

Illustrated catalogue of type specimens of Megalopodidae (Coleoptera) deposited at the Museu de Zoologia da Universidade de São Paulo

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Abstract. The Museu de Zoologia da Universidade de São Paulo (MZUSP) houses an important Megalopodidae collection representing 144 species, especially from Brazil and the Neotropical fauna. The type specimens of some species have never been accessed since their original descriptions, and are thus unknown to a major part of the Megalopodidae researchers. Presented here is an illustrated catalogue of the megalopodid type specimens of 32 species deposited at MZUSP, featuring photos of habitus and labels, and complete label data of all the specimens, which originally belonged to Jacintho Guérin's personal collection. Conflicting and inconsistent data provided in the literature and in the specimens' labels are addressed. Taxa originally proposed as species varieties are here reaffirmed as valid, with subspecific rank. *Agathomerus varians* Monrós, 1945 and *Plesioagathomerus vittatus* Monrós, 1945, originally described as junior synonyms, are considered unavailable names. The subspecific epithet *nagriapex* is emended into *Agathomerus bifasciatus nigrapex* Guérin, 1949. An overview of the MZUSP Megalopodidae collection is presented with a history of the arrival of Guérin's specimens.

Keywords. Holotype; Jacintho Guérin; Megalopodinae; Taxonomy.

INTRODUCTION

Megalopodidae is a small family of Chrysomeloidea comprising over 580 species distributed worldwide, but with most of the diversity occurring in the Neotropical region (Lawrence & Ślipiński, 2014). Brazil is by far the most diverse country with about 150 species in 10 genera (Seeno & Wilcox, 1982; Rodríguez-Mirón, 2018). Despite the high diversity of species in Brazil, these numbers are expected to be underestimated due to the long-time absence of studies of the South American megalopodid fauna. After the contributions from Guérin (1943-1952), Monrós (1945, 1947) and Pic (*e.g.*, 1948, 1955) in the decades of 1940 and 1950, no other taxonomic paper has been published about this family for the region. In addition, most of the Neotropical species are known only from their type-localities or from unclear or extensive localities (like Bolivia, Amazonia and South America) (*e.g.*, Pic, 1955). Further studies in species distribution might show broader occurrence records and provide more accurate data on species richness and diversity.

The Megalopodidae collection from the Museu de Zoologia da Universidade de São Paulo

(MZUSP, São Paulo, Brazil) stands out as one the most representative of the Neotropical region, especially from Brazil and neighbouring countries. It holds about 1,200 specimens in 144 species and seven genera, and other *ca.* 800 specimens still pending identification to species level. Besides, the MZUSP collection includes many type specimens and the totality or parts of important private collections, comprising specimens studied by several specialists in Chrysomeloidea (Campaner, 2014). For these reasons, the study of the MZUSP collection proves opportune for anyone assessing the Neotropical Megalopodidae fauna.

During a re-curation of the megalopodid collection, we came across specimens labelled as types of 30 taxa, some of which whose names do not figure in the recent world or local species lists (Rodríguez-Mirón, 2018; Botero, 2020, whereas others are cited only in the list of taxa from Brazil (Botero, 2020). These absences and conflicting data prompted us to investigate the validity of such names.

Some of these taxa were published in obscure journals with limited global reach, which are often unknown or overlooked by the coleopterist community. We therefore present an illustrated

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and commented catalogue of the type specimens of Megalopodidae housed in the MZUSP in order to re-introduce these barely known species to science. The inconsistencies in the data provided in the literature and in the specimens' labels are commented and elucidated. Moreover, we address nomenclatural issues concerning the validity of taxa described as varieties and the availability of others originally described as synonyms. Finally, a brief account on the history of Monrós' and Guérin's collections and their arrival at the MZUSP.

MATERIAL & METHODS

All the specimens listed and illustrated are deposited in the Coleoptera collection of the Museu de Zoologia da Universidade de São Paulo (MZUSP). Information about complementary type series deposited in other collections is given when available.

The species are listed in alphabetical order in their original combination. A chronological list of citations is given for each entry and for their subsequent combinations and synonyms. The category of types (if holotype, paratype or syntype) is informed followed by a verbatim copy of labels' data. Data on different label rows are separated by a single slash ("/"), and data on different labels are separated by double slashes ("/"). When appropriate, conflicting data, corrections, justifications and further information on type series are commented.

Photographs of type specimens and their labels are provided for all the species, preferably the holotypes. Photographs were taken on a Zeiss AxioCam MRc 5 video camera attached to a Carl Zeiss Discovery stereomicroscope and edited on Adobe Photoshop CS6.

RESULTS

The arrival of the type specimens to the MZUSP

The major bulk of the MZUSP's Megalopodidae collection was formed in 1987 with the acquisition of the massive personal Coleoptera collection from Ricardo von Diringshofen ("Dirings") (1900-1986). Ferreira *et al.* (2016) presented biographical accounts and reported the processes of acquisition and incorporation of Dirings' entomological collection to the MZUSP. His collection was one of the most relevant of Brazil and the Neotropical Region especially in terms of the number of specimens, but also for comprising numerous other smaller collections purchased entirely or in part from Coleoptera specialists, such as J. Guérin, G.H. Nick, J. Bechyně, B. Pohl and F. Plaumann (Costa *et al.*, 2000; Campaner, 2014; Campaner *et al.*, 2008; Ferreira *et al.*, 2016).

In the occasion of the arrival of Dirings collection to the MZUSP, Martins *et al.* (1991) presented a brief overview of the whole collection, then estimated in around 2.5 million specimens, and detailed the newcomer chrysomeloid collection in each subfamily, including the number of types, total number of specimens, and those

identified by Chrysomeloidea specialists, such as J. and S. Bechyně, W. Bokermann, J. Guérin and E. Uhmman.

The incorporation of Dirings' collection to the MZUSP brought not only a great number of specimens of Megalopodidae originally assembled by him and his collaborators, but also parts of the excellent collection previously acquired from Jacintho Guérin. Dirings' megalopodid holdings comprised 776 specimens, 617 of which determined by specialists, notably F. Monrós and J. Guérin (Martins *et al.*, 1991).

Jacintho Guérin (1898-1960) was an Italian engineer who lived most of his life in Brazil, where he worked for an electricity distribution company (Nomura, 1995). He started to form his entomological collection in 1922 with butterflies, but soon after gave priority to beetles.

His collection comprising around 30,000 specimens is now deposited in the Instituto Biológico de São Paulo (IBSP, São Paulo, Brazil), except for those from the families Erotylidae, Megalopodidae and Chrysomelidae: Cryptocephalinae, which had previously been acquired by Dirings (Nomura, 1995; Campaner *et al.*, 2008). Every specimen in his collection received an accession number that would be mentioned in his papers. Such numbers enable a reliable recognition of the specimens when these are mislabelled in the collection. We could not retrieve his record book, which might possibly be held by the IBSP. Originally, within each drawer, the species were organised according to the colour patterns and similarities, thus enabling their easy recognition and identification. Once arrived at the MZUSP, his collection was disassembled and the species scattered along with the MZUSP's megalopodid collection and displayed in alphabetic order.

Guérin's collection included types and other specimens originally from Francisco Monrós, an author with whom he was in constant contact and eventually exchanged material. Francisco Monrós (1922-1958) was a prolific Spanish taxonomist working in Argentina specialized in the smaller Chrysomeloidea families and subfamilies. During his short career, he assembled a substantial collection that included specimens exchanged with many eminent colleagues of his time. Upon his death, the collection was acquired by the United States National Museum (Washington, D.C., USA). Biographies and detailed information about his work and collection can be found in Blake (1958, 1961) and Staines (1995).

Catalogue of type specimens at the MZUSP

The MZUSP houses 49 type specimens, therein comprising 27 primary types, representing 32 species and subspecies of Megalopodidae. Some of these taxa do not figure amongst the valid species in recently published Brazilian and world species list (*e.g.*, Rodríguez-Mirón, 2018; Botero, 2020). Some species were probably overlooked by those authors (like *Agathomerus almeidai* Guérin, 1946, *Mastostethus columbianus* Guérin, 1951 and *Megalopus bicolor* Guérin, 1943), whereas others might have been considered as invalid infra-subspecific

rank (like *Agathomerus bifasciatus* var. *nigrapex* Guérin, 1949, *Mastostethus haematomelas* var. *unicolor* Guérin, 1943 and *Megalopus jacobyi* var. *apicalis* Monrós, 1947).

The taxa *Agathomerus bifasciatus nigrapex* Guérin, 1949, *Agathomerus elegans humeriotatus* Guérin, 1943, *Mastostethus haematomelas unicolor* Guérin, 1943, *Agathomerus nobilis cyaneonotatus* Guérin, 1943, *Megalopus jacobyi apicalis* Monrós, 1947, and *Megalopus jacobyi testaceus* Monrós, 1947 turned out to be valid names with subspecific rank, according to Article 45.6.4 of the Code (ICZN, 1999). In contrast, *Agathomerus varians* and *Plesioagathomerus vittatus*, from Monrós (1945), were originally described as synonyms of other species. These names are thus unavailable (ICZN, 1999, Article 11.6).

We call the attention to the fact that some type specimens from Guérin's collection might not be labelled accordingly. Specimens of *Agathomerus nicki* Guérin, 1948 and *Nickimerus setosus* Guérin, 1948, labelled as allotypes, are actually the holotypes. One specimen labelled as co-type (= syntype) of *Plesioagathomerus canus* Monrós, 1945 actually does not belong to the type series, since it has been collected after the species description. Other mislabelled specimens are herein corrected and commented on. Furthermore, the species that were recognized by Guérin as junior synonyms (either published or not) received a new identification label, had their red type labels removed, and were organized under the name of the senior synonym. For example, the holotype of *Agathomerus nobilis cyaneonotatus* was displayed amongst specimens of their senior synonym *A. basalis* Pic, 1916, without a red type label. Moreover, the types of *Mastostethus semirufus* Guérin, 1943 and *Megalopus vittatus* Guérin, 1943 were found amongst specimens of *Mastostethus angustalisi* Pic, 1916 and *Megalopus unifasciatus* Pic, 1916, respectively, albeit these species have not been formally synonymized. A similar organisation fashion is expected to be found in other parts of Guérin's collection, in which the putative "lost" types might be retrieved after a scrutiny throughout the collection, and they can be recognized by the matching data and accession numbers given in the original description and the specimens' labels.

***Agathomerus almeidai* Guérin, 1946
(Fig. 1A-C)**

Agathomerus almeidai Guérin, 1946: 205, fig. 1; Botero, 2020.

Holotype: ♀ "HOLOTIPO // Lambary. / Minas. ♀ / 11.924 // Coll. J. Guerin. / S. Paulo. Brasil. / 15980 // *Agathomerus* / *almeidai* / J. Guér. / J. Guerin. det. 1944".

***Agathomerus bifasciatus nigrapex* Guérin, 1949
(Fig. 1D-F)**

Agathomerus bifasciatus nigrapex Guérin, 1949: 232 (incorrect original spelling).

Agathomerus bifasciatus nigrapex Guérin, 1949, *nomem emendatum*.

Holotype: "HOLOTIPO // B. Horizonte. / Minas. / 1.947 // Coll. J. Guerin. / S. Paulo. Brasil. / 17515 // *Agathomerus* / *bifasciatus* / v. *nigrapex* J. Guér. / J. Guerin. det. 1949".

Comments: The original description clearly mentions the black spots in the apex of elytra as a diagnostic character for the subspecies. Thus, the spelling "*ngriapex*" is here considered a lapsus, and "*nigrapex*" is accepted as the intended correct name. The taxon name is therefore corrected to *Agathomerus bifasciatus nigrapex* Guérin, 1949, *nomem emendatum* (ICZN, 1999, Art. 32.5.1).

***Agathomerus elegans humeriotatus* Guérin, 1943
(Fig. 1G-I)**

Agathomerus elegans humeriotatus Guérin, 1943: 308, fig. 7.

Agathomerus (*Euagathomerus*) *elegans humeriotatus*, Monrós, 1947: 194.

Holotype: "HOLOTIPO // Jabaquara. / S. Paulo. / 11.937 // Coll. J. Guerin. / S. Paulo. Brasil. / 1435 // *Agathomerus* / *elegans*. J. Guér. / v. *humeriotatus* / J. Guerin. det. 1943".

Paratype: "PARATIPO // Cidade. / S. Paulo. / 3.938 // Coll. J. Guerin. / S. Paulo. Brasil. / 15439 // *Agathomerus* / *elegans*. / v. *humeriotatus* / J. Guér. / J. Guerin. det. 1943".

Other type material: 2 paratypes. 1 paratype is deposited at Instituto Biológico de São Paulo (IBSP); 1 paratype was originally deposited in the private collection of H. Zellibor, which was later incorporated in the collection of C.A. Campos Seabra and, finally, split through Brazilian entomological collections. The major part of it, however, was deposited in the Museu Nacional do Rio de Janeiro (MNRJ, Rio de Janeiro, Brazil) (Costa et al., 2000). The current location of this paratype is unknown.

***Agathomerus hieroglyphicus* Guérin, 1945
(Fig. 2A-C)**

Agathomerus hieroglyphicus Guérin, 1945: 256, fig. 3; Botero, 2020.

Holotype: "HOLOTIPO // M. Anhangara / Paraná. / 11.943 // Paraná XI/43 / M. Anhangara / Hatschbach-Leg / Coll. J. Guerin. / S. Paulo. Brasil. / 16478 // *Agathomerus* / *hieroglyphicus* / J. Guér. / J. Guerin. det. 1944".

***Agathomerus nobilis cyaneonotatus* Guérin, 1943
(Fig. 2D-F)**

Agathomerus nobilis cyaneonotatus Guérin, 1943: 309.
Agathomerus basalis Pic, 1916: 20; Guérin, 1948: 70 (syn.); Botero, 2020.

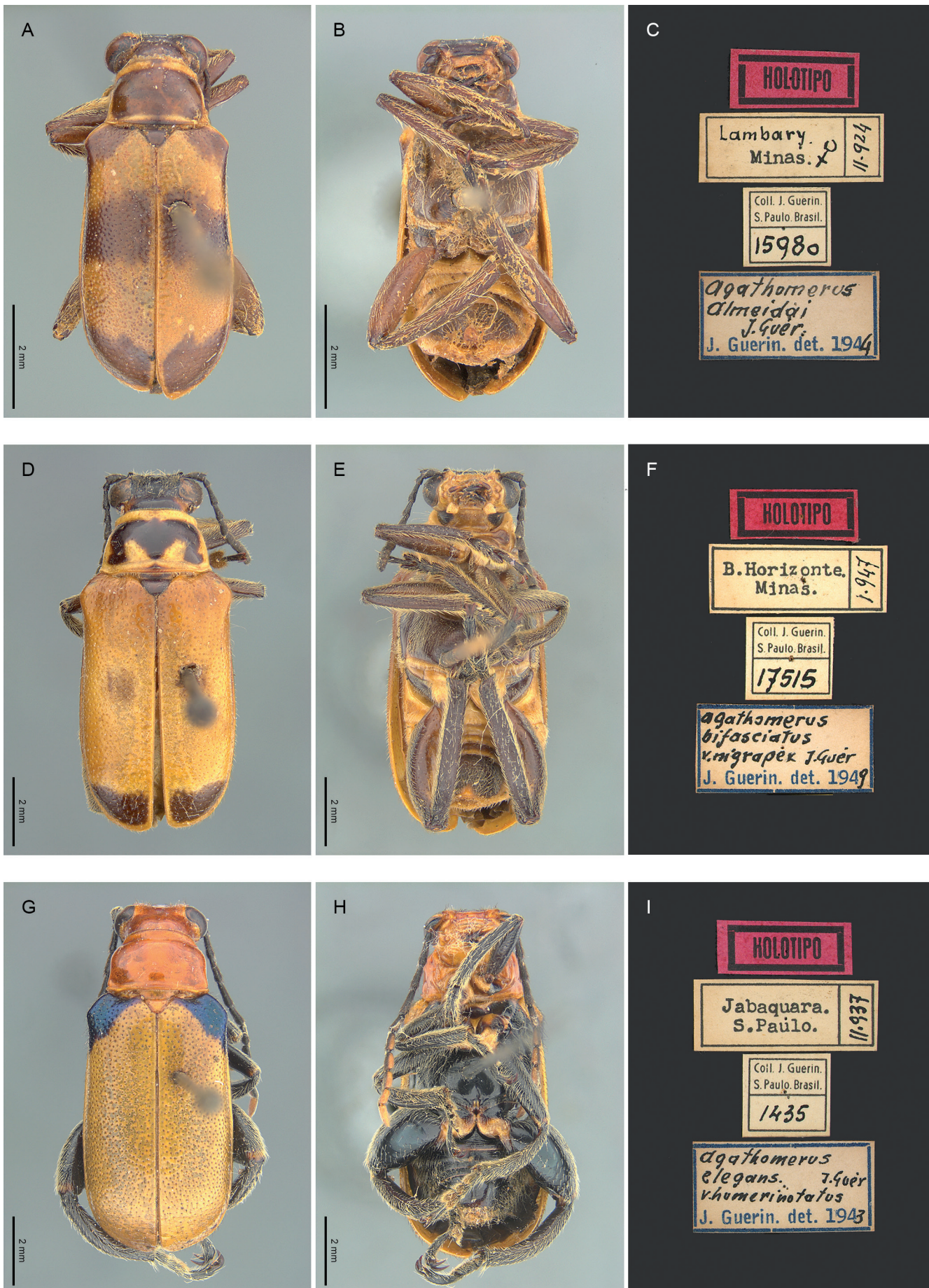


Figure 1. Megalopodidae type specimens, habitus and labels. (A-C) *Agathomerus almeidai* Guérin, 1946, holotype; (D-F) *Agathomerus bifasciatus nigrapex* Guérin, 1949, holotype; (G-I) *Agathomerus elegans humerintotatus* Guérin, 1943, holotype.

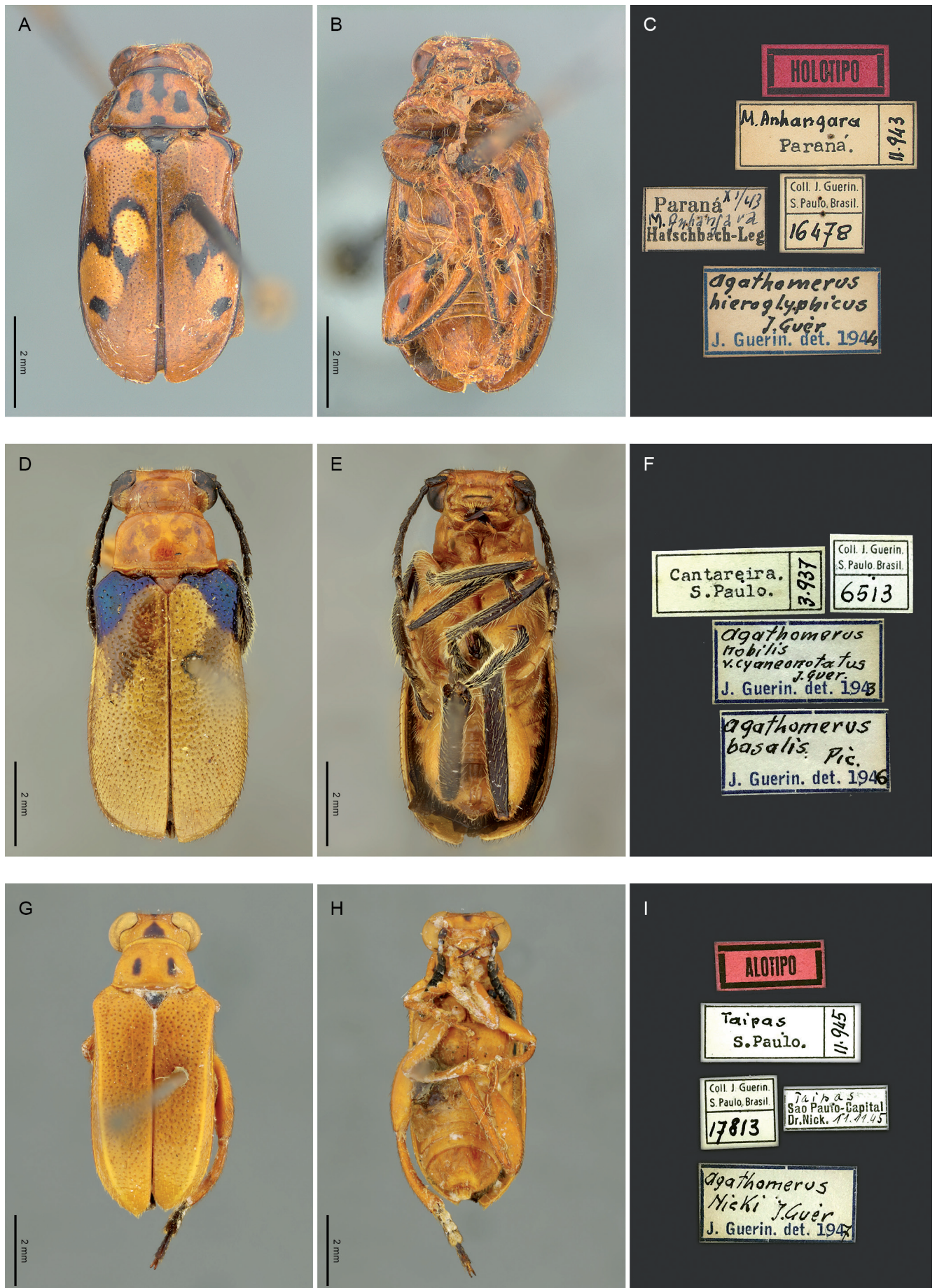


Figure 2. Megalopodidae type specimens, habitus and labels. (A-C) *Agathomerus hieroglyphicus* Guérin, 1945, holotype; (D-F) *Agathomerus nobilis cyaneonotatus* Guérin, 1943 (= *Agathomerus basalis* Pic, 1916), holotype. (G-I) *Agathomerus nicki* Guérin, 1948, holotype (not "allotype");

Agathomerus (Agathomerus) basalis, Rodríguez-Mirón, 2018: 272.

Holotype: "Cantareira. / S. Paulo. / 3.937 // Coll. J. Guérin / S. Paulo Brasil. / 6513 // *Agathomerus / nobilis / v. cyaneonotatus* / J. Guer. / J. Guerin. det. 1943 // *Agathomerus / basalis* Pic. / J. Guerin. det. 1946".

***Agathomerus nicki* Guérin, 1948
(Fig. 2G-I)**

Agathomerus nicki Guérin, 1948: 70, fig. 2; Botero, 2020.
Agathomerus (Agathomerus) nicki, Rodríguez-Mirón, 2018: 272.

Holotype: "ALOTIPO // Taipas / S. Paulo. / 11.945 // Taipas / São Paulo – Capital / Dr. Nick. 11.11.45 // Coll. J. Guérin / S. Paulo Brasil. / 17813 // *Agathomerus / Nicki* J. Guer. / J. Guérin. det. 1947".

Comments: The specimen labelled as "alotipo" (alotipo) from the MZUSP is actually the holotype of *Agathomerus nicki*. All the locality data, dates and accession number given in the labels match with the data provided in the original description for the single holotype specimen.

***Agathomerus quadrimaculatus* Guérin, 1945
(Fig. 3A-C)**

Agathomerus quadrimaculatus Guérin, 1945: 259, fig. 5; Monrós, 1945: 155.

Agathomerus (Mesagathomerus) quadrimaculatus, Monrós, 1947: 183; Rodríguez-Mirón, 2018: 273; Botero, 2020.

Agathomerus varians Monrós [unavailable], Monrós, 1945: 146, 155, fig. 3 (syn.).

Holotype: ♀ "HOLOTIPO // Cordoba / Villa Dolores / Argentina / 2.940 // Cordoba / Villa Dolores / II-1940 // Coll. J. Guerin. / S. Paulo. Brasil. / 16562 // *Agathomerus / quadrimaculatus* / J. Guér. / J. Guerin. det. 1944".

Paratype: "PARATIPO // Tucuman / S. Cayteno / Argentina / 12.934 // Coll. J. Guerin. / S. Paulo. Brasil. / 16714 // XII-1934 / HOGAR AGRICOLA / S. CAYETANO / TUCUMAN // *Agathomerus / quadrimaculatus* / J. Guér. / J. Guerin. det. 1944".

Comments: Monrós (1945: 146) described *Agathomerus varians* as a new species, but later on, in an addendum in the last page of the same work (p. 155), he informed that *A. varians* is actually a synonym of *A. quadrimaculatus* Guérin, 1945, which had been published a few months earlier. The name *Agathomerus varians* Monrós is therefore unavailable, according to Article 11.6 of the Code (ICZN, 1999), and thus cannot be considered as a junior synonym *A. quadrimaculatus* Guérin.

***Agathomerus vittatus* Guérin, 1945
(Fig. 3D-F)**

Agathomerus vittatus Guérin, 1945: 258, fig. 4.
Plesioagathomerus vittatus (Guérin) [not Monrós, 1945], Monrós, 1945: 155; Monrós, 1947: 199, pl. 4, fig. 3 [*villatus*, sic].

Plesioagathomerus vittatus Monrós [not Guérin, 1945] [unavailable], Monrós, 1945: 150, 155 (syn), fig. 4; Rodríguez-Mirón, 2018: 285.

Holotype: ♂ "HOLOTIPO // Pindapoy / Misiones ♂ / Argentina / 10.935 // Misiones / Pindapoy / X-1955 // Coll. J. Guérin. / S. Paulo. Brasil. / 16853 // *Agathomerus / vittatus*. / J. Guér. / J. Guérin. det. 1944". **Paratype:** ♀: "PARATIPO // Isla Martim / Garcia ♀ / Argentina / 10.921 // Isla. Martim / Garcia / 1.X.1921 // Coll. J. Guérin. / S. Paulo. Brasil. / 16769 // *Agathomerus / vittatus*. ♀ / J. Guér. / J. Guérin. det. 1944". **Paratype:** ♂: "PARATIPO // Nove de Julio / Buenos Aires ♂ / Argentina / 11.1929 // 9 de Julio B.A. / 21/XI/29 No. 713 // Coll. J. Guérin. / S. Paulo. Brasil. / 16645 // *Agathomerus / vittatus*. ♂ / J. Guér. / J. Guérin. det. 1944".

Comments: Guérin (1945) described *Agathomerus vittatus* in a work issued in August. Simultaneously, in a paper issued in December, Monrós (1945) described the same species with a similar specific epithet but in a new genus, *Plesioagathomerus vittatus*. However, before his work was published, Monrós was already aware of Guérin's paper, so that in the last page (p. 155), he included corrections for his present work, stating that *Agathomerus vittatus* Guérin should be transferred to *Plesioagathomerus* as a synonym of *Plesioagathomerus vittatus* Monrós. The name *Plesioagathomerus vittatus* Monrós was originally described as a synonym of *Plesioagathomerus vittatus* (Guérin) and is therefore unavailable, according to Article 11.6 of the Code (ICZN, 1999), and thus can be considered neither as a junior synonym nor as a junior homonym of *P. vittatus* (Guérin). Accordingly, the type species of *Plesioagathomerus* Monrós, 1945 is *Agathomerus vittatus* Guérin by monotypy.

***Mastostethus columbianus* Guérin, 1951
(Fig. 3G-I)**

Mastostethus columbianus Guérin, 1951: 577; fig. 2.

Paratype: "PARATIPO // Vila Elvira / Cauca / Colombia / 1.932 // Villa Elvira / Cauca // Coll. J. Guérin. / S. Paulo. Brasil. / 18589 // *Mastostethus columbianus* / J. Guér. / J. Guerin det. 1950". **Paratype:** "PARATIPO // Vila Elvira / Cauca / Colombia / 1.932 // Villa Elvira / Cauca // Coll. J. Guérin. / S. Paulo. Brasil. / 18514 // *Mastostethus columbianus* / J. Guér. / J. Guerin det. 1950".

Other type material: The original description lists the holotype from "Columbia: S. Antonio" and 2 para-

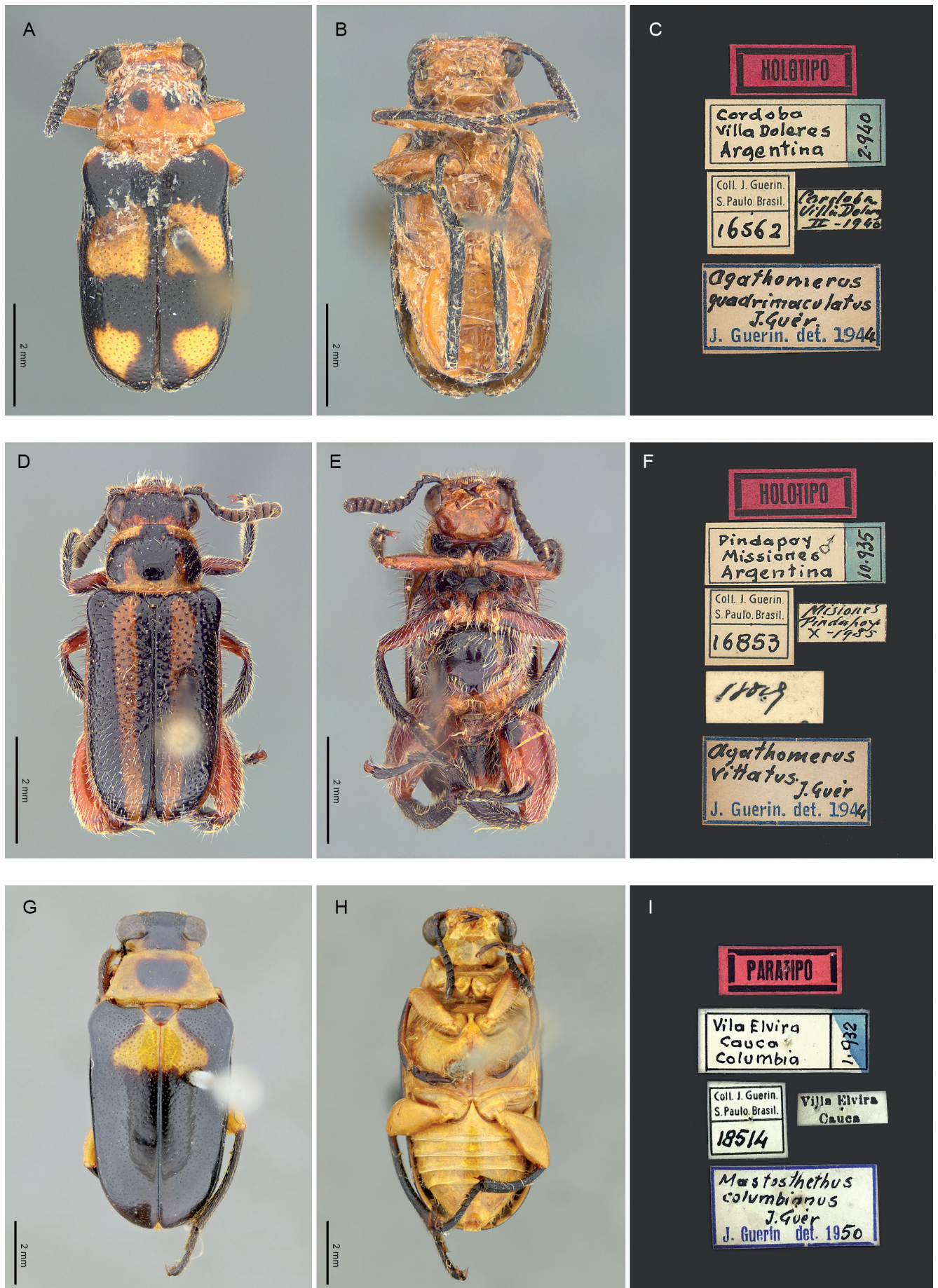


Figure 3. Megalopodidae type specimens, habitus and labels. (A-C) *Agathomerus quadrimaculatus* Guérin, 1945, holotype; (D-F) *Agathomerus vittatus* Guérin, 1945 (currently *Plesioagathomerus vittatus* (Guérin)), holotype; (G-I) *Mastostethus columbianus* Guérin, 1951, paratype.

types from "Columbia: Aguatal" and "Rio Vitaco" in the collection of the "Museum Georg Frey", currently at the Naturhistorisches Museum Basel (NHMB, Basel, Switzerland). The paratype from "Aguatal" was not found in that collection (M. Geiser, personal communication).

***Mastostethus cordatus* Guérin, 1943
(Fig. 4A-C)**

Mastostethus cordatus Guérin, 1943: 304; fig. 4; Botero, 2020.

Holotype: "HOLOTIPO // S. Amaro. / S. Paulo. / 2.938 // Coll. J. Guérin. / S. Paulo. Brasil. / 4872 // *Mastostethus / Cordatus* / J. Guér. / J. Guerin. det. 1943".

***Mastostethus costaricensis* Guérin, 1948
(Fig. 4D-F)**

Mastostethus costaricensis Guérin, 1948: 69, fig. 1.
Mastostethus costaricensis, Rodríguez-Mirón, 2018: 279.

Holotype: "HOLOTIPO // Guápiles / Costa Rica / 2.946 // Coll. J. Guerin. / S. Paulo. Brasil. / 17630 // *Mastostethus / costaricensis* / J. Guér. / J. Guérin. det. 1947". **Paratype:** "PARATIPO // Guápiles / Costa Rica / 2.946 // Coll. J. Guerin. / S. Paulo. Brasil. / 17596 // *Mastostethus / costaricensis* / J. Guér. / J. Guérin. det. 1947".

***Mastostethus decoratus* Guérin, 1944
(Fig. 4G-I)**

Mastostethus decoratus Guérin, 1944: 547, fig. 3; Rodríguez-Mirón, 2018: 279; Botero, 2020.

Holotype: "HOLOTIPO // Passa Quatro / Minas. / 1.923 // Passa Quatro / 915 / S. Minas. Ger. / 15.-1.-1923 / Serra / dos / cochos / 1460 m / J. Zikán // no. 278 / J.F. Zikán // Coll. J. Guerin. / S. Paulo. Brasil. / 16253 // *Mastostethus / decoratus* / J. Guér. / J. Guerin. det. 1944".

***Mastostethus duodecimpunctatus* Guérin, 1945
(Fig. 5A-C)**

Mastostethus duodecimpunctatus Guérin, 1945: 255, fig. 2; Botero, 2020.

Holotype: ♀ "HOLOTIPO // Curitiba. / Paraná. / 12.944 // Curitiba / Paraná / (S. Inacio / XII 944/ Hatschbach-Leg // Coll. J. Guerin. / S. Paulo. Brasil. / 17127 // *Mastostethus / duodecimpunctatus* / J. Guér. ♀ / J. Guerin. det. 1945". **Paratype:** "PARATIPO // Apiaí / S. Paulo. / 1.945 // Coll. J. Guerin. / S. Paulo. Brasil. / 17189 // *Mastostethus / duodecimpunctatus* / J. Guér. ♀ / J. Guerin. det. 1945".

***Mastostethus elongatus* Guérin, 1944
(Fig. 5D-F)**

Mastostethus elongatus Guérin, 1944: 548, fig. 4; Botero, 2020.
Mastostethus elongatus, Rodríguez-Mirón, 2018: 280.

Holotype: "HOLOTIPO // Cantareira. / S. Paulo. / 1.940 // Coll. J. Guerin. / S. Paulo. Brasil. / 0274 // *Mastostethus / elongatus* / J. Guér. / J. Guerin. det. 1944".

***Mastostethus haematomelas unicolor* Guérin, 1943
(Fig. 5G-I)**

Mastostethus haematomelas unicolor Guérin, 1943: 302.

Holotype: ♂ "HOLOTIPO // Campinas. / S. Paulo. / 1937 // Coll. J. Guerin. / S. Paulo. Brasil. / 11456 // *Mastostethus / haematomelas / v. unicolor* J. Guér. / J. Guerin. det. 1943". **Paratype:** "PARATIPO / Campinas. / S. Paulo. / 1.937 // Coll. J. Guerin. / S. Paulo. Brasil. / 11729 / *Mastostethus / haematomelas / v. unicolor* J. Guér. / J. Guerin. det. 1943". **Paratype:** "PARATIPO / B. Horizonte. / Minas. / 10.940 // Coll. J. Guerin. / S. Paulo. Brasil. / 4245 / *Mastostethus / haematomelas / v. unicolor* J. Guér. / J. Guerin. det. 1943".

Comments: In the original publication, Guérin (1943: 302) defined the holotype (specimen number 11.456) as from Belo Horizonte (Minas Gerais state), and two paratypes (numbers 4,245 and 11,729) from Campinas (São Paulo state). Actually, the holotype (11.456) is from Campinas and the paratypes are from Campinas and Belo Horizonte.

***Mastostethus jabaquarensis* Guérin, 1944
(Fig. 6A-C)**

Mastostethus jabaquarensis Guérin, 1944: 546, fig. 2; Rodríguez-Mirón, 2018: 280; Botero, 2020.

Holotype: "HOLOTIPO // Jabaquara / S. Paulo / 11.943 // Jabaquara / S. Paulo 7.XI.43 / Coll. H. Zellibor // Coll. J. Guerin. / S. Paulo. Brasil. / 16205. // *Mastostethus / jabaquarensis* / J. Guér. / J. Guerin. det. 1944".

***Mastostethus latefasciatus* Guérin, 1943
(Fig. 6D-F)**

Mastostethus latefasciatus Guérin, 1943: 305; fig. 5; Botero, 2020.

Holotype: "HOLOTIPO // Leop. Bulhões. / Goiaz. // 12.937 // LEOPOLDO BULHOES / Est. Goyaz. Dez.37 / Dr. Nick. // Coll. J. Guerin. / S. Paulo. Brasil. / 15436 // *Mastostethus / latefasciatus* / J. Guér. / J. Guerin. det. 1943". **Paratype:** "PARATIPO // Leop. Bulhões. / Goiaz. // 12.937 // Coll. J. Guerin. / S. Paulo. Brasil. / 15407 // LEOPOLDO BULHOES

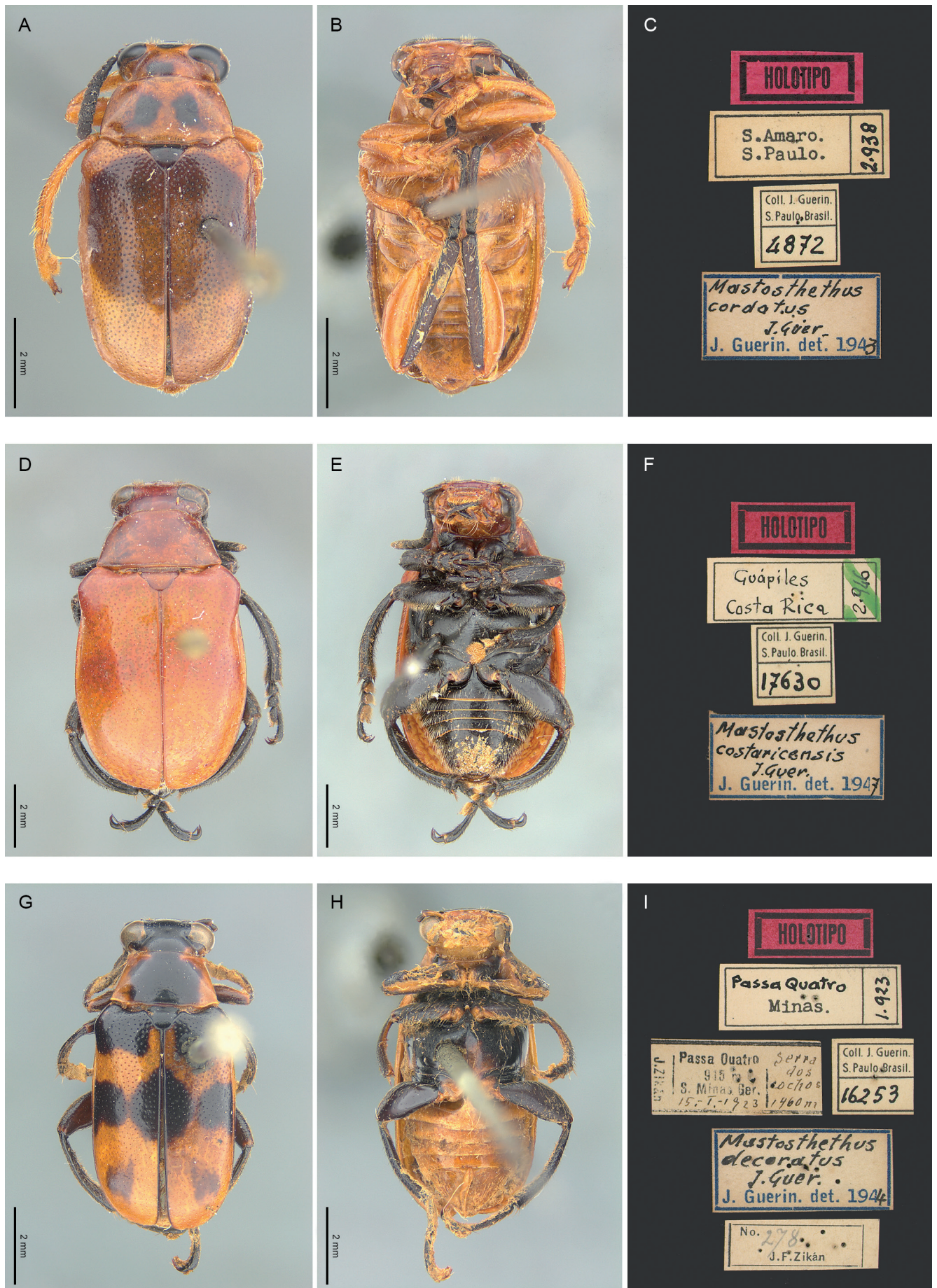


Figure 4. Megalopodidae type specimens, habitus and labels. (A-C) *Mastostethus cordatus* Guérin, 1943, holotype; (D-F) *Mastostethus costaricensis* Guérin, 1948, holotype; (G-I) *Mastostethus decoratus* Guérin, 1944, holotype.



Figure 5. Megalopodidae type specimens, habitus and labels. (A-C) *Mastostethus duodecimpunctatus* Guérin, 1945, holotype; (D-F) *Mastostethus elongatus* Guérin, 1944, holotype; (G-I) *Mastostethus haematomelas unicolor* Guérin, 1943, holotype.

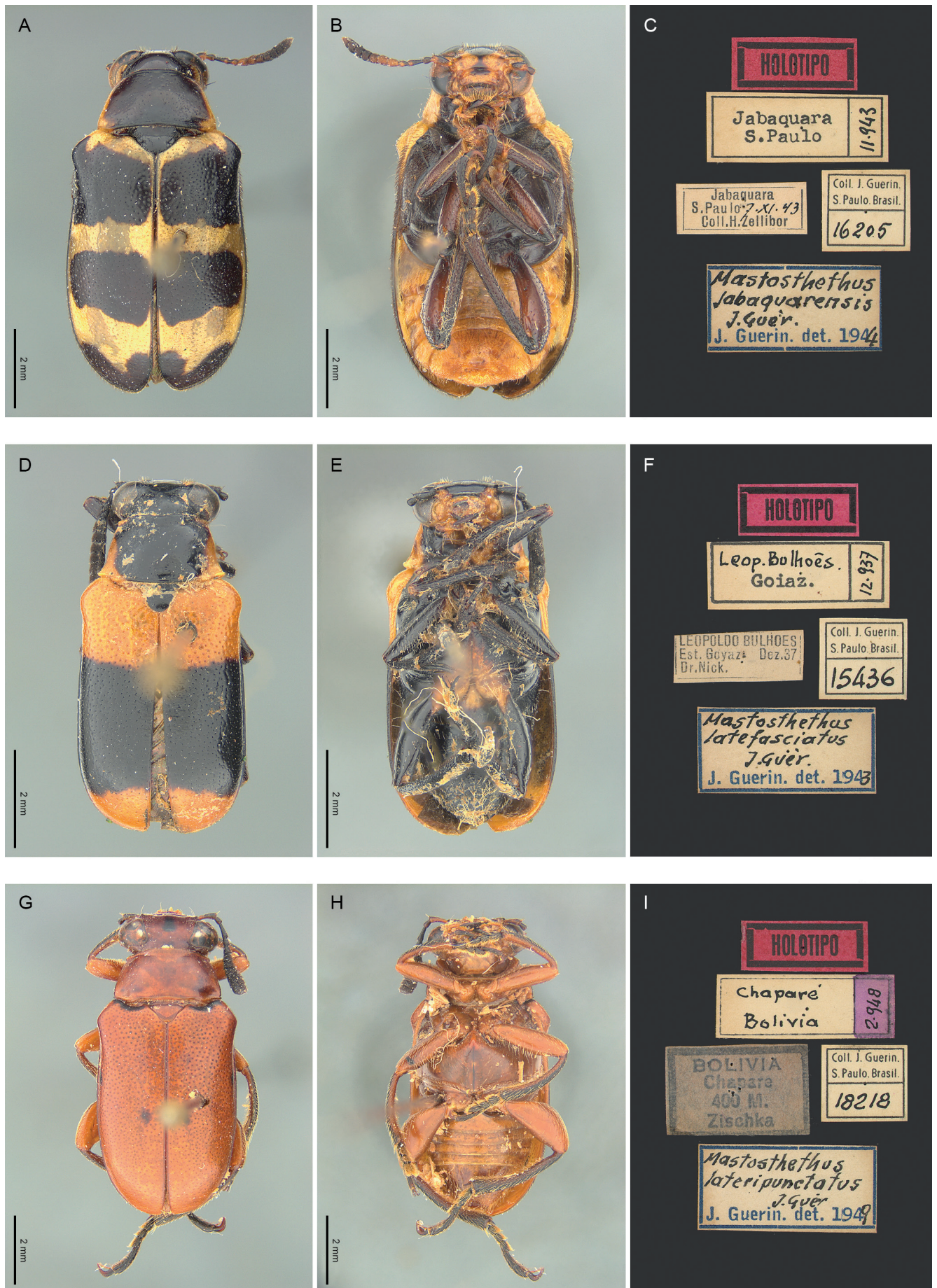


Figure 6. Megalopodidae type specimens, habitus and labels. (A-C) *Mastostethus jabaquarensis* Guérin, 1944, holotype; (D-F) *Mastostethus latefasciatus* Guérin, 1943, holotype; (G-I) *Mastostethus lateripunctatus* Guérin, 1949, holotype.

/ Est. Goyaz. Dez.37 / Dr. Nick. // Masthoshethus / latefasciatus / J. Guér. / J. Guerin. det. 1943".

***Mastostethus lateripunctatus* Guérin, 1949
(Fig. 6G-I)**

Mastostethus lateripunctatus Guérin, 1949: 230, fig. 3.

Holotype: "HOLOTIPO // Chaparé / Bolivia / 2.948 // BOLIVIA / Chapare / 400 M. / Zischka // Coll. J. Guerin. / S. Paulo Brasil. / 18218 // Mastostethus / lateripunctatus / J. Guér. / J. Guerin. det. 1949".

***Mastostethus megalopoides* Guérin, 1943
(Fig. 7A-C)**

Mastostethus megalopoides Guérin, 1943: 305; fig. 6; Botero, 2020.

Holotype: "HOLOTIPO // Curitiba. / Paraná. / 10.934 // Coll. J. Guerin. / S. Paulo. Brasil. / 11094 // Mastostethus / megalopoides / J. Guér. / J. Guerin. det. 1943".

***Mastostethus melanopterus* Guérin, 1944
(Fig. 7D-F)**

Mastostethus melanopterus Guérin, 1944: 545, fig. 1; Rodríguez-Mirón, 2018: 281.

Holotype: ♂ "HOLOTIPO // Satipo / Huancayo / Perú / 12.939 // Satipo / Huancayo – PERU / 16-XII.1937 // Paprzycki // Coll. J. Guerin. / S. Paulo. Brasil. / 16379 // Mastostethus / melanopterus / J. Guér. / J. Guerin. det. 1944".

***Mastostethus mirabilis* Guérin, 1943
(Fig. 7G-I)**

Mastostethus mirabilis Guérin, 1943: 301, fig. 1; Botero, 2020.

Holotype: ♂ "HOLOTIPO // Indiana. / S. Paulo. / 5.935 // Coll. J. Guérin. / S. Paulo Brasil. / 11562 // Mastostethus / mirabilis. / ♂ / J. Guér. / J. Guerin. det. 1943". **Paratype:** ♀ "ALOTIPO // Jabaquara. / S. Paulo. / 3.939 // JABAQUARA / S. Paulo 26. 3. 39 / Dr. Nick. // Coll. J. Guérin. / S. Paulo Brasil. / 15438 // Mastostethus / mirabilis. / ♀ / J. Guér. / J. Guerin. det. 1943".

Other type material: 1 paratype ♀ was originally deposited in the private collection of H. Zellibor, which was later incorporated in the collection of C.A. Campos Seabra and, finally, split through Brazilian entomological collections. The major part, however, was deposited in the Museu Nacional do Rio de Janeiro (MNRJ, Rio de Janeiro, Brazil). The current location of this paratype is unknown.

***Mastostethus nigripes* Guérin, 1945
(Fig. 8A-C)**

Mastostethus nigripes Guérin, 1945: 254, fig. 1; Botero, 2020.

Holotype: ♀ "HOLOTIPO // Barigui / Paraná. / 9.944 // Paraná. X. 944 / Barigui / R. Lange – Leg // Coll. J. Guerin. / S. Paulo. Brasil. / 16702 // Mastostethus / nigripes ♀ / J. Guér. / J. Guerin. det. 1945".

***Mastostethus pallidus* Guérin, 1943
(Fig. 8D-F)**

Mastostethus pallidus Guérin, 1943: 303, fig. 2; Botero, 2020.

Holotype: ♂ "HOLOTIPO // Mafra. / S. Catarina. / 12.941 // Coll. J. Guerin. / S. Paulo. Brasil. / 11055 // Mastostethus / pallidus / J. Guér. ♂ / J. Guérin. det. 1943". **Paratype:** ♀ "ALOTIPO // Mafra. / S. Catarina. / 12.942 // Coll. J. Guerin. / S. Paulo. Brasil. / 11573 // Mastostethus / pallidus / J. Guér. ♀ / J. Guérin. det. 1943". **Paratype:** ♂ "PARATIPO // Mafra. / S. Catarina. / 3.942 // Coll. J. Guerin. / S. Paulo. Brasil. / 11698 // Mastostethus / pallidus / J. Guér. ♂ / J. Guérin. det. 1943". **Paratype:** ♀ "PARATIPO // Mafra. / S. Catarina. / 2.942 // Coll. J. Guerin. / S. Paulo. Brasil. / 10853 // Mastostethus / pallidus / J. Guér. ♀ / J. Guérin. det. 1943".

***Mastostethus punctatus* Guérin, 1952
(Fig. 8G-I)**

Mastostethus punctatus Guérin, 1952: 435, fig. 1.

Paratype: "PARATIPO // Maracay / Venezuela / 1918 // Venezuela / Maracay / coll. P. Vogl // Coll. J. Guerin. / S. Paulo. Brasil. / 18809 // Mastostethus / punctatus / mihi / J. Guérin. det. 1952".

Other type material: Holotype deposited in the "Zoologische Sammlung des Bayerischen Staates", currently "Zoologische Staatssammlung München" (SNSB, Munich, Germany).

***Mastostethus semirufus* Guérin, 1943
(Fig. 9A-C)**

Mastostethus semirufus Guérin, 1943: 303; fig. 3; Botero, 2020.

Holotype: "Lambary. / Minas / 11.924 // Coll. J. Guerin. / S. Paulo Brasil. / 10679 // Mastostethus / semirufus ♂ / J. Guér. / J. Guerin. det. 1943 // Mastostethus / angustalisi Pic // J. Guerin. det. 1949". **Paratype:** "Jabaquara. / S. Paulo / 10.938 // JABAQUARA / S. Paulo / Dr. Nick. 30.10.38. // Coll. J. Guerin. / S. Paulo Brasil. / 15473 //

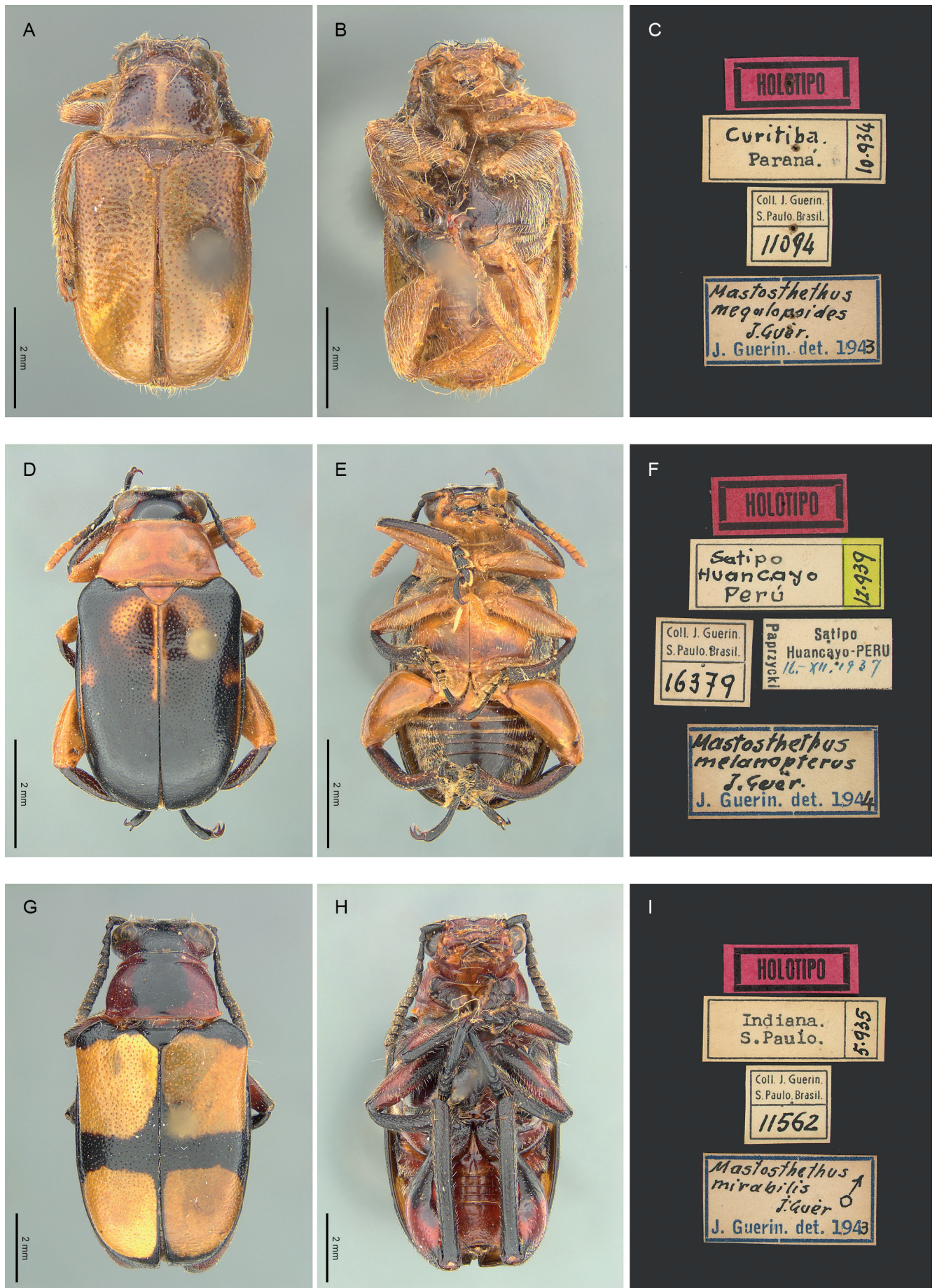


Figure 7. Megalopodidae type specimens, habitus and labels. (A-C) *Mastostethus megalopoides* Guérin, 1943, holotype; (D-F) *Mastostethus melanopterus* Guérin, 1944, holotype; (G-I) *Mastostethus mirabilis* Guérin, 1943, holotype.



Figure 8. Megalopodidae type specimens, habitus and labels. (A-C) *Mastostethus nigripes* Guérin, 1945, holotype; (D-F) *Mastostethus pallidus* Guérin, 1943, holotype; (G-I) *Mastostethus punctatus* Guérin, 1952, paratype.



Figure 9. Megalopodidae type specimens, habitus and labels. (A-C) *Mastostethus semirufus* Guérin, 1943, holotype; (D-F) *Megalopus bicolor* Guérin, 1943, holotype; (G-I) *Megalopus jacobyi* var. *apicalis* Monrós, 1947, syntype.

Mastostethus semirufus ♂ / J. Guér / J. Guerin. det. 1943 // *Mastostethus angustalisi* Pic // J. Guerin. det. 1949".
Paratype: "Jabaquara. / S. Paulo / 2.933 // Coll. J. Guerin. / S. Paulo Brasil. / 4140 // *Mastostethus semirufus* ♀ / J. Guér / J. Guerin. det. 1943 // *Mastostethus angustalisi* Pic // J. Guerin. det. 1949". **Paratype:** "Casa Grande. / S. Paulo / 2.936 // Coll. J. Guerin. / S. Paulo Brasil. / 4203 // *Mastostethus semirufus* ♀ / J. Guér / J. Guerin. det. 1943 // *Mastostethus angustalisi* Pic // J. Guerin. det. 1949".

Comments: The holotype of *Mastostethus semirufus* was identified and labelled by Guérin as a synonym of *Mastostethus angustalisi* Pic, 1916. However, that synonymy has not been published.

***Megalopus bicolor* Guérin, 1943
(Fig. 9D-F)**

Megalopus bicolor Guérin, 1943: 310, fig. 9; Botero, 2020.

Holotype: "HOLOTIPO // Rio Paraguay. / Amazonas. / 3.937 // RIO PARAUARY / Amaz. 15.3.37. / Coll. Zellibor-Hauff // Coll. J. Guerin. / S. Paulo Brasil. / 10349 // *Megalopus bicolor* / ♀ / J. Guér / J. Guerin. det. 1943".

***Megalopus (Mucromegalopus) jacobyi apicalis*
Monrós, 1947
(Fig. 9G-I)**

Megalopus (Mucromegalopus) jacobyi var. *apicalis* Monrós, 1947: 214, fig. 51c.

Syntype: "PARATIPO // Salta / Rosario de la / Frontera / Argentina / 2.944 // Arg. Salta / Rosario de la / Frontera 2.44 / El Naranjo / Monrós // Coll. J. Guerin. / S. Paulo Brasil. / 18393 // Meg. (Mucrom.) / *jacobyi* var. / *apicalis* mihi / F. Monrós det. 1946 // Paratipo".

Comments: Monrós (1947) did not fix holotypes for the so-called varieties (*i.e.*, subspecies) of *M. jacobyi*. Thus, the type specimens labelled as "paratype" or "cotipo" are here considered as syntypes.

***Megalopus (Mucromegalopus) jacobyi testaceus*
Monrós, 1947
(Fig. 10A-C)**

Megalopus (Mucromegalopus) jacobyi var. *testaceus* Monrós, 1947: 213, fig. 51a.

Syntype: "COTIPO // Salta. Oran / Tablillas / Argentina / 1.946 // Argentina / Salta / Oran. tabli- / llas Martinez // Coll. J. Guerin. / S. Paulo Brasil. / 18419 // Cotipo // Meg. (Mucrom.) / *jacobyi* var. / *testaceus* mihi / F. Monrós det. 1946".

Comments: see comment above for *Megalopus jacobyi apicalis*.

***Megalopus olivencius* Guérin, 1943
(Fig. 10D-F)**

Megalopus olivencius Guérin, 1943: 309, fig. 8; Botero, 2020.

Holotype: "HOLOTIPO // S.P. Olivença / Amazonas / 7.935 // Coll. J. Guerin. / S. Paulo Brasil. / 11990 // *Megalopus olivencius* ♀ / J. Guér / J. Guerin. det. 1943".

***Megalopus (Mucromegalopus) vespa vespa*
Monrós, 1947
(Fig. 10G-I)**

Megalopus (Mucromegalopus) vespa var. *vespa* Monrós, 1947: 208, fig. 49; Rodríguez-Mirón, 2018: 284.

Paratype: "COTIPO // Salta / C. Moldes la Ollada / Argentina / 1946 // Arg.- Salta / C. Moldes / La Ollada / Monrós // Coll. J. Guerin. / S. Paulo Brasil. / 18385 // *Megalopus (Mucromegal.) vespa* s. str. / mihi / F. Monrós det. 1946 // Cotipo".

Comments: It is not clear whether this specimen is indeed a type or not, due to conflicting collecting year in the specimen's labels (1946) and in the publication (1945). Although the specimen is labelled as "cotipo", it might actually be a paratype, as originally defined by Monrós (1947: 210).

***Megalopus vittatus* Guérin, 1943
(Fig. 11A-C)**

Megalopus vittatus Guérin, 1943: 311; fig. 10; Botero, 2020.

Holotype: "Jabaquara / S. Paulo. / 3.934 // Coll. J. Guerin / S. Paulo Brasil. / 4146 // *Megalopus vittatus* ♂ / J. Guér / J. Guerin. det. 1943 // *Megalopus unifasciatus* / Pic / J. Guerin. det. 1949".

Comments: The holotype of *Megalopus vittatus* had the type label removed and was identified and labelled by Guérin as a synonym of *Megalopus unifasciatus* Pic, 1916. However, that synonymy has not been published. The specimen can be reliably recognised as the holotype by the labels' data and accession number.

***Nickimerus setosus* Guérin, 1948
(Fig. 11D-F)**

Nickimerus setosus Guérin, 1948: 71, fig. 3; Rodríguez-Mirón, 2018: 285; Botero, 2020.



Figure 10. Megalopodidae type specimens, habitus and labels. (A-C) *Megalopus jacobyi* var. *testaceus* Monrós, 1947 syntype; (D-F) *Megalopus olivencius* Guérin, 1943, holotype; (G-I) *Megalopus (Mucromegalopus) vespa* var. *vespa* Monrós, 1947, paratype.

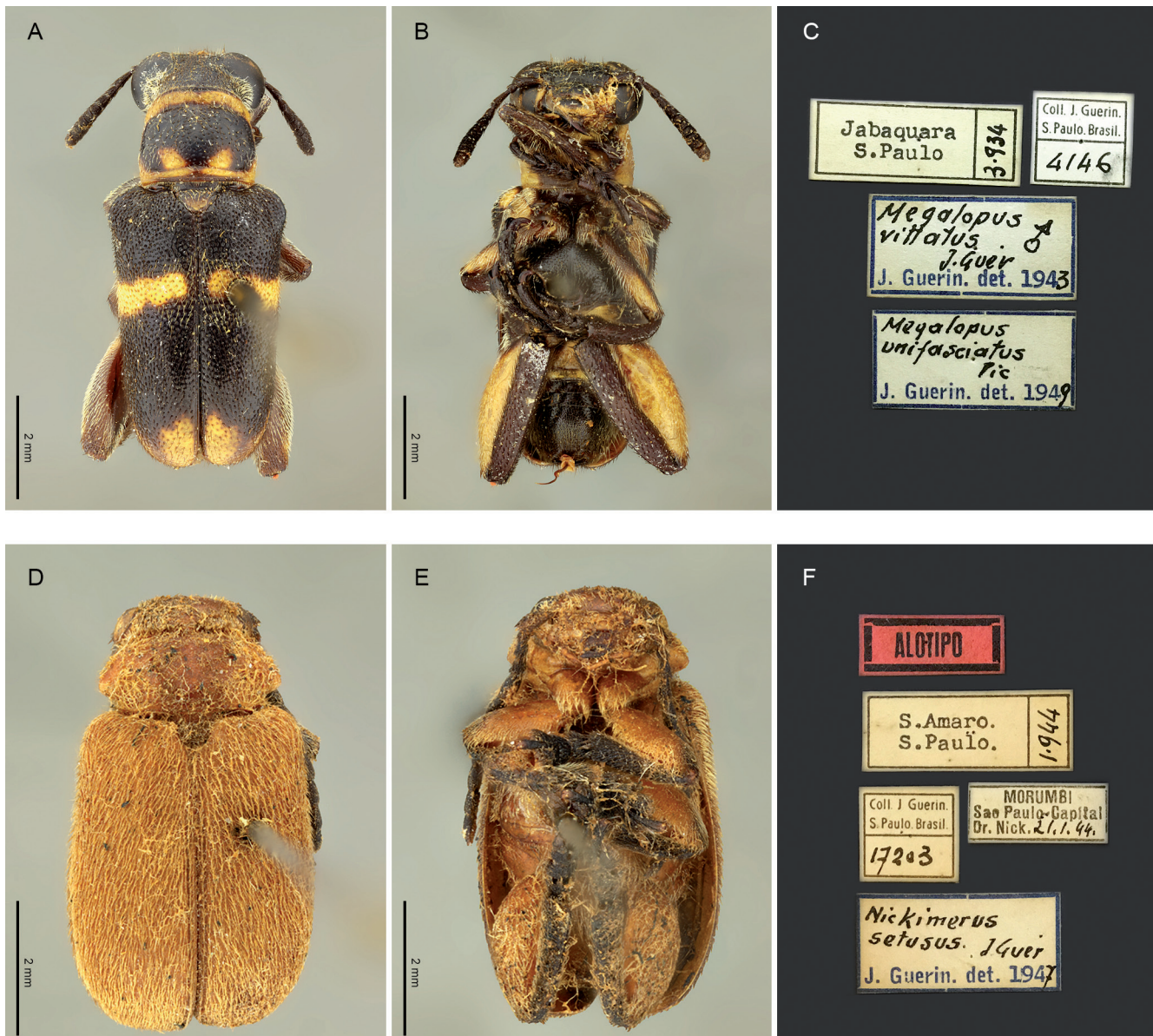


Figure 11. Megalopodidae type specimens, habitus and labels. (A-C) *Megalopus vittatus* Guérin, 1943, holotype; (D-F) *Nickimerus setosus* Guérin, 1948, holotype (not "allotype").

Holotype: "ALOTIPO // S. Amaro. / S. Paulo. / 1.944 // Coll. J. Guerin / S. Paulo Brasil. / 17203 // Morumbi / São Paulo Capital / Dr. Nick. 21.1.44. // Nickimerus / setosus. J. Guér / J. Guerin. det. 1947".

Comments: The specimen labelled as "alotipo" (allotype) from the MZUSP is actually the holotype of *Nickimerus setosus*. All the locality data, dates and accession number given in the labels match with the data provided in the original description for the single holotype specimen.

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of *Mastostethus columbianus* in the Naturhistorisches Museum Basel, Switzerland,, and to two anonymous reviewers for their valuable suggestions and corrections.

AUTHORS' CONTRIBUTIONS

G.B.: conceptualization, methodology, data analysis, writing, review and editing. M.M.D.: data analysis and writing. C.C.: data analysis, literature search and writing. All the authors actively participated in the discussion of the results, reviewed and approved the final version of the paper.

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