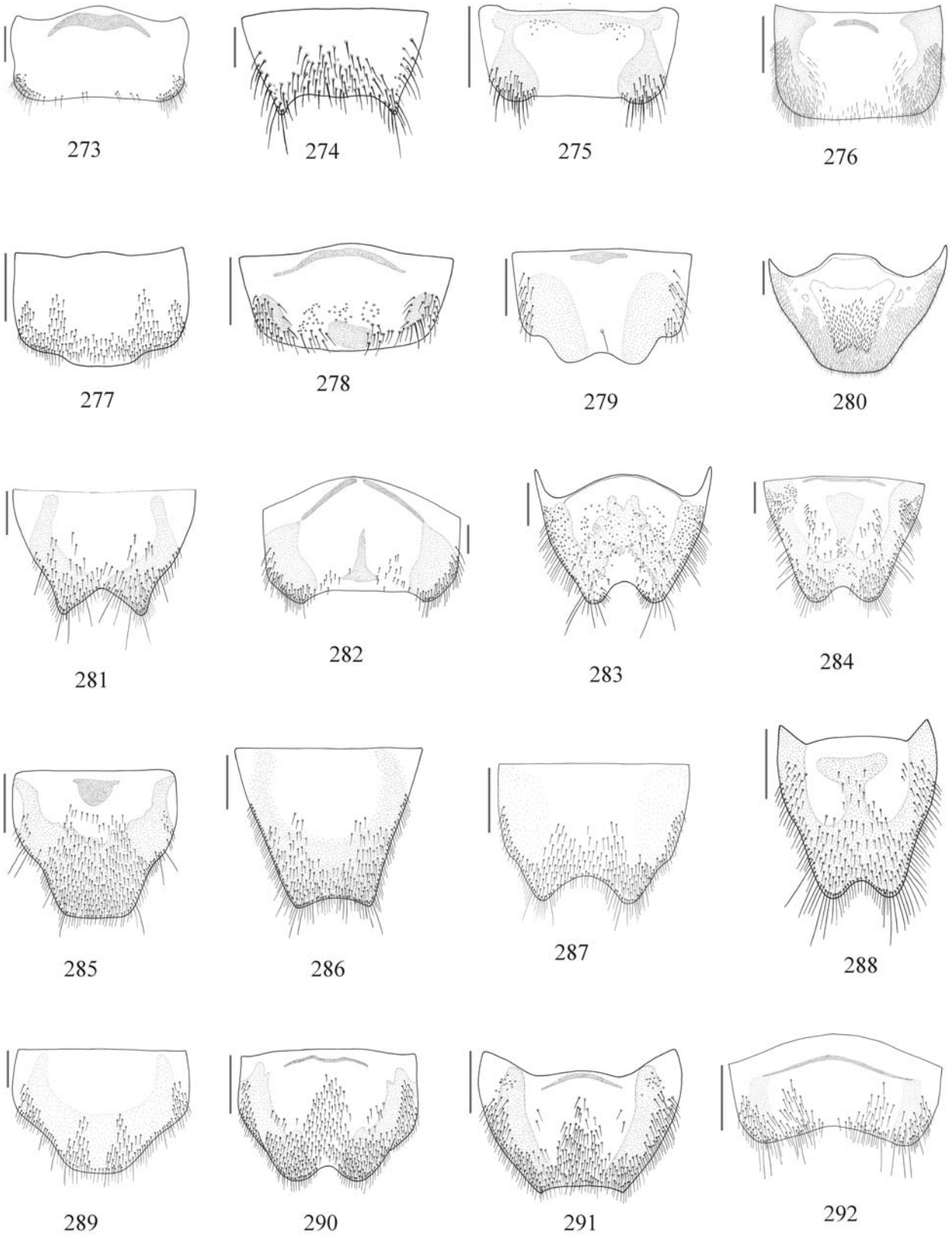
Golbach (1994) followed Arnett (*l.c.*) and recorded 10 species of *Dipropus* to Argentina: 8 from *Ischiodontus* and 2 from *Dicrepidius*.

Johnson (2002a) treating of the classification of the Neartic genera of Elateridae, kept *Ischiodontus* Candèze, 1859 as synonym and cited 8 species from "southeastern states to California".

Johnson (2002b) designated the Lectotype and Paralectotypes to *Ischiodontus* species described by Champion, 1895 and later transferred to *Dipropus*.

The genus *Dipropus* is formed by about 150 species. It is recorded from North America (United States of America (Michigan, Ohio, Indiana, Texas, Alabama, Florida), Mexico), Central America (Guatemala, Belize, Honduras, Nicaragua, Costa Rica, Panama), Antilles (Cuba, Hispaniola, Guadeloupe, Martinique, Grenada), South America (Colombia, Venezuela, Guyana, Suriname, Brazil, Ecuador, Peru, Bolivia, Chile, Paraguay, Argentina, Uruguay).

The *Dipropus* species included in this analysis do not form a monophyletic group. The monophyletic group ((*D. pinguis*)((*D. brasilianus*)(*D.factuellus*))) is characterized by homoplasies, 34(1) prosternal spine with rounded apex, 40(0) tibial spurs short, 42(1) lamella of protarsomere 1 absent, 43(1) lamella of mesotarsomere 1 absent and 44(1) lamella of metatarsomere 1 absent. It belongs to a monophyletic group formed by a large polytomy that includes some genera and



Figs. 273-292. Sternite 8 of male: 273, *Achrestus flavocinctus*; 274, *Adiaphorus ponticerianus*; 275, *Ampedus sanguineus*; 276, *Anoplischius haematopus*; 277, *Atractosomus flavescens*; 278, *Blauta cribraria*; 279, *Calopsephus apicalis*; 280, *Chalcolepidius zonatus*; 281, *Crepidius flabellifer*; 282, *Ctenicera silvatica*; 283, *Cyathodera lanugicollis*; 284, *Cyathodera longicornis*; 285, *Dayakus angularis*; 286, *Dicrepidius ramicornis*; 287, *Dipropus brasilianus*; 288, *Dipropus laticollis*; 289, *Dipropus schwarzi*; 290, *Elius birmanicus*; 291, *Elius dilatatus*; 292, *Lampropsephus cyaneus*. Bars = 2 mm, except figs. 275, 278, 281, 285, 287, 288, 292 = 5 mm, figs. 276, 277, 280, 286, 290, 291 = 1 mm.

several groups of genera. *D. schwarzi* is characterized by homoplasies, 2(3) anterior margin of frons straight, 27(1) last palpomere slightly widened apicad and 37(4) free margin of metacoxal plate with small tooth. It is the sister-group of *Anoplischius* and also participate of the large anterior polytomy. *D. laticollis* is characterized by a synapomorphy, 29(2) hind angles of pronotum with apex inwards, and a homoplasy, 61(2) aedeagus narrow and long. It is the sister-group of ((*Cyathodera* (*Trielasmus varians* (*Paraloboderus glaber* ((*Loboederus appendiculatus*) (*Prolobodorus crassipes*))))))). The number of species examined is insufficient to propose new genera, considering the large number of species included in the genus at moment.

Dipropus brasilianus (Germar, 1824)
(Figs. 19, 72, 221, 261, 287, 324, 348, 410, 411).

Elater brasilianus Germar, 1824: 55.
Dipropus brasilianus; Germar, 1839: 217.
Ischiodontus brasilianus; Candèze, 1859: 105; 1891: 61 (cat.); Schenkling, 1925: 89 (cat.); Blackwelder, 1944: 299 (cat.).

Length:11.5-12.5 mm. General integument reddish-brown; legs and antennae clearer. Pubescence grayish, long, thin and moderately dense. Frons carinate, longer than wide; slightly concave medioanteriorly; anterior margin slightly rounded, almost straight, prominent, surpassing nasal; punctuation coarse and dense. Nasal high, slightly wider than long. Antennae (Fig. 19) with 11 antennomeres; in male 4 antennomeres longer than hind angles of pronotum; serrate; scape shorter than eye; 2nd antennomere globular, 3rd triangular, shorter than 4th, last narrowed at apex. Labrum (Fig. 72) subrectangular and setous. Mandibles wide with one apical and one subapical tooth; penicillus formed by short setae disposed in whole mesal area; molar area absent; dorsal region with carina and moderately long setae. Maxillae: galea with thick and spatulate setae; last palpomere securiform. Labium: prementum with setae in front of palpi; postmentum with 2 long setae and several shorter. Pronotum (Fig. 221) slightly convex, grooved longitudinal medially near base; wider than long, slightly narrowed to apex; lateral margins incompletely carinate; anterior margin straight; hind angles slightly divergent and carinate near lateral margin; median basal tubercle flat; punctuation moderately coarse and dense, sparser near base. Prosternal channel long. Prosternal spine with apex narrowed and rounded. Borders of mesosternal cavity declivous. Metacoxal plate (Fig. 261) strongly narrowed laterally; free margin with well developed tooth. Tibial spurs short; tarsomeres 2-3 lamellate beneath. Scutellum subtriangular. Elytra convex, narrowed on distal half; striae punctuated and grooved; interstices equal and slightly convex.

Male. Tergite 8 elongate, slightly narrowed apicad; with setae near middle and near margins; clothed with microtrichiae. Sternite 8 (Fig. 287) transverse, narrowed on distal third; anterior margin strongly notched at middle; anterior angles prominent and rounded; a band of setae near anterior and lateral margins. Sternite 9 (Fig. 324): apex gradually narrowed; distal half setous. Tergite 9 (Fig. 348) moderately notched at middle; punctuate with some setae near angles; tergite 10 longer than 9, with anterior margin rounded; setous near apex. Aedeagus (Figs. 410, 411) elongate; basal piece shorter than parameres; parameres fused ventrally; median lobe slightly narrowed to apex; slightly longer than parameres; parameres with apex securiform, rounded laterally.

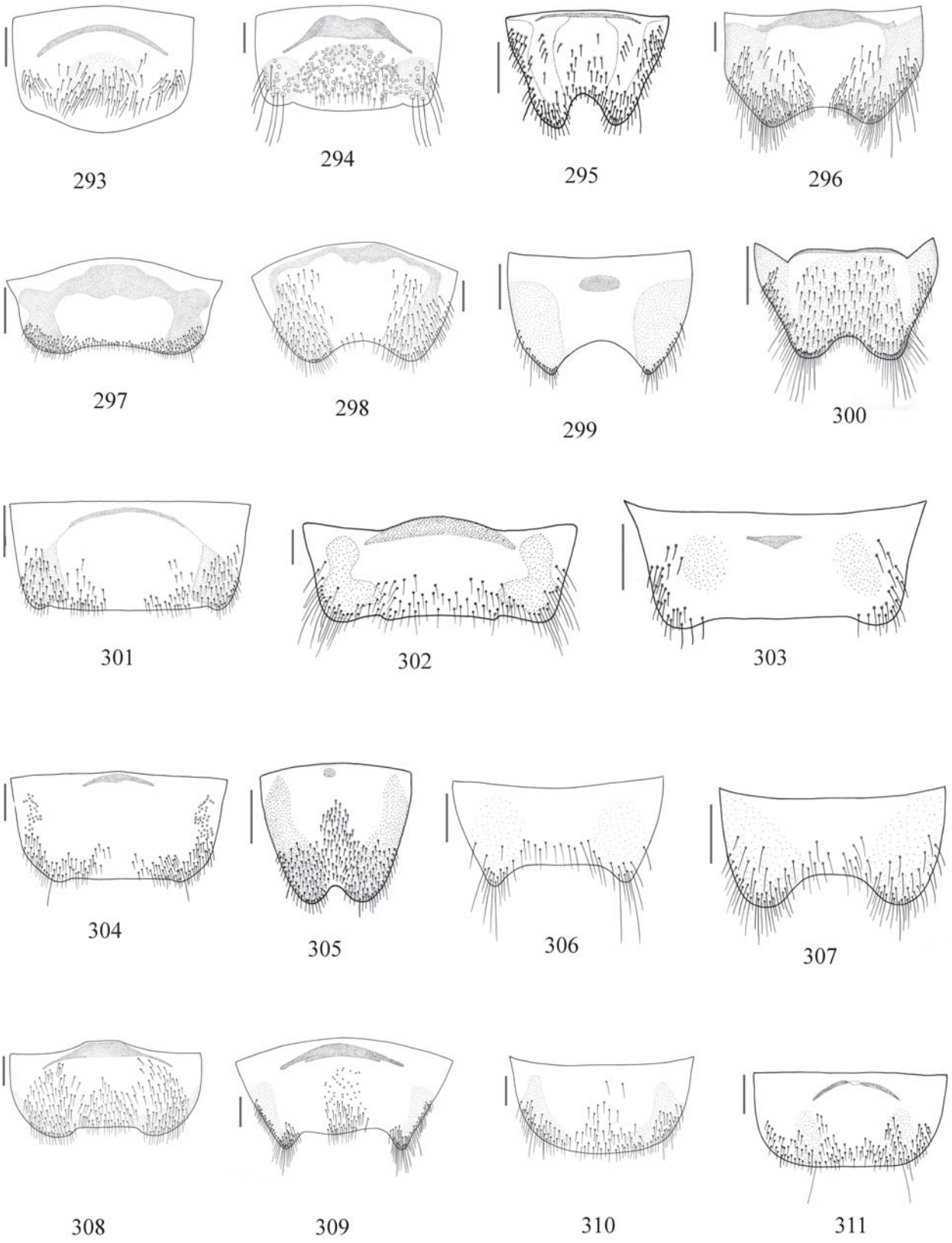
Material examined. BRAZIL. São Paulo: São Paulo (Ipiranga), 1 ex. (MZSP); Monte Alegre (Faz. Sta. Maria), 1 ex. (MZSP).

Dipropus factuellus (Candèze, 1859)
(Figs. 20, 315, 349, 412, 413, 479).

Ischiodontus factuellus Candèze, 1859: 118; 1891: 62 (cat.); Schenkling, 1925: 90 (cat.); Blackwelder, 1944: 299 (cat.).

Length: 8.5-10.0 mm. General integument yellowish-brown. Pubescence yellowish, long and dense. Frons carinate, longer than wide; slightly concave medioanteriorly; anterior margin slightly rounded, almost straight, prominent, surpassing nasal; punctuation coarse and dense. Nasal high, slightly wider than long. Antennae (Fig. 20) with 11 antennomeres; in male 3.2 antennomeres longer than hind angles of pronotum; slightly serrate; scape shorter than eye; 2nd antennomere globular, 3rd triangular elongate, shorter than 4th, last narrowed at apex. Labrum subrectangular and setous, with anterior margin rounded. Mandibles wide with one apical and one subapical tooth; penicillus formed by short setae disposed in whole mesal area; molar area absent; dorsal region with carina and moderately long setae. Maxillae: galea with spatulate setae; last palpomere securiform. Labium: prementum with setae in front of palpi; postmentum with 2 long setae and several shorter. Pronotum slightly convex; wider than long, slightly narrowed to apex; lateral margins incompletely carinate; anterior margin almost straight; hind angles slightly divergent and carinate near lateral margin; median basal tubercle flat; punctuation moderately coarse and dense, sparser near base. Prosternal channel long. Prosternal spine with apex narrowed and rounded. Borders of mesosternal cavity declivous. Metacoxal plate strongly narrowed laterally; free margin with well developed tooth. Tibial spurs short; tarsomeres 2-3 lamellate beneath. Scutellum subtriangular elongate. Elytra convex, narrowed on distal half; striae deeply punctuated; interstices equal and flat.

Male. Tergite 8 (Fig. 315) wider than long, slightly narrowed apicad; with setae distributed on almost whole surface; clothed with microtrichiae. Sternite 8 transverse, narrowed on distal third; anterior margin strongly notched at middle; anterior angles prominent and rounded; a band of setae near anterior and lateral margins. Sternite 9: apex gradually narrowed; distal half setous. Tergite 9 (Fig. 349) moderately notched at middle; punctuate with some setae near angles; tergite 10 longer than 9, punctuate and setous. Aedeagus (Figs. 412, 413) short and wide; basal piece longer than parameres; parameres fused ventrally; median lobe slightly narrowed to apex, with lateral margins sinuous; much longer than



Figs. 293-311. Sternite 8 of male: 293, *Heterocrepidius gilvellus*; 294, *Heterocrepidius ventralis*; 295, *Loboederus appendiculatus*; 296, *Melanotus spernendus*; 297, *Olophoeus gibbus*; 298, *Ovipalpus pubescens*; 299, *Physorhinus xanthocephalus*; 300, *Proloboderus crassipes*; 301, *Propsephus beniensis*; 302, *Pseudolophoeus guineensis*; 303, *Rhinopsephus apicalis*; 304, *Sephilus formosanus*; 305, *Sephilus frontalis*, 306, *Singhalenus gibbus*; 307, *Singhalenus taprobanicus*; 308, *Sphenomerus antennalis*; 309, *Sphenomerus brunneus*; 310, *Spilus nitidus*; 311, *Stenocrepidius simoni*. Bars = 2 mm, except figs. 293, 304 = 1 mm, figs. 295, 299, 301, 305 = 0.5 mm, fig. 297 = 5 mm.

parameres; parameres with apex securiform, narrow.

Female. Tergite 8 transverse, subtriangular; setae at middle and near apex, marginal longer. Sternite 8 (Fig. 479) elongate, narrowed on distal half; partially clothed with short setae; spiculum gastrale 4 times sternite length. Ovipositor with stylus; bursa copulatrix without spines or sclerotized pieces.

Material examined. ARGENTINA. 8 exs. (MZSP). Prov. Buenos Aires, 4 exs (MNHN). Chaco and Santiago del Estero Provinces: Rio Salado, 1 ex. (MZSP), 22 exs (MNHN). Missiones Province, 1 ex. (MZSP). PARAGUAY. 2 exs (MNHN).

Dipropus laticollis (Eschscholtz, 1829)
(Figs. 21, 73, 196, 222, 288, 325, 350, 414, 415,480).

Dicrepidius laticollis Eschscholtz, 1829: 31.
Dipropus laticollis; Germar, 1839: 216.
Anoplischius laticollis; Candèze, 1859: 74; Steinheil, 1875: 115; Champion, 1895: 314; Schenkling, 1925: 79 (cat.); Blackwelder, 1944: 298 (cat.).

Length: 14-17 mm. General integument reddish-brown; antennae and legs clearer. Pubescence yellowish, fine, very long, sparse and bristle. Frons carinate, longer than wide; convex; anterior margin rounded, surpassing nasal; punctuation moderately coarse and sparse. Nasal wider than long. Antennae (Fig. 21) with 11 antennomeres; in male 4.2 antennomeres longer than hind angles of pronotum; subserrate in both sexes; scape shorter than eye; 2nd antennomere globular, 3rd triangular elongate, shorter than 4th, last narrowed at apex. Labrum (Fig. 73) semielliptical with long setae. Mandibles with one apical and one subapical tooth; penicillus formed by short setae disposed in whole mesal area; molar area well developed; dorsal region with carina and moderately long setae. Maxillae: galea with spatulate setae; last palpomere securiform. Labium: prementum with long setae in front of palpi; postmentum with two long setae and many moderately short. Pronotum (Fig. 222) wider than long, slightly convex; lateral margins carinate; anterior margin slightly prominent at middle; hind angles inwardly directed, with long carina; median basal tubercle indistinct; punctuation moderately coarse and sparse. Prosternal channel long. Prosternal spine (Fig. 196) curved, compressed laterally with subapical lobe. Borders of mesosternal cavity narrow and declivous. Metacoxal plate strongly narrowed laterally; free margin straight. Tibial spurs long; tarsomeres 1-3 lamellate beneath. Scutellum elongate, slightly narrowed to apex; distal margin rounded. Elytra convex, narrowed apicad; striae grooved at base, marked by weak moderately coarse punctuation; interstices flat.

Male. Tergite 8 elongate, gradually narrowed to apex; anterior margin rounded; punctuate and marginate by setae; translucent at base; clothed with microtrichiae. Sternite 8 (Fig. 288) elongate, slightly narrowed on distal half; anterior margin notched at middle; translucent in a basal U-shaped area; partially clothed by setae, longer near margins. Sternite 9 (Fig. 325): distal third abruptly narrow to apex; setous near apex. Tergite 9 (Fig. 350) slightly notched at middle, almost straight; a few setae near angles; tergite 10 narrow, longer than 9. Aedeagus (Figs. 414, 415) narrow and long; basal piece shorter than parameres; parameres fused ventrally; median lobe almost straight, narrowed at apex; much longer than parameres; apex of parameres spatuliform, slitted subapically.

Female. Tergite 8 elongate, narrowed to apex; basal third translucent; setae at apex, marginal longer. Sternite 8 (Fig. 480) elongate, narrowed apicad; partially clothed with short setae; spiculum gastrale 4.60 times sternite length. Ovipositor with stylus; bursa copulatrix without spines or sclerotized pieces.

Material examined. BRAZIL. Minas Gerais: Santa Bárbara (Serra do Caraça), 4 exs. MZSP); Vila Monte Verde, 16 exs. (MZSP). Rio de Janeiro: Petrópolis, 1 ex. (MNHN). Espírito Santo: ex-coll. Fleutiaux, 1 ex. (MNHN); Linhares, 12 exs. (MZSP). São Paulo: Alto da Serra, 1 ex. (MZSP); Alto da Serra (Estação Biológica de Paranapiacaba), 2 exs. (MZSP); Barueri, 6 exs. (MZSP); Itu (Faz. Pau d´Alho), 1 ex. (MZSP); Monte Alegre (Faz. Sta Maria), 2 exs. (MZSP); Osasco, 1 ex. (MZSP); Pindamonhangaba (Eugênio Lefrève), 3 exs. (MZSP); São Paulo (Santo Amaro), 1 ex. (MZSP). Paraná: Ponta Grossa, 1 ex. (MZSP).

Dipropus pinguis (Candèze, 1859)
(Figs. 22, 223, 262).

Ischiodontus pinguis Candèze, 1859: 103; 1891: 61 (cat.); Champion, 1895: 319; Schenkling, 1925: 91 (cat.); Blackwelder, 1944: 300 (cat.).

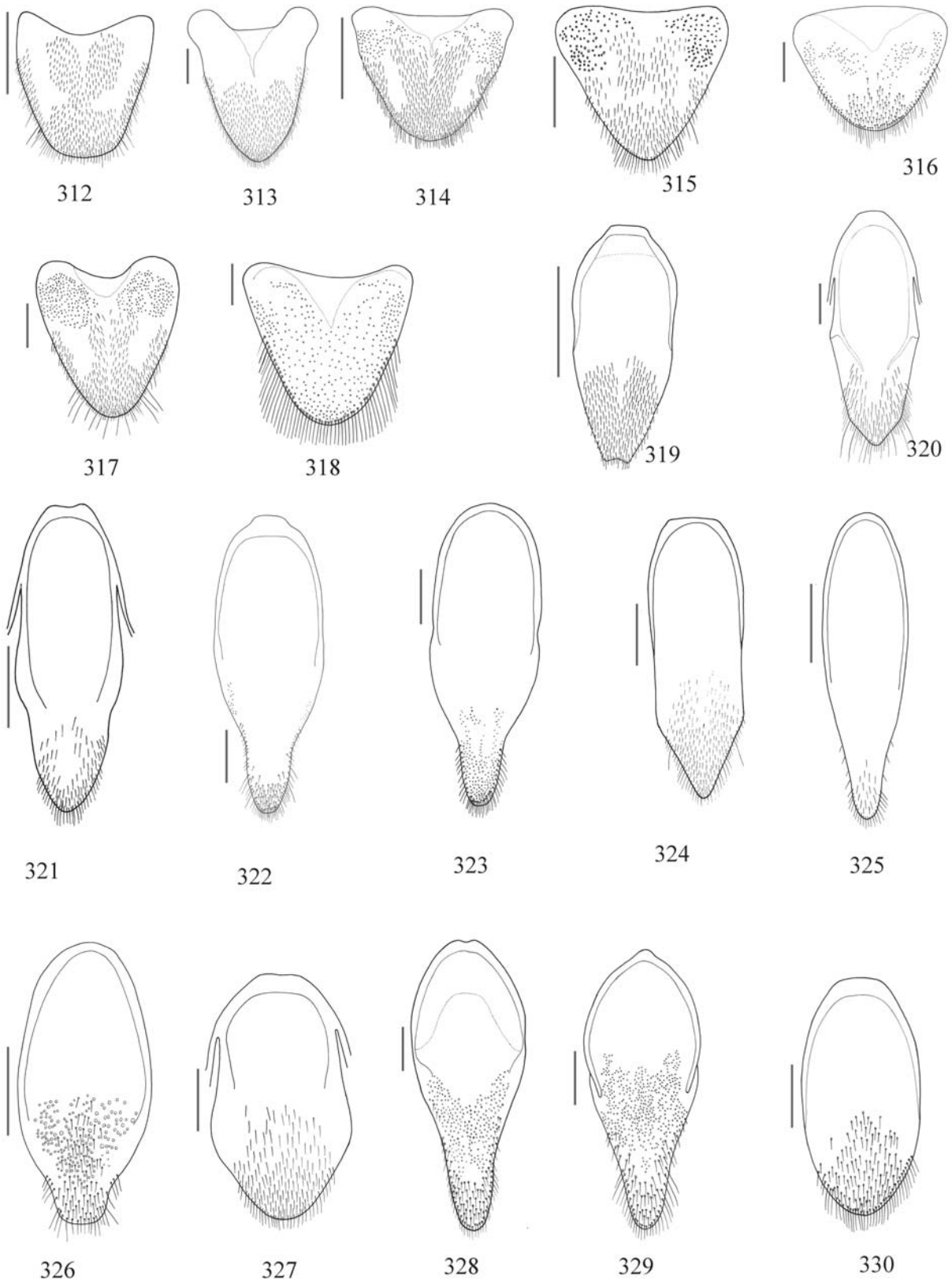
Length: 13.5 mm. General integument reddish-dark-brown; legs and antennae clearer. Pubescence whitish, moderately long and moderately dense. Frons carinate, longer than wide; convex; anterior margin rounded and prominent, surpassing nasal; punctuation coarse and dense. Nasal wider than long. Antennae (Fig. 22) with 11 antennomeres; serrate; antennomeres 3-11 with longitudinal carina; scape as long as eye; 2nd antennomere globular, 3rd triangular elongate, slightly shorter than 4th, last narrowed at apex. Labrum semielliptical and setous. Pronotum (Fig. 223) strongly convex; wider than long, slightly narrowed to apex; lateral margins incompletely carinate; anterior margin U-shaped; hind angles backwardly directed and carinate; median basal tubercle flat; punctuation coarse and dense. Prosternal channel long. Prosternal spine with apex narrowed and rounded. Borders of mesosternal cavity narrow and declivous. Metacoxal plate (Fig. 262) slightly narrowed laterally; free margin with small tooth. Tibial spurs long; tarsomeres 2-3 lamellate beneath. Scutellum elongate with posterior margin rounded; anterior, lateral and posterior margins notched at middle. Elytra convex, narrowed on distal third; striae punctuate and grooved; interstices equal and convex.

Material examined. Without locality, 1 ex. (MNHN).

Dipropus schwarzi (Becker, 1961)
(Figs. 127, 128, 224, 289, 351, 416, 417).

Ischiodontus schwarzi Becker, 1961: 169.

Length: 8-9 mm. General integument reddish-brown; antennae and legs clearer. Pubescence yellowish, long, moderately dense and bristle. Frons carinate, longer than wide;



Figs. 312-330. Tergite 8 of male: 312, *Achrestus flavocinctus*; 313, *Anoplischius haematopus*; 314, *Blauta cribraria*; 315, *Dipropus factuellus*; 316, *Lampropsephus cyaneus*; 317, *Pantolamprus mirabilis*; 318, *Proloboederus crassipes*. Sternite 9 of male: 319, *Blauta cribraria*; 320, *Crepidius flabellifer*; 321, *Crepidius resectus*; 322, *Cyathodera lanugicollis*; 323, *Cyathodera longicornis*; 324, *Dipropus brasilianus*; 325, *Dipropus laticollis*; 326, *Heterocrepidius gilvellus*; 327, *Lampropsephus cyaneus*; 328, *Loboederus appendiculatus*; 329, *Proloboderus crassipes*; 330, *Sphenomerus antennalis*. Bars = 5 mm, except figs. 312, 322, 323 = 10 mm, figs. 313, 316-319, 326 = 1 mm, fig. 320= 2 mm, figs. 327-329= 0.5 mm.

convex and flat anteriorly; anterior margin straight, prominent, surpassing nasal; punctuation moderately coarse and dense. Nasal wider than long. Antennae with 11 antennomeres; in male 4.25 antennomeres longer than hind angles of pronotum; serrate; scape shorter than eye; 2nd antennomere globular, 3rd triangular elongate, as long as 4th and same shape, last narrowed at apex. Labrum semielliptical with long setae. Mandibles (Figs. 127, 128) with one apical and one subapical tooth; penicillus formed by short setae disposed in whole mesal area; molar area well developed; dorsal region with carina and moderately long setae. Maxillae: galea with spatulate setae; last palpomere securiform. Labium: prementum with long setae in front of palpi; postmentum with two long setae and many moderately short. Pronotum (Fig. 224) wider than long, slightly narrowed anteriad; strongly convex; convexity decreasing basad; lateral margins carinate; anterior margin straight; hind angles backwardly directed and carinate; median basal tubercle indistinct; punctuation moderately coarse and sparse, sparser and smaller basad. Prosternal channel long. Prosternal spine with subapical lobe. Borders of mesosternal cavity narrow and declivous. Metacoxal plate strongly narrowed laterally; free margin with tooth. Tibial spurs long; tarsomeres 2-3 lamellate beneath. Scutellum pentagonal with posterior margin rounded. Elytra convex, narrowed apicad; striae coarsely punctuate and grooved; interstices equal and slightly convex.

Male. Tergite 8 elongate, gradually narrowed to apex; anterior margin rounded; punctuate and marginate by setae; translucent in a triangular area at base; clothed with microtrichiae. Sternite 8 (Fig. 289) transverse strongly narrowed on distal half; anterior half trapezoidal; translucent in a basal U-shaped area; densely setous near margins. Sternite 9: distal third gradually narrow to apex; punctuate on distal half and setous near apex. Tergite 9 (Fig. 351) strongly notched at middle; punctuate with few setae near angles; tergite 10 slightly shorter than 9, punctuate with setae on distal half. Aedeagus (Figs. 416, 417) elongate; basal piece shorter than parameres; parameres fused ventrally; median lobe almost straight, constricted at apex and near base; slightly longer than parameres; apex of parameres securiform preceded by lateral tooth.

Material examined. UNITED STATES OF AMERICA. Florida. Highland co., 4 exs (MZSP).

Elius Candèze, 1859

Elius Candèze, 1859: 9, 45; 1891: 56 (cat.); Fleutiaux, 1905: 320; Schwarz, 1906: 60, 72; Schenkling, 1925: 84 (cat.); Fleutiaux, 1928: 105 (cat.).
Sphenomerus Fleutiaux, 1918 (*non* Candèze)
Aelius Sharp, 1889: 132

Type-species: *Elius prionocerus* Candèze, 1859, designated by monotypy.

Candèze (1859) erected *Elius* to one species, *E. prionocerus*, from Madras. Candèze (1891) catalogued 8 species to this genus.

Schwarz (1906) included 11 species in the genus.

Schenkling (1925) catalogued 11 species to this genus.

Fleutiaux (1928) described 4 new species, considered *Sphenomerus mouhoti* Fleutiaux, 1918 (*non* Candèze) as synonym of *Elius birmanicus* and gave a new name to *Sphenomerus mouhoti* Fleutiaux, 1918 (*non* Candèze), *Elius correctus*. He also presented an identification key to 6 species and a note with some retifications and observations about *E. stuppens* Candèze, 1893 and *E. dilatatus* Candèze, 1878.

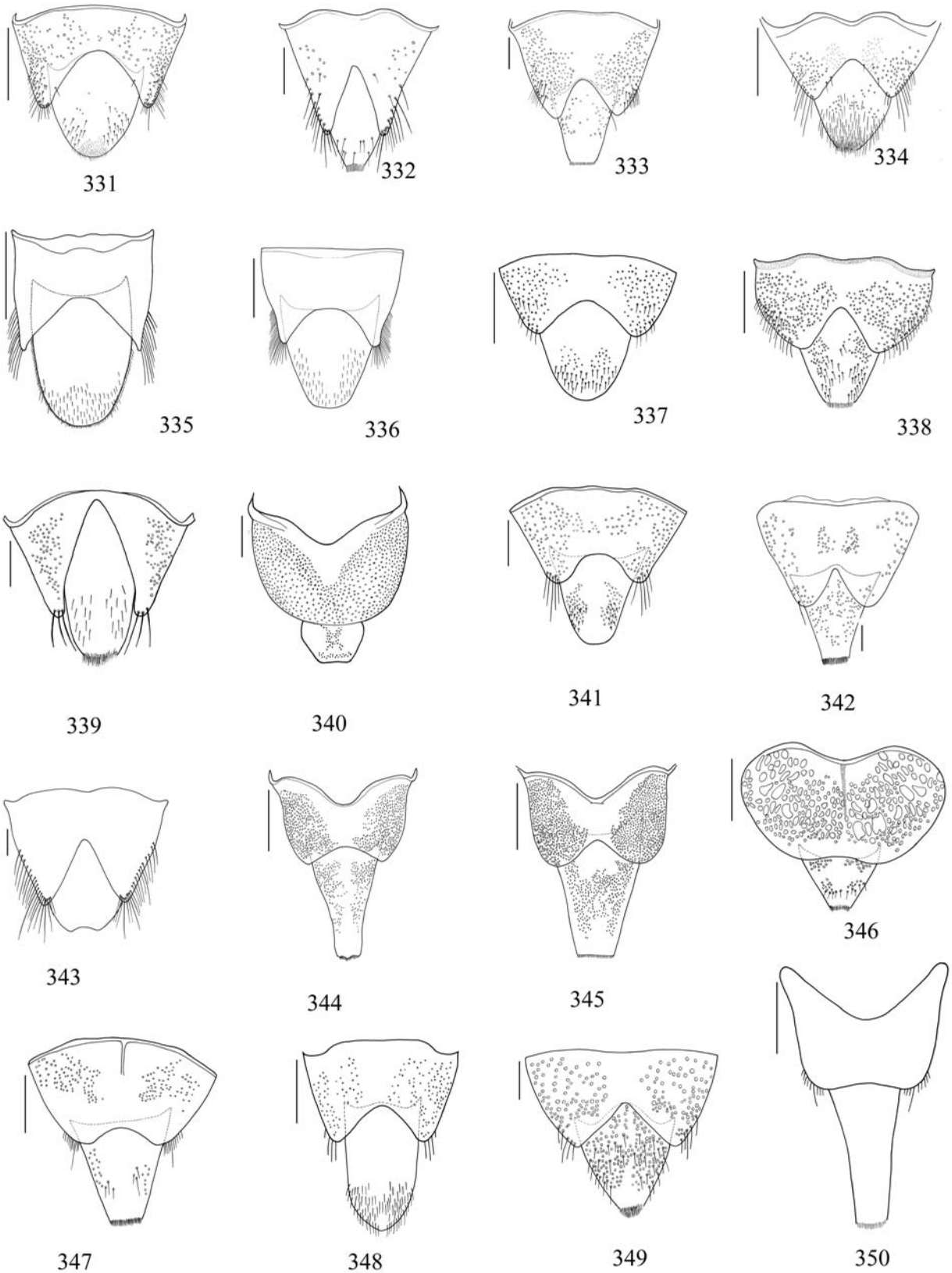
The genus *Elius* is formed by 16 species: *E. alveolarius* Candèze, 1878, *E. angusticollis* Fleutiaux, 1928, *E. annamensis* Fleutiaux, 1928, *E. birmanicus* Candèze, 1893 (=*Sphenomerus mouhoti* Fleutiaux, 1918), *E. candezei* Fleutiaux, 1928, *E. correctus* Fleutiaux, 1928 (=*Sphenomerus mouhoti* Fleutiaux, 1918), *E. dilatatus* Candèze, 1878, *E. elegans* Candèze, 1880, *E. insularis* Candèze, 1889, *E. prionocerus* Candèze, 1859, *E. robustus* Fleutiaux, 1928, *E. sericeus* Candèze, 1893, *E. serraticornis* Kirsch, 1875, *E. stuppeus* Candèze, 1893, *E. umbilicatus* Candèze, 1865, *E. ventralis* Candèze, 1888. It is recorded from India, Burma, Laos, Thailand, Malaysia, Singapore, Borneo.

The *Elius* species included in this analysis form a monophyletic group, characterized by homoplasies, 3(2) anterior margin of frons strongly prominent, 56(1) sternite 8 of male gradually narrowed to apex and 66(1) median lobe moderately longer than parameres. It is the sister-group of ((*Stenocrepidius simoni*)(*Heterocrepidius*)).

Elius birmanicus Candèze, 1893
(Figs. 23, 74, 225, 263, 290, 352, 418, 419).

Elius birmanicus Candèze, 1893: 173; Schenkling, 1925: 84 (cat.).

Length: 24.5-25.0 mm. General integument reddish-brown. Pubescence yellowish, long and dense. Frons carinate, longer than wide; convex; anterior margin slightly rounded, almost straight, prominent surpassing nasal; punctuation moderately coarse and dense. Nasal very high, slightly wider than long, coarsely punctuate. Antennae (Fig. 23) with 11 antennomeres; densely pubescent; in male 2.7 antennomeres longer than hind angles of pronotum; strongly serrate; scape shorter than eye; 2nd antennomere globular, 3rd triangular and prominent laterally, shorter than 4th, last narrowed at apex. Labrum (Fig. 74) semicircular and setous. Mandibles narrow with one apical and one subapical tooth; penicillus formed by short setae disposed in whole mesal area; molar area absent; dorsal region with carina and moderately long setae. Maxillae: galea with simple setae; last palpomere widened to apex. Labium: prementum with setae in front of palpi; postmentum with two long setae and many moderately short. Pronotum (Fig. 225) convex, slightly wider than long, slightly narrowed to apex; lateral margins straight and incompletely carinate; anterior margin straight; hind angles backwardly directed and carinate; median basal tubercle flat preceded by carina; punctuation moderately coarse and very dense. Prosternal channel long. Prosternal spine flat with apex narrowed and rounded. Borders of mesosternal cavity narrow and declivous. Metacoxal plate (Fig. 263) strongly narrowed laterally; free margin with small



Figs. 331-350. Tergites 9-10 of male: 331, *Achrestus flavocinctus*; 332, *Adiaphorus gracilis*; 333, *Adiaphorus ponticerianus*; 334, *Ampedus sanguineus*; 335, *Anoplischius bicarinatus*; 336, *Anoplischius haematopus*; 337, *Atractosomus flavescens*; 338, *Blauta cribraria*; 339, *Calopsephus apicalis*; 340, *Chalcolepidius zonatus*; 341, *Crepidius flabellifer*; 342, *Crepidius resectus*; 343, *Ctenicera silvatica*; 344, *Cyathodera lanugicollis*; 345, *Cyathodera longicornis*; 346, *Dayakus angularis*; 347, *Dicrepidius ramicornis*; 348, *Dipropus brasilianus*; 349, *Dipropus factuellus*; 350, *Dipropus laticollis*. Bars = 2 mm, except figs. 331, 334, 346, 350 = 5 mm, figs. 335, 336, 338, 340, 344, 347= 1 mm, figs. 341, 352= 0.5 mm, fig. 349= 10 mm.

lobe. Tibial spurs long; tarsomeres 1-3 lamellate beneath on legs anterior and median and 2-3 on posterior legs. Scutellum subpentagonal with distal margin rounded. Elytra convex, narrowed on distal third; striae punctuated and grooved; interstices equal and slightly convex.

Male. Tergite 8 subtriangular, setous on distal 2/3; clothed with microtrichiae. Sternite 8 (Fig. 290) transverse, slightly narrowed on distal half; anterior margin strongly notched at middle; translucent at middle, partially clothed by setae. Sternite 9: distal half gradually narrowed to apex; punctuate near middle and setous near apex. Tergite 9 (Fig. 352) strongly notched at middle; punctuate laterally; setae laterally near apex; tergite 10 longer than 9, punctuate and with setae near apex. Aedeagus (Figs. 418, 419) elongate; basal piece shorter than parameres; parameres fused ventrally; median lobe almost straight, constricted at apex; slightly longer than parameres; parameres with lateral tooth near apex.

Material examined. LAOS. Xieng Khouang Province: Mt. Mekong, 4 exs (MNHN); rive Siamoise, 2 exs. (MNHN). Luang Prabang, 1 ex. (MNHN). VIETNAM. Annam, 1 ex. (MNHN). Cochinchina, Mont Chaudoc, 1 ex. (MNHN)

Elius dilatatus Candèze, 1878
(Figs. 24, 75, 197, 226, 291, 353, 420, 421).

Elius prionocerus Candèze, 1878: 11; 1891: 56 (cat.); Schenkling, 1925: 84 (cat.).

Length: 16-17 mm. General integument reddish-brown. Pubescence yellowish, long and dense. Frons carinate, longer than wide; convex; anterior margin roundly prominent surpassing nasal; with longitudinal median carina at base; punctuation coarse and dense. Nasal very high, slightly wider than long, coarsely punctuate. Antennae (Fig. 24) with 11 antennomeres; densely pubescent; in male 2.2 antennomeres longer than hind angles of pronotum; serrate, stronger in male; scape shorter than eye; 2nd antennomere globular, 3rd triangular elongate, shorter than 4th, last narrowed at apex. Labrum (Fig. 75) narrow, semi-elliptical. Mandibles narrow with one apical and one subapical tooth; dorsal region with carina and moderately long setae. Last maxillar palpomere widened to apex. Pronotum (Fig. 226) slightly wider than long, slightly narrowed to apex; moderately convex; lateral margins straight and carinate; anterior margin lightly prominent at middle; hind angles long, backwardly directed and carinate; median basal tubercle flat; punctuation coarse and very dense. Prosternal channel long. Prosternal spine (Fig. 197) flat with apex narrowed and rounded. Borders of mesosternal cavity narrow and declivous. Metacoxal plate strongly narrowed laterally; free margin with small lobe. Tibial spurs long; tarsomeres 1-3 lamellate beneath on legs anterior and median and 2-3 on posterior legs. Scutellum subpentagonal with distal margin rounded. Elytra convex, narrowed on distal third; striae punctuated and grooved; interstices equal and slightly convex.

Male. Tergite 8 subtriangular, almost completely setous; clothed with microtrichiae. Sternite 8 (Fig. 291) transverse, narrowed apicad; anterior margin slightly notched at middle; translucent at middle, partially clothed by setae. Sternite 9: distal half gradually narrowed to apex; punctuate near middle and setous near apex. Tergite 9 (Fig. 353) moderately notched at middle; punctuate; a few setae laterally near apex; tergite 10 longer than 9, punctuate. Aedeagus (Figs. 420, 421) elongate; basal piece shorter than parameres; parameres fused ventrally; median lobe almost straight, constricted at apex; slightly longer than parameres; parameres with lateral tooth near apex.

Material examined. INDIA. Côte de Malabar, 1 ex. (MNHN). REPUBLIC OF SINGAPORE. 3 exs (MNHN). MALAYSIA. Selangor, Bukit Kutu, 1 ex. (MNHN).

Heterocrepidius Guérin-Méneville, 1838

Heterocrepidius Guérin-Méneville, 1838: 23; Lacordaire, 1857: 167, 170; Candèze, 1859: 9, 31; 1891: 55 (cat.); Champion, 1895: 297; Schwarz, 1906: 60, 64; Schenkling, 1925: 77 (cat.); Blackwelder, 1944: 297 (cat.).
Heteropus Germar, 1839: 217

Type-species: *Heterocrepidius ventralis* Guérin-Méneville, 1838, designated by Hyslop (1921) by monotypy.

Guérin-Méneville (1838) erected *Heterocrepidius* to *H. ventralis* from Peru. When he described the tarsi, lamellate under 2nd and 3rd tarsomeres of anterior and median tarsi and only at 3rd at posterior tarsi, he stated that "… ce qui pourrait autoriser à former avec cet insecte une coupe générique liant les *Monocrepidius* aux *Dicrepidius*, coupe que nous proposerions de désigner sous le nom d`*Heterocrepidius*".

Lacordaire (1857) redescribed the genus and stated about the tarsal lamellae. According to him, several genera were established based on the number of tarsal lamellae.The name used by Guérin-Méneville (*l. c.*), *Heterocrepidius*, is related to different number of lamellae under posterior tarsi. In fact, this genus presents tarsomeres 1-3 lamellate at anterior and median legs and tarsomeres 2-3 at posterior leg.

Candèze (1859) redescribed the genus *Heterocrepidius* and presented an identification key for 11 species, from which, 8 new species and 2 removed from *Heteropus*, besides the type-species. The majority of these species are from Brazil. According to him, they look-like *Physodactylus* Fischer, 1823, also with legs dilated.

Candèze (1891) catalogued 15 species to *Heterocrepidius* and considered *Heteropus* Germar as synonym.

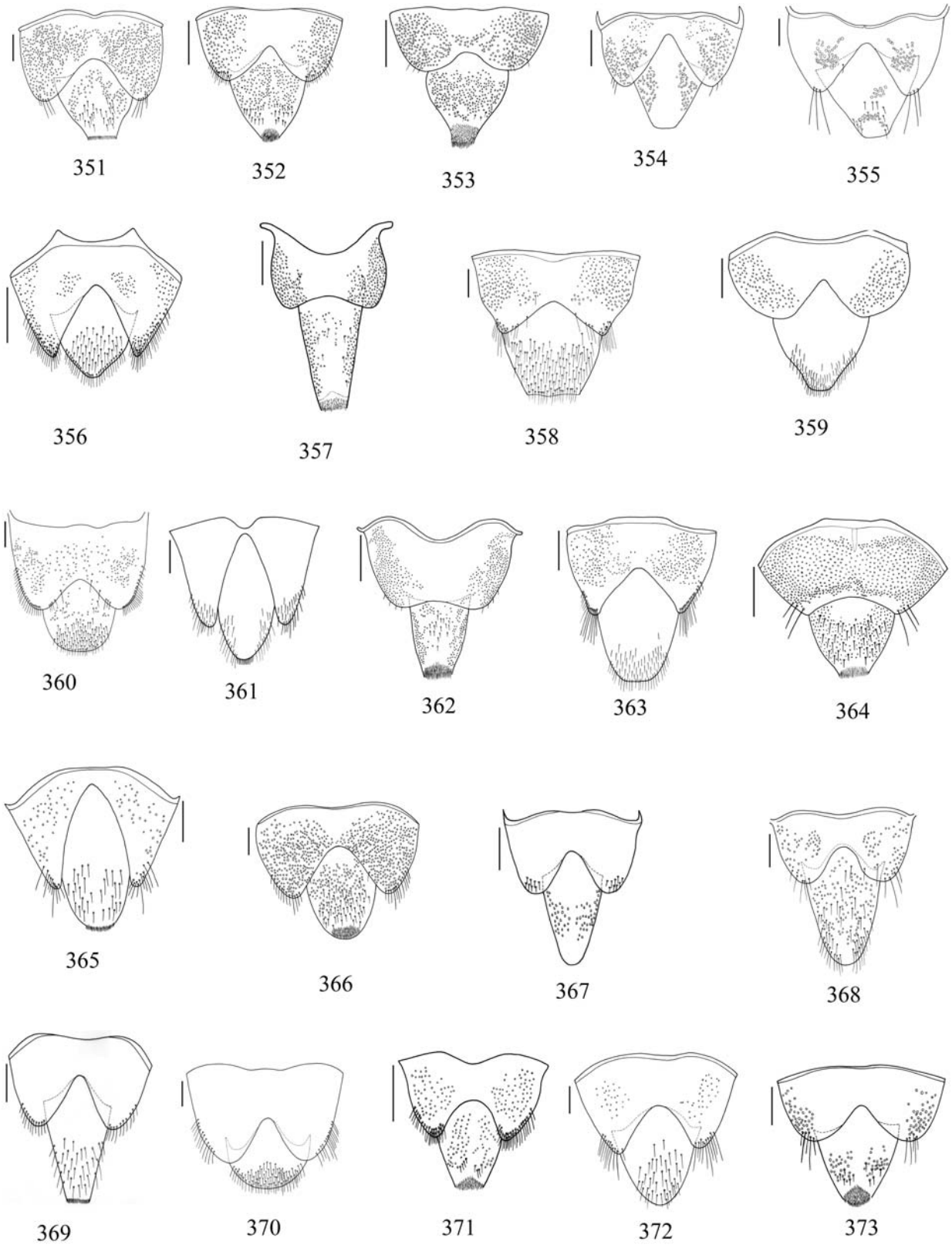
Fleutiaux (1892) erected *Dactylophysus* (Physodactylini, Elaterinae), to *Heterocrepidius mendax* Candèze, 1859, considering "*Heterocrepidius* Candèze, 1859 (*nec* Guér.)" as synonym of this genus.

The genus was composed by 16 species, from which 13 are from South America, one from Mexico and two from South Africa. Champion (1895) transferred the species from South Africa to *Anoplischius* and described *H. megalops*, from Costa Rica.

Schwarz (1906) included 22 species in the genus.

Schenkling (1925) catalogued 23 species to this genus.

Blackwelder (1944) catalogued 18 species to this genus.



Figs 351-373. Tergites 9-10 of male: 351, *Dipropus schwarzi*; 352, *Elius birmanicus*; 353, *Elius dilatatus*; 354, *Heterocrepidius gilvellus*; 355, *Heterocrepidius ventralis*; 356, *Lampropsephus cyaneus*; 357, *Loboederus appendiculatus*; 358, *Melanotus spernendus*; 359, *Olophoeus gibbus*; 360, *Ovipalpus pubescens*; 361, *Physorhinus xanthocephalus*; 362, *Proloboderus crassipes*; 363, *Propsephus beniensis*; 364, *Pseudolophoeus guineensis*; 365, *Rhinopsephus apicalis*; 366, *Sephilus formosanus*; 367, *Sephilus frontalis*; 368, *Singhalenus gibbus*; 369, *Singhalenus taprobanicus*, 370, *Sphenomerus antennalis*; 371, *Sphenomerus brunneus*; 372, *Spilus nitidus*; 373, *Stenocrepidius simoni*. Bars = 2 mm, except figs. 352-354, 356, 362, 363, 367 = 0.5 mm, fig. 357= 1 mm, figs. 359, 364, 365, 371 = 5 mm.

The genus *Heterocrepidius* is formed by 25 species: *H. aenescens* Candèze, 1859, *H. afer* Candèze, 1889, *H. castanopterus* Candèze, 1859, *H. columbicus* Steinh., 1875, *H. contractus* Candèze, 1896, *H. corvinus* Candèze, 1896, *H. crocipes* (Germar, 1824), *H. depressus* Candèze, 1859, *H. ferrugineus* Lucas, 1857, *H. gilvellus* Candèze, 1859, *H. glis* Candèze, 1859, *H. granulatus* Candèze, 1859, *H. indicus* Candèze, 1893, *H. insularis* Candèze, 1894, *H. majusculus* Candèze, 1896, *H. marginatus* Candèze, 1896, *H. megalops* Champion, 1895, *H. minor* Schwarz, 1906, *H. modestus* Schwarz, 1906, *H. morio* Candèze, 1896, *H. picipes* (Germar, 1839), *H. puberulus* Boh., 1858, *H. rufus* Steinheil, 1873, H. *tibialis* Candèze, 1859, *H. ventralis* Guérin, 1838. It is recorded from Central America (Costa Rica), South America (Colombia, Brazil, Ecuador, Peru, Argentina, Uruguay), India and Indonesia (Sumatra).

The *Heterocrepidius* species included in this analysis form a monophyletic group, characterized by sinapomorphies, 38(1) femur widened and 68(2) apex of median lobe widely rounded, and by homoplasies, 31(2) carina of hind angles of pronotum weak, 37(2) free margin of metacoxal plate with very developed lobe, 59(1) median region of tergite 9 of male very narrow and 62(2) basal piece longer than parameres. It is the sister-group of *Stenocrepidius simoni*.

Heterocrepidius gilvellus Candèze, 1859
(Figs. 25, 76, 129, 130, 165, 179, 228, 264, 293, 326, 354, 422, 423).

Heterocrepidius gilvellus Candèze, 1859: 34; Schenkling, 1925: 77 (cat.); Blackwelder, 1944: 297 (cat.).

Length: 10.0-10.5 mm. General integument reddish-brown clear. Pubescence yellowish-white, long and dense. Frons carinate, longer than wide; concave medioanteriorly; anterior margin roundly prominent, surpassing nasal; punctuation moderately coarse and dense. Nasal short, wider than long. Antennae (Fig. 25) with 11 antennomeres; in male 2 antennomeres longer than hind angles of pronotum; subserrate; scape shorter than eye; 2nd antennomere globular, 3rd cylindrical, elongate, shorter than 4th, last narrowed at apex. Labrum (Fig. 76) narrow and setous. Mandibles (Figs. 129, 130) elongate with subapical small tooth; penicillus formed by short setae disposed in whole mesal area; dorsal region with carina and moderately long setae. Maxillae (Fig. 165): galea with simple setae; last palpomere elliptical. Labium (Fig. 179): prementum with long setae in front of palpi; postmentum with some long setae and many moderately short. Pronotum (Fig. 228) convex, wider than long, slightly narrowed to apex; lateral margins straight and incompletely carinate; anterior margin straight; hind angles backwardly directed and weakly carinate; median basal tubercle indistinct; punctuation moderately coarse and very dense. Prosternal channel absent. Prosternal spine with subapical lobe. Borders of mesosternal cavity narrow and declivous. Metacoxal plate (Fig. 264) very wide, strongly narrowed laterally; free margin with lobe. Femur dilatate; tibial spurs long; tarsomeres 1-3 lamellate at anterior and median legs and tarsomere 3 at posterior leg. Scutellum subtriangular elongate. Elytra convex, narrowed on distal fourth; striae punctuated and grooved; interstices equal and slightly convex.

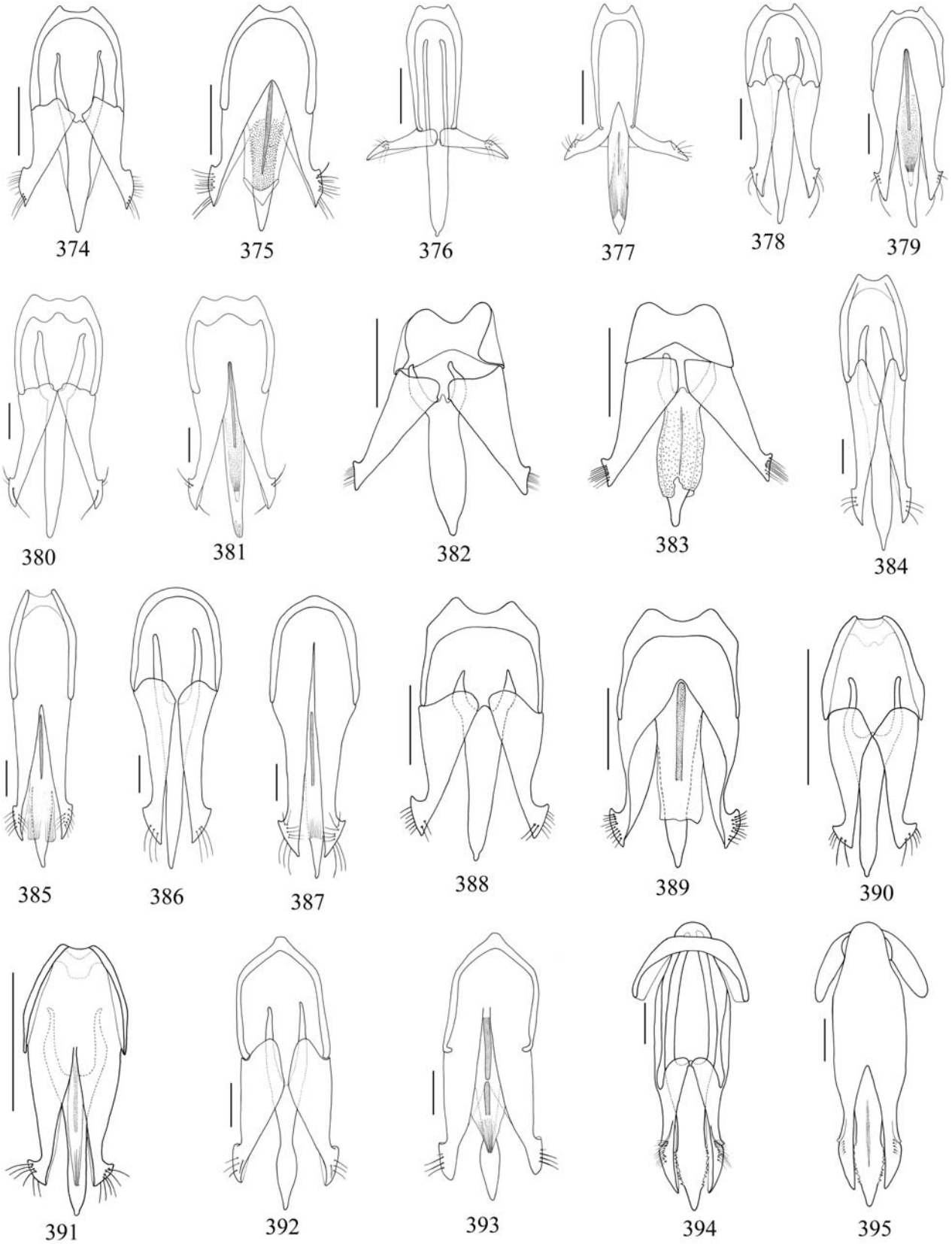
Male. Tergite 8 wider than long, narrowed apicad; anterior margin straight; setae near lateral and anterior margins; clothed with microtrichiae. Sternite 8 (Fig. 293) transverse, with anterior margin slightly prominent at middle; anterior angles rounded; translucent with a narrow transversal basal sclerite; a band of setae near anterior margin. Sternite 9 (Fig. 326): apex abruptly narrowed; distal half punctuate and setous. Tergite 9 (Fig. 354) strongly notched at middle; punctuate laterally, with some setae near angles; tergite 10 longer than 9, punctuate laterally. Aedeagus (Figs. 422, 423) elongate; basal piece longer than parameres; parameres fused ventrally; median lobe wide, almost straight, slightly narrowed near middle with apex rounded; strongly longer than parameres; parameres with apex securiform.

Material examined. Without locality: 1 ex. (MNHN). BRAZIL. Ex-coll. Chevrolat, ex-coll. Fleutiaux, 1 ex. (MNHN).

Heterocrepidius ventralis Guérin-Méneville, 1838
(Figs. 26, 77, 131, 132, 229, 265, 294, 355, 424, 425).

Heterocrepidius ventralis Guérin-Méneville, 1838: 23; Candèze, 1859: 36; Schenkling, 1925: 77 (cat.); Blackwelder, 1944: 297 (cat.).

Length: 8.5-9.0 mm. General integument reddish dark-brown. Pubescence whitish, moderately long and dense. Frons carinate, longer than wide; slightly concave medioanteriorly; anterior margin roundly prominent, surpassing nasal; punctuation moderately coarse and very dense. Nasal short, wider than long. Antennae (Fig. 26) with 11 antennomeres; in male 2 antennomeres longer than hind angles of pronotum; subserrate; scape shorter than eye; 2nd antennomere globular, 3rd cylindrical, elongate, shorter than 4th, last narrowed at apex. Labrum (Fig.77) semielliptical and setous. Mandibles (Figs. 131, 132) narrow with one apical and one subapical small tooth; penicillus formed by short setae disposed in whole mesal area; molar area absent; dorsal region with carina and moderadely long setae. Maxillae: galea with simple setae; last palpomere elliptical. Labium: prementum with long setae in front of palpi; postmentum with some long setae and many moderately short. Pronotum (Fig. 229) convex, wider than long, slightly narrowed to apex; lateral margins straight and incompletely carinate; anterior margin slightly prominent at middle; hind angles slightly divergent and weakly carinate; median basal tubercle indistinct; punctuation moderately coarse and very dense. Prosternal channel absent. Prosternal spine with subapical lobe. Borders of mesosternal cavity narrow and declivous. Metacoxal plate (Fig. 265) strongly narrowed laterally; free margin with lobe. Femur dilatate; tibial spurs long; tarsomeres 1-3 lamellate at anterior and median legs and tarsomeres 2-3 at posterior legs. Scutellum subpentagonal elongate. Elytra convex, narrowed on distal fourth; striae punctuated and grooved; interstices equal and slightly convex.



Figs. 374-395. Aedeagus (dorsal, ventral): 374, 375, *Achrestus flavocinctus*; 376, 377, *Achrestus venustus*; 378, 379, *Adiaphorus gracilis*; 380, 381, *Adiaphorus ponticerianus*; 382, 383, *Ampedus sanguineus*; 384, 385, *Anoplischius bicarinatus*; 386, 387, *Anoplischius haematopus*; 388, 389, *Atractosomus flavescens*; 390, 391, *Blauta cribraria*; 392, 393, *Calopsephus apicalis*; 394, 395, *Chalcolepidius zonatus*. Bars = 2 mm, except figs. 374-377, 382, 383= 5 mm, figs. 388, 389= 0.5 mm, figs. 390, 391, 394, 395= 1 mm.

Male. Tergite 8 wider than long, narrowed apicad; anterior margin rounded; punctuate with setae near lateral and anterior margins; clothed with microtrichiae. Sternite 8 (Fig. 294) transverse, with anterior margin straight; anterior angles rounded; translucent with a narrow transversal basal sclerite; a band of setae near anterior margin. Sternite 9: apex gradually narrowed; distal half punctuate and setous. Tergite 9 (Fig. 355) strongly notched at middle; punctuate near lateral margins, with some long setae near angles; tergite 10 longer than 9, gradually narrowed to apex; punctuate and with some setae near middle of anterior half. Aedeagus (Figs. 424, 425) elongate; basal piece longer than parameres; parameres fused ventrally; median lobe wide, almost straight, slightly narrowed near middle with apex rounded; strongly longer than parameres; parameres with apex securiform.

Material examined. BRAZIL. Santa Catarina: 1 ex. (MNHN); Blumenau, 1 ex. (MNHN).

Lamononia Van Zwaluwenburg, 1928

Lamononia Van Zwaluwenburg, 1928: 118

Type-species: *Lamononia monticola* Van Zwaluwenburg, 1928, designated by monotypy.

Van Zwaluwenburg (1928) erected *Lamononia*, to *L. monticola* based on 2 specimens from Samoa (Malololelei, Upolu). According to him, "the strongly bent mucro distinguishes the new genus from *Spilus*, *Ischiodontus* and *Pantolamprus*, while the perpendicular mesosternal cavity makes confusion with *Propsephus* impossible."

The genus *Lamononia*, monotypical, is recorded only from type-locality.

No species of this genus was examined but by the original description it is possible to verify that it presents tarsomeres 2 and 3 lamellate, indicating that it belongs to Dicrepidiina.

Lampropsephus Fleutiaux, 1928

Lampropsephus Fleutiaux, 1928: 104.

Type-species: *Psephus cyaneus* Candèze, 1878, designated by monotypy.

Fleutiaux (1928) erected *Lampropsephus* to include one species of *Psephus*, *P. cyaneus* Candèze, 1878, from Tonkin. According to him, it is similar to some blue *Pantolamprus*, but the metasternum is not prominent between the mesocoxae and the borders of mesosternal cavity are horizontal.

The genus *Lampropsephus*, monotypical, is recorded only from the type-locality.

Lampropsephus cyaneus is characterized by one synapomorphy, 35(4) borders of mesosternal cavity slightly declivous followed by strongly declivous, and by homoplasies, 8(4) antennae of male serrate in both sides, 9(3) antennae of female serrate in both sides, 15(3) antennae of male not reaching hind angles apices, 18(1) labrum semicircular, 24(3) galea bilobed, 25(4) setae of galea simple and spatulate, 40(0) tibial spurs short, 60(1) apex of sternite 9 of male abruptly narrowed and 61(0) aedeagus short and wide. It belongs to a tricotomy formed by two other groups of genera.

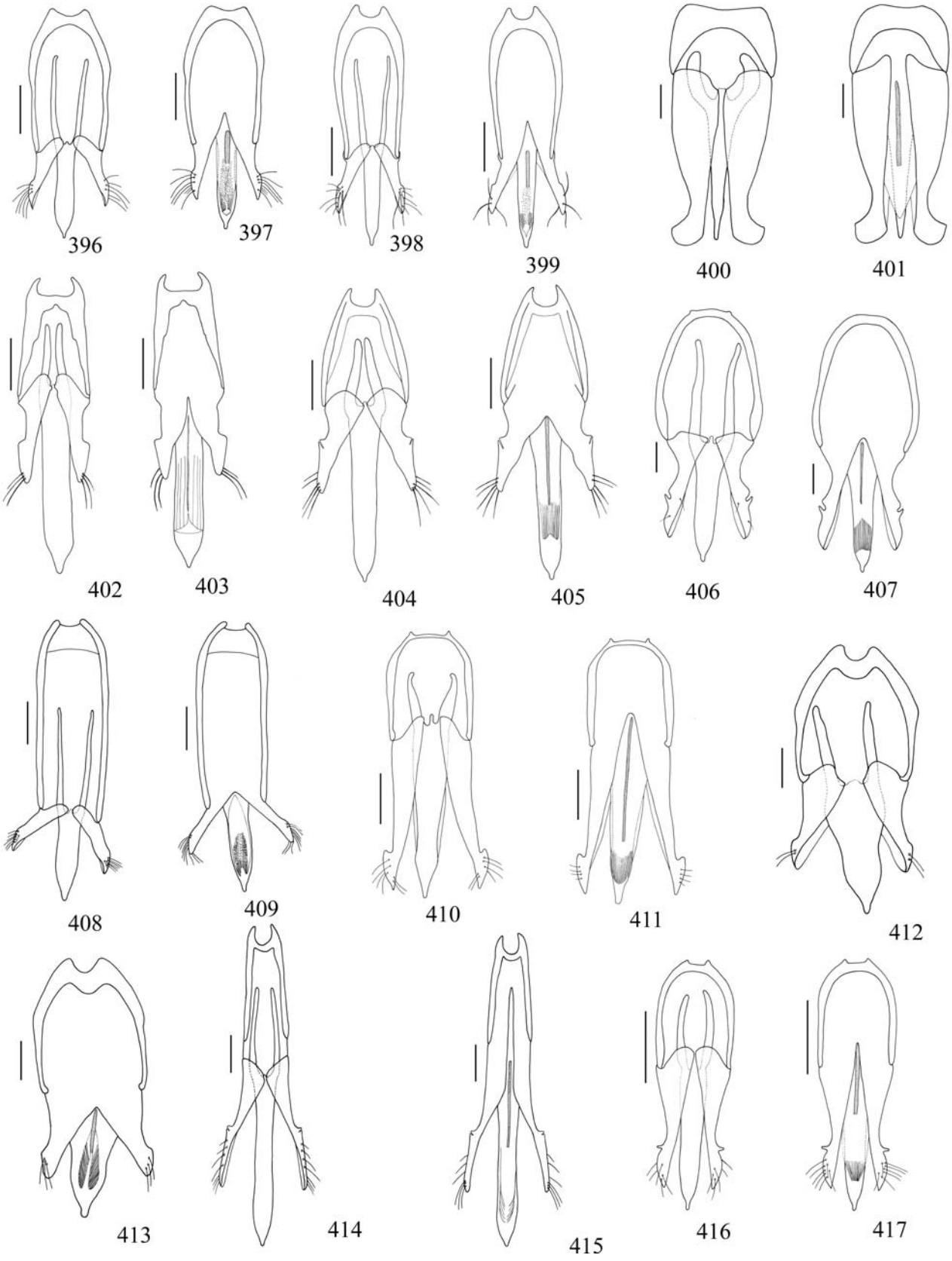
Lampropsephus cyaneus (Candèze, 1878) (Figs. 27, 78, 133, 134, 166, 198, 227, 292, 316, 327, 356, 426, 427, 481, 507).

Psephus cyaneus Candèze, 1878: 11; Fleutiaux, 1918: 204.
Propsephus cyaneus; Schenkling, 1925: 97 (cat.).

Length: 14.0-16.5 mm. General integument black with shine metallic blue or violet; antennae black. Pubescence black, fine, moderately long and bristle. Frons carinate, wider than long; convex; anterior margin prominent, surpassing nasal; punctuation fine and dense. Nasal strongly wider than long. Antennae (Fig. 27) with 11 antennomeres; in male not reaching hind angles of pronotum; serrate, serrate in both sides in female; scape shorter than eye; 2nd antennomere globular, 3rd triangular, shorter than 4th, last elliptical. Labrum (Fig. 78) semicircular and setous. Mandibles (Figs. 133, 134) wide with one apical and one subapical tooth; penicillus formed by short setae disposed in whole mesal area; molar area absent; dorsal region with carina and moderadely long setae. Maxillae (Fig. 166): galea bilobed with simple and spatulate setae; last palpomere securiform. Labium: prementum with setae in front of palpi; postmentum with 2 long setae and some shorter. Pronotum (Fig. 227) wider than long, narrowed to apex; strongly and roundly convex; lateral margins carinate; anterior margin slightly notched; hind angles slightly divergent and carinate; median basal tubercle flat; punctuation fine and moderately dense, sparser near base. Prosternal channel long. Prosternal spine (Fig. 198) with subapical lobe. Borders of mesosternal cavity wide, slightly declivous (almost horizontal) and distally more strongly declivous. Metacoxal plate slightly narrowed laterally; free margin with small lobe. Tibial spurs short; tarsomeres 2-3 lamellate beneath. Scutellum elongate with posterior margin rounded and lateral margins notched. Elytra strongly convex, narrowed on distal half; striae weakly punctuated; interstices equal and flat.

Male. Tergite 8 (Fig. 316) wider than long, slightly narrowed apicad; anterior margin rounded; with long setae near margins; clothed with microtrichiae. Sternite 8 (Fig. 292) transverse; anterior margin slightly notched at middle; anterior angles rounded; moderately long setae near lateral margins. Sternite 9 (Fig. 327): distal third abruptly narrowed apicad; distal half setous, specially near middle. Tergite 9 (Fig. 356) strongly notched at middle, V-shaped; partially punctuate with many setae near angles; tergite 10 shorter than 9, setous on distal half. Aedeagus (Figs. 426, 427) short and wide; basal piece shorter than parameres; parameres fused ventrally; median lobe gradually narrowed to apex; slightly longer than parameres; parameres with apex cuneiform, notched at subapical region.

Female. Tergite 8 transverse, slightly narrowed to apex; anterior margin rounded; partially clothed with short setae, the marginal



Figs. 396-417. Aedeagus (dorsal, ventral): 396, 397, *Crepidius flabellifer*; 398, 399, *Crepidius resectus*; 400, 401, *Ctenicera silvatica*; 402, 403, *Cyathodera lanugicollis*; 404, 405, *Cyathodera longicornis*; 406, 407, *Dayakus angularis*; 408, 409, *Dicrepidius ramicornis*; 410, 411, *Dipropus brasilianus*; 412, 413, *Dipropus factuellus*; 414, 415, *Dipropus laticollis*; 416, 417, *Dipropus schwarzi*. Bars = 2 mm, except figs. 396-399= 1 mm, figs. 402-405= 10 mm, figs. 408-411, 414-417= 5 mm.

longer. Sternite 8 (Fig. 481) elongate, narrowed on distal half; partially clothed with short setae; spiculum gastrale 3.17 times sternite length. Ovipositor with stylus; bursa copulatrix (Fig. 507) with 7 spiny areas, some of them star-like.

Material examined. TONKIN. [Vietnam] Hoa Binh, 2 exs. (MNHN).

Loboederus Guérin-Méneville, 1831

Loboederus Guérin-Méneville, 1831: 9, t. 9; Latreille, 1834: 148; Castelnau, 1840: 239; Blackwelder, 1944: 298 (cat.); Camargo-Andrade, 1935: 438, 439; Casari, 2004:459.
Lobederus; Lacordaire, 1857: 167, 169; Candèze, 1859: 9, 78; Schenkling, 1925: 82.
Loboderus Schwarz, 1906: 61, 69.

Type species: *Elater appendiculatus* Perty, 1830, designated by monotypy.

Perty (1830) described *Elater appendiculatus*, from São Paulo, Brazil, characterized, besides the hind angles of pronotum with internal appendices, by antennae serrate with last antennomere "lanceolate".

Guérin-Méneville (1831) erected *Loboederus* to *L. monilicornis* from São Paulo, Brazil. Latreille (1834) redescribed *Loboederus*, only with *L. monilicornis* Guérin, considering the last antennomere with "false article" and, erroneously, recorded it from "Java".

Castelnau (1840) redescribed the genus and considered *Elater appendiculatus* Perty, 1830 as synonym of *Loboederus monilicornis* Guérin, 1831.

Lacordaire (1857) described the antennae as filiform in females and serrate in males, with last antennomere longer with rounded apex. According to him, Guérin-Méneville (*l. c.*) examined only females because he did not describe the lamellae of tarsi, invisible in females, and also, had not mentioned the sexual differences of antennal shape and lenght. He considered the genus formed only by *L. appendiculatus* Perty, from São Paulo, Brazil, but stated that "M. Guérin-Méneville, qui l'a décrit presque em même temps que M. Perty, l'a nommé *L. monilicornis*...". He commented the error of Latreille (1834) recording it from Java.

Candèze (1859) redescribed the genus with only one species. According to him, Guérin- Méneville (1831) and Latreille (1834) described this species at same time and Latreille, erroneously, recorded it from Java. He stated also that Latreille (1834) considered the tarsi with only one lamella under 3rd article, but he (Candèze) noted another, small, under 2nd, but they are well visible only on anterior tarsi of male and are almost absent on females.

Candèze (1891) catalogued this genus only with *L. appendiculatus* (*L. monilicornis* as synonym).

Schwarz (1906) presented a key to genera and redescribed the "Genus *Loboderus* [sic]Guérin", formed by *L. appendiculatus*.

Hyslop (1921) designated *Loboederus monilicornis* as the type species and added a note: **"**Candèze (1859) reduces the type to synonymy under *Lobederus appendiculatus* Perty**"**.

Schenkling (1925) catalogued one species to this genus.

Camargo-Andrade (1935) presented an historical review of the genus discussing the previous authors and described a new species, *L. luederwaldti*. He also redescribed the genus and *L. appendiculatus*.

Lesne (1940) described *Loboederus fleutiauxi*.

Blackwelder (1944) catalogued two species to *Lobaederus* [sic].

Casari (2004) presented a revision of the genus and synonymized *L. fleutiauxi* Lesne, 1940 under *L. luederwaldti* Camargo-Andrade, 1935.

The genus *Loboederus* is formed by two species: *L. appendiculatus* Perty, 1830 (= *L. monilicornis* Guérin, 1831) and *L. luederwaldti*, 1935 (= *L. fleutiauxi* Lesne). It is recorded from Brazil.

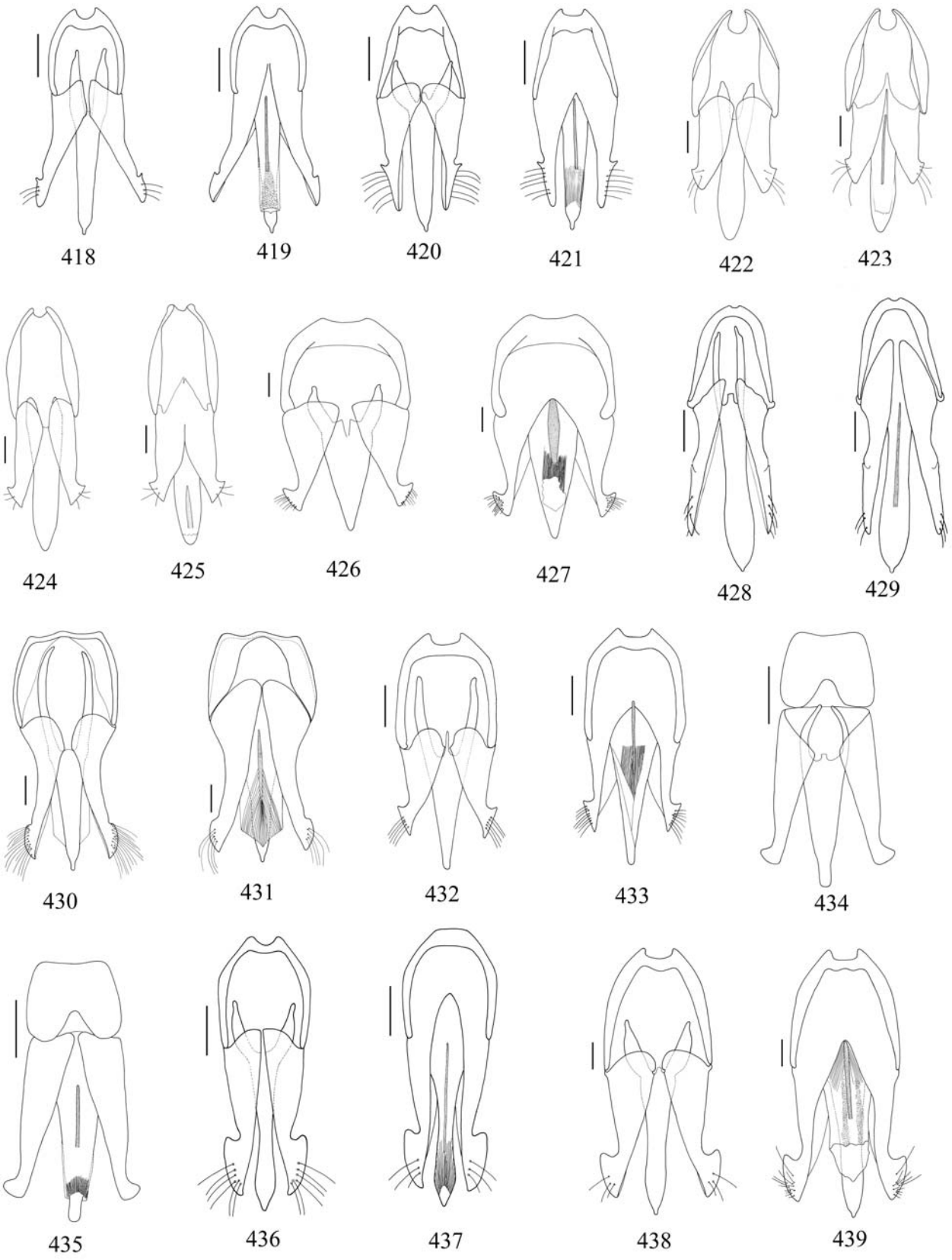
Loboederus appendiculatus is characterized by one synapomorphy, 30(0)hind angles of pronotum with posterolateral appendix, and by homoplasies, 7(2) nasal as wide as long, 14(2) antennomere 3 as long as 4, 21(1) mesal area of mandibles with one apical and one subapical tooth near apex, 22(1) penicillus reduced, 27(0) last palpomere securiform, 31(1) carina of hind angles of pronotum absent, 33(1) prosternal channel present, 37(1) free margin of metacoxal plate with small lobe, 63(0) parameres separated and 67(6) lateral margins of median lobe slightly narrowed at middle. It is the sister-group of *Proloboderus crassipes*.

Loboederus appendiculatus (Perty, 1830)
(Figs. 28, 79, 230, 295, 328, 357, 428, 429, 482).

Elater appendiculatus Perty, 1830: 21.
Loboederus appendiculatus; Gemminger & Harold, 1869: 1514 (cat.); Candèze, 1859: 79; Casari, 2004: 460.

Length: 15-20 mm. Frons carinate, wider than long; concave medioanteriorly; anterior margin strongly prominent at middle, surpassing nasal; punctuation coarse and dense. Nasal high, as long as wide. Antennae (Fig. 28) with 11 antennomeres; in male 3.2 antennomeres longer than hind angles of pronotum; slightly serrate; scape shorter than eye; 2nd antennomere globular, 3rd triangular, as long as 4th, last elliptical; antennomeres 5-11 with or without longitudinal smooth band. Labrum (Fig. 79) semielliptical and setous. Mandibles narrow with one subapical tooth; penicillus short, formed by short setae disposed in small mesal area; dorsal region with carina and moderately long setae. Maxillae: galea with simple setae; last palpomere securiform. Pronotum (Fig. 230) strongly convex, slightly grooved longitudinal medially and parallel lateral margins; wider than long, strongly narrowed to apex; lateral margins incompletely carinate; anterior margin prominent at middle; hind angles not carinate, backwardly directed with posterolateral appendix; median basal tubercle flat and rounded; punctuation coarse and dense. Prosternal channel long. Prosternal spine with apex narrowed. Borders of mesosternal cavity slightly declivous. Metacoxal plate strongly narrowed laterally; free margin with small lobe. Tibial spurs long; tarsomeres 2-3 lamellate beneath.

Male. Sternite 8 (Fig. 295) transverse, slightly narrowed



Figs. 418-439. Aedeagus (dorsal, ventral): 418, 419, *Elius birmanicus*; 420, 421, *Elius dilatatus*; 422, 423, *Heterocrepidius gilvellus*; 424, 425, *Heterocrepidius ventralis*; 426, 427, *Lampropsephus cyaneus*; 428, 429, *Loboederus appendiculatus*; 430, 431, *Melanotus spernendus*; 432, 433, *Olophoeus gibbus*; 434, 435, *Ovipalpus pubescens*; 436, 437, *Pantolamprus ligneus*; 438, 439, *Pantolamprus perpulcher*. Bars = 2 mm, except figs. 418-421, 428, 429= 0.5 mm, figs. 432-437= 5 mm.

apicad; anterior margin strongly notched at middle; anterior angles prominent and rounded; translucent in a lateral band and at middle; setae moderately long near lateral margins and at middle. Sternite 9 (Fig. 328): distal half abruptly narrowed to apex; distal third setous. Tergite 9 (Fig. 357) slightly notched at middle; punctuate; tergite 10 narrow, longer than 9, punctuate laterally and with a few setae. Aedeagus (Figs. 428, 429) elongate; basal piece shorter than parameres; parameres separate ventrally; median lobe narrowed near middle and constricted at apex; much longer than parameres; parameres cleft subapically.

Female. Sternite 8 (Fig. 482) wider than long, narrowed on distal half; partially clothed with short setae; spiculum gastrale 3.43 times sternite length. Ovipositor with stylus; bursa copulatrix without spines or sclerotized pieces.

Material examined. BRAZIL. 1 ex. (MNHN). Goiás: Anápolis (Chácara Tangará), 1 ex. (MZSP); Leopoldo Bulhões, 1 ex. (IBSP); Rio Verde, 1 ex. (MZSP). Distrito Federal: Brasília (Cidade Universitária), 1 ex. (MZSP). Bahia: Encruzilhada, 960 m, 2 exs. (DZUP). Mato Grosso: Chavantina, 1 M (dissected) (MZSP); Dourados, 1 ex. (DZUP); Rio Brilhante, 1 ex. (DZUP); Salobra (Instituto Oswaldo Cruz, Zona da N. O. B.), 1 ex. (MZSP); Utiariti (Rio Papagaio), 1 ex. (MZSP). Mato Grosso do Sul: Fátima do Sul (Sítio Alpha), 1 ex. (MZSP). Minas Gerais: Arinos, 1 ex. (MZSP); Uberaba, 3 exs (MNHN);Uberlândia, 1 ex. (MZSP). São Paulo: Andes, 3 exs (MZSP); Batatais, 1 ex. (MZSP); Botucatu, 5 exs. (1 F dissected) (MZSP); Itápolis, 1 ex. (MZSP); Itu, 1 ex. (MZSP); Nova Europa (Faz. Itaquerê), 2 exs. (MZSP); Piraju, 2 exs. (MZSP); Pirassununga, 2 exs. (MZSP); Regente Feijó, 1 ex. (MZSP); Ribeirão Preto (Tamanduá), 2 exs (MZSP); (Coqueiros), 1 ex. (MZSP); (Fac. Medicina), 1 ex. (MZSP); Rio Claro (Campus), 1 ex. (MZSP); São José dos Campos, 1 ex. (MZSP); São Paulo (Cantareira), 1 ex. (MZSP). *Paraná*: Campo Mourão, 1 ex. (DZUP).

Neopsephus Kishii, 1990

Neopsephus Kishii, 1990:12.

Type-species: *Neopsephus takasago* Kishii, 1990, designated by monotypy.

Kishii (1990) erected *Neopsephus* to a new species, *N. takasago*, based on a female from Taiwan. He compared this genus with *Lampropsephus* Fleutiaux, 1928 and *Sphenomerus* Candèze, 1859.

The genus *Neopsephus*, monotypical, is recorded only from type-locality.

No specimen of this genus was examined but, by the original description is possible to verify that it presents tarsomeres 2 and 3 lamellate indicating that it shoul be kept in Dicrepidiina.

Olophoeus Candèze, 1859

Olophoeus Candèze, 1859: 9, 15; 1891: 50 (cat.); Schwarz, 1899: 65; 1906: 59, 76; Fleutiaux, 1919: 38, 40; 1935a: 201; Schenkling, 1925: 87 (cat.); Burgeon, 1947: 17; Quelle, 1955: 228; Basilewsky, 1958: 382.

Type-species: *Olophoeus gibbus* Candèze, 1859, designated by monotypy.

Candèze (1859) erected *Olophoeus* to a new species, *O. gibbus*, from Gabon. In 1891 he catalogued the genus with only one species.

Schwarz (1906) included 9 species in the genus.

Schenkling (1925) catalogued 14 species to this genus.

Fleutiaux (1935a) discussed about the type-species of *Psephus* and *Olophoeus*. He also described *Olophoeus elgonensis* and *O. gerstaeckeri.*

Burgeon (1947) treated of 20 species, from which 10 species and 1 subspecies were new. He also grouped the 19 species from Congo into 4 groups; the remainder was included in any group.

Basilewsky (1958) redescribed the genus and described two species and two subspecies, one to *O. cinnamomeus* Schwarz and one to *O. guineensis* Candèze. He also presented an identification key and the geographical distribution for 18 species.

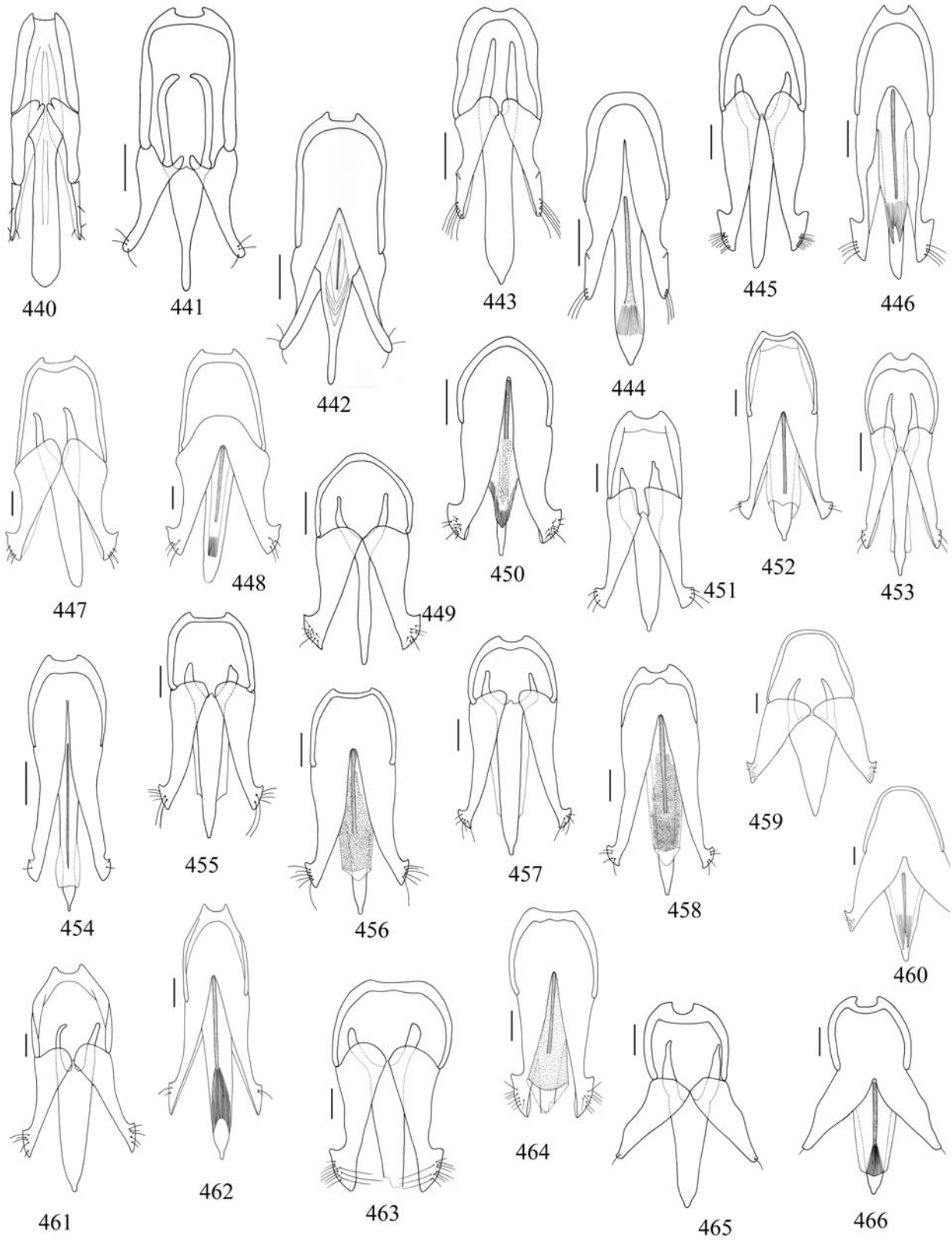
Girard (1974) described 4 species.

The genus *Olophoeus* is formed by 35 species: *O. aemidioides* Burgeon,1947, *O. alternans* Burgeon, 1947,*O. antennalis* (Fleutiaux, 1918), *O. bequaerti* Burgeon, 1947, *O. brachycerus* Burgeon, 1947, *O. brunnipennis* Schawrz, 1908, *O. brunneus* Girard, 1974, *O. christophei* Girard, 1974, *O. cinnamomeus* Schwarz, 1901 (Ssp. *burgeoni* Basilewsky, 1958), *O. elgonensis* Fleutiaux, 1935, *C. gaedikei* Girard, 1974, *O. gerstaeckeri* Fleutiaux, 1935, *O. gibbus* Candèze, 1859, *O. granulipennis* (Candèze, 1891) (=*Psephus granulatus* Candèze, 1878), *O. guineensis* (Candèze, 1881) (Ssp. *antennatus* Candèze, 1896, Ssp. *katanganus* Basilewsky, 1958, Ssp. *guineensis* Burgeon, 1947), *O. kigonseranus* Burgeon, 1947, *O. maculatus* (Schwarz, 1908), *O. massarti* Burgeon, 1947, *O. mechowi* (Candèze, 1881), *O. melancholicus* (Candèze, 1881), *O. minutus* Schwarz, 1906, *O. mutatus* (Fleutiaux, 1919), *O. nubilus* (Klug, 1855) (=*Psephus radula* Candèze, 1896), *O. parallelus* (Candèze, 1859), *O. protensus* (Gerst., 1884) (=*Psephus rugulipennis* Fairm., 1891), *O. quadricollis* Burgeon, 1947, *O. quellei* Basilewsky, 1958, *O. rugosus* Schwarz, 1899, *O. russatus* (Fairmaire, 1887), *O. semiferrugineus* Schwarz, 1896, *O. seydeli* Basilewsky, 1958, *O. soricinus* Burgeon, 1947, *O. transvaalensis* Girard, 1974, *O. vanderstichelei* Burgeon, 1947, *O. vrydaghi* Burgeon,1947. It is widely recorded from Africa (Guinea, Nigeria, Cameroon, Gabon, Congo, Democratic Republic of Congo, Somalia, Angola, Tanzania, Mozambique, South Africa,).

Olophoeus gibbus is characterized by one synapomorphy, 20(2) mandibles quadrangular, and by homoplasies, 0(2) frons as wide as long, 3(0) anterior margin of frons at nasal level, 8(5) antennae of male strongly serrate, 14(0) antennomere 3 longer than 4, 18(3) labrum subrectangular, 58(2) distal margin of tergite 9 of male moderately notched at middle, 61(0) aedeagus short and wide and 66(2) median lobe strongly longer than parameres. It belongs to a polytomy formed by *Anoplischiopsis bivittatus*, *Pseudolophoeus guineensis* and *Adiaphorus.*

Olophoeus gibbus Candèze, 1859
(Figs. 30, 81, 137, 138, 168, 231, 297, 359, 432, 433).

Olophoeus gibbus Candèze, 1859: 15; Murray, 1878: 145; Schwarz, 1899: 65, 67; Schenkling, 1925: 87 (cat.).



Figs. 440-466. Aedeagus (dorsal, ventral): 440, *Paraloboderus glaber* (adapted from Golbach, 1990); 441, 442, *Physorhinus xanthocephalus*; 443, 444, *Proloboderus crassipes*; 445, 446, *Propsephus beniensis*; 447, 448, *Pseudolophoeus guineensis*; 449, 450, *Rhinopsephus apicalis*; 451, 452, *Sephilus formosanus*; 453, 454, *Sephilus frontalis*; 455, 456, *Singhalenus gibbus*; 457, 458, *Singhalenus taprobanicus*; 459, 460, *Sphenomerus antennalis*; 461, 462, *Sphenomerus brunneus*; 463, 464, *Spilus nitidus*; 465, 466, *Stenocrepidius simoni*. Bars = 2 mm, except figs. 443, 444, 453, 454=0.5 mm, figs. 445-446= 5 mm.

Length: 28.5 mm. General integument reddish-brown with antennae and legs clearer. Pubescence golden, moderately long and dense. Frons carinate, as long as wide; convex, prominent medioanteriorly, not surpassing nasal; punctuation moderately coarse and very dense. Nasal short, very wider than long. Antennae (Fig. 30) with 11 antennomeres; in male one antennomere longer than hind angles of pronotum; strongly serrate; scape shorter than eye; 2nd antennomere globular, 3rd triangular elongate, longer than 4th, last narrowed at apex. Labrum (Fig. 81) subrectangular with rounded angles and setous. Mandibles (Figs. 137, 138) quadrangular, lateral margin straight, with one apical and one subapical tooth; penicillus reduced to basal area, formed by short setae disposed in small mesal area; molar area absent; dorsal region with carina and moderadely long setae. Maxillae (Fig. 168): galea with simple setae; medio- and basistipes partially fused; last palpomere elliptical. Labium: prementum with setae in front of palpi; postmentum with 2 long setae and several moderately long. Pronotum (Fig. 231) wider than long, wider near middle; strongly convex; lateral margins carinate; anterior margin straight; hind angles backwardly directed and carinate; median basal tubercle transverse and flat; punctuation moderately coarse and very dense. Prosternal channel short. Prosternal spine with small lobe near apex. Borders of mesosternal cavity slightly declivous. Metacoxal plate slightly narrowed laterally; free margin straight. Tibial spurs long; tarsomeres 2-3 lamellate beneath. Scutellum subtriangular elongate with lateral margins notched. Elytra convex, slightly narrowed on distal third; striae grooved and punctuated; interstices equal and slightly convex; 4th and 6th interstices fused near apex.

Male. Tergite 8 wider than long, subtriangular with rounded apex; translucent in a small triangular basal area and a distal narrow band; marginate by fringe of setae; clothed with microtrichiae. Sternite 8 (Fig. 297) transverse, with anterior angles rounded; partially translucent; setae moderately long near anterior and lateral margins. Sternite 9: distal half gradually narrowed to apex; distal half setous. Tergite 9 (Fig. 359): anterior margin moderately notched at middle, V-shaped; punctuate laterally; tergite 10 longer than 9, with setae near margins of distal half. Aedeagus (Figs. 432, 433) elongate, wide; basal piece longer than parameres; parameres fused ventrally; median lobe gradually narrowed apicad; moderately longer than parameres; parameres cuneiform notched subapically.

Material examined. GHANA. Tafo, 1 ex. (MZSP). CENTRAL AFRICAN REPUBLIC. La Maboké, 3 exs (MNHN). CAMEROON. Nkolbisson (Yaoundé), 1 ex. (MNHN); Balauga, 1 ex. (MNHN). GABON. Benito, 2 exs (MNHN); Talagouga, 1 ex. (MNHN).

Pantolamprus Candèze, 1859

Pantolamprus Candèze, 1859: 9, 16; 1891: 50 (cat.); Schwarz, 1906: 59, 62; Fleutiaux, 1919: 38, 39; Schenkling, 1925: 74 (cat.); Basilewsky, 1958: 339; Girard, 1971: 590; Girard, 2003b: 463.

Subgen. *Xantholamprus* Fleutiaux, 1935b: 304. Type-species of subgenus: *Pantolamprus sulcicollis* Schwarz, 1896, by original designation.

Type-species: *Ampedus savagei* Hope, 1843. Hyslop (1921) designated *Pantolamprus nitens* Candèze, 1859; Basilewsky (1958) synonymized it under *P. savagei* (Hope, 1843).

Candèze (1959) established *Pantolamprus* to one new species, *P. nitens*, and one species transferred from *Ampedus* Westwood, 1842, *A. perpulcher* Westwood, 1842, both from Africa. In 1891 he catalogued 5 species to this genus. In 1882 described a new species, *P. auratus*.

Schwarz (1906) included 14 species in the genus.

Fleutiaux (1919) treated of *Pantolamprus mirabilis* Candèze (1896), *P. purpureus* Schwarz (1899) and a new species, *P. cyanipennis*.

Hyslop (1921) considered *Pantolamprus nitens* as the type-species of the genus.

Schenkling (1925) catalogued 15 species to this genus.

Fleutiaux (1935b) described *P. terminatus* and erected the subgenus *Xantholamprus* to include the species with elytra not metallic and strongly striate like, *P. sulcicollis*, Schwarz, 1896 and *P. ligneus* Candèze, 1896.

Fleutiaux (1935c) designated *P. sulcicollis* as the type-species of the subgenus *Xantholamprus* and described *P. monardi*, *P. niger*, *P. antennalis*, *P. canaliculatus* and *P. praestus*.

Basilewsky (1958) redescribed the genus *Pantolamprus*, described one species, *P. kivuensis* and considered *P. ruficollis* Fleutiaux, 1902 as synonym of *P. cyanocephalus* (Hope, 1843), and *P. nitens* as synonym of *P. savagei*. He also presented an identification key and redescriptions to 11 species from Congo.

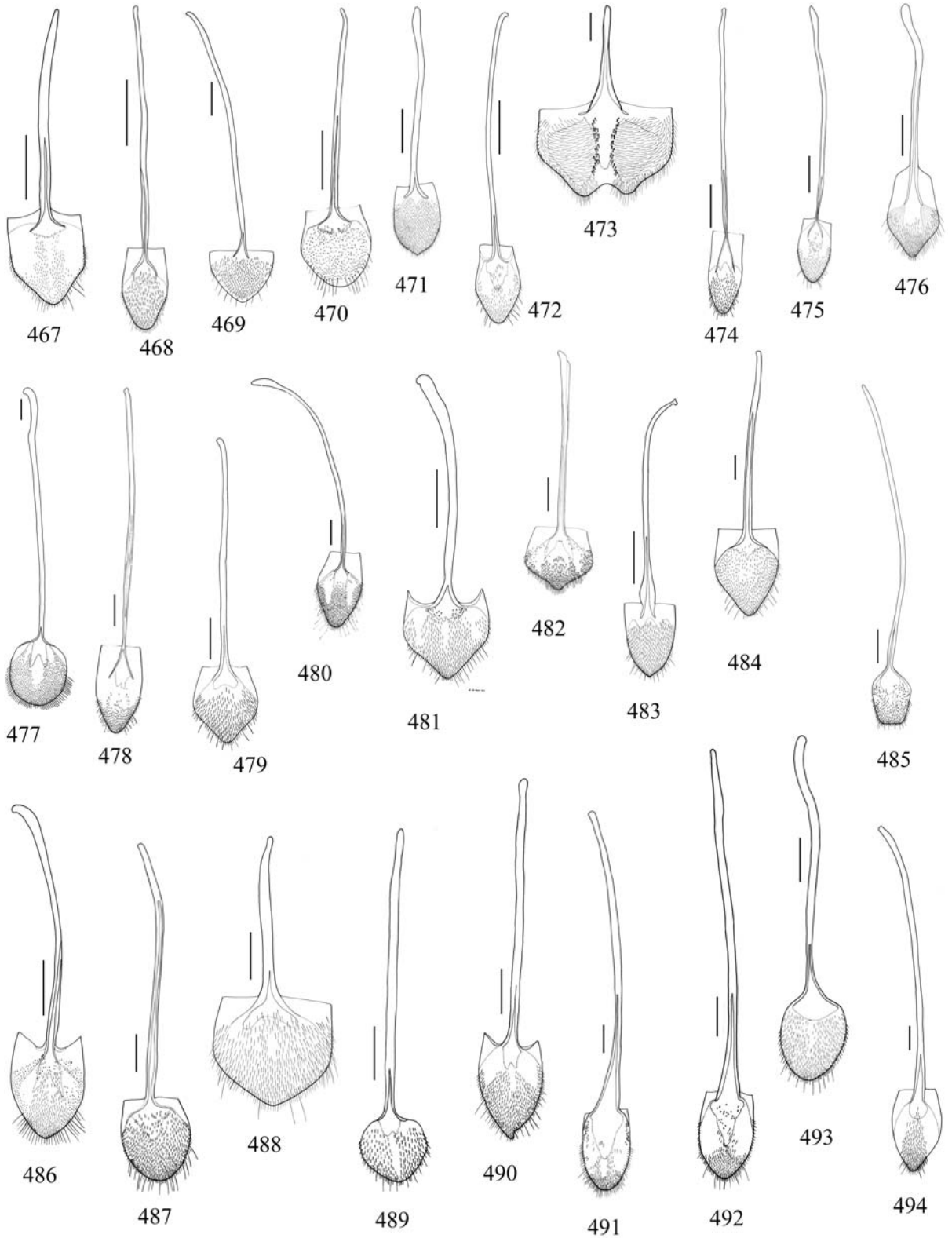
Cobos (1970) recorded *Pantolamprus* (*s.str.*) *cyanocephalus* and *P.* (*s. str.*) *rufipes* Harold (1878) to Congo.

Girard (1971) recorded *P. cyanocephalus* to Lamto (Côte d´Ivoire). According to him, this genus includes about 20 species, all from Africa intertropical.

Girard (2003a) commented that the presence of the borders of mesosternal cavity vertical as diagnose of *Pantolamprus (Pantolamprus)*, occurs also in *Catalamprus* and *Pantolamprus (Xantholamprus*), but the former has coloration bright and metallic. He recorded *P. auripennis*, *P. cyanocephalus* and *P. perpulcher* from Nimba.

Girard (2003b) described *P. neavei* and designated the lectotypes to *P. mirabilis* Candèze, 1896 and *P. nigripes* Quedenfeldt, 1886. He described two varieties to *P. cyanocephalus*, one to *P. perpulcher* (Westwood, 1842), three to *P. rufangulus* Fleutiaux, 1902 and one to *P. nigripes*; *P. rohanchaboti* Fleutiaux, 1925 was considered a variety of the latter.

The genus *Pantolamprus* is formed by 27 species: *P. angustus* Fleutiaux, 1902, *P. antennalis* Fleutiaux, 1935, *P. auripennis* (Hope, 1843) (= *Ampedus auripennis* Hope, 1843, = *Pantolamprus perpulcher* var. *auripennis*; Candèze, 1859, = Var. *dohrni* (Candèze, 1881), = *Pantolamprus dohrni* Candèze, 1881, = Var. *rubeoviolaceus* Girard, 1992), *P. auratus* Candèze, 1882, *P. candezei* Fleutiaux, 1902, *P. (Xantholamprus) canaliculatus* Fleutiaux, 1935b, *P. cyanipennis* Fleutiaux, 1919, *P. dohrni* Candèze, 1881, *P. (Xantholamprus) kivuensis*



Figs 467-494. Sternite 8 of female: 467, *Achrestus flavocinctus*; 468, *Achrestus venustus*; 469, *Anchastus digittatus*; 470, *Atractosomus flavescens*; 471, *Blauta cribraria*; 472, *Catalamprus angustus*; 473, *Chalcolepidius zonatus*; 474, *Crepidius flabellifer*; 475, *Crepidius resectus*; 476, *Ctenicera silvatica*; 477, *Cyathodera longicornis*; 478, *Dicrepidius ramicornis*; 479, *Dipropus factuellus*; 480, *Dipropus laticollis*; 481, *Lampropsephus cyaneus*; 482, *Loboederus appendiculatus*; 483, *Melanotus spernendus*; 484, *Pantolamprus mirabilis*; 485, *Physorhinus xanthocephalus*; 486, *Proloboderus crassipes*; 487, *Propsephus cavifrons*; 488, *Pseudolophoeus guineensis*; 489, *Rhinopsephus apicalis*; 490, *Sephilus frontalis*; 491, *Singhalenus gibbus*; 492, *Singhalenus taprobanicus*; 493, *Spilus atractomorphus*; 494, *Trielasmus varians*. Bars = 1 mm, except figs. 469, 479, 484, 485, 487-489, 491, 494= 5 mm, figs. 472, 474, 475, 477, 478, 481, 486, 493= 10 mm.

Basilewsky, 1958, *P. (Xantholamprus) ligneus* Candèze, 1896, *P. menieri* Girard, 1992, *P. mirabilis* Candèze, 1896 (= *P. bennigseni* Schwarz, 1896, = *P. insignis* Fleutiaux, 1902), *P. monardi* Fleutiaux, 1935b, *P. neavei* Girard, 2003, *P. niger* Fleutiaux, 1935b, *P. nigripes* Quedenfeldt, 1886 (=Var. *hohanchaboti* Fleutiaux, 1925, = *Pantolamprus Rohan-Chaboti* Fleutiaux, 1925, = Var. *obscurus* Girard, 2003), *P. plasoni* Candèze, 1896, *P. perpulcher* (Westwood, 1842) (= *Ampedus auricollis* Hope, 1843, =*Ampedus auripennis* Hope, 1843, *Ampedus cyanicollis* Hope, 1843, =*Ampedus cyanocephalus* Hope, 1843, =*Ampedus iris* Hope, 1843, =*Ampedus savagei* Hope, 1843, =Var. *garnieri* Girard, 2003), *P. (Xantholamprus) praeustus* Fleutiaux, 1935b, *P. purpureus* Schwarz, 1899, *P. rufangulus* Fleutiaux, 1902 (= Var. *paulyi* Girard, 2003, = Var. *rufoviridis* Girard, 2003, = Var. *cyaneus* Girard, 2003), *P. ruficollis* Fleutiaux, 1902, *P. rufipes* Harold, 1878, *P. savagei* (Hope, 1843)(= *Pantolamprus perpulcher* var. *savagei*; Candèze, 1859, *P. nitens* Candèze, 1859), *P. (Xantholamprus) sulcicollis* Schwarz, 1896 (= *P. plasoni* Candèze, 1896), *P. tanzanicus* Girard, 1992 and *P. terminatus* Fleutiaux, 1935c. It is widely recorded from Africa (Guiné Bissau, Sierra Leone, Liberia, Ivory Coast, Ghana, Cameroon, Congo, Guiné, Gabon, Democratic Republic of the Congo, Malawi, Tanzania, Angola, Zambia, Mozambique,South Africa).

The *Pantolamprus* species included in this analysis form a monophyletic group characterized by homoplasies, 18(1) labrum semicircular, 24(3) galea bilobed and 25(4) setae of galea simple and spatulate. It is the sister-group of ((*Achrestus flavocinctus*)(*Dayakus angularis*)).

Pantolamprus (Xantholamprus) ligneus Candèze, 1896 (Figs. 32, 233, 436, 437).

Pantolamprus ligneus Candèze, 1896: 21; Schenkling, 1925: 74 (cat.).
Pantolamprus (Xantholamprus) ligneus; Fleutiaux, 1935c.

Length: 16-18 mm. General integument brown with elytra yellow. Pubescence golden, long and moderately dense, yellow on elytra. Frons carinate, wider than long; convex; flattened anteriorly; anterior margin prominent; punctuation moderately coarse and dense. Nasal wider than long. Antennae (Fig. 32) with 11 antennomeres; in male 0.8 antennomere longer than hind angles of pronotum; wide and serrate; scape shorter than eye; 2nd antennomere globular; 3rd triangular, wider than long, shorter than 4th; last narrowed at apex. Labrum semicircular with long setae. Mandibles wide with one apical and one subapical tooth. Last maxillar palpomere with securiform apex. Pronotum (Fig. 233) wider than long, narrowed anteriad; strongly convex, grooved longitudinal medially; lateral margins carinate; anterior margin slightly notched; hind angles wide, backwardly directed and weakly carinate; median basal tubercle flat; punctuation fine and dense, coarse on anterior angles and near anterior margin. Prosternal channel long. Prosternal spine very wide with subapical tooth. Borders of mesosternal cavity raised at base and vertical. Tibial spurs long; tarsomeres 1-3 lamellate beneath. Scutellum elongate with posterior margin rounded and lateral margins notched. Elytra convex, narrowed on distal third; striae coarse- and deeply punctuate and grooved; interstices equal and flat.

Male. Aedeagus (Figs. 436, 437) elongate; basal piece shorter than parameres; parameres separate ventrally; median lobe moderately narrowed near middle, constricted at apex; slightly longer than parameres; subapical region of parameres securiform rounded.

Material examined. [ANGOLA]. Ex-typis; col. R. I. Sc. N. B. Congo Portugais, ex-coll. Candèze, 2 Lectotype M (ISNB).

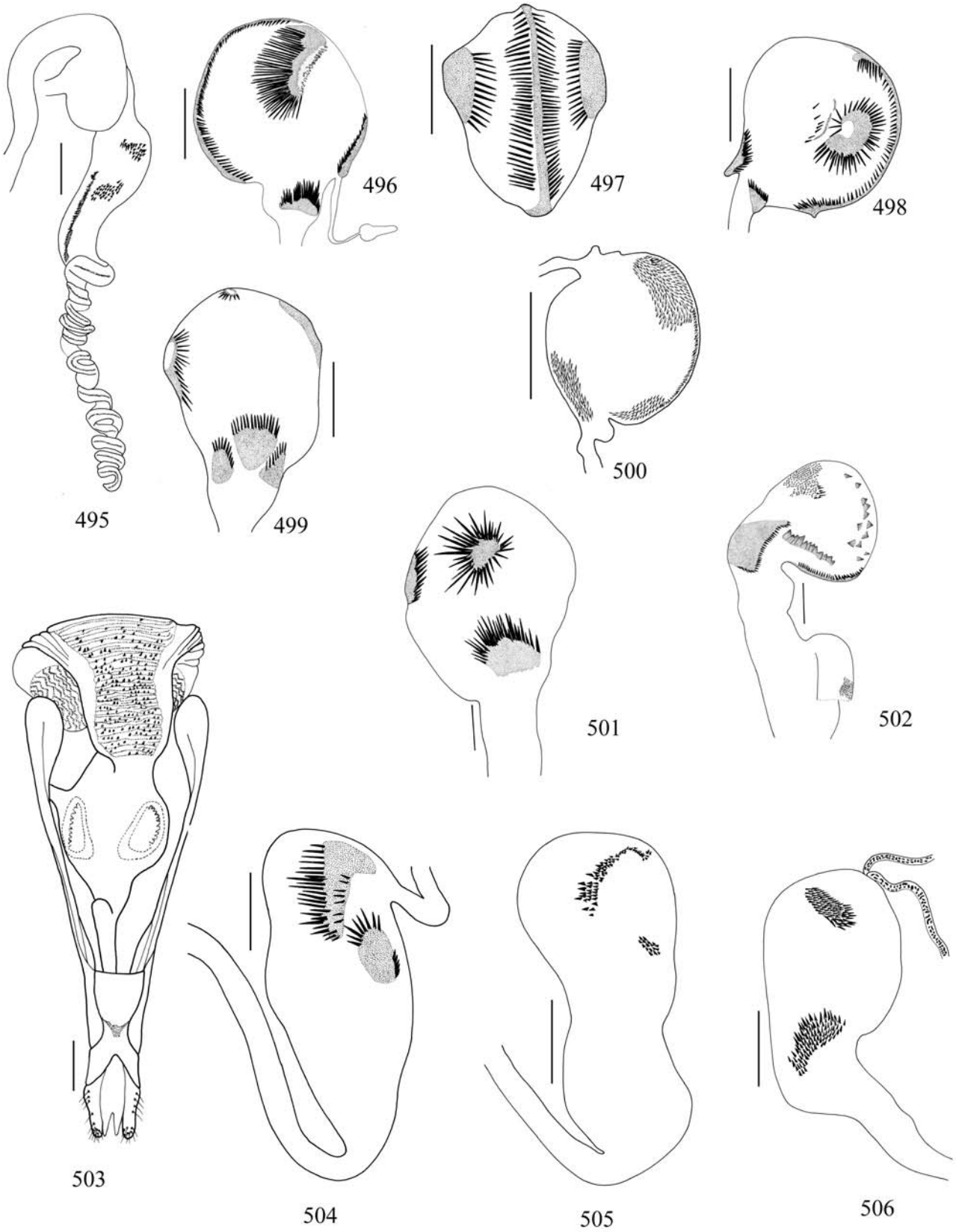
Pantolamprus* (*Pantolamprus*) *mirabilis Candèze, 1896 (Figs. 33, 83, 170, 234, 317, 484, 509, 510).

Pantolamprus mirabilis Candèze, 1896: 20; Fleutiaux, 1919: 39; Schenkling, 1925: 75 (cat.)
Pantolamprus bennigseni Schwarz, 1896:89.
Pantolamprus insignis Fleutiaux, 1902: 115.

Length: 18.0 mm. General integument orange with head, antennae and scutellum black and elytra metallic blue. Pubescence moderately long and dense, ferrugineous on orange integument and black on black and blue integument. Frons carinate, wider than long, convex, flat anteriorly; anterior margin wide and slightly rounded, slightly prominent surpassing nasal; punctuation moderately coarse and dense. Nasal wider than long. Antennae (Fig. 33) with 11 antennomeres; wide and serrate in female; scape shorter than eye; 2nd antennomere globular, 3rd triangular elongate, slightly shorter than 4th, last narrowed at apex. Labrum (Fig. 83) semicircular with long setae. Mandibles robust, with one apical and one subapical tooth; penicillus formed by short setae disposed in whole mesal area; molar area well developed; dorsal region with carina and moderately long setae. Maxillae (Fig. 170): galea bilobed with simple and spatulate setae; last palpomere securiform. Labium: prementum with setae in front of palpi; postmentum with two long setae and several moderately long. Pronotum (Fig. 234) as long as wide, narrowed anteriad; moderately convex; lateral margins carinate; anterior margin notched; hind angles backwardly directed, carinate; median basal tubercle flat; punctuation moderately coarse and moderately dense, finer near base. Prosternal channel long. Prosternal spine widened apicad, with subapical tooth. Borders of mesosternal cavity raised at base and vertical. Metacoxal plate narrowed laterally; free margin straight. Tibial spurs long; tarsomeres 1-3 lamellate beneath. Scutellum elongate with posterior margin rounded and lateral margins notched. Elytra moderately convex, narrowed on distal third; striae coarsely punctuate; interstices equal and flat.

Female. Tergite 8 (Fig. 317) subtriangular, densely setous. Sternite 8 (Fig. 484) subpentagonal with short setae, longer at margins; spiculum gastrale 2.95 times sternite length. Ovipositor with stylus; bursa copulatrix (Figs. 509, 510) with 5 spiny areas, some disposed star-like.

Material examined. ZAMBIA. 1400 m, Mazabuka, 1 ex. (MZSP)



Figs. 495-506. Bursa copulatrix: 495, *Anchastus digittatus*; 496, *Achrestus flavocinctus*; 497-499, *Atractosomus flavescens* (D, L, V); 500, *Blauta cribraria*; 501, *Calopsephus apicalis*; 502, *Catalamprus angustus*; 503, *Chalcolepidius zonatus*; 504, *Crepidius flabellifer*; 505, *Crepidius resectus*; 506, *Dicrepidius ramicornis*. Bars = 1 mm except fig. 495= 5 mm, figs. 501, 502= 2 mm, figs. 504, 505= 0.5 mm.

Pantolamprus* (*Pantolamprus*) *perpulcher Westwood, 1842
(Figs. 34, 84, 141, 142, 171, 181, 199, 235, 438, 439).

Ampedus perpulcher Westwood, 1842:205.
Pantolamprus perpulcher Candèze, 1859: 17; Schenkling, 1925: 75 (cat.).
Ampedus auricollis Hope, 1843: 365.
Ampedus auripennis Hope, 1843: 365.
Ampedus cyanicollis Hope, 1843: 365.
Ampedus cyanocephalus Hope, 1843: 365.
Ampedus iris Hope, 1843: 365.

Length: 16.5 mm. General integument black with legs, pronotum, hypomera and a narrow anterior band of prosternum yellow; elytra and head with metallic blue shine. Pubescence moderately long and dense, black dorsally and whitish ventrally. Frons carinate, wider than long, convex, prominent medioanteriorly surpassing nasal in short area; anterior margin strongly rounded; punctuation moderately coarse and dense. Nasal wider than long. Antennae (Fig. 34) with 11 antennomeres; in male not reaching hind angles of pronotum; serrate; scape shorter than eye; 2nd antennomere globular, 3rd triangular, as wide as long, shorter than 4th, last narrowed at apex. Labrum (Fig. 84) semicircular with long setae. Mandibles (Figs. 141, 142) robust, with one subapical tooth; penicillus formed by short setae disposed in whole mesal area; molar area well developed; dorsal region with carina and moderately long setae. Maxillae (Fig. 171): galea bilobed with simple and spatulate setae; last palpomere securiform. Labium (Fig. 181): prementum with setae in front of palpi; postmentum with two long setae and several short. Pronotum (Fig. 235) as long as wide, slightly narrowed anteriad; strongly convex; lateral margins carinate; anterior margin almost straight; hind angles backwardly directed, carinate; median basal tubercle flat; punctuation moderately coarse and dense, finer near base. Prosternal channel long. Prosternal spine widened apicad, with subapical tooth. Borders of mesosternal cavity (Fig.199) raised at base and vertical. Metacoxal plate narrowed laterally; free margin straight. Tibial spurs long; tarsomeres 1-3 lamellate beneath. Scutellum elongate with posterior margin rounded and lateral margins notched. Elytra convex, gradually narrowed at distal half; striae weakly punctuate; interstices equal and flat.

Male. Aedeagus (Figs. 438, 439) elongate; basal piece slightly shorter than parameres; parameres fused ventrally; median lobe narrow, slightly longer than parameres, slightly narrowed near middle and constricted at apex; apex of parameres securiform rounded.

Material examined. GHANA. Kumasi 1 ex. (MZSP).

Paraloboderus Golbach, 1990

Paraloboderus Golbach, 1990: 27.

Type-species: *Paraloboderus glaber* Golbach, 1990, by monotypy.

Golbach (1990) erected *Paraloboderus* to *P. glaber* from Argentina and Bolivia. According to him is probable that this species live together with termites or ants.

The genus *Paraloboderus*, monotypical, is recorded from the type-localities.

Paraloboderus glaber is characterized by homoplasies, 8(1) antennae of male serrate, 14(0) antennomere 3 longer than 4 and 68(1) apex of median lobe rounded. It is the sister-group of ((*Loboederus appendiculatus*)(*Proloboderus crassipes*)).

Paraloboderus glaber Golbach, 1990
(Figs. 35, 236, 440).

Paraloboderus glaber Golbach, 1990: 28.

Length: 15.5-18.0 mm. General integument opaque and reddish-brown. Pubescence short, yellowish, stout and decumbent. Frons carinate, wider than long, pentagonal, very prominent and concave medioanteriorly; anterior margin surpassing nasal; punctuation moderately coarse and sparse. Nasal wider than long, triangular. Antennae (Fig. 35) with 11 antennomeres; in male 3 antennomeres longer than hind angles of pronotum; serrate in both sexes; scape shorter than eye; 2nd antennomere globular; 3rd triangular elongate, slightly longer than 4th; last narrowed at apex. Labrum semi-elliptical with distal margin rounded. Last maxilar palpomere widened apicad. Pronotum (Fig. 236) wider than long, narrowed anteriorly; moderately convex; slightly grooved longitudinal medially; lateral margins incompleteley carinate; anterior margin prominent at middle; hind angles backwardly directed and carinate, internal margin downwardly directed; median basal tubercle indistinct; punctuation moderately coarse and dense. Prosternal channel absent. Prosternal spine with rounded apex and subapical small lobe. Borders of mesosternal cavity narrow and declivous. Metacoxal plate narrowed laterally; free margin straight. Tibial spurs long; tarsomeres 1-3 with tiny lamellae beneath. Scutellum triangular elongate with rounded angles. Elytra very elongate, narrowed near apex; lateral margins forming brim; striae coarsely punctate; interstices slightly convex.

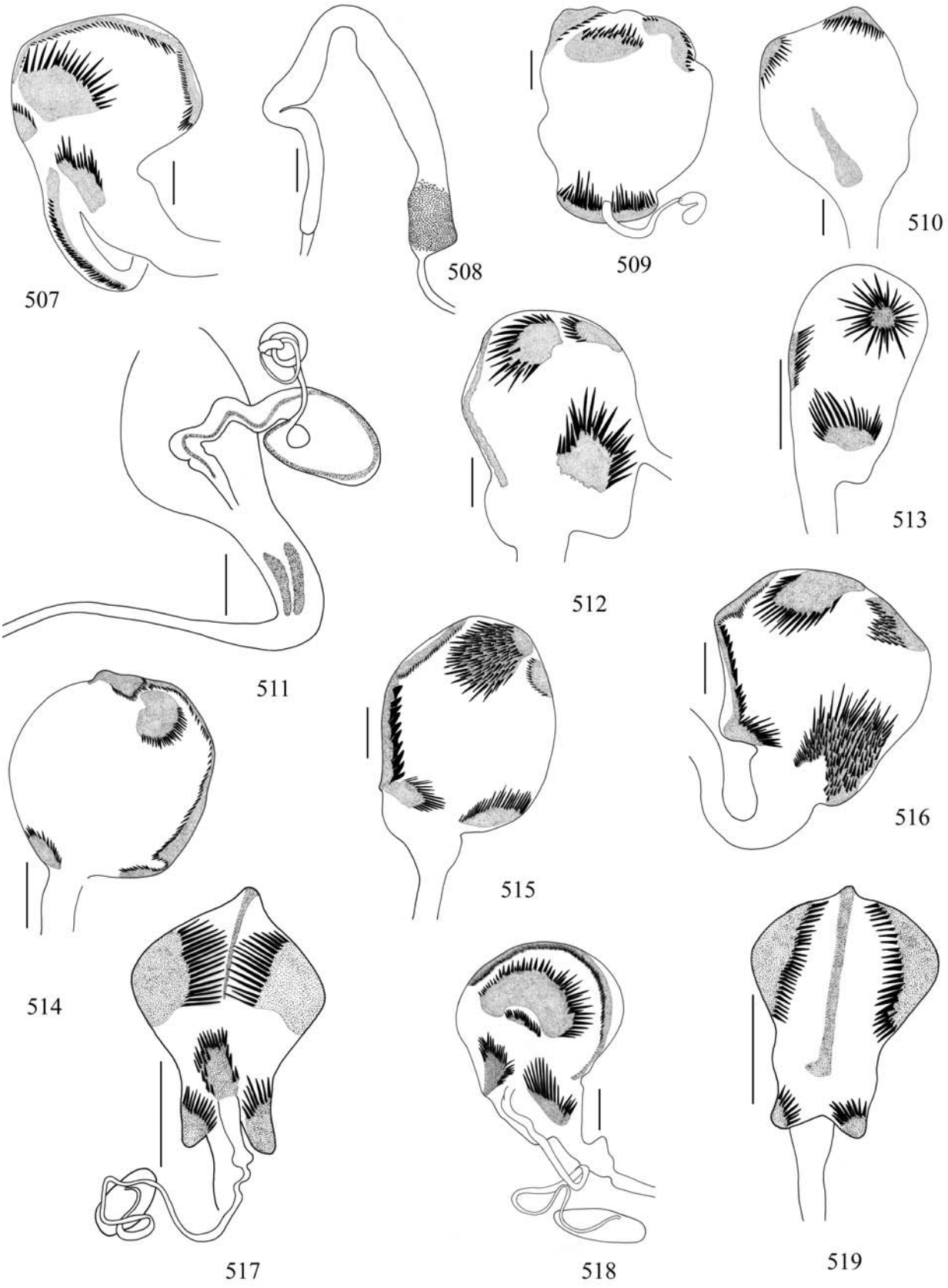
Aedeagus (Fig. 440) (adapted from Golbach, 1990): elongate; parameres longer than basal piece; subapical region of parameres slitly laterally; apex of parameres almost straight; median lobe moderately longer than parameres with lateral margins almost straight and apex rounded.

Material examined (5 male paratypes). ARGENTINA. Santiago del Estero, C. Jaime, 24.XI.1948, col. F. Lema (IMLA); Santiago del Estero, La Banda, 30.X.1946, col. Briones (IMLA); Tucuman, Dpto. Burruyacú, Siete de Abril, Represa, 10.I.1982, col. R. Golbach (IMLA). BOLIVIA. Cabeza, Santa Cruz, II.47, Peredo (IMLA); San Miserato, Chiquitos, Santa Cruz, 1000 m, 11.II.1958, Monrós (IMLA).

Proloboderus Fleutiaux, 1912

Proloboderus Fleutiaux, 1912: 264 Schenkling, 1925: 82 (cat.); Blackwelder, 1944: 298 (cat.).

Type species: *Proloboderus crassipes* Fleutiaux, 1912, designated by Hyslop, 1921 by monotypy.



Figs. 507-519. Bursa copulatrix: 507, *Lampropsephus cyaneus*; 508, *Melanotus spernendus*; 509, 510, *Pantolamprus mirabilis* (D, V); 511, *Physorhinus xanthocephalus*; 512, *Propsephus cavifrons*; 513, *Rhinopsephus apicalis*; 514, *Sephilus frontalis*; 515, *Singhalenus gibbus*; 516, *Singhalenus taprobanicus*; 517-519, *Spilus atractomorphus* (D, L, V). Bars = 1 mm, except fig. 507= 0.5 mm, figs. 509-513, 515= 5 mm, fig. 516= 2 mm.

Fleutiaux (1912) erected *Proloboderus* to *P. crassipes* from Santiago del Estero (Argentina). According to him, this genus is similar to *Loboederus*, but with hind angles of pronotum normal.

Schenkling (1925) and Blackwelder (1944) catalogued one species to this genus.

The genus *Proloboderus*, monotypical, is recorded from Argentina.

Proloboderus crassipes is characterized by synapomorphies, 12(1) antennomere 2 transverse, 13(2) antennomere 3 of male subtrapezoidal and 38(2) femur very widened, and by homoplasies, 8(4) antennae of male serrate in both sides and 66(4) median lobe 1/3 longer than parameres. It is the sister-group of *Loboederus appendiculatus*.

Proloboderus crassipes Fleutiaux, 1912
(Figs. 37, 38, 86, 145, 146, 173, 183, 201, 300, 318, 329, 362, 443, 444, 486).

Proloboderus crassipes Fleutiaux, 1912: 264; Schenkling, 1925: 82 (cat.); Blackwelder, 1944: 298 (cat.).

Length: 14.5-15.5 mm. General integument brownish, slightly reddish-brown. Pubescence yellowish, very long and dense; longer and denser on lateral margins of pronotum, antennae and tibiae. Frons carinate, wider than long, concave longitudinal medially; anterior margin prominent at middle and surpassing nasal; punctuation coarse and moderately dense. Nasal high, slightly wider than long. Antennae (Figs. 37, 38) with 11 antennomeres; in male 3 antennomeres longer than pronotum; serrate in both sides; scape very wide and shorter than eye; antennomeres 2-10 transverse; 3rd trapezoidal, shorter than 4th, last elliptical with apex slightly narrowed. Labrum (Fig. 86) semicircular and densely setous. Mandibles (Figs. 145, 146) elongate with one apical and one subapical small tooth; penicillus formed by short setae disposed in whole mesal area; molar area well developed; dorsal region with carina and moderately long setae. Maxillae (Fig. 173): galea with simple setae; last palpomere with widened apex. Labium (Fig. 183): prementum with long setae in front of palpi; postmentum with moderately long setae. Prothorax (Fig. 201): pronotum wider than long, slightly narrowed anteriad; slightly convex, slightly grooved medioanteriorly; lateral margins sinuous and carinate; anterior margin prominent at middle; hind angles slightly divergent and carinate; median basal tubercle indistinct; punctuation moderately coarse and sparse, absent on basal third. Prosternal channel absent. Prosternal spine with rounded apex. Borders of mesosternal cavity very narrow and slightly declivous. Metacoxal plate narrowed laterally; free margin straight. Femur very widened, tibiae flat an enlarged; tibial spurs long; tarsomeres 2-3 lamellate beneath. Scutellum elongate with posterior margin rounded. Elytra slightly convex; striae punctuate; interstices equal and flat.

Male. Tergite (Fig. 318) 8 slightly wider than long, slightly narrowed apicad, with anterior margin rounded; punctuate and marginate by setae; clothed with microtrichiae. Sternite 8 (Fig. 300) transverse, slightly narrowed to apex; almost totally dark; anterior margin notched at middle; anterior angles rounded; setae disposed on whole surface. Sternite 9 (Fig. 329): distal half abruptly narrowed to apex; punctuate at middle and setous on distal third. Tergite 9 (Fig. 362): anterior margin almost straight; punctuate laterally with a few setae near angles; tergite 10 narrow, shorter than 9; punctuate laterally and setous near middle. Aedeagus (Figs. 443, 444) elongate; basal piece slightly longer than parameres; parameres fused ventrally; median lobe slightly narrowed near middle, constricted at apex and slightly longer than parameres; subapical region of parameres slitted laterally.

Female. Tergite 8 subtriangular, translucent in a basal area, densely setous. Sternite 8 (Fig. 486) elongate narrowed apicad; with short setae near middle and long setae near margins; spiculum gastrale 3.10 times sternite length. Ovipositor with stylus; bursa copulatrix without spines or sclerotized pieces.

Material examined. ARGENTINA. Chaco de Santiago del Estero, Rio Salado, 10 exs. (MNHN); same locality; decembre; collection Wagner; Prolobodorus crassipes Fleut. Type collection Fleutiaux; Bull. Soc. Ent. Fr. 1912, p. 264, coll. Fleutiaux, 1 ex. (MNHN).

Propsephus Hyslop, 1921

Psephus Candèze, 1859: 9, 19; 1891: 50 (cat.); Schwarz, 1906: 61, 79; Fleutiaux, 1919: 38, 42; 1935a: 201.
Atractodes Erichson, 1843: 294.
Heterocrepidius Lacordaire, 1857: 110.
Subg. *Campylopsephus* Schwarz, 1899: 65; 1906: 79, 82.
Propsephus Hyslop, 1921: 666; Schenkling, 1925: 92 (cat.); Fleutiaux, 1935a: 204; Burgeon, 1947: 47; Girard, 1971: 593; Girard, 2003a: 469.

Type-species: *Psephus beniniensis* Candèze, 1859, designated by Hyslop, 1921.

Candèze (1859) erected *Psephus* to 16 species from Africa, 11 new species and 6 transferred from *Atractodes*, *Dicrepidius* or *Heterocrepidius*. He characterized the genus and presented a key to species. In 1891 he catalogued 74 species to this genus (66 African and 8 Oriental).

Schwarz (1899) erected the subgenus *Campylopsephus* to include the species with hind angles of pronotum curved innerly. However Basilewsky (1958) considered that this character does not justify the proposition of a new subgenus.

Schwarz (1899, 1901) transferred the following species to *Olophoeus*: *Psephus attenuatus*, *P. granulipennis*, *P. guineensis*, *P. mechowi*, *P. melancholicus* (= *P. paralleus*) and *P. radula*. In 1906 included 114 species in *Psephus*: 104 into subgenus *Psephus* and 10 into subgenus *Campylopsephus*.

Girard (1971) transferred *P. attenuatus* and *P. guineensis* to *Pseudolophoeus* Girard, 1971. In 1972 he transferred *P. invenustus* to tribe Odontonychini. In 1991b he replaced the species transferred to *Olophoeus* by Schwarz in its original genus.

Blair (1927) described *Psephus aenescens* and stated that this species is very near to *P.* (*Ischiodontus*) *hawaiiensis* Candèze. According to him, "It is, perhaps, doubtful whether

this insect should be placed in *Psephus* or in *Ischiodontus*, the two genera being scarcely separable. Schwarz in Wystman, ´Genera Insectorum`, retains *Ischiodontus* with the exception of *I. hawaiiensis*, for American forms, *Psephus* for African and Oriental. Probably the new species, with *hawaiiensis*, would be more naturally placed with the Polynesian group of *Psephus*. Incidently it may be noted that, through an unfortunate error in labelling, the name *hawaiiensis* is quite inappropriate, the species occurring in Samoa, not the Sandwich Islands"

Hyslop (1921) give *Propsephus*, new name for *Psephus* Candèze, 1859, preoccupied by a genus of Coleoptera (*Psephus* Kirby, 1826). He also designated *Psephus beniniensis* Candèze as type-species.

Schenkling (1925) catalogued 172 species to this genus.

Fleutiaux (1932) treating of the faune of Mozambique, described *Propsephus lesnei* and recorded *P. bucculatus* Candèze, 1859, *P. oberthuri* Candèze, 1881 and *P. granulipennis* Candèze, 1859 to this region. In 1935a, verified the ambiguity of the characters that define the genus and that the genotype choose by Hyslop (*l. c.*), the first cited by Candèze, 1859, was not representative. He proposed replace *Psephus beniniensis* Candèze by *Psephus eliminatus* Candèze because the later represents much better the generic characters enumerate by Candèze. He also transferred *Ischiodontus pedestris* Gerstaecker to *Propsephus*. In 1935b described 17 new species.

Van Zwaluwenburg (1936) widened the geographical distribution of *P. compactus* Van Zwaluwenburg.

Quelle (1955) presented an illustration of the bursa copulatrix of *Propsephus elimatus* Candèze, 1859, represented by long spines, similar to material examined.

Basilewsky (1958) redescribed the genus and divided the 100 species into two Sections, based on the 3rd antennomere size. He followed Fleutiaux (1935a) and considered *Psephus eliminatus* Candèze, 1859 as type-species of the genus, and stated: "Espèce-type: *Psephus eliminatus* Candèze, 1859, fixée par Fleutiaux en 1935". He described 59 new species and enumerated other 41, including a brief redescription, geographical distribution and informations about the type material of each one.

Van Zwaluwenburg (1959) designated the Lectotype of *P. hawaiiensis* (Candèze, 1833) (from ISNB), restored its specific status and considered *Psephus euaensis* Schwarz, 1902 as its synonym. Also designated as neotype of the *Psephus euaensis*, one specimen from DEI collection because the material of Elateridae in the Godeffroy Museum (where Schwarz's type was deposited) was destroyed during the war. This specimen in the DEI appears to him, to have been original Schwarz's material not deposited in the Godeffroy Museum. He commented that in 1928 he considered *P. hawaiiensis* as synonym of P. *tongaensis* because the types were not available. He also enumerated the differences between the two species. Related to *P. major* (Candèze, 1878) he commented that the type is said to have been in the Godeffroy Museum, destroyed during the war. He examined two females from Samoa (from DEI) and did not see any specimen which could be the type. According to him, *P. major* is known only from Samoa, where it is very common, and the original type-locality, Fiji, probably is erroneous. He also designated the neotype of *Psephus rufipes* Schwarz, 1902 from DEI. He considered *P. vitiensis* Van Zwaluwenburg, 1940 as synonym of *P. tongaensis* (Candèze, 1878) and designated the Lectotype of the latter (from ISNB). He also commented the confusion of the type of *P. vitiensis* with *P. tongaensis*. He presented an identification key to 7 species of *Propsephus* from Mid-Pacific and the illustration of aedeagus of *Propsephus euaensis* (Schwarz, 1901) and *P. tongaensis* (Candèze, 1878).

According to Girard (1971), this genus is widely represented in "Afrique Noire". He recorded 21 species from Lamto (Côte d´Ivoire), from which 10 are new species. In 1991b treating of the *Propsephus* afrotropical studied by Candèze, he presented the new combination of three species of *Olophoeus*: *Propsephus garnulipennis* (Candèze, 1878), *P. parallelus* (Candèze, 1859) and *P. radula* (Candèze, 1896). He also designated the lectotypes of 27 species of *Propsephus*.

Van Zwaluwenburg (1934) described *Propsephus compactus*.

Fleutiaux (1945) described *P. lepesmei* and *P. doualaensis*.

Laurent (1965) presented a brief historical about the genus and, about the type-species, stated that Hyslop (1921) designated *Psephus beniensis* Candèze, but this species has 3rd antennomere equal 4th, grave exception of diagnostic character of the genus, and Fleutiaux (1935a) changed the type-species to *Psephus elimatus* Candèze. He also presented a key and the geographical distribution to two species recorded to that area, *P. cavifrons* Erichson, 1834 and *P. puberulus* Boheman, 1851.

Cobos (1970) erected a subgenus, *Psephodes*, and presented a key to two subgenus (*Psephodes* and *Propsephus*). He also described 18 species and recorded 12 from " Republica do Congo".

Girard (1974a) described 7 species of *Propsephus*; in 1975, *P. amietoi*; in 1976, 6 species from Africa; in 1980, 8 species of Ethiopian region. In 1989 described 6 species of Afrotropical *Propsephus* housed in the Musée Royal de l´Afrique Central in Tervuren. He also designated Lectotypes to 6 species (*Psephus aspersus* Candèze, 1896; *P. brevipennis* Candèze, 1859; *P. dentatus* Candèze, 1881; *P. fulgidus* Schwarz, 1901; *P. morio* Candèze, 1881; *P. semipunctatus* Schwarz, 1901), proposed 8 synonymies (*Propsephus aspersus* Candèze, 1896 = *P. niveopilosus* Cobos, 1970; *Propsephus brevipennis* Candèze, 1859 = *P. gaedikei* Girard, 1971; *Propsephus congoensis* Basilewsky, 1958 = *P. vaneyeni* Basilewsky, 1958; *Propsephus dentatus* Candèze, 1881 = *P. vuattouxi* Girard, 1971; *Propsephus fulgidus* Schwarz, 1909 = *P. hirsutus* Basilewsky, 1958; *Propsephus morio* Candèze = *P. girardi* Girard, 1971; *Propsephus olophoeoides* Fleutiaux, 1918 = *P. ziwanicus* Fleutiaux, 1935; *Propsephus semipunctatus* Schwarz = *P. diversecribratus* Basilewsky, 1958) and 5 new combinations [tranferred from *Olophoeus*] (*Propsephus bequaerti* (Burgeon, 1947), *P. brunnipennis* (Schwarz, 1908),

P. kigonseranus (Burgeon, 1947), *P. russatus* (Fairmaire, 1887), *P. semiferrugineus* (Schwarz, 1896)). In 1991a treating of the Elateridae from the Savanah of the Nimban mountains, described 11 new species and recorded three species by the first time to this region. In 1985 described *P. zeijsti*; in 1986 described 7 species; in 1996 described 6 species from Afrotropical region; in 2003a described 25 species and recorded 40 species from Nimba and also proposed a new combination, *Propsephus aficanus*.

The genus *Propsephus* is formed by about 380 species. It is widely recorded from Africa, Madagascar, Seychelles, Malaysia and Polynesia.

The *Propsephus* species included in this analysis do not form a monophyletic group. *P. beniensis*, the type-species, is characterized by only one homoplasy, 8(2) antennae of male subserrate. (*P. beniensis*)(*P. cavifrons*) form a tricotomy with *Spilus*.

Propsephus beniensis (Candèze, 1859)
(Figs. 39, 87, 147, 148, 238, 268, 301, 363, 445, 446).

Psephus beniensis Candèze, 1859: 21.
Propsephus beniensis; Hyslop, 1921: 667; Schenkling, 1925: 93 (cat.).

Length: 21 mm. General integument reddish-brown; prothorax slightly darker. Pubescence yellowish, moderately long and dense. Frons carinate, longer than wide, concave medioanteriorly near anterior margin; anterior margin rounded and very prominent, surpassing nasal; punctuation coarse and dense. Nasal longer than wide. Antennae (Fig. 39) of male with 11 antennomeres; in male one antennomere longer than pronotum; slightly serrate; scape shorter than eye; 2nd antennomere globular, 3rd triangular elongate, shorter than 4th, last narrowed at apex. Labrum (Fig. 87) like narrow band with long setae. Mandibles (Figs. 147, 148) robust, with one apical and one subapical tooth; penicillus formed by short setae disposed in whole mesal area; molar area well developed; dorsal region with carina and moderately long setae. Maxillae: galea with simple setae; last palpomere securiform. Labium: prementum with setae in front of palpi; postmentum with two long setae and several moderately long. Pronotum (Fig. 238) slightly wider than long, narrowed anteriad; strongly convex; lateral margins carinate; anterior margin almost straight; hind angles long, slightly divergent and carinate; median basal tubercle flat; punctuation coarse, heterogeneous and dense. Prosternal channel long. Prosternal spine with subapical lobe. Borders of mesosternal cavity narrow and declivous. Metacoxal plate (Fig. 268) strongly narrowed laterally; free margin with small tooth. Tibial spurs long; tarsomeres 1-3 lamellate beneath. Scutellum elongate, slightly narrowed to apex with posterior margin rounded. Elytra convex, narrowed on distal third; striae deeply punctuate; interstices equal and flat.

Male. Tergite 8 subtriangular with distal margin rounded; punctuate and marginate by setae; clothed with microtrichiae. Sternite 8 (Fig. 301) translucent with narrow sclerotized transverse band near base; anterior margin straight with rounded angles; setae concentrate near angles. Sternite 9: distal half gradually narrow to apex; distal third setous. Tergite 9 (Fig. 363) strongly notched at middle; punctuate with setae concentrate near angles; tergite 10 longer than 9 with setae near apex. Aedeagus (Figs. 445, 446) elongate; basal piece shorter than parameres; parameres fused ventrally; median lobe slightly narrowed to apex and slightly longer than parameres; apex of parameres securiform, excavate anteriorly.

Material examined. ANGOLA. 30 Km N of Quiculungo, 1 ex. (MZSP)

Propsephus cavifrons (Erichson, 1843)
(Figs. 40, 88, 157, 239, 487, 512).

Atractodes cavifrons Erichson, 1843: 224.
Psephus cavifrons; Candèze, 1859: 25.
Propsephus bucculatus cavifrons; Schenkling, 1925: 93 (cat.).

Length: 18-19 mm. General integument reddish-brown. Pubescence whitish, short and moderately dense. Frons carinate, slightly longer than wide, concave medioanteriorly near anterior margin; anterior margin wide, slightly rounded and very prominent, surpassing nasal; punctuation coarse and dense. Nasal longer than wide. Antennae (Fig. 40) of female with 11 antennomeres; serrate; scape shorter than eye; 2nd antennomere globular, 3rd short and triangular, shorter than 4th, last narrowed at apex. Labrum (Fig. 88) semielliptical with long setae. Epipharynx (Fig. 157): membranous with two striate areas and two sclerites near base; two median bands of microtrichiae convergent at base; sensorial points near middle. Mandibles robust, with one apical and one subapical tooth; penicillus formed by short setae disposed in whole mesal area; molar area well developed; dorsal region with carina and moderately long setae. Maxillae: galea with simple setae; last palpomere securiform. Labium: prementum with setae in front of palpi; postmentum with two long setae and several moderately long. Pronotum (Fig. 239) slightly wider than long, narrowed anteriad; strongly convex; lateral margins carinate; anterior margin almost straight; hind angles, slightly divergent and carinate; median basal tubercle flat; punctuation coarse and very dense. Prosternal channel long. Prosternal spine with subapical lobe. Borders of mesosternal cavity narrow and declivous. Metacoxal plate strongly narrowed laterally; free margin with small tooth. Tibial spurs long; tarsomeres 1-3 lamellate beneath. Scutellum subpentagonal with posterior margin rounded. Elytra convex, narrowed on distal fourth; striae coarsely punctuate; interstices equal and flat.

Female. Tergite 8 subtriangular, densely setous. Sternite 8 (Fig. 487) elongate with distal margin rounded; densely clothed with short setae; spiculum gastrale 3.68 times sternite length. Ovipositor with stylus; bursa copulatrix (Fig. 512) with 6 spiny areas, some disposed star-like.

Material examined. NAMIBIA. (S. W. Africa), Okanhandja, 1 ex. (MNHN). SOUTH AFRICA. Transvaal [Province], 1 ex. (MNHN).

Pseudolophoeus Girard, 1971

Pseudolophoeus Girard, 1971: 591; 2003a: 460.
Olophoeus (*pars*) Candèze, 1859:15; Schenkling, 1925: 87 (cat.).

Type-species: *Olophoeus guineensis* Candèze, 1881, original designation.

Girard (1971) erected *Pseudolophoeus* to include 8 species of *Olophoeus* Candèze (*O. guineensis guineensis* (Candèze, 1881), *O. guineensis antennatus* (Candèze), *O. guineensis katanganus*, Basilewsky, 1958, *O. vrydaghi* (Burgeon, 1947), *O. cinnamomeus* Schwarz, 1901, *O. vandertichelei* Burgeon, 1947, *O. alternans* Burgeon, 1947, *O. quellei*, Basilewsky, 1958), and perhaps, one more species (*O. protensus* Gerstaecker) that, according to him, needs to examine the type. He also redescribed *Olophoeus guineensis* and designated it as type-species. In 1991b presented a new combination of one species belonged to *Olophoeus*: *Pseudolophoeus melancholicus* (Candèze, 1881). In 2003a emphasized the diagnostic characters of the genus: antennae carinate from 3rd to 9th antennomeres, prosternal spine not strongly declivous innerly and last ventrite convex. He recorded *P. guineensis* to Nimba.

The genus *Pseudolophoeus* is formed by 10 species: *P. alternans* (Burgeon, 1947), *P. cinnamomeus* (Schwarz, 1901), *P. guineensis antennatus* (Candèze), *P. guineensis guineensis* (Candèze, 1881) (=*Olophoeus guineensis*; Schwarz, 1906), *P. guineensis katanganus* (Basilewsky, 1958), *P. melancholicus* (Candèze, 1881), *P. protensus* Gerst., 1884, *P. quellei* (Basilewsky, 1958), *P. vandertichelei* (Burgeon, 1947), *P. vrydaghi* (Burgeon, 1947). It is recorded from Africa (Senegal, Gambia, Guine Bissau, Sierra Leone, Liberia, Ivory Coast, Democratic Republic of Congo, South Africa).

Pseudolophoeus guineensis is characterized by synapomorphies, 21(5)mesal area of mandibles with one bilobed subapical tooth and 27(3) last palpomere cylindrical, and by homoplasies, 3(0) anterior margin of frons at nasal level, 4(4) median anterior region of frons downwards, 15(1) antennae of male 2.5-4.4 antennomeres longer than hind angles of pronotum, 16(0) longitudinal carina of antennae present, 19(1) anterior margin of labrum notched at middle, 25(2) setae of galea short bristle, 33(0) prosternal channel absent, 37(4) free margin of metacoxal plate with small tooth, 40(2) tibial spurs very long, 58(4) distal margin of tergite 9 of male slightly notched at middle and 67(0) lateral margins of median lobe almost straight. It belongs to a polytomy formed by *Anoplischiopsis bivittatus*, *Olophoeus gibbus* and *Adiaphorus*.

Pseudolophoeus guineensis (Candèze, 1881)
(Figs. 41, 89, 149, 150, 174, 184, 240, 302, 364, 447, 448, 488).

Psephus guineensis Candèze, 1881:27; 1891: 51 (cat.).
Olophoeus guineensis; Schwarz, 1906: 76; Schenkling, 1925: 87 (cat.).
Pseudolophoeus guineensis; Girard, 1971: 591.

Length: 14-16 mm. General integument dark-brown. Pubescence yellowish, moderately long and dense. Frons carinate, wider than long, convex and flat anteriorly; anterior margin slightly rounded, surpassing nasal in narrow band; punctuation moderately coarse and dense. Nasal wider than long. Antennae (Fig. 41) with 11 antennomeres; in male 3 antennomeres longer than hind angles of pronotum; serrate in male, subserrate in female; scape shorter than eye; 2nd antennomere globular, 3rd triangular, slightly shorter than 4th, last narrowed at apex; longitudinal carina present on antennomeres 3-7 or 3-8; carina weaker to apex direction. Labrum (Fig. 89) semielliptical with long setae; anterior margin notched at middle. Mandibles (Figs. 149, 150) narrow with one subapical bilobed tooth; penicillus formed by short setae disposed in whole mesal area; dorsal region with carina and moderadely long setae. Maxillae (Fig. 174): galea with bristle short setae; last palpomere cylindrical. Labium (Fig. 184): prementum with setae in front of palpi; postmentum with many long setae. Pronotum (Fig. 240) wider than long, slightly narrowed anteriad; strongly convex; lateral margins carinate; anterior margin almost straight; hind angles backwardly directed and carinate; median basal tubercle flat; punctuation moderately coarse and dense. Prosternal channel absent. Prosternal spine with small subapical lobe. Borders of mesosternal cavity declivous. Metacoxal plate strongly narrowed laterally; free margin with tooth. Tibial spurs very long; tarsomeres 2-3 lamellate beneath. Scutellum subtriangular elongate. Elytra strongly convex, slightly narrowed on distal third; striae punctuate and grooved; interstices punctuate, equal and flat.

Male. Tergite 8 elongate with distal margin rounded; punctuate and marginate by setae; clothed with microtrichiae. Sternite 8 (Fig. 302) translucent with basal transverse sclerite; anterior margin straight with rounded angles; setae concentrate near distal third. Sternite 9 slightly narrowed apicad; distal third setous. Tergite 9 (Fig. 364) densely punctuate; anterior margin slightly notched at middle, with setae near angles; tergite 10 as long as 9, with setae distributed in almost whole area. Aedeagus (Figs. 447, 448) elongate, wide; basal piece shorter than parameres; parameres fused ventrally; median lobe slightly narrowed apicad with rounded apex, slightly longer than parameres; apex of parameres securiform.

Female. Tergite 8 transverse, slightly narrowed apicad, with anterior margin rounded; densely setous. Sternite 8 (Fig. 488) with narrowed and rounded apex; clothed by moderately long setae; spiculum gastrale 1.93 time sternite length. Ovipositor with stylus; bursa copulatrix without spiny areas.

Material examined. GHANA. 2 exs (MZSP). GAMBIA. 5 exs (MNHN). SENEGAL. Badi, 4 exs (MNHN). Casamance, 2 exs (MNHN). IVORY COAST. Bouake, Cap de Le Magnen, 1 ex. (MNHN). Dimbroko, 5 exs (MNHN). Lamto, 2 exs (MNHN). GUINEA. Ziela, NIMBA, 3 exs (MNHN).

Rhinopsephus Schwarz, 1906

Rhinopsephus Schwarz, 1906: 59, 82; Schenkling, 1925: 98 (cat.); Basilewsky, 1958: 470; Cobos, 1970: 183; Girard, 2003a: 464.

Type-species: *Psephus minor* Candèze, 1881. Hyslop (1921) designated *Psephus miliaris* Schwarz, 1903, as type-species; Basilewsky (1958) synonymized it under *Rhinopsephus minor* (Candèze, 1881).

Schwarz (1906) erected the genus *Rhinopsephus* to 5 species from *Psephus* Candèze, 1859.

Hyslop (1921) designated *Psephus milares* Schwarz, 1903 as type-species.

Schenkling (1925) catalogued 6 species to this genus.

Basilewsky (1958) redescribed briefly the genus, described a new species, *R. sylvaticus* and considered *Psephus miliaris* Schwarz, 1903 (type-species designated by Hyslop) as synonym of *R. minor* (Candèze, 1882).

Cobos (1970) described two new species, *R. reticulicollis* and *R. lucidulus* and commented the similarities of this genus with *Ischiodontus* and *Dicrepidius*, and some doubts on the vality of *Rhinopsehus*. According to him, at that time, the genus was composed by 6 species besides 2 new species described by him.

According to Girard (1985) the genus *Rhinopsephus* Schwarz is exclusively afrotropical. It was composed by 10 species, 6 of which found at western Africa. He described two new species *R. martini* and *R. balachowskyi*; in 1985 (1986) described *R. venustus*. In 2003a commented that the genus is exclusively afrotropical; described two new species and recorded 5 others from Nimba.

The genus *Rhinopsephus* is formed by 13 species: *R. apicalis* (Schwarz, 1903), *R. balachowskyi* Girard, 1985, *R. guineensis* Girard, 2003, *R. impressicollis* (Schwarz, 1899)(=*R. nasalis* (Schwarz, 1902)), *R. lamottei* Girard, 2003, *R. lucidulus* Cobos, 1970, *R. martini* Girard, 1985, *R. minor* (Candèze, 1881)(=*R. milaris* (Schwarz, 1903), *R. nigrifrons* Schwarz, 1909, *R. reticulicollis* Cobos, 1970, *R. submarmoratus* (Schwarz, 1903), *R. sylvaticus* Basilewsky, 1958, *R. venustus* Girard, 1985(1986). It is recorded from Africa (Ivory Coast, Cameroon, Gabon, Democratic Republic of the Congo, Tanzania).

Rhinopsephus apicalis is characterized by homoplasies, 0(1) frons longer than wide, 6(0) ridge of nasal present, 7(1) nasal longer than wide, 9(4) antennae of female pectinate, 25(6) setae of galea thick and spatulate, 28(1) pronotum longer than wide and 69(2) apex of sternite 8 of female widely rounded. It forms a tricotomy with *Calopsephus apicalis* and *Catalamprus angustus*.

Rhinopsephus apicalis (Schwarz, 1903)
(Figs. 42, 43, 90, 156, 241, 269, 303, 365, 449, 450, 489, 513).

Psephus apicalis Schwarz, 1903: 48.
Rhinopsephus apicalis; Schwarz, 1906: 82; Schenkling, 1925: 98 (cat.).

Length: 8.5-10.0 mm. General integument dark-brown with prothorax and anterior 2/3 of elytra yellow; pronotum with longitudinal median band dark-brown, wider frontally. Pubescence moderately long and dense, accompanying integument color dorsally, and whitish ventrally. Frons carinate, longer than wide, convex and slightly concave near anterior margin; anterior margin wide and rounded, prominent, surpassing nasal; punctuation coarse and very dense. Nasal (Fig. 156) longer than wide, with 2 longitudinal ridges. Antennae (Figs. 42, 43) with 11 antennomeres; in male 3 antennomeres longer than pronotum; serrate in male, roundly serrate in female; scape shorter than eye; 2nd antennomere globular, 3rd triangular, shorter than 4th, last elliptical; antennomeres 3-11 with longitudinal carina. Labrum (Fig. 90) semielliptical with long setae. Mandibles robust, with one apical and one subapical tooth; penicillus formed by short setae disposed in whole mesal area; molar area well developed; dorsal region with carina and moderately long setae. Maxillae: galea with thick and spatulate setae; last palpomere widened to apex. Labium: prementum with setae in front of palpi; postmentum with two long and several tiny setae. Pronotum (Fig. 241) longer than wide; strongly convex, grooved longitudinal medially, near base; lateral margins carinate; anterior margin straight; hind angles backwardly directed and carinate; median basal tubercle indistinct; punctuation moderately coarse and very dense. Prosternal channel long. Prosternal spine with subapical tooth. Borders of mesosternal cavity narrow and declivous. Metacoxal plate (Fig. 269) slightly narrowed laterally; free margin with well developed tooth. Tibial spurs very small; tarsomeres 2-3 lamellate beneath. Scutellum elongate with posterior margin rounded. Elytra convex, slightly narrowed on distal third; striae coarsely and deeply punctuate, grooved near base; interstices equal and flat.

Male. Tergite 8 elongate with distal margin rounded; punctuate and marginate by setae; clothed with microtrichiae. Sternite 8 (Fig. 303) translucent with very small basal transverse sclerite; anterior margin straight with rounded angles; setae concentrate near angles. Sternite 9: distal half slightly narrow to apex; distal third setous. Tergite 9 (Fig. 365): anterior margin strongly notched at middle, V-shaped; punctuate with setae concentrate near angles; tergite 10 longer than 9 with setae near apex. Aedeagus (Figs. 449, 450) elongate, wide; basal piece shorter than parameres; parameres fused ventrally; median lobe very narrow, widened near base, slightly longer than parameres; apex of parameres securiform and rounded.

Female. Tergite 8 subtriangular, densely setous. Sternite 8 (Fig. 489) rounded, narrowed at apex; clothed by moderately long setae; spiculum gastrale 4.63 times sternite length. Ovipositor with stylus; bursa copulatrix (Fig. 513) with 5 spiny areas, some disposed star-like.

Material examined. CAMEROON. (Kamerun), 1 ex. (MNHN). SIERRA LEONE. Rhobomp, 1 ex. (MNHN).

Semiotopsis Candèze, 1887

Semiotopsis Candèze, 1882: 188; 1891: 44 (cat.); Schwarz, 1906: 60, 74; Schenkling, 1925: 84 (cat.); Blackwelder, 1944: 298 (cat.).

Type-species: *Semiotopsis ungulata* Candèze, 1887, designated by monotypy.

Candèze (1887) erected *Semiotopsis* to *S. ungulata* from "Nouvelle Grenade: Valle de Cauca". It was characterized especially by tarsomeres 2 and 3 lamellate, mesosternum distinct from metasternum and claws toothed.

Schenkling (1925) and Blackwelder (1944) catalogued one species to this genus.

The genus *Semiotopsis*, monotypical, is recorded from Colombia.

No specimen of this genus was examined but by original description it is possible to verify that it presents tarsomeres 2 and 3 lamellate indicating that it belongs to Dicrepidiina.

Sephilus Candèze, 1878

Sephilus Candèze, 1878: 108; 1891: 56; Schwarz, 1906: 60, 70; Schenkling, 1925: 82

Type-species: *Sephilus frontalis* Candèze, 1878, designated by monotypy.

Candèze (1878) erected the genus *Sephilus* to *S. frontalis*, from Borneo. According to him, *S. frontalis* should be included in *Psephus* or *Elius*, but he preferred put it in a new genus.

Schwarz (1906) included 3 species in the genus.

Schenkling (1925) catalogued three species to this genus.

Kishii (1999) studied the aedeagus of *S. formosanus* Schwarz, 1902 and described *S. shibatai*.

The genus *Sephilus* is formed by 4 species: *S. formosanus* Schwarz, 1902, *S. frontalis* Candèze, 1878, *S. minor* Schwarz, 1901, *S. shibatai* Kishii, 1999. It is recorded fromTaiwan, Malaysia, Borneo, Sumatra.

The *Sephilus* species included in this analysis form a monophyletic group, characterized by homoplasies, 2(0) anterior margin of frons declivous at middle, 25(0) setae of galea simple and 34(1) prosternal spine with rounded apex. It is the sister-group of ((*Achrestus venustus*)((*Dicrepidius ramicornis*)(*Crepidius*))).

Sephilus formosanus Schwarz, 1912
(Figs. 44, 91, 242, 270, 304, 366, 451, 452).

Sephilus formosanus Schwarz, 1912: 319; Schenkling, 1925: 82 (cat.).

Length: 11.5-12.0 mm. General integument reddish-brown; prothorax and head darker. Pubescence yellowish-white moderately long and dense. Frons carinate, as wide as long; convex; anterior margin wide and rounded, prominent, surpassing nasal; punctuation coarse and dense. Nasal longer than wide. Antennae (Fig. 44) of male with 11 antennomeres; 1.7 antennomeres longer than pronotum; serrate; scape shorter than eye; 2nd antennomere globular, 3rd triangular elongate, shorter than 4th, last narrowed at apex. Labrum (Fig. 91) like narrow band with long setae. Mandibles wide with one apical and one subapical tooth; penicillus formed by short setae disposed in whole mesal area; dorsal region with carina and moderately long setae. Maxillae: galea with simple setae; last palpomere securiform. Labium: prementum with setae in front of palpi; postmentum with two long and several moderately long setae. Pronotum (Fig. 242) wider than long, slightly narrowed anteriorly; moderately convex; convexity decreasing basad; grooved longitudinal medially, at base; lateral margins carinate; anterior margin straight; hind angles backwardly directed and carinate; median basal tubercle flat; punctuation coarse and dense. Prosternal channel long. Prosternal spine with narrowed apex. Borders of mesosternal cavity narrow and declivous. Metacoxal plate (Fig. 270) strongly narrowed laterally; free margin straight. Tibial spurs small; tarsomeres 1-3 lamellate beneath. Scutellum elongate with posterior margin rounded and lateral margins notched. Elytra moderately convex, narrowed on distal third; striae grooved; interstices equal and flat.

Male. Tergite 8 as long as wide, slightly narrowed apicad; distal margin rounded; partially clothed by setae; clothed with microtrichiae. Sternite 8 (Fig. 304) translucent with very small basal transverse sclerite; anterior margin straight with angles truncate; setae concentrate near anterior margin. Sternite 9: distal half gradually narrow to apex and setous. Tergite 9 (Fig. 366): anterior margin strongly notched at middle; punctuate with setae near angles; tergite 10 as long as 9, punctuate and sparsely setous. Aedeagus (Figs. 451, 452) elongate; basal piece shorter than parameres; parameres fused ventrally; median lobe slightly narrowed apicad with constricted apex; moderately longer than parameres; apex of parameres securiform and rounded.

Material examined. TAIWAN. (Formosa)1 ex. (MNHN). Kuraru, 1 ex. (MNHN).

Sephilus frontalis Candèze, 1878
(Figs. 45, 46, 92, 243, 305, 367, 453, 454, 490, 514).

Sephilus frontalis Candèze, 1878: 109; Schwarz, 1906: t.3, f. 10; Schenkling, 1925: 83 (cat).

Length: 19.5-24.0 mm. General integument reddish-brown with prothorax and head dark-brown. Pubescence yellow, moderately long and dense. Frons carinate, longer than wide; convex; anterior margin wide and rounded, very prominent, surpassing much nasal; punctuation moderately coarse and dense. Nasal longer than wide. Antennae (Figs. 45, 46) with 11 antennomeres; in male 2 antennomeres longer than pronotum; strongly serrate; scape as long as eye; 2nd antennomere globular, 3rd triangular elongate, with lateral appendix, as long as 4th, last narrowed at apex. Labrum (Fig. 92) semielliptical with margin sinuous and long setae. Mandibles wide with one apical and one subapical tooth; penicillus formed by short setae disposed in whole mesal area; dorsal region with carina and moderadely long setae. Maxillae: galea with simple setae; last palpomere securiform. Labium: prementum with setae in front of palpi; postmentum with two long and several short setae. Pronotum (Fig. 243) wider than long, slightly narrowed anteriorly; moderately convex; convexity decreasing basad; grooved longitudinal medially, at base; lateral margins carinate; anterior margin straight; hind angles backwardly directed and carinate; median basal tubercle flat; punctuation moderately

coarse and very dense. Prosternal channel long. Prosternal spine with narrowed apex. Borders of mesosternal cavity narrow and declivous. Metacoxal plate strongly narrowed laterally; free margin straight. Tibial spurs small; tarsomeres 1-3 lamellate beneath. Scutellum elongate with posterior margin rounded and lateral margins notched. Elytra moderately convex, narrowed on distal third; with small sutural spine; striae coarsely punctuate and slightly grooved, more strongly grooved basally; interstices equal and flat.

Male. Tergite 8 longer than wide; subtriangular with distal margin rounded; partially clothed by setae; clothed with microtrichiae. Sternite 8 (Fig. 305) elongate, slightly narrowed apicad; partially translucent; anterior margin notched at middle angles rounded; setae concentrate on distal half. Sternite 9: distal half gradually narrow to apex and setous. Tergite 9 (Fig. 367): anterior margin strongly notched at middle; punctuate with setae near angles; tergite 10 longer than 9, punctuate. Aedeagus (Figs. 453, 454) elongate; basal piece shorter than parameres; parameres fused ventrally; median lobe slightly narrowed apicad, more strongly narrowed subapically and constricted at apex; moderately longer than parameres; apex of parameres securiform preceeded by tooth.

Female. Tergite 8 elongate, subtriangular with narrowed apex; densely setous. Sternite 8 (Fig. 490) elongate, narrowed at apex; clothed with moderately long setae; spiculum gastrale 2.90 times sternite length. Ovipositor with stylus; bursa copulatrix (Fig. 514) with 7 spiny areas; 3 frontal areas partially fused; some disposed star-like.

Material examined. SUMATRA. Palembang, 1 ex. BORNEO. Sarawak, 1 ex. (MNHN). Brunei, 1 ex. (MNHN). Without locality: ex-coll. Fleutiaux, 1 ex. (MNHN).

Singhalenus Candèze, 1859

Singhalenus Candèze, 1859: 9, 43; 1891: 56 (cat.); Schwarz, 1906: 60, 72; Fleutiaux, 1928: 104: Schenkling, 1925: 83 (cat.).

Type-species: *Singhalenus taprobanicus* Candèze, 1859, designated by Hyslop, 1921.

Candèze (1859) erected *Singhalenus* to two species from "Indies Orientalis". In 1891 he catalogued 3 species to this genus.

Schwarz (1906) included 5 species in the genus.

Schenkling (1925) catalogued 5 species to this genus.

Fleutiaux (1928) characterized the genus, redescribed *S. candezei* Schwarz, 1896 and compared it with other species of this genus.

The genus *Singhalenus* is formed by 5 species: *S. candezei* Schwarz, 1896, *S. gibbus* Candèze, 1892, *S. horsfieldi* Candèze, 1865, *S. rubiginosus* Candèze, 1859, *S. taprobanicus* Candèze, 1859. It is recorded from India, Sri Lanka, Vietnam.

The *Singhalenus* species included in this analysis form a monophyletic group, characterized by homoplasies, 8(2) antennae of male subserrate, 9(2) antennae of female subserrate, 19(1) anterior margin of labrum notched at middle, 28(1) pronotum longer than wide, 37(4) free margin of metacoxal plate with small tooth and 40(0) tibial spurs short. It forms a tricotomy with (*Sphenomerus*) ((*Elius*) ((*Stenocrepidius simoni*) (*Heterocrepidius*))).

Singhalenus gibbus Candèze, 1892
(Figs. 47, 93, 158, 244, 306, 368, 455, 456, 491, 515).

Singhalenus gibbus Candèze, 1892: 487; Schenkling, 1925: 83 (cat.)

Length: 10.0-25.0 mm. General integument from reddish dark-brown to reddish-brown; legs and antennae clearer. Pubescence whitish, long and moderately dense, longer on pronotum. Frons carinate, strongly convex; longer than wide; anterior margin straight and prominent, surpassing much nasal; punctuation moderately coarse and dense. Nasal wider than long. Antennae (Fig. 47) with 11 antennomeres; in male 2.20 antennomeres longer than pronotum; subserrate; scape shorter than eye; 2nd antennomere globular, 3rd elongate, slightly shorter than 4th, last narrowed at apex. Labrum (Fig. 93) semielliptical; anterior margin notched at middle; with long setae. Mandibles (Fig. 158) narrow, with one apical and one subapical tooth; penicillus formed by short setae disposed in whole mesal area; dorsal region with carina and moderately long setae. Maxillae: galea with simple setae; last palpomere securiform. Labium: prementum with setae in front of palpi; postmentum with two long and several moderately long setae. Pronotum (Fig. 244) longer than wide, narrowed anteriorly; strongly convex on anterior half, declivous on basal half; lateral margins carinate; anterior margin prominent; hind angles backwardly directed and carinate; median basal tubercle flat; punctuation coarse and dense. Prosternal channel long. Prosternal spine with narrowed and rounded apex. Borders of mesosternal cavity narrow and declivous. Metacoxal plate strongly narrowed laterally; free margin with tooth. Tibial spurs small; tarsomeres 1-3 lamellate beneath. Scutellum pentagonal elongate. Elytra convex, narrowed on distal third; with tiny sutural spine; striae deeply punctuate; interstices equal and flat.

Male. Tergite 8 longer than wide; slightly narrowed apicad with distal margin rounded; partially clothed by setae; clothed with microtrichiae. Sternite 8 (Fig. 306) transverse, slightly narrowed apicad; almost totally translucent; anterior margin slightly notched at middle; angles prominent and rounded; setae concentrate near anterior margin and at angles. Sternite 9: distal half gradually narrow to apex and setous. Tergite 9 (Fig. 368): anterior margin strongly notched at middle; punctuate with long setae near angles; tergite 10 longer than 9, punctuate and setous. Aedeagus (Figs. 455, 456) elongate; basal piece shorter than parameres; parameres fused ventrally; median lobe gradually narrowed apicad, moderately longer than parameres; apex of parameres securiform.

Female. Tergite 8 elongate, subtriangular with narrowed apex; densely setous. Sternite 8 (Fig. 491) elongate, narrowed at apex; anterior margin rounded; partially clothed with moderately long setae; spiculum gastrale 3.78 times sternite length. Ovipositor with stylus; bursa copulatrix (Fig. 515) with

7 spiny areas; 3 longitudinal areas partially fused; some disposed star-like.

Material examined. INDIA. Chota Nagapur, 2 exs. (MNHN). Madura, 1 ex. (MNHN).

Singhalenus taprobanicus Candèze, 1859
(Figs. 48, 94, 245, 307, 369, 457, 458, 492, 516).

Singhalenus taprobanicus Candèze, 1859: 44; 1891: 56 (cat.); Schenkling, 1925: 84 (cat.).

Length: 9.0-11.5 mm. General integument reddish dark-brown. Pubescence thin, yellowish-white and moderately long. Frons carinate, strongly convex; longer than wide; anterior margin straight and prominent, surpassing much nasal; punctuation moderately coarse and dense. Nasal wider than long. Antennae (Fig. 48) with 11 antennomeres; subserrate; scape shorter than eye; 2nd antennomere globular, 3rd elongate, slightly shorter than 4th, last narrowed at apex. Labrum (Fig. 94) semielliptical; anterior margin notched at middle; with long setae. Mandibles narrow with one apical and one subapical tooth; penicillus formed by short setae disposed in whole mesal area; dorsal region with carina and moderately long setae. Maxillae: galea with simple setae; last palpomere securiform. Labium: prementum with setae in front of palpi; postmentum with two long and several moderately long setae. Pronotum (Fig. 245) longer than wide, slightly narrowed anteriorly; strongly convex on anterior half, declivous on basal half; lateral margins carinate; anterior margin prominent; hind angles backwardly directed and carinate; median basal tubercle flat; punctuation moderately coarse and dense. Prosternal channel long. Prosternal spine with narrowed and rounded apex. Borders of mesosternal cavity narrow and declivous. Metacoxal plate strongly narrowed laterally; free margin with tooth. Tibial spurs small; tarsomeres 1-3 lamellate beneath. Scutellum pentagonal elongate. Elytra convex, narrowed on distal third; with tiny sutural spine; striae deeply punctuate; interstices equal and flat.

Male. Tergite 8 longer than wide; slightly narrowed apicad with distal margin rounded; partially clothed by setae; clothed with microtrichiae. Sternite 8 (Fig. 307) transverse, slightly narrowed apicad; almost totally translucent; anterior margin moderately notched at middle; angles prominent and widely rounded; setae concentrate near anterior margin and at angles. Sternite 9: distal third abruptly narrowed to apex and setous. Tergite 9 (Fig. 369): anterior margin strongly notched at middle; punctuate with moderately long setae near angles; tergite 10 longer than 9, punctuate and setous. Aedeagus (Figs. 457, 458) elongate; basal piece shorter than parameres; parameres fused ventrally; median lobe gradually narrowed apicad, constricted at apex, moderately longer than parameres; apex of parameres securiform rounded.

Female. Tergite 8 elongate, subtriangular with narrowed apex; densely setous. Sternite 8 (Fig. 492) elongate, narrowed at apex; anterior margin sharpend; partially clothed with short setae, some marginal longer; spiculum gastrale 4.42 times sternite length. Ovipositor with stylus; bursa copulatrix (Fig. 516) with 7 spiny areas; 3 longitudinal areas partially fused; some disposed star-like.

Material examined. INDIA. Mahé, Malabar [coast], 4 exs. (MNHN). Ayur, North Salem, 4 exs (MNHN).

Sphenomerus Candèze, 1859

Sphenomerus Candèze, 1859: 9, 41; 1891: 56(cat.); Schwarz, 1906: 60, 70; Schenkling, 1925: 82 (Cat.); Fleutiaux, 1928: 109.

Type-species: *Sphenomerus antennalis* Candèze, 1859, designated by Hyslop, 1921.

Candèze (1859) erected *Sphenomerus* to 3 species from Ceylon. According to him, this genus is similar to *Heterocrepidius*, differing specially by structure of antennae. In 1891 catalogued 5 species to the genus.

Schwarz (1906) included 7 species in the genus.

Schenkling (1925) catalogued 8 species to this genus.

Fleutiaux (1928) described a new species, *S. duporti* and presented an identification key to three species.

Van Zwaluwenburg (1936) described *S. melanesiensis* and compared it with *S. bakeri* (Fleutiaux).

Kishii (1999**)** studied the bursa copulatrix of *S. takasago* e the aedeagus of *S. brunneus*.

The genus *Sphenomerus* is formed by 12 species: *S. angustus* Schwarz, 1901(=*S. angustatus* Schwarz, 1906), *S. antennalis* Candèze, 1859, *S. bakeri* (Fleutiaux), *S. bonnottei* Fleutiaux, 1918, *S. brunneus* Candèze, 1864, *S. canaliculatus* Candèze, 1859, *S. duporti* Fleutiaux, 1928, *S. melanesiensis* Zwaluwenburg, 1936, *S. mouhoti* Candèze, 1865, *S. rufescens* Schwarz, 1901, *S. submetallescens* Candèze, 1859, *S. takasago* Kishii, 1991. It is recorded from India, Sri Lanka, Thailandia, Laos, Vietnam, "Tonkin", Taiwan.

The *Sphenomerus* species included in this analysis form a monophyletic group, characterized by one synapomorphy, 24(5) galea butterfly wing-like, and by homoplasies, 25(4) setae of galea simple and spatulate and 60(2) apex of sternite 9 of male slightly narrowed. It forms a tricotomy with (*Singhalenus*) ((*Elius*) ((*Stenocrepidius simoni*) (*Heterocrepidius*))).

Sphenomerus antennalis Candèze, 1859
(Figs. 49, 95, 175, 185, 246, 308, 330, 370, 459, 460).

Sphenomerus antennalis Candèze, 1859: 42; 1891: 56 (cat.); Schekling, 1925: 82 (cat.)

Length: 12.5 mm. General integument dark-brown. Pubescence whitish, moderately long and dense. Frons carinate, longer than wide; concave; anterior margin trapezoidal, prominent, surpassing nasal; punctuation coarse and dense. Nasal wider than long. Antennae (Fig. 49) of male with 11 antennomeres; 2 antennomeres longer than hind angles of pronotum; strongly serrate; antennomeres very wide at apex; scape shorter than eye; 2nd antennomere globular, 3rd

triangular, slightly shorter than 4th; last narrowed at apex. Labrum (Fig. 95) narrow band-like; with long setae. Mandibles narrow, with one apical and one subapical tooth; penicillus formed by short setae disposed in whole mesal area; dorsal region with carina and moderately long setae. Maxillae (Fig. 175): galea very wide, butterfly wing-like, with simple and spatulate setae; last palpomere slightly widened to apex. Labium (Fig. 185): ligula strongly notched medioanteriorly; prementum with setae in front of palpi; postmentum with two long and several moderately long setae. Pronotum (Fig. 246) longer than wide, slightly narrowed anteriorly; moderately convex; lateral margins incompletely carinate; anterior margin slightly prominent at middle; hind angles divergent and not carinate; median basal tubercle flat; punctuation moderately coarse and dense. Prosternal channel long. Prosternal spine with rounded apex. Borders of mesosternal cavity narrow and declivous. Metacoxal plate strongly narrowed laterally; free margin with small lobe. Tibial spurs long; tarsomeres 1-3 lamellate beneath. Scutellum triangular elongate with posterior margin rounded and lateral margins notched. Elytra convex, narrowed on distal third; striae grooved; interstices equal and flat.

Male. Tergite 8 wider than long; slightly narrowed apicad with distal margin rounded; partially clothed by setae; clothed with microtrichiae. Sternite 8 (Fig. 308) transverse with lateral margins rounded; almost totally translucent; anterior margin slightly notched at middle; angles prominent and widely rounded; partially clothed with setae. Sternite 9 (Fig. 330): distal third slightly narrowed to apex and setous. Tergite 9 (Fig. 370): anterior margin strongly notched at middle; microsetose laterally and with long setae near angles; tergite 10 wide, shorter than 9, setous near apex. Aedeagus (Figs. 459, 460) short and wide; basal piece shorter than parameres; parameres fused ventrally; median lobe gradually narrowed apicad, moderately longer than parameres; apex of parameres securiform sharpened.

Material examined. INDIA. Madura, Shembaganur, 1 ex. (MNHN). Trichinopoli, 1 ex. (MNHN).

Sphenomerus brunneus Candèze, 1865
(Figs. 50, 96, 176, 202, 247, 309, 371, 461, 462).

Sphenomerus brunneus Candèze, 1865: 22; 1891: 56 (cat.); Fleutiaux, 1918: 204; Schekling, 1925: 82 (cat.).

Length: 14 mm. General integument reddish dark-brown; pronotum darker. Pubescence yellowish, moderately long and moderately dense. Frons carinate, longer than wide; convex and flat medioanteriorly; anterior margin prominent, at nasal level; punctuation coarse and dense. Nasal wider than long. Antennae (Fig. 50) of male with 11 antennomeres; not reaching hind angles of pronotum; serrate; scape shorter than eye; 2nd antennomere globular, 3rd elongate, longer than 4th; last narrowed at apex. Labrum (Fig. 96) narrow band-like; with long setae. Mandibles narrow, with one apical and one subapical tooth; penicillus formed by short setae disposed in whole mesal area; dorsal region with carina and moderately long setae. Maxillae (Fig. 176): galea wide, butterfly wing-like, with simple and spatulate setae; last palpomere widened to apex. Labium: ligula strongly notched medioanteriorly; prementum with long setae in front of palpi; postmentum with many long setae, 2 of them longer. Pronotum (Fig. 247) wider than long, narrowed anteriorly; moderately convex; lateral margins incompletely carinate; anterior margin slightly prominent at middle; hind angles backwardly directed and carinate; median basal tubercle flat; punctuation moderately coarse and dense. Prosternal channel long. Prosternal spine (Fig. 202) with subapical lobe. Borders of mesosternal cavity narrow and declivous. Metacoxal plate slightly narrowed laterally; free margin with small lobe. Tibial spurs long; tarsomeres 1-3 lamellate beneath. Scutellum slightly longer than wide; subpentagonal with posterior margin rounded. Elytra convex, narrowed on distal third; striae grooved and punctuate; interstices equal and flat.

Male. Tergite 8 wider than long; slightly narrowed apicad with distal margin rounded; partially clothed by setae; clothed with microtrichiae. Sternite 8 (Fig. 309) transverse, narrowed to apex; lateral margins straight; almost totally translucent; anterior margin moderately notched at middle; angles prominent and rounded; setae near middle and laterally. Sternite 9: distal half gradually narrowed to apex and setous. Tergite 9 (Fig. 371): anterior margin strongly notched at middle; punctuate laterally with moderately long setae near angles; tergite 10 longer than 9, punctuate with some setae near apex. Aedeagus (Figs. 461, 462) short and wide; basal piece shorter than parameres; parameres fused ventrally; median lobe gradually narrowed apicad, with constricted apex; moderately longer than parameres; apex of parameres securiform sharpened.

Material examined. TONKIN, 1 ex. (MNHN).

Spilomorphus Champion, 1894

Spilomorphus Champion, 1894: 296; Schwarz, 1906: 59, 63; Schenkling, 1925: 75 (cat.); Blackwelder, 1944: 297 (cat.).

Type-species: *Spilomorphus rubricollis* Champion, 1894, by monotypy.

Champion (1894) erected *Spilomorphus* for *S. rubricollis* from Panama (Bugaba). He stated about the genus: "…has the meso- and metasternum formed exactly as *Spilus*; but it differs from it in having the coxal plates undilated opposite the point of insertion of the femora, the legs short, the prosternal sutures parallel behind, the prosternum abruptly declivous behind the coxae, and the antennae with joints from the third broadly triangular".

Schenkling (1925) and Blackwelder (1944) catalogued one species to this genus.

The genus S*pilomorphus*, monotypical, is recorded from Panama.

No specimen of this genus was examined, but by original description it is possible suppose that this genus belongs to

Dicrepidiina. According to Champion (1894) this genus presents "tarsi with joints 2 and 3 lamellate beneath" that agrees with the subtribe characterization.

Spilus Candèze, 1859

Spilus Candèze, 1859: 87; 1891: 60 (cat.); Champion, 1894: 295; Schwarz, 1906: 59, 63: Schenkling, 1925: 75 (cat.); Blackwelder, 1944: 297 (cat.).

Type-species: *Spilus rubidus* Candèze, 1859, designated by Hyslop, 1921.

Candèze (1859) erected *Spilus* to 4 new species from South America. In 1891 he catalogued 5 species to this genus.

Champion (1894) described one species from Nicaragua and Panama, *S. ciliaticornis*.

Schwarz (1906) included 8 species in the genus.

Schenkling (1925) catalogued 8 South American species to this genus besides one from Africa.

Blackwelder (1944) catalogued 8 species to this genus.

The genus *Spilus* is formed by 9 species: *S. africanus* Schwarz, 1905, *S. atractomorphus* Candèze, 1859, *S. brevis* Candèze, 1881, *S. ciliaticornis* Champion, 1894, *S. crassus* Candèze, 1900, *S. laevigatus* Candèze, 1959, *S. nigricans* Candèze, 1896, *S. nitidus* Candèze, 1859, *S. rubidus* Candèze, 1859. It is recorded from Central America (Nicaragua, Panama), South America (Colombia, Venezuela, Guyana, Brazil) and Africa.

The *Spilus* species included in this analysis form a monophyletic group, characterized by synapomorphies, 3(4) anterior margin of frons at nasal level at middle and 34(4) prosternal spine with subapical prominent lobe (nose-like), and by homoplasies, 0(2) frons as wide as long, 7(3) nasal very narrow, almost absent at middle and 35(3) borders of mesosternal cavity raised and declivous. It forms a tricotomy with *Propsephus beniensis* and *P. caviforns*.

Spilus atractomorphus Candèze, 1859
(Figs. 51, 97, 203, 248, 271, 493, 517-519).

Spilus atractomorphus Candèze, 1859: 88; 1891: 60 (cat.); Schenkling, 1925: 75 (cat.); Blackwelder, 1944: 297 (cat.).

Length: 11-14 mm. General integument from yellowish reddish-brown to reddish-brown. Pubescence yellow long and dense. Frons carinate, as long as wide; slightly concave medioanteriorly; anterior margin rounded, depressed at middle, not prominent, at nasal level; punctuation moderately coarse and dense. Nasal narrow, wider than long. Antennae (Fig. 51) with 11 antennomeres; in male, 2 antennomeres longer than hind angles of pronotum; serrate; scape shorter than eye; 2nd antennomere globular, 3rd triangular, shorter than 4th, last narrowed at apex. Labrum (Fig. 97) semicircular; with long setae. Mandibles wide, with one apical and one subapical tooth; penicillus formed by short setae disposed in whole mesal area; molar area present; dorsal region with carina and moderately long setae. Maxillae: galea with simple setae; last palpomere securiform. Labium: prementum with long setae in front of palpi; postmentum with two long and several moderately short setae. Pronotum (Fig. 248) wider than long, gradually narrowed anteriad; moderately convex on anterior 2/3 and declivous on basal third; grooved longitudinal medially on basal third; lateral margins carinate; anterior margin straight; hind angles long, backwards and carinate; median basal tubercle flat; punctuation moderately coarse and dense, smaller and sparser on basal third. Prosternal channel long. Prosternal spine with subapical tubercle nose-like. Borders of mesosternal cavity (Fig. 203) raised and declivous. Metacoxal plate (Fig. 271) narrowed laterally; free margin with well developed tooth. Tibial spurs long; tarsomeres 1-3 lamellate beneath. Scutellum pentagonal elongate with posterior margin rounded. Elytra convex, slightly narrowed on distal third; striae coarsely punctuate; interstices equal and flat.

Female. Tergite 8 elongate, slightly narrowed apicad; distal margin rounded; densely setous. Sternite 8 (Fig. 493) elongate, slightly narrowed apicad; anterior margin rounded; clothed with short setae, some marginal longer; spiculum gastrale 3.62 times sternite length. Ovipositor with stylus; bursa copulatrix (Figs. 517-519) with 7 spiny areas; some disposed star-like.

Material examined. Cayenne, ex-Collection Jekel, 1 ex. (MNHN). Without locality, 1 ex. (MNHN).

Spilus nitidus Candèze, 1859
(Figs. 52, 98, 151, 152, 249, 310, 372, 463, 464).

Spilus nitidus Candèze, 1859: 88; 1891: 60 (cat.); Schenkling, 1925: 76 (cat.); Blackwelder, 1944: 297 (cat.)

Length: 13-15 mm. General integument dark reddish-brown. Pubescence whitish, long and dense. Frons carinate, as long as wide; slightly concave medioanteriorly; anterior margin rounded, depressed at middle, not prominent, at nasal level; punctuation moderately coarse and dense. Nasal narrow, wider than long. Antennae (Fig. 52) with 11 antennomeres; in male not reaching hind angles of pronotum; serrate; scape shorter than eye; 2nd antennomere globular, 3rd triangular, shorter than 4th, last narrowed at apex. Labrum (Fig. 98) narrow band-like; with long setae. Mandibles (Figs. 151, 152) wide, with one apical and one subapical tooth; penicillus formed by short setae disposed in whole mesal area; molar area present; dorsal region with carina and moderadely long setae. Maxillae: galea with simple setae; last palpomere securiform. Labium: prementum with long setae in front of palpi; postmentum with two long and several moderately short setae. Pronotum (Fig. 249) wider than long, gradually narrowed anteriad; moderately convex on anterior 2/3 and declivous on basal third; grooved longitudinal medially on basal third; lateral margins carinate; anterior margin straight; hind angles backwardly directed and carinate; median basal tubercle indistinct; punctuation moderately coarse and dense, smaller and sparser on basal third. Prosternal channel long. Prosternal spine with subapical tubercle nose-like. Borders of mesosternal cavity raised and declivous. Metacoxal plate narrowed laterally;

free margin with well developed tooth. Tibial spurs long; tarsomeres 1-3 lamellate beneath. Scutellum subtriangular elongate with posterior margin rounded. Elytra convex, slightly narrowed on distal third; striae coarsely punctuate; interstices equal and flat.

Male. Tergite 8 slightly wider than long; slightly narrowed apicad with distal margin rounded; partially clothed by setae; clothed with microtrichiae. Sternite 8 (Fig. 310) transverse, slightly narrowed apicad; almost totally translucent; anterior margin widely rounded; setae concentrate near anterior margin. Sternite 9: distal half gradually narrowed to apex and setous. Tergite 9 (Fig. 372): anterior margin strongly notched at middle; punctuate laterally and with moderately long setae near angles; tergite 10 slightly longer than 9 and setous. Aedeagus (Figs. 463, 464) elongate; basal piece shorter than parameres; parameres fused ventrally; median lobe slightly narrowed apicad; apex of parameres securiform excavate.

Material examined. PERU. 2 exs. (MNHN). Madre de Dios , 5 exs (MNHN).

Stenocrepidius Schwarz, 1902

Stenopus Schwarz, 1900: 307 (preoccupied).
Stenocrepidius Schwarz, 1902: 126; 1906: 60, 65; Schenkling, 1925: 77 (cat.); Blackwelder, 1944: 297 (cat.).

Type-species: *Stenopus angustus* Schwarz, 1900, designated by Hyslop, 1921.

Schwarz (1900) erected *Stenopus* to three species from "Caucathal": *S. angustus*, *S. elongatus* and *S. rubripennis*.

Schwarz (1902) treating of "Neue Elateridae aus Australien" included at the end of the article: "Aenderung des Gattungsnames *Stenopus* Schw. in *Stenocrepidius* Schw. Für die von mir in der Deutsch. Ent. Zeitschr. 1900 pag. 307 aufgestellte Gattung ändere ich den namen *Stenopus* da dieser bereits anderweiting vergeben est, in *Stenocrepidius* um". In 1906 included 5 species in *Stenocrepidius*.

Schenkling (1925) and Blackwelder (1944) catalogued 5 species to this genus.

The genus *Stenocrepidius* is formed by 5 species: *S. angustus* (Schwarz, 1900), *S. elongatus* (Schwarz, 1900), *S. estebanus* (Fleutiaux, 1891), *S. rubripennis* (Schwarz, 1900)

5. *S. simoni* Fleutiaux, 1891. It is recorded from South America (Colombia, Venezuela).

Stenocrepidius simoni is characterized by one synapomorphy, 65(4) subapical region of parameres narrowed and truncate, and by homoplasies, 0(2) frons as wide as long, 3(0) anterior margin of frons at nasal level, 29(1) hind angles of pronotum divergent, 42(1) lamella of protarsomere 1 absent, 43(1) lamella of mesotarsomere 1 absent and 61(0) aedeagus short and wide. It is the sister-group of *Heterocrepidius*.

Stenocrepidius simoni (Fleutiaux, 1891) (Figs. 99, 250, 272, 311, 373, 465, 466).

Heterocrepidius simoni Fleutiaux, 1891:276.
Stenopus simoni; Schwarz, 1900: 308.
Stenocrepidius simoni; Schenkling, 1925: 78 (cat.): Blackwelder, 1944:297 (cat.).

Length: 8.5-9.5 mm. General integument brown, slightly reddish-brown; legs clearer. Pubescence whitish, moderately long and dense. Frons carinate, as long as wide; slightly concave medioanteriorly; anterior margin wide and slightly rounded, surpassing nasal; punctuation moderately coarse and dense. Nasal narrow, wider than long. Antennae (broken): scape shorter than eye; 2nd antennomere globular, 3rd elongate and very short, shorter than 4th. Labrum (Fig.99) narrow band-like; with long setae. Mandibles narrow, with one apical and one subapical tooth; penicillus formed by short setae disposed in almost whole mesal area; dorsal region with carina and moderately long setae. Maxillae: galea with simple setae; last palpomere elliptical. Labium: prementum with long setae in front of palpi; postmentum with two long and several moderately long setae. Pronotum (Fig. 250) wider than long; moderately convex; lateral margins incompletely carinate; anterior margin prominent at middle; hind angles divergent and carinate; median basal tubercle indistinct; punctuation moderately coarse and dense. Prosternal channel absent. Prosternal spine with bilobed apex. Borders of mesosternal cavity narrow and declivous. Metacoxal plate (Fig. 272) strongly narrowed laterally; free margin with small lobe. Tibial spurs long; tarsomeres 2-3 lamellate beneath. Scutellum subpentagonal elongate with posterior margin rounded. Elytra convex; slightly narrowed on distal 2/3; striae grooved; interstices equal and flat.

Male. Tergite 8 slightly wider than long; slightly narrowed apicad with distal margin rounded; partially clothed by setae; clothed with microtrichiae. Sternite 8 (Fig. 311) tranverse: translucent with transversal basal sclerite; anterior margin straight; anterior angles rounded; setae concentrate near anterior margin. Sternite 9: distal half gradually narrowed to apex and setous. Tergite 9 (Fig. 373): anterior margin strongly notched at middle; punctuate laterally and with setae near angles; tergite 10 slightly longer than 9, punctuate and setous. Aedeagus (Figs. 465, 466) short and wide; basal piece shorter than parameres; parameres fused ventrally; median lobe constricted near base and at apex, slightly narrowed apicad; apex of parameres slightly narrowed and straight.

Material examined. VENEZUELA. Caracas, 1 ex. (MNHN).

Trielasmus Blanchard, 1843

Trielasmus Blanchard, 1843: 131; Candèze, 1859: 147; 1891: 63 (cat.); Schenkling, 1925: 85 (cat.); Blackwelder, 1944: 299 (cat.).

Type-species: *Trielasmus varians* Blanchard, 1843, designated by monotypy.

Blanchard (1843) erected *Trielasmus* to *T. varians* based on one specimen collected "sur the arbustes près de Santa-Ana, dans la provice de Chiquitos".

Schenkling (1925) and Blackwelder (1944) catalogued one species to this genus.

The genus *Trielasmus*, monotypical, is recorded from South America (Bolivia, Argentina).

Trielasmus varians is characterized by homoplasies, 1(2) frontal carina incomplete and 7(3) nasal very narrow, almost absent at middle. It is the sister-group of ((*Paraloboderus glaber*)((*Loboederus appendiculatus*)(*Prolobodorus crassipes*))).

Trielasmus varians Blanchard, 1843
(Figs. 53, 100, 153, 154, 159, 251, 494).

Trielasmus varians Blanchard, 1843: 131; Candèze, 1859: 147; 1891: 63 (cat.); Schwarz, 1906: 317; Schenkling, 1925: 86 (cat.).

Length: 12.5 mm. General integument dark-brown. Pubescence whitish, long and moderately dense. Frons incompletely carinate, wider than long; anterior margin slightly rounded, flat at middle, not prominent, at nasal level; punctuation moderately coarse and dense. Nasal very short, wider than long. Antennae (Fig. 53) with 11 antennomeres; in female, serrate; scape shorter than eye; 2nd antennomere globular, 3rd triangular, shorter than 4th. Labrum (Fig. 100) subrectangular, band-like; with long setae. Epipharynx (Fig. 159): membranous with two striate areas near base; two median bands of microtrichiae convergent at base; sensorial points and 2 setae near middle. Mandibles (Figs. 153, 154) very narrow, with sharpened apex and subapical tooth; penicillus formed by short setae disposed in whole mesal area; molar area present; dorsal region with carina and moderately long setae. Maxillae: galea with simple setae; last palpomere slightly widened to apex. Labium: prementum with long setae in front of palpi; postmentum with two long and several short setae. Pronotum (Fig. 251) wider than long; moderately convex; lateral margins carinate; anterior margin slightly prominent at middle; hind angles backwardly directed and carinate; median basal tubercle indistinct; punctuation moderately small and moderately dense, finer on basal third. Prosternal channel absent. Prosternal spine with subapical small lobe and apex narrowed. Borders of mesosternal cavity narrowed and declivous. Metacoxal plate slightly narrowed laterally; free margin straight. Tibial spurs long; tarsomeres 1-3 lamellate beneath. Scutellum subtriangular elongate. Elytra convex, slightly narrowed on distal 2/3; striae grooved; interstices equal and flat.

Female. Tergite 8 triangular elongate; densely setous. Sternite 8 (Fig. 494) elongate, elliptical; short setae longitudinal medialy, some marginal longer; spiculum gastrale 4.15 times sternite length. Ovipositor with stylus; bursa copulatrix without spines or sclerotized pieces.

Material examined. BRAZIL. Mato Grosso, 1 ex. (MNHN). ECUADOR. 1 ex. (MNHN). ARGENTINA. Santiago del Estero; 55 Km au N. D´Icano, 2 exs (MNHN). BOLIVIA. Santa Cruz de la Sierra: Chiquitos, 1 ex. (MNHN).

GENUS REMOVED FROM THE SUBTRIBE

Ovipalpus Solier, 1851

Ovipalpus Solier, 1851: 9; Lacordaire, 1857: 220; Candèze, 1863: 513; 1891: 59 (cat.); Schwarz, 1906: 60, 71; Schenkling, 1925: 83 (cat.); Blackwelder, 1944: 298 (cat.).

Type-species: *Ovipalpus pubescens* Solier, 1851, designated by monotypy.

Solier (1851) erected *Ovipalpus* to *O. pubescens* from Concepcion (Chile). Lacordaire (1857) presented a diagnosis to genus.

Candèze (1863) in the "Additions et Corrections" stated about *Ovipalpus*: " … établi sur une espèce (*pubescens*) qui me paraît devoir rentrer dans le genre *Anoplischius*". In 1891, he characterized the genus only with the type-species.

Schenkling (1925) and Blackwelder (1944) catalogued two species to this genus.

Golbach (1953) described a new species, *O. schajovskoii* and presented a key to the 3 species and one subspecies of the genus. He also presented a discussion among the known species.

The genus *Ovipalpus* is formed by three species: *O. piceus* Fleutiaux, 1910, *O. pubescens* Solier, 1851 (= *Cylindroderus chilensis* Candèze, 1878; var. *ruficeps* Fleutiaux, 1910), *O. schajovskoii* Golbach, 1953. It is recorded from Chile.

Ovipalpus pubescens is characterized by synapomorphies, 3(3) anterior margin of frons fused to nasal, 24(4) galea narrow (tongue-like) and 36(2) lateral margin of metacoxal plate widened laterally and by homoplasies, 2(3) anterior margin of frons straight, 4(4) median anterior region of frons downwards, 18(2) labrum subtrapezoidal, 20(1) mandibles narrow, 27(2) last palpomere elliptical and 58(2) distal margin of tergite 9 of male moderately notched at middle. It is the sister-group of *Ctenicera silvatica*. It was exclude from Dicrepidiina and also from Ampedini. It is supposed that it belongs to Prosternini (Prosterninae).

Ovipalpus pubescens Solier, 1851
(Figs. 31, 82, 139, 140, 169, 180, 232, 266, 298, 360, 434, 435).

Ovipalpus pubescens Solier, 1851: 10; Schenkling, 1925: 83 (cat.); Blackwelder, 1944: 298 (cat.).
Cylindroderus chilensis Candèze, 1878: 199; Fleutiaux, 1907: 227.

Length: 12-14 mm. General integument black with prothorax yellow. Pubescence grayish, moderately long and dense. Frons not carinate, wider than long; frontally, almost vertical; punctuation coarse and dense. Nasal absent. Antennae (Fig. 31) with 11 antennomeres; in male 2 antennomeres longer than hind angles of pronotum; serrate; scape much shorter than eye; 2nd antennomere globular, 3rd elongate, very short, shorter than 4th, last narrowed at apex. Labrum (Fig. 82) subtrapezoidal with rounded angles and setous. Mandibles (Figs. 139, 140) elongate with 3 teeth; penicillus elongate, formed by short setae disposed in mesal area; molar area absent; dorsal region

with carina and moderately long setae. Maxillae (Fig. 169): galea and lacinia narrow, tongue-like, clothed with simple setae; last palpomere oval. Labium (Fig. 180): prementum with very long setae in front of palpi; anterior margin of ligula notched at middle; postmentum with several moderately long setae. Pronotum (Fig. 232) wider than long; convex; anterior margin straight; lateral margins almost straight and carinate only basally; hind angles strongly divergent and carinate; median basal tubercle transverse and flat; punctuation moderately coarse and dense. Prosternal channel absent. Prosternal spine with subapical lobe. Borders of mesosternal cavity narrow and declivous. Metacoxal plate (Fig. 266) slightly widened laterally; free margin straight. Tibial spurs long; tarsomeres not lamellate beneath. Scutellum subpentagonal elongate. Elytra convex, slightly narrowed on distal half; striae grooved and punctuate; interstices equal and flat.

Male. Tergite 8 slightly longer than wide,with anterior margin rounded; punctuate and marginate by fringe of setae; clothed with microtrichiae. Sternite 8 (Fig.298) transverse, slightly narrowed to apex; anterior margin notched at middle; anterior angles rounded; partially translucent; setae moderately long disposed in lateral bands. Sternite 9: distal half gradually narrowed to apex; distal third setous. Tergite 9 (Fig. 360) : anterior margin strongly notched at middle; sparsely punctuate; tergite 10 shorter than 9, setous at apex. Aedeagus (Figs. 434, 435) elongate, wide; basal piece very short, located above parameres base; parameres separate ventrally; median lobe slightly narrowed apicad, with rounded apex; moderately longer than parameres; parameres with dilated apex, booth-like.

Material examined. CHILE. 1 ex. (MNHN). Provincia de Curicó: Curicó, Cubiilo, 1 ex. (MZSP). Provincia de Talca: (Taka), Vilches, 2 exs (MZSP).

OUTGROUPS

Chalcolepidius zonatus Eschscholtz, 1829
(Figs. 14, 280, 340, 394, 395, 473, 503).

Chalcolepidius zonatus Eschscholtz, 1829:32; Casari, 2002: 347.

Length: 22-43 mm. Frons not carinate; nasal absent. Antennae (Fig. 14) serrate in both sexes, in male not reaching hind angles of pronotum; scape shorter than eye; 2nd antennomere globular, 3rd triangular elongate, shorter than 4th. Labrum transverse, slightly narrowed apicad with long setae. Mandibles robust with one apical tooth; penicillus like narrow band; molar area absent; dorsal region with carina and long setae. Maxillae: galea brush-like with simple setae; last palpomere securiform. Pronotum longer than wide, wider at hind angles, slightly narrowed anteriad from hind angles apex; anterior margin prominent and sinuous at middle; hind angles wide, slightly divergent, with truncate apex, raised laterally forming edge continues with that of lateral margin; median basal tubercle triangular-elongate and very weak or indistinct; convexity moderate; densely micropunctate with sparse umbilicate punctures more concentrate lateroanteriorly. Prostenal channel well developed. Notosternal sutures strongly sinuous. Prosternal spine flattened laterally with rounded apex. Borders of mesosternal cavity wide and horizontal on basal ¾ and vertical on distal ¼. Meso-metasternal suture weak.Metacoxal plate moderately narrowed laterally; free margin straight.Tibial spurs absent. Anterior and median tibiae and last tarsal segment of all legs of male bearing fringe of long cilia. Scutellum strongly folded with horizontal basal area triangular, notched anterior- and posteriorly, grooved longitudinal medially on anterior half.

Male. Sternite 8 (Fig. 280) transverse, narrowed apicad, subtrapezoidal, basal margin trilobed (median lobe wider) translucent at median region and two small spots each side. Tergite 9 (Fig. 340) densely punctuate, anterior margin rounded. Aedeagus (Figs. 394, 395): median lobe slightly narrowed near middle, constricted at apex; bearing lateral teeth; subapical region of parameres cleft.

Female. Sternite 8 (Fig. 473) with anterior margin moderately wide and deeply notched at middle; spiculum gastrale 1.40 times sternite length. Ovipositor (Fig. 503) without stylus; bursa copulatrix with three spiny areas; openings of colleterial glands with sclerotized rings.

Material examined. BRAZIL. Pará: Santarém, 1 ex. (MZSP). Goiás: 2 exs (MZSP); Muquém, 1 ex. (MZSP). Mato Grosso: Barra do Tapirapé, 1 ex. (MZSP); Jacaré, Xingu 1ex. (MZSP); Roncador, 1 ex. (MZSP). Minas Gerais: Lavras, 3 exs (MZSP); Mariana, 2 exs (MZSP); Rio Matipó, 1 ex. (MZSP); Santa Bárbara, Serra do Caraça, 1 ex. (MZSP); São José das Ilhas, Faz. Palmeiras, 2 exs (MZSP); Viçosa, 10 exs (MZSP). Rio de Janeiro: 2 exs (MZSP); Angra dos Reis, 2 exs (MZSP); Bocaina, 1 ex. (MZSP); 6 exs (MZSP); Mendes, 1 ex. (MZSP); Petrópolis, 1 ex. (MZSP); Serra dos Órgãos, 1 ex. (MZSP); Teresópolis, 1 ex. (MZSP). Espírito Santo: 1 ex. (MZSP); Santa Teresa, 17 exs (MZSP). São Paulo: Anhembi, 1 ex. (MZSP); Barueri, 1 ex. (MZSP); Botucatu, 2 exs (MZSP); Campinas, 1 ex. (MZSP); Guarujá, 1 ex. (MZSP), Iporanga, 1 ex. (MZSP); Ilha de Búzios, 3 exs (MZSP); Ilha de São Sebastião, 3 exs (MZSP); Ipeúna, 1 ex. (MZSP); Itararé, 3 exs (MZSP); Itatiba, 1 ex. (MZSP); Itu, Faz. Pau d'Alho, 8 exs (MZSP); Jundiaí, 2 exs (MZSP); Manoel da Nóbrega, 1 ex. (MZSP); Pai Mathias, 1 ex. (MZSP); Peruíbe, Estrada do Grajau, 1 ex. (MZSP); Piracicaba, 2 exs (MZSP); Pirassununga, 1 ex. (MZSP); Rio Mombuca , 3 exs (MZSP); Santos, 2 exs (MZSP), Praia Grande, 1 ex. (MZSP), Cidade da Criança, 2 exs (MZSP), Praia do Itaguaré, 1 ex. (MZSP); São Manuel, 1 ex. (MZSP); São Paulo, 5 exs (MZSP), Booklin, 1 ex. (MZSP), Horto Florestal, 3 exs (MZSP), Ipiranga, 4 exs (MZSP), Ubatuba, 1 ex. (MZSP). Paraná: Curitiba, 4 exs (MZSP); Jaguariaiva, 1 ex. (MZSP); Matinhos 1 ex. (MZSP); Paranaguá, 1 ex. (MZSP); Ponta Grossa, 14 exs (MZSP); Porto Cabral, 1 ex., (MZSP). Santa Catarina: 1 ex. (MZSP); Joinville, 12 exs (MZSP), Rio Bracinho, 1 ex. (MZSP); Rio Natal, 4 exs (MZSP); Rio Vermelho, 43 exs (MZSP); São Bento do Sul, 12 exs (MZSP); Timbó, ex-coll. Dirings, 33 exs, (MZSP). Rio Grande do Sul: Vila Oliva, 1 ex. (MZSP).

Ctenicera silvatica (Van Dyke, 1932)
(Figs. 15, 67, 120, 216, 282, 343, 400, 401, 476).

Ludius silvaticus Van Dyke, 1932: 409.
Ctenicera silvatica; Blackwelder & Arnett, 1974: 48.

Length: 14-22 mm. General integument dark-brown with antennae black. Pubescence long, dense, whith metallic shine. Frons not carinate, wider than long, flat; anterior margin at nasal level; punctuation moderately coarse and dense. Nasal

wider than long. Antennae (Fig. 15) with 11 antennomeres; in male 2 antennomeres longer than hind angles of pronotum; slightly serrate in both sexes; scape shorter than eye; 2nd antennomere globular, 3rd triangular elongate, longer than 4th, last narrowed at apex. Labrum (Fig. 67) semielliptical, with long setae. Mandibles (Fig. 120) robust, with apex wide with one subapical tooth and one lobe between teeth; penicillus narrow, formed by short setae disposed in whole mesal area; dorsal region with carina and moderadely long setae. Maxillae: galea with simple setae; last palpomere securiform. Labium: postmentum with two long setae and several moderately short. Pronotum (Fig. 216) longer than wide, slightly narrowed anteriad; moderately convex; lateral margins carinate; anterior margin almost straight; hind angles divergent and carinate; median basal tubercle indistinct; punctuation moderately coarse and dense. Prosternal channel absent. Prosternal spine with subapical lobe. Borders of mesosternal cavity declivous. Metacoxal plate strongly narrowed laterally; free margin with small lobe, almost straight. Tibial spurs long; tarsomeres not lamellate beneath. Scutellum elongate with posterior margin rounded. Elytra convex, slightly narrowed to apex; striae punctuate and grooved; interstices punctuate, equal and flat.

Male. Tergite 8 wider than long with distal margin rounded; setous; clothed with microtrichiae. Sternite 8 (Fig. 282) transverse, slightly narrowed on anterior angles; anterior margin straight with angles moderately prominent; translucent with lateral and basal irregular bands yellowish; setae concentrate near angles. Sternite 9: distal half gradually narrow to apex and setous. Tergite 9 (Fig. 343) strongly notched at middle; V-shaped; with setae concentrate laterally on distal half; tergite 10 shorter than 9 with apex notched. Aedeagus (Figs. 400, 401) elongate; basal piece short, transverse, located on parameres base; parameres separate ventrally; median lobe narrow, slightly narrowed apicad, with apex rounded; parameres without setae and apex foot-like.

Female. Tergite 8 elongate, triangular; translucent median-basally; setous laterally and at apex. Sternite 8 (Fig. 476) setous with apex triangular; spiculum gastrale 3.80 times sternite length. Ovipositor with styli; bursa copulatrix without sclerotized pieces or spines.

Material examined. UNITED STATES OF AMERICA. California: Mt Lassen, 4 exs (MZSP); Tehama County: 12 mi W Minéral, 2 exs (MZSP); 6 mi E Minéral, 2 exs (MZSP).

Melanotus spernendus Candèze, 1873
(Figs. 29, 80, 135, 136, 167, 296, 358, 430, 431, 483, 508).

Melanotus spernendus Candèze, 1873: 21; 1891: 142 (cat.); Lewis, 1894:192; Schenkling, 1925: 281 (cat.).

Length: 15.5-18.5 mm. General integument dark-brown; antennae and legs clearer. Pubescence yellow, dense and moderately long. Frons carinate, wider than long; convex; anterior margin wider and rounded, surpassing nasal in narrow band; punctuation coarse and dense. Nasal short, wider than long. Antennae (Fig.29) with 11 antennomeres; in male one antennomere longer than hind angles of pronotum; slightly serrate in both sexes; scape shorter than eye; 2nd antennomere globular, 3rd cylindrical, shorter than 4th, last narrowed at apex. Labrum (Fig. 80) semicircular, with long setae. Mandibles (Figs. 135, 136) narrow, with subapical tooth; penicillus formed by short setae disposed in whole mesal area; dorsal region with carina and moderadely long setae. Maxillae (Fig. 167): galea with long bristle setae; last palpomere securiform. Labium: prementum with setae in front of palpi; postmentum with two long setae and several moderately short. Pronotum wider than long, narrowed anteriad; moderately convex; convexity decreasing basad; lateral margins carinate; anterior margin U-shaped; hind angles long, backwardly directed and strongly carinate; median basal tubercle flat; punctuation coarse and dense, smaller and denser on median basal third. Prosternal channel present. Prosternal spine with subapical lobe. Borders of mesosternal cavity declivous. Metacoxal plate strongly narrowed laterally; free margin straight. Tibial spurs long; tarsomeres not lamellate beneath; claws pectinate. Scutellum pentagonal with posterior margin rounded. Elytra convex, slightly narrowed to apex; striae punctuate and grooved; interstices equal and flat.

Male. Tergite 8 elongate, slightly narrowed apicad, with distal margin rounded; setous; clothed with microtrichiae. Sternite 8 (Fig. 296) transverse, narrowed on distal half; anterior margin strongly notched at middle; fore angles rounded; translucent with lateral bands yellowish and sclerite transversal basal; setae concentrate on distal half. Sternite 9: distal half gradually narrow to apex and setous. Tergite 9 (Fig. 358) moderately notched at middle; punctuate with setae concentrate near angles; tergite 10 longer than 9 and setous. Aedeagus (Figs. 430, 431) elongate; basal piece shorter than parameres, parameres separate ventrally; median lobe narrowed apicad with apex constricted and rounded; apex of parameres securiform.

Female. Tergite 8 elongate, slightly narrowed apicad with anterior margin rounded; clothed with setae. Sternite 8 (Fig. 483) slightly narrowed apicad, densely clothed with setae; spiculum gastrale 3.82 times longer than sternite. Ovipositor with styli; bursa copulatrix (Fig. 508) very elongate with one spiny area.

Material examined. JAPAN. Nagai-cho, Osaka, 10 exs (MZSP).

Ampedus sanguineus (Linnaeus, 1758)
(Figs. 6, 57, 105, 106, 160, 189, 207, 252, 275, 334, 382, 383).

Elater sanguineus Linnaeus, 1758: 405; Candèze, 1859: 442; Schenkling, 1925: 153(cat.).
Ampedus sanguineus; Dejean, 1833: 104; LeConte, 1884: 32.

Length: 11.5-15.5 mm. General integument dark-brown to black with elytra orange. Pubescence black, moderately long, denser on pronotum. Frons carinate, wider than long, convex; anterior margin rounded and prominent at middle, surpassing nasal; punctuation moderately coarse and dense. Nasal very narrow, wider than long. Antennae (Fig.6) with 11

antennomeres; in male not reaching hind angles of pronotum; slightly serrate in both sexes; scape shorter than eye; 2nd antennomere globular, 3rd elongate, shorter than 4th, last with narrowed at apex. Labrum (Fig.57) semielliptical, notched at middle with long setae. Mandibles (Figs. 105, 106) robust, with one apical and one subapical tooth; penicillus well developed, formed by short setae disposed in wide band in whole mesal area; molar area absent; dorsal region with carina and moderately long setae. Maxillae (Fig. 160): galea with spatulate setae; last palpomere securiform. Labium (Fig. 189): prementum with setae in front of palpi; postmentum with two long setae and several short [represented by punctures]. Pronotum (Fig. 207) wider than long, narrowed anteriorly; moderately convex; lateral margins carinate; anterior margin slightly prominent at middle; hind angles backwardly directed and carinate; median basal tubercle flat; punctuation moderately coarse and dense, finer and sparser on basal third. Prosternal channel short. Prosternal spine with narrowed apex and subapical lobe. Borders of mesosternal cavity narrow and declivous. Metacoxal plate (Fig. 252) strongly narrowed laterally; free margin with well developed lobe. Tibial spurs very long; tarsomeres not lamellate beneath. Scutellum elongate with posterior margin rounded. Elytra moderately convex, slightly narrowed to apex; striae coarsely punctuate, grooved near base; interstices equal and flat.

Male. Tergite 8 wider than long, slightly narrowed apicad, with distal margin rounded; punctuate on anterior half and marginate by setae; clothed with microtrichiae. Sternite 8 (Fig. 275) transverse, slightly narrowed apicad; anterior margin straight with rounded angles; translucent with lateral and basal irregular bands yellowish; setae concentrate near angles and microsetae at middle, near anterior margin. Sternite 9: distal half gradually narrow to apex and setous. Tergite 9 (Fig. 334) strongly notched at middle; punctuate with setae concentrate near angles; tergite 10 longer than 9 with setae on distal 2/3. Aedeagus (Figs. 382, 383) short and wide; basal piece short, located on parameres base; parameres separate ventrally; median lobe narrowed near base and at apex; apex of parameres triangular.

Material examined. SLOVAKIA. Harmanec, 1 ex. (MZSP). Mor., Tkvice, 1 ex. (MZSP). Without locality, 1 ex. (MZSP)

Anchastus digittatus LeConte, 1853
(Figs. 7, 58, 107, 108, 208, 253, 469, 495).

Anchastus digittatus LeConte, 1853: 459; Lacordaire, 1857: 176; Candèze, 1891: 106 (cat.); Schenkling, 1925: 187 (cat.); Blackwelder, 1974: 50 (cat.).

Length: 11 mm. General integument yellowish-brown. Pubescence yellow, moderately long and dense. Frons carinate, wider than long; convex; anterior margin strongly rounded, prominent at middle, surpassing nasal in very narrow stripe; punctuation moderately coarse and very dense. Nasal wider than long. Antennae (Fig. 7) with 11 antennomeres; in female, not reaching hind angles of pronotum; subserrate in both sexes; scape shorter than eye; 2nd antennomere globular, 3rd globular, longer than 2nd and shorter than 4th, last with apex narrowed. Labrum (Fig. 58) semicircular, narrowed at base, with long setae. Mandibles (Figs. 107, 108) robust, with one apical and one subapical tooth; penicillus formed by short setae disposed in wide band in whole mesal area; with lobe at base; molar area well developed; dorsal region with carina and moderadely long setae. Maxillae: galea with spatulate setae; last palpomere securiform. Labium: prementum with long setae in front of palpi; postmentum with two long setae, with several moderately long setae. Pronotum (Fig. 208) slightly wider than long, strongly narrowed frontally; moderately convex; lateral margins carinate; anterior margin slightly notched; hind angles backwardly directed and not carinate; median basal tubercle flat; punctuation moderately small and dense. Prosternal channel short. Prosternal spine with sharpened apex and subapical small tooth. Borders of mesosternal cavity narrowed and declivous. Metacoxal plate (Fig. 253) strongly narrowed laterally; free margin with well developed lobe. Tibial spurs very long; tarsomere 3 lamellate beneath. Scutellum subtriangular elongate with posterior margin rounded. Elytra moderately convex, narrowed on distal third; striae coarsely punctuate; interstices equal and flat.

Female. Tergite 8 slightly wider than long, narrowed to apex; distal margin rounded; median basal area translucent; densely setous. Sternite 8 (Fig. 469) triangular, clothed with setae; spiculum gastrale 5.75 times sternite length. Ovipositor with stylus; bursa copulatrix (Fig. 495) narrow, spiraled at apex, with spines innerly.

Material examined. UNITED STATES OF AMERICA. Georgia: Fulton Co. Atlanta, 1 ex. (MZSP)

Physorhinus xanthocephalus Germar1840
(Figs. 36, 85, 143, 144, 172, 182, 200, 237, 267, 299, 361, 441, 442, 485, 511).

Physorhinus xanthocephalus Germar, 1840: 245; Candèze, 1859: 392; 1891: 103 (cat.); Schenkling, 1925:182 (cat.); Blackwelder, 1944: 301 (cat.).

Length: 10-12 mm. General integument brown with frons and lateral irregular band of elytra yellow; anterior margin of frons brown; legs clearer. Pubescence yellow, moderately long and dense. Frons carinate, wider than long; convex; anterior margin wide and rounded, prominent, surpassing nasal; punctuation moderately coarse and moderately dense. Nasal wider than long. Antennae (Fig. 36) with 11 antennomeres; in male 2.2 antennomere longer than hind angles of pronotum; subserrate in both sexes; scape shorter than eye; 2nd antennomere globular, 3rd globular, longer than 2nd and shorter than 4th, last with apex slightly narrowed. Labrum (Fig. 85) semicircular with long setae. Mandibles (Figs. 143, 144) robust, with one apical and one subapical tooth; penicillus formed by short setae disposed in wide band in whole mesal area; molar area very well developed; dorsal region with carina and moderately long setae. Maxillae (Fig. 172): galea with spatulate setae; last palpomere securiform. Labium (Fig. 182):

prementum with short setae in front of palpi; postmentum without two long setae, with several moderately long setae. Pronotum (Fig. 237) wider than long, strongly narrowed anteriad; moderately convex; lateral margins carinate; anterior margin strongly notched; hind angles backwardly directed and carinate; carina very distant from lateral margins; median basal tubercle flat; punctuation moderately coarse and moderately dense. Prosternal channel short. Prosternal spine (Fig. 200) with rounded apex and subapical lobe. Borders of mesosternal cavity raised and declivous. Metacoxal plate (Fig. 267) strongly narrowed laterally; free margin with well developed tooth. Tibial spurs very long; tarsomere 3 lamellate beneath. Scutellum subtriangular elongate with posterior margin rounded. Elytra moderately convex, narrowed apicad; striae distinct only laterally; elytra punctuate with striae marked by coarse punctures only laterally.

Male. Tergite 8 elongate, slightly narrowed to apex; distal margin rounded marginate by setae; clothed with microtrichiae. Sternite 8 (Fig. 299) transverse with lateral margins rounded; anterior margins strongly notched; partially translucent with basal sclerite and 2 lateral bands yellowish; lateral setae near angles. Sternite 9: distal half gradually narrow to apex and setous. Tergite 9 (Fig. 361): anterior margin strongly notched at middle, V-shaped; setous near angles; tergite 10 longer than 9 with setae near apex. Aedeagus (Figs. 441, 442) elongate; basal piece longer than parameres; parameres fused ventrally; median lobe gradually narrowed on apical 2/3 and strongly narrowed on distal third; apex of parameres straight with rounded apex.

Female. Tergite 8 elongate, slightly narrowed to apex; distal margin rounded; densely setous. Sternite 8 (Fig. 485) subpentagonal with apex truncate; clothed with setae; spiculum gastrale 7 times sternite length. Ovipositor with stylus; bursa copulatrix (Fig. 511) narrow with spines innerly; opening of colleterial glands with two sclerotized pieces.

Material examined. BRAZIL. São Paulo: Ilha de Buzios, 1 ex. (MZSP); Juquiá, 1 ex. (MZSP), Paranapiacaba, 2 exs. (MZSP), Salesópolis (Estação Biológica de Boracéia), 1 ex. (MZSP), São Paulo (Ipiranga), 1 ex. (MZSP).

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