

A new species of *Aristobrotica* Bechyné and a checklist of the genus (Coleoptera, Chrysomelidae, Galerucinae)

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ABSTRACT. A new species of *Aristobrotica* Bechyné and a checklist of the genus (Coleoptera, Chrysomelidae, Galerucinae). A new neotropical species of the Section Diabroticites (Luperini, Diabroticina) is described and illustrated. *Aristobrotica capillosa* **sp. nov.**, from the state of Amazonas, northern Brazil, is the only species of the genus with elytra densely covered by erect hairs. The genus *Aristobrotica* Bechyné, 1956 now comprises 17 species, with only one occurring in Central America, *Aristobrotica allardi* (Jacoby, 1887) from Panama, and the remaining 16 are South American. A checklist of *Aristobrotica* species and their geographic distribution is also provided.

KEYWORDS. Diabroticites; Luperini; Neotropics; North Brazil; Taxonomy.

RESUMO. Nova espécie de *Aristobrotica* Bechyné e checklist do gênero (Coleoptera, Chrysomelidae, Galerucinae). Uma nova espécie neotropical da Seção Diabroticites (Luperini, Diabroticina) é descrita e ilustrada. *Aristobrotica capillosa* **sp. nov.**, do Estado do Amazonas, norte do Brasil, é a única espécie do gênero com os élitros densamente cobertos por pelos eretos. O gênero *Aristobrotica* Bechyné, 1956 compreende atualmente 17 espécies, somente uma ocorre na América Central, *Aristobrotica allardi* (Jacoby, 1887) do Panamá e as 16 restantes são sul-americanas. Um checklist das espécies de *Aristobrotica* e a distribuição geográfica das mesmas também é fornecido.

PALAVRAS-CHAVE. Diabroticites; Luperini; Neotropical; norte do Brasil; Taxonomia.

The genus *Aristobrotica* was established by Bechyné (1956) to include the species of *Diabrotica* that possess the antennomeres III-V thickened in males (except in *Aristobrotica mirapeua* Moura, 1997), tibiae and femora of the male middle legs modified with excavations or expansions, and by the position of the ocular sulcus, forming an *annulus* around the eyes; generally the integument of this *annulus* is different from that of the rest of the head. In a key, Smith & Lawrence (1967) added the fore tarsi with the proximal three tarsomeres ventrally uniformly covered by an adhesive patch and the mesotibiae and femora modified as a clasp-organ. According to Torre-Bueno (1989), clasping organs in male insects hold the females during copulation; however, up-to-date there has not been an opportunity to observe this behavior in *Aristobrotica* and to determine if this truly occurs in individuals of different species.

The majority of the 16 species that comprise *Aristobrotica* was originally described in *Diabrotica*; the only species originally allocated to this genus is *Aristobrotica mirapeua* Moura. *Aristobrotica*, along with 16 other genera, makes up the Section Diabroticites, the most numerous of the four sections of the Subtribe Diabroticina, with a predominantly neotropical distribution (Wilcox 1972; Seeno & Wilcox 1982; Cabrera-Walsh & Cabrera 2004; Cabrera & Cabrera-Walsh 2004).

Although individuals of Diabroticites are essentially phytophagous, a curious behavior was recorded by Mafraneto & Jolivet (1994): specimens of *Aristobrotica angulicollis*

(Erichson, 1848) was found feeding on *Epicauta aterrима* Klug, 1825 (Coleoptera, Meloidae); some individuals were observed preying adults meloids that had fallen from the plant and remained immobile, engaging in thanatosis or similar behavior.

With regard to geographic distribution, with the exception of *Aristobrotica allardi* from Panama, all other species are South American, occurring mainly in the north of South America.

The purpose of this paper is to describe a new species of *Aristobrotica* from Brazil and to provide a checklist with the species that currently comprise the genus and their distribution.

MATERIAL AND METHODS

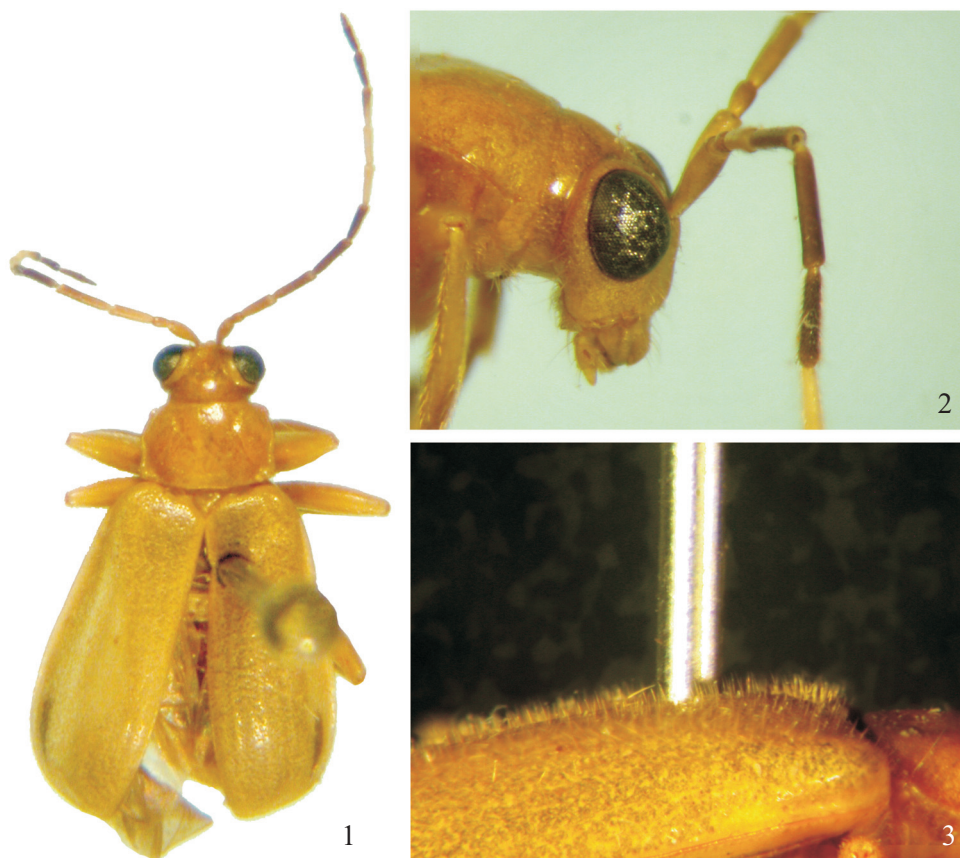
Specimens studied are housed in the collections of Museu de Ciências Naturais da Fundação Zoobotânica do Rio Grande do Sul, Porto Alegre, RS, Brazil (MCNZ), and Museu de Zoologia da Universidade de São Paulo, São Paulo, Brazil (MZSP).

RESULTS AND DISCUSSION

Aristobrotica capillosa **sp. nov.**

(Figs. 1–7)

Type material. Holotype male, BRAZIL, state of Amazonas, 60 km N. Manaus (Fazenda Esteio, ZF-3 km-23), 14.I.1986, B.C. Klein col., Arm. Malaise (= Malaise trap)



Figs. 1–3. *Aristobrotica capillosa* sp. nov. Habitus, male holotype. Length = 7.1 mm. 2, head, lateral view. 3, detail of elytral surface in lateral view.

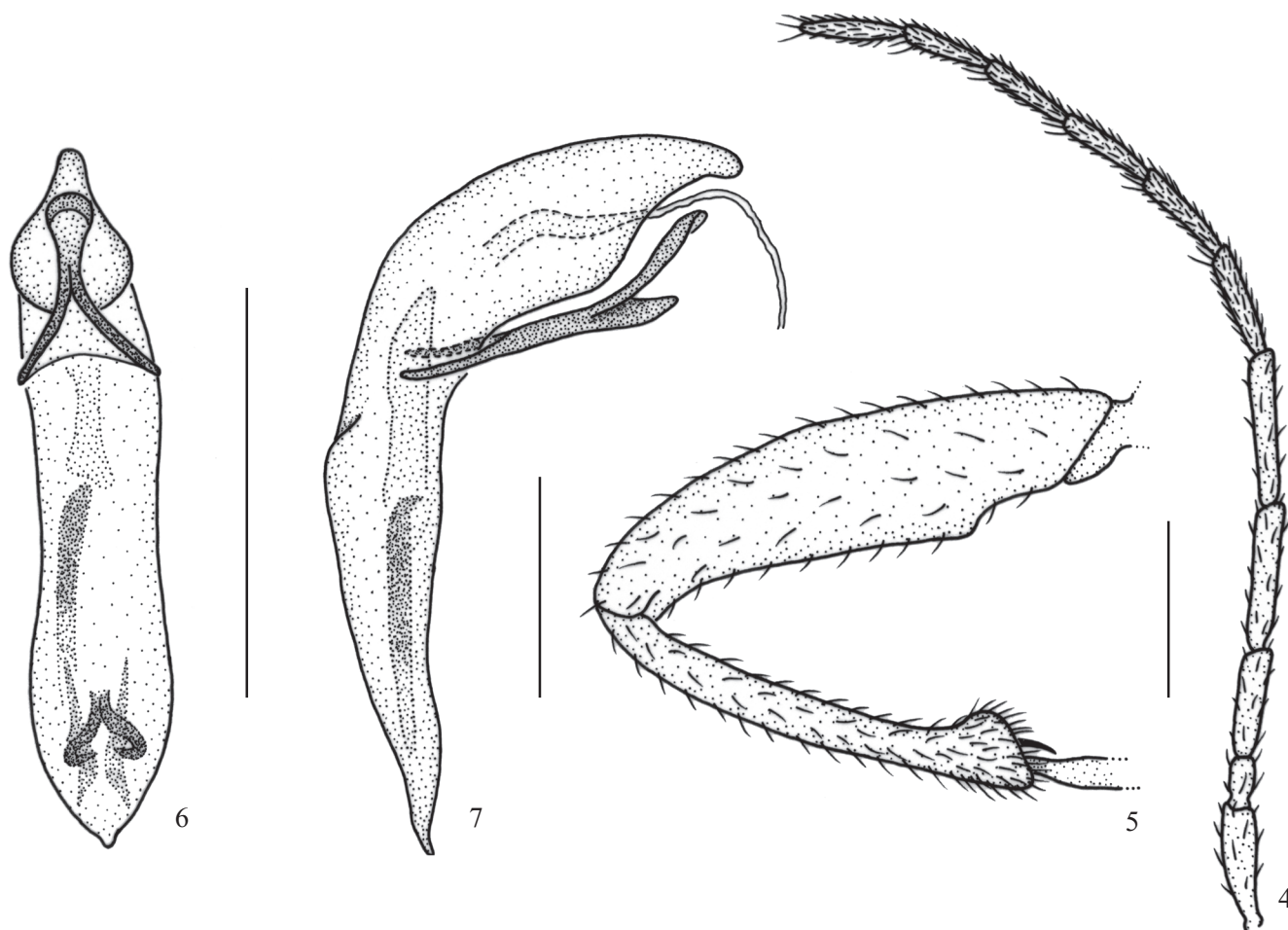
(Reserva 1301) (Col. MCN 167.040) (MCNZ). Paratype male, same data as holotype, except for 10.IV.1985 (Col. MCN 167.045) (MCNZ). Paratype male, same data as holotype, except for 28.V.1986 (Reserva 1112) (MZSP).

Description, male. Body length 6.9–7.1 mm; elytral length 4.9–5.5 mm; humeral width 2.5–2.8 mm. Body elongate oblong, slightly convex. Coloration generally yellow, except apex of mandibles, antennomeres IV–VI, XI and XI, apical half of IX, narrow longitudinal strip postero-lateral near elytral apices (Fig. 1), lateral portion of metasternum and metepisternum, from brown to dark-brown (in two specimens, tone of tarsomeres tends to be a little darker than the rest of leg).

Head with smooth and bright integument, with punctuation sparse and slightly deep; vertex finely and inconspicuously punctate, depressed above antennal calli; frons sub-convex, more elevated medially from clypeus up to space between insertions of antennae; surface with hairs sparsely distributed. Labrum transverse, shiny, with a transversal row of six long setae on median line; lateral margins slightly rounded and anterior margin straight with a median notch. Maxillae with developed lacinia and galea, both with short setae more concentrated apically; galea subcylindrical, apically slightly wider than base; maxillary palpi with four palpomeres: first palpomere short, transverse, second and third subcylindrical, this latter the longest, and the apical conical. Labial palpi 3-segmented, two basal palpomeres subequal and apical subconical. Eyes globose, pro-

jected when observed dorsally (Fig. 1) and outlined by developed *annulus* (Figs. 1, 2), which possess integument different from rest of head, more irregular and less bright; a long supraorbital seta present near eye margin. Area posterior to gena and to eyes endowed with sparse long hairs. Genal space with half length of eye diameter (Fig. 2). Antennae (Fig. 4) 11-segmented, filiform, surpassing half of elytra length; scape subcylindrical, about twice pedicel length; antennomere III approximately 2.2 times longer than II and slightly shorter than IV or V, which are subequal; VI–XI subequal, decreasing in size apicad; antennomere XI apically acuminate. Hairs sparsely distributed on antennomeres I to V; starting with VI, covering consists of pubescence uniformly short and dense, with apical hairs longer at the end of each antennomere (Fig. 4).

Prothorax sub-rectangular, transverse, width 1.5 greater than length; lateral margins slightly rounded, each of the anterior and posterior angles endowed with a long bristle. Pronotum moderately convex, somewhat depressed in basal region proximal to scutellum, bright, glabrous, covered with fine punctures sparsely distributed. Prosternum narrow, laminar between anterior coxae, bright with sparse hairs; anterior coxal cavities open. Mesosternum short and inconspicuous between middle coxae; integument bright sparsely pubescent. Metasternum with smooth and bright surface, covered by dense uniform pubescence. Scutellum subtriangular, glabrous with fine sparse punctuation.



Figs. 4–7. *Aristobrotica capillosa* sp. nov., male paratype. 4, antennae. 5, femur and tibia of middle leg. Aedeagus: 6, ventral view; 7, lateral view. Bars = 1 mm.

Elytra with punctuation irregular, weak, densely covered with erect golden yellow hairs (Fig. 3). Epipleura bright, glabrous, gradually narrowed posteriorly, not reaching elytral apex; row of hairs equally spaced arranged on upper and lower margins. Outer border of elytra with bristles regularly spaced starting at brown latero-apical spot.

Legs with femora fusiform, bright, covered by short hairs sparsely distributed; pubescence of tibiae denser at apical end (Fig. 5).

Anterior legs: tibiae sub-straight, somewhat wider toward the end. Protarsomere I subcylindrical, slightly dilated, with an adhesive patch ventrally; length about two times the tarsomeres II and III and subequal to V. Middle legs (Fig. 5): inner margin of femur with protuberance on basal third; tibia slightly curved, with apex strongly dilated on the inner margin and an apical spur; inner side of tibia endowed with a fine brown carina. Posterior legs with tibiae slightly curved, with apical spur; tarsomere I cylindrical, length subequal to following tarsomeres together. Tarsal claws bifid, inner claws slightly more curved than the outer ones.

Abdomen with sterna I to V subequal in length, somewhat depressed laterally; surface covered with short hairs, dense

and uniformly distributed.

Aedeagus with median lobe (Figs. 6, 7) sclerotized, elongate and curved in lateral view, about 2.2 times the length of the tegmen; basal orifice protected by a hood-shaped process; apical end acuminate, with small rounded projection (Fig. 6). By transparency, four sclerotizations are observed inside the middle lobe, where the three arranged more apically are more evident: (1) one elongate, somewhat dilated basally and thickened toward the apical end; (2) a pair elongate with both ends sharpened and below anterior, (3) a sclerite in the form of two hooks fused at the base with converging apices (Fig. 6). Tegmen (Fig. 6) with basal plate dilated and rounded; below the dilated portion, a bifurcation of the origin to a pair of arms directed laterally, which partially involve the middle lobe (Fig. 7).

Female. Unknown.

Distribution. Only known from the type locality, Fazenda Esteio, 60 km north of Manaus, capital of state of Amazonas, Brazil (2°24'26"S, 59°43'40"W).

Etymology. The specific epithet *capillosa* is an adjective denoting "hairy" and it is used in reference to the hairy elytra, with surface densely covered by erect hairs.

Remarks. In the genus *Aristobrotica* all species known until now have elytral surface glabrous or with hairs very sparsely distributed; in *A. capillosa* **sp. nov.** the elytra are densely covered by erect hairs. Elytra with evident pubescence (i.e., those not only with hairs very sparsely distributed or arranged in rows) in Diabroticina is not very common; this feature were also observed in some species of other genera, but not at the same density of hairs as with *A. capillosa* **sp. nov.**: *Zischkaiia* Bechyné, 1956 (Section Diabroticites), *Trichobrotica* Bechyné, 1956 and *Parabrotica* Bechyné & Bechyné, 1961 particularly *P. decolor* Bechyné & Bechyné, 1961 (Section Phyllethrites). Additionally, regarding the pubescent elytra, the new species does not possess the antennomeres III-V thickened in males, a feature that is also recorded in *A. mirapeua* (Moura 1997). Unlike what was defined by Smith & Lawrence (1967), indicating that representatives of *Aristobrotica* have ventral adhesive patches on three basal tarsomeres of the anterior legs, in the new species this structure is present only on protarsomere I. With regard to the male genitalia, the median lobe of *A. capillosa* **sp. nov.** also has a process in the form of a hood with rounded margins which protects the basal orifice, as shown by Moura (2009) in *Isotes eruptiva* (Bechyné, 1956) and *Paranapiacaba teinturieri* (Allard, 1894) (both species of the Section Diabroticites).

Checklist of the *Aristobrotica* species and their distribution

Aristobrotica allardi (Jacoby, 1887). Panama.
Aristobrotica angulicollis (Erichson, 1848). Guyana, Surinam, French Guyana, Bolivia (Chaparé), Peru (Pucallpa), and Brazil (Amapá, Amazonas, Pará, Maranhão, Ceará, and Bahia).
Aristobrotica belemea (Gahan, 1891). Brazil (Pará).
Aristobrotica capillosa Moura **sp. nov.** Brazil (Amazonas).
Aristobrotica conformis (Gahan, 1891). Colombia, French Guyana, and Brazil (Amazonas and Pará).
Aristobrotica delecta (Gahan, 1891). Brazil (Amazonas).
Aristobrotica discreta (Weise, 1921). Brazil (Amazonas and Pará).
Aristobrotica excisa (Weise, 1921). Brazil (Amazonas).
Aristobrotica flavonotata (Jacoby, 1880). Ecuador.
Aristobrotica marginipennis (Gahan, 1891). Brazil (Rio de Janeiro).
Aristobrotica mirapeua Moura, 1997. Brazil (Goiás).
Aristobrotica nigrovittulata (Baly, 1886). Colombia, Venezuela, and Brazil.
Aristobrotica paraensis (Baly, 1886). Brazil (Amazonas and

Pará).

Aristobrotica proba (Weise, 1921). Brazil (Amazonas).
Aristobrotica spectabilis (Baly, 1891). Peru and Brazil (Amazonas).
Aristobrotica steinheili (Baly, 1886). Colombia.
Aristobrotica zelota (Gahan, 1891). Brazil (Minas Gerais and Rio de Janeiro).

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