

Redescription of the Neotropical genus *Aristathlus* (Heteroptera, Reduviidae, Harpactorinae) *

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ABSTRACT

The Neotropical genus *Aristathlus* BERGROTH 1913, is redescribed. Digital dorsal habitus photographs for *A. imperatorius* BERGROTH and *A. regalis* BERGROTH, the two included species, are provided. Selected morphological structures are documented with scanning electron micrographs. Male genitalia are documented for the first time with digital photomicrographs and line drawings. New distributional records in South America are given for species of *Aristathlus*.

Keywords: Harpactorini, Hemiptera, male genitalia, Neotropical region, taxonomy.

INTRODUCTION

Reduviidae is the second largest family of Heteroptera with more than 6000 species described (MALDONADO 1990). Despite not having an agreement about the suprageneric classification of Reduviidae (e.g., PUTSHKOV & PUTSHKOV 1985; MALDONADO 1990),

* This paper is dedicated to Michail Josifov on the occasion of his 80th birthday.

it is evident that the tribe Harpactorini (Harpactorinae) is the most diversified group (DAVIS 1969; MALDONADO 1990). Members of Harpactorinae are commonly associated with plant crops and some have been studied as biological control agents of crop pests (e.g., GRUNDY & MAELZER 2000, 2003; GRUNDY et al. 2000; JAHNKE et al. 2003; NISHI et al. 2004; CHANDRAL et al. 2005; GRUNDY 2007; ISHIKAWA et al. 2007).

In the Neotropical Region there are 51 genera of Harpactorini (MALDONADO 1990, 1992; CARVALHO et al. 2001; BÉRENGER 2003, 2007). The only and outdated key to the genera of the Neotropics is that of STÅL (1872).

Despite their importance as crop pest predators, species identification of Harpactorini is sometimes challenging. After STÅL's key (1872), many genera have been described as new, for instance *Atopozelus* (ELKINS 1954a), *Carmenula* (MALDONADO 1992), *Coilopus* (ELKINS 1969), *Eccelenodalus* (ELKINS & WYGODZINSKY 1957), *Harpactorella* (WYGODZINSKY 1947), *Iquitozelus* (BÉRENGER 2003), *Marjoriana* (BÉRENGER 2007), *Mucrolicter* (ELKINS 1962), *Notocyrtoides* (CARVALHO et al. 2001), and *Orbella* (MALDONADO 1987).

Only a fraction of the Harpactorini genera have been revised or redescribed in tropical America, for instance, *Atopozelus* ELKINS (HART 1972b), *Atrachelus* AMYOT & SERVILLE (ELKINS 1954b), *Castolus* STÅL (MALDONADO 1976b), *Diarthrotarsus* BERGROTH (WYGODZINSKY 1948), *Doldina* STÅL (HUSSEY & ELKINS 1955), *Erbessus* STÅL (WYGODZINSKY 1947), *Harpactor* LAPORTE (WYGODZINSKY 1947), *Heza* AMYOT & SERVILLE (MALDONADO 1976a, 1983), *Ischnoclopius* STÅL (HART 1975), *Nesocastolus* (MALDONADO 1993), *Notocyrtus* BURMEISTER (CARVALHO & COSTA 1992, 1993), *Sossius* CHAMPION (MALDONADO & CARPINTERO 1993), and *Sava* AMYOT & SERVILLE (COSCARÓN et al. 1999). HART (1986, 1987) treated the speciose genus *Zelus* FABRICIUS for North America and the West Indies, but most of the species distributed in South America remain unpublished (HART 1972a).

BERGROTH (1913) described the genus *Aristathlus* to include two new species, *A. imperatorius* and *A. regalis* (PUTSHKOV & PUTSHKOV 1985; MALDONADO 1990). Beyond catalog entries, these species have not been mentioned again in the literature, with the exception of GIL-SANTANA (2007), who recorded *Aristathlus* from Brazil and documented the pronotal color variation in *A. imperatorius*. The aim of this paper is to redescribe the genus, add new distributional information, and describe and illustrate male genitalic characters. This information will facilitate the identification of *Aristathlus*.

MATERIAL AND METHODS

Specimens studied are deposited in the following institutions (acronyms follow EVENHUIS 2007): American Museum of Natural History, New York (AMNH), Instituto de Ciencias Naturales, Universidad Nacional, Bogotá, Colombia (ICN), Universidade Federal do Rio de Janeiro, Brazil (MNRJ), National Museum of Natural History, Leiden, The Netherlands (RMNH), United States National Museum of Natural History, Washington D.C. (USNM).

Observations were made with a Nikon SMZ1500 stereoscope, and drawings with a camera lucida attached to it. Measurements were made with a micrometer eyepiece. Scanning electron micrographs (SEM) were taken with uncoated specimens in a Zeiss environmental SEM, EVO 60EP. Digital dorsal habitus images and male genitalia images were taken using a Microptics-USA photomicrographic system, with Infinity K2 lens and CF-1 and CF-4 objectives. All measurements are in millimeters unless otherwise stated.

Dissections of the male genitalia were accomplished by removing the pygophore from the abdomen with a pair of forceps, and clearing it in a warm 10% KOH solution. The pygophore was then rinsed in water and dehydrated in 70% ethanol. Structures were then dissected, studied, and drawn in glycerin. The endosoma of the phallus was everted by gently pulling the dorsal endosomal processes with a fine forceps.

Locality data of the specimens were georeferenced with GEOLocate (RIOS & BART 2005) and the aid of gazetteers and regional maps of South America. Decimal degree coordinates for these localities were then processed in DIVA-GIS (HIJMANS et al. 2007) with a digital elevation model of South America to produce a distribution map of the species.

Terminology: Morphological terms mostly follow DAVIS (1969) and LENT & WYGODZINSKY (1979). Reduviidae have four labial segments as observed in other Heteroptera, although the first segment is reduced in most subfamilies (C. WEIRAUCH, pers. com.). The labial segments are numbered in the descriptive parts of the text from second to fourth, corresponding to the visible segments (see e.g., WEIRAUCH & FORERO 2007). Terms of pre-tarsal structures follow WEIRAUCH (2005). DAVIS (1966) and CARRERA & OSUNA (1996) are followed for male genitalic terms, and SCUDDER (1959) for female genitalic terminology.

Abbreviations: 1gcx, first gonacoxa; 1gpo, first gonapophysis; bp, basal plates; bstr, base of struts; end, sclerotized processes of the apex of the endosoma; ep, lateral endosomal processes; gpl, gonoplac; mp, median apical process of the dorsal phallothecal sclerite; ptg 8, paratergite 8; pht, dorsal phallothecal sclerite; sp 8, spiracle 8; st 6-7, sternites 6 and 7; syn 9/10, syntergite 9/10.

Aristathlus BERGROTH, 1913

BERGROTH 1913: 240 [new genus]; WYGODZINSKY 1949: 36 [catalog]; PUTSHKOV & PUTSHKOV 1985: 26 [catalog]; MALDONADO 1990: 166 [catalog].

TYPE SPECIES: *A. imperatorius* BERGROTH, 1913 (by original designation).

DIAGNOSIS: Recognized by its dark coloration with U-shaped yellow marking on the pronotum; body elongate, much longer than wide, total length 5.6 – 5.9 times longer as humeral width; third (second visible) labial segment the longest, fourth (third visible) the shortest; anterior lobe of pronotum with two rounded lobes on disc, elevated in males; posterior lobe of pronotum without spines; mesepisternum without tubercle on anterior margin; fore and middle femora stout, hind femur less stout; scapus the longest antennal

segment, pedicel and basiflagellomere together subequal to scapus; pygophore with single median posterior process and elongate, slender parameres; waxy areas on the pleura.

BERGROTH (1913) noted that *Aristathlus* is similar to *Zelus*, but did not mention specifically which characters separate the two genera. Representatives of both genera have elongate bodies, with the head longer than wide, and without spines next to the antenniferous tubercles. A number of genera in the Neotropical Region superficially share the condition of elongate body and head. Apart from *Zelus*, those genera include *Atopozelus*, *Ischnoclopius*, *Iquitozelus*, and *Heza*.

The structure of the fore and middle femora separate *Aristathlus* from *Zelus* and *Atopozelus*, because they are robust in *Aristathlus* and long and delicate in *Zelus* and *Atopozelus* (HART 1972a, b, 1986, 1987). Furthermore, *Atopozelus* does not have parameres (HART 1972b), which are present in *Aristathlus*. *Aristathlus* can be distinguished from *Ischnoclopius* by the elongate abdomen with parallel margins, and by having the fore femur slightly longer than the middle femur. In *Ischnoclopius* the abdomen is widened apically and the fore femur is much longer than the middle femur (HART 1975). *Aristathlus* is distinguished from *Iquitozelus* mainly by the parallel abdomen, which in the latter is lobate at the level of the abdominal segments six and seven (BÉRENGER 2003). Species of *Heza* have a spatulate abdomen, with the connexivum usually with spines, a spine adjacent to the antenniferous tubercle, the pronotum with spines, and a tubercle on the anterior part of the mesepisternum (MALDONADO 1976a). *Aristathlus* does not have spines next to the antenniferous tubercles, on the pronotum, and the connexivum, and the mesepisternum is flat.

Aristathlus is further distinguished from the aforementioned genera by the bifid median apical process of the dorsal phallosclerite (see Figs 6C, F, arrows) and the enlarged, paired endosomal processes (Fig. 6A-F).

REDESCRIPTION: *Male:* Medium sized (table 1), elongate with parallel margins. **COLORATION:** Black with yellow or pale yellow markings on pronotum and hemelytra (Figs 1A, B). **VESTITURE:** Silver, delicate, long, dense setae on head, thorax, mesoscutum, and metanotum; sparse bristlelike, dark setae on legs; short, dark, and bristlelike setae on hemelytra. Other structures with vestiture as indicated below. **STRUCTURE:** Head: Elongate, slightly shorter than length of pronotum; anteocular portion about 1.7 times as long as postocular one (Fig. 2B); postocular portion gently curved in dorsal view towards the neck (Fig. 2B); interocular sulcus deeply impressed, curved in dorsal view (Figs 2A, B); ocellus elevated, located closer to eye than to other ocellus (Fig. 2A); mandibular plate very small, nearly obscured by antenniferous tubercle; maxillary plate large, quadrangular, concave medially (Fig. 2A); clypeus nearly straight, slightly convex at middle; gena about as large as maxillary plate; gula nearly flat; labrum triangular; labial segments: second (first visible) stout, reaching anterior margin of eye, third (second visible) nearly as stout as second, the longest, reaching the neck, fourth (third visible) the shortest; eyes nearly hemispherical in lateral and dorsal views, neither reaching dorsal nor ventral margin of head in lateral view, ommatidia not protruding (Figs 2A, B); antennal segments: scapus about 3-4 times longer than head, glabrous (Fig. 1A); pedicel about a third of scapus

Table 1. Measurements of *A. imperatorius* and *A. regalis*. Abbreviations: TotLen: total length; LenHd, length of head; LenPm, length of pronotum; LenScut, length of scutellum; WidHd, width of head; IntOcDi, interocular distance; WidPrn, width of pronotum; WidScut, width of scutellum; Ant1-4, antennal segments 1-4 (i.e., scapus, pedicel, basiflagellomere, distiflagellomere); Lab2-4, labial segments (visible) 2-4.

	TotLen	LenHd	LenPrn	LenScut	WidHd	IntOcDi	WidPrn	WidScut	Ant1	Ant2	Ant3	Ant4	Lab2	Lab3	Lab4
<i>A. imperatorius</i>															
Male	24.35	3.30	4.45	1.05	1.53	0.85	4.35	1.15	5.05	1.75	4.00	-	1.35	1.85	0.50
Female	25.40	3.45	4.35	1.00	1.65	0.80	4.50	1.20	-	-	-	-	1.40	2.15	0.55
<i>A. regalis</i>															
Male	21.20	3.20	3.60	1.15	1.55	0.80	3.75	1.25	6.30	-	-	-	1.40	2.00	0.55
Male	20.90	3.10	3.70	1.00	1.50	0.75	3.65	1.30	6.20	2.10	-	-	1.35	1.85	0.55
Female	22.10	3.40	3.40	1.00	1.58	0.78	3.80	1.35	7.25	2.30	-	-	1.35	2.00	0.55
Female	22.10	3.30	3.45	1.00	1.64	0.86	3.70	1.33	6.80	2.04	4.70	2.04	1.35	2.00	0.50

length, subequal in diameter to scapus, with dense, short, bristlelike, black setae, and at least six trichobothria on apical half (Fig. 2H, arrows); basiflagellomere about 0.85 times shorter than scapus, slightly stouter than pedicel, with dense very short golden setae; distiflagellomere the shortest. Thorax: Pronotum slightly longer than wide (Figs 1A, B); disc of anterior lobe globose, mostly glabrous with linear areas of dense setae (Figs 2C, D), longitudinal sulcus deeply impressed, reaching anterior margin of pronotum, anterior lateral angles blunt or produced as a small tubercle; posterior lobe wider at posterior margin, disc flat, paired elevated ridges on anterior portion of disc connecting with globose disc of anterior lobe (Fig. 2D), posterior margin curved, humeral angles broadly curved, gently sloping laterally to transverse sulcus; scutellum (mesoscutum) triangular, broadly blunt apically, excavated medially near anterior margin and laterally on each side, produced as an elevated Y-shaped cuticle; metanotum produced dorsally as a blunt tubercle (Fig. 2D, arrow); propleuron with procoxal cavity slightly produced laterally, coxal suture deeply impressed, dorsal margin with a fovea; mesepisternum with sparse setae (Fig. 2E), more dense on anterodorsal margin (Fig. 2F), usually these setae with waxy secretions; anterior margin of mesepisternum flat, without a raised tubercle (i.e., “plica” of authors) (Fig. 2F); mesepimeron small, concave; suture between mesepimeron and metepisternum sinuate (Fig. 2E), mesothoracic spiracle large, ovoid (Fig. 2G), with inner cuticle modified as acute trichia (Fig. 2G, inset); metepisternum with dorsal carina strongly or barely impressed; metepimeron small, with posterior margin strongly

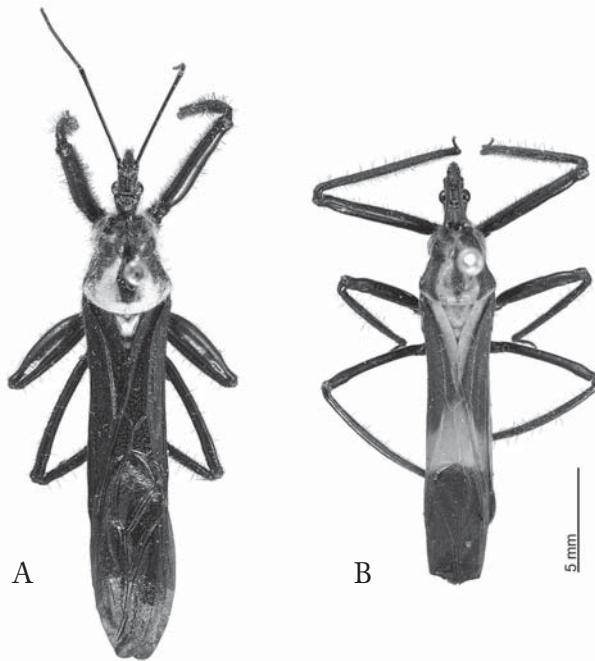


Fig. 1: Habitus digital photographs. **A.** *Aristathlus imperatorius*, male [Monzon Valley, Peru]. **B.** *A. regalis*, male [Sinop, Brazil].

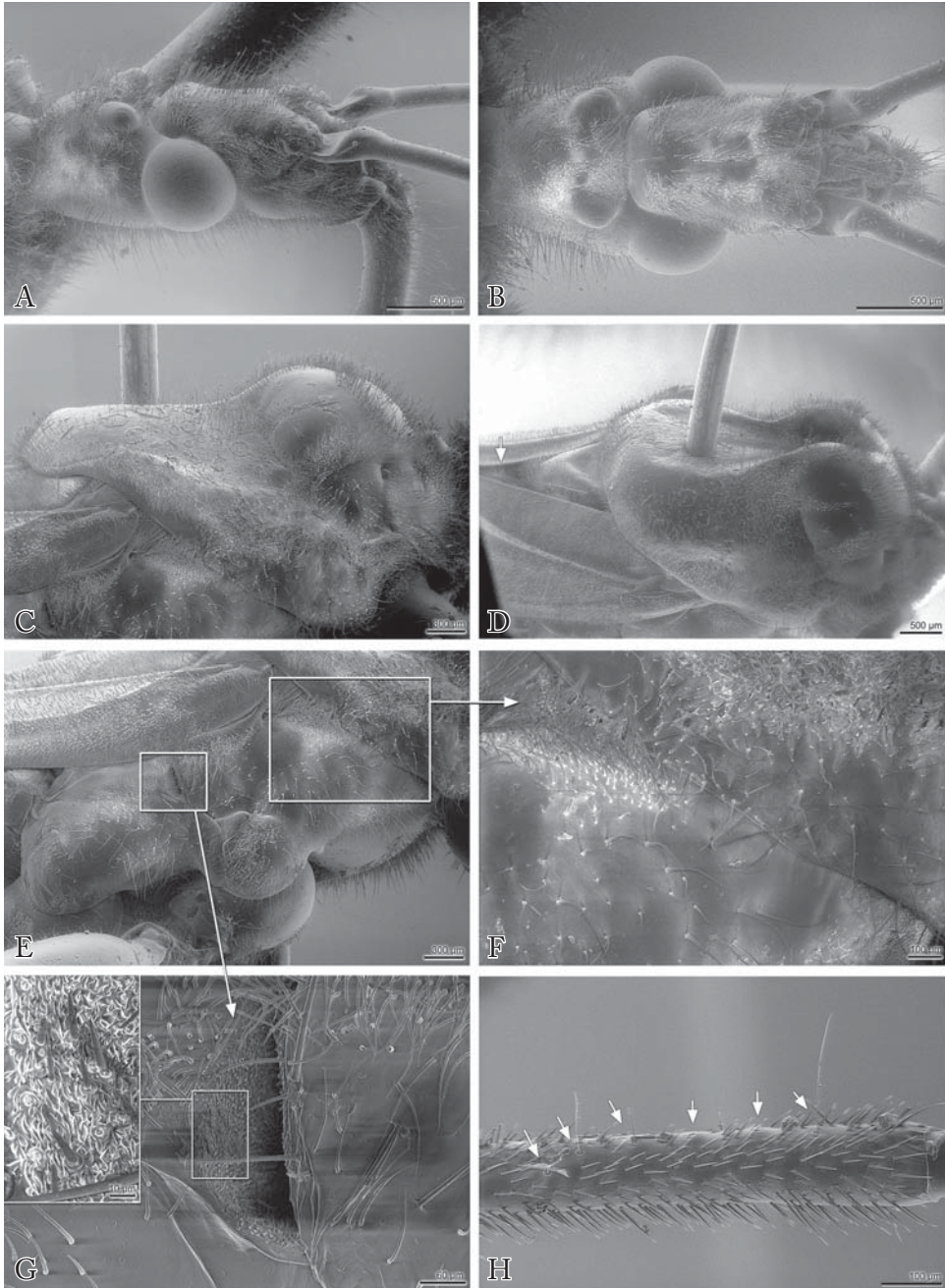


Fig. 2: *Aristathlus imperatorius*, male. SEM. **A.** Head, right, dorsolateral view. **B.** Head, dorsal view. **C.** Pronotum, right, lateral view. **D.** Pronotum, scutellum, and metanotum, right, dorsolateral view. Arrow points to protuberant metanotum. **E.** Meso- and metapleura, right, lateral view. **F.** Detail mesepisternum next to posterior margin of pronotum. **G.** Mesothoracic spiracle, with insert of detailed inner cuticle. **H.** Pedicel, lateral view of apical half. Arrows point to insertions of trichobothria.

concave; prosternum triangular, stridulatory sulcus with transverse fine ridges, apex of sulcus reaching middle of anterior coxa, areas lateral to stridulatory sulcus nearly flat; mesosternum slightly concave medially on anterior half, distal half strongly concave and narrowing apically with margins carinate; metasternum slightly convex. *Hemelytra*: Long, surpassing the abdomen by about half the length of the membrane; margins parallel (Figs 1A, B); corium with cell between cubitus and postcubitus nearly pentagonal (Fig. 1A). *Legs*: Fore, middle, and hind coxae globose, slightly constricted apically; trochanters nearly quadrangular; coxae and trochanters densely setose on ventral surface; fore femur elongated, nearly cylindrical, stout, slightly swollen at base, ventrally with dense, medium-sized bristlelike setae, dorsally with long, sparse, bristlelike setae; middle femur with greater diameter at middle than basally or apically, shorter than fore femur, ventrally with dense short bristlelike setae; hind femur cylindrical, slightly curved in dorsal view, barely longer than fore femur, constricted subapically, with sparse short bristlelike setae and few medium-sized bristlelike setae; fore tibia stout, lesser in diameter than fore femur, gently curved, apically bulbous, with dense, short and long bristlelike setae on all surface, setae on apex of tibia pale; middle tibia very similar in length and structure to anterior tibia but less setose; hind tibia longer than middle tibia, similar in structure to middle tibia; tarsi on all three legs with three segments, first tarsal segment the shortest, first and second combined as long as third, all segments densely setose on ventral surface; claw of pretarsus with large basal tooth, acute apically, deeply incised, parempodial setae divergent, apparently expanded apically. Abdomen: Elongate, margins parallel; sternites with incomplete, deeply impressed sutures between them, ending each one in a rugose area; spiracle 1 laterally on tergite 1, spiracles 2-7 medially on respective sternite (Fig. 3A), spiracles circular (Fig. 3B). Genitalia: Pygophore elongate ovoid (Figs 4, 5B, G), slightly expanded laterad at level of insertions of parameres (Fig. 4), ovoid in posterior view (Figs 5A, F), slightly constricted in basal third (Figs 5B, G), with a median process on its posterior margin (Figs 5A, B, F, G); single median process of posterior margin directed dorsad, wide or narrow, with apex carinated and reclined (Figs 5C, D, H, I); eighth sternite; strongly concave medially (Figs 4A, C, 5B, G); paramere elongate, sinuate in lateral view, setose apically (Figs 5E, J); phallus with articulatory apparatus with basal plates strongly curved (Figs 6A, B, D, E, bp), dorsally fused (Fig. 6D) or not (Figs 6A); basal plate bridge strongly sclerotized; dorsal phallothecal sclerite ovoid (Fig. 6A, pht) or elongate ovoid (Fig. 6D), strongly sclerotized, with a median, bifid apical process (Figs 6A, D, mp), posterior margin convex or gently concave (Figs 6A, D); base of the struts fused, elongate (Fig. 6D) or not (6A, bstr); basal part of endosoma with paired, dorsal processes (Figs 6A, D, ep), stout, strongly sclerotized and curved laterally, projecting beyond apex of endosoma (Figs 6B, C, E, F), apically notched; apex of endosoma with numerous small, triangular, sclerotized processes (Figs 6B, C, E, F, end), apparently forming dorsal and ventral sacs.

Female: Similar to male in coloration, vestiture, and structure, except the following. STRUCTURE: Thorax: Anterior lobe of pronotum less elevated than in male. *Hemelytra*: Longer than in male. *Legs*: Hind tibia curved ventrally, slightly flattened, and enlarged

subbasally (Fig. 3E). Abdomen: Spiracle 8 on paratergite 8 (Fig. 3D). Genitalia: Syntergite 9/10 nearly vertical, part corresponding to tergite 10 protuberant, with ventral margin slightly concave (Fig. 3C); first gonacoxa wide (Fig. 3D); first gonapophysis narrow, reaching basal third of first gonacoxa (Fig. 3D); gonoplac paired, not projecting posteriorly (Fig. 3D).

MEASUREMENTS: As in Table 1.

DISCUSSION: The type specimens of *A. imperatorius* and *A. regalis* were not located. PUTSHKOV & PUTSHKOV (1985) listed in their catalog the type depositories of several spe-

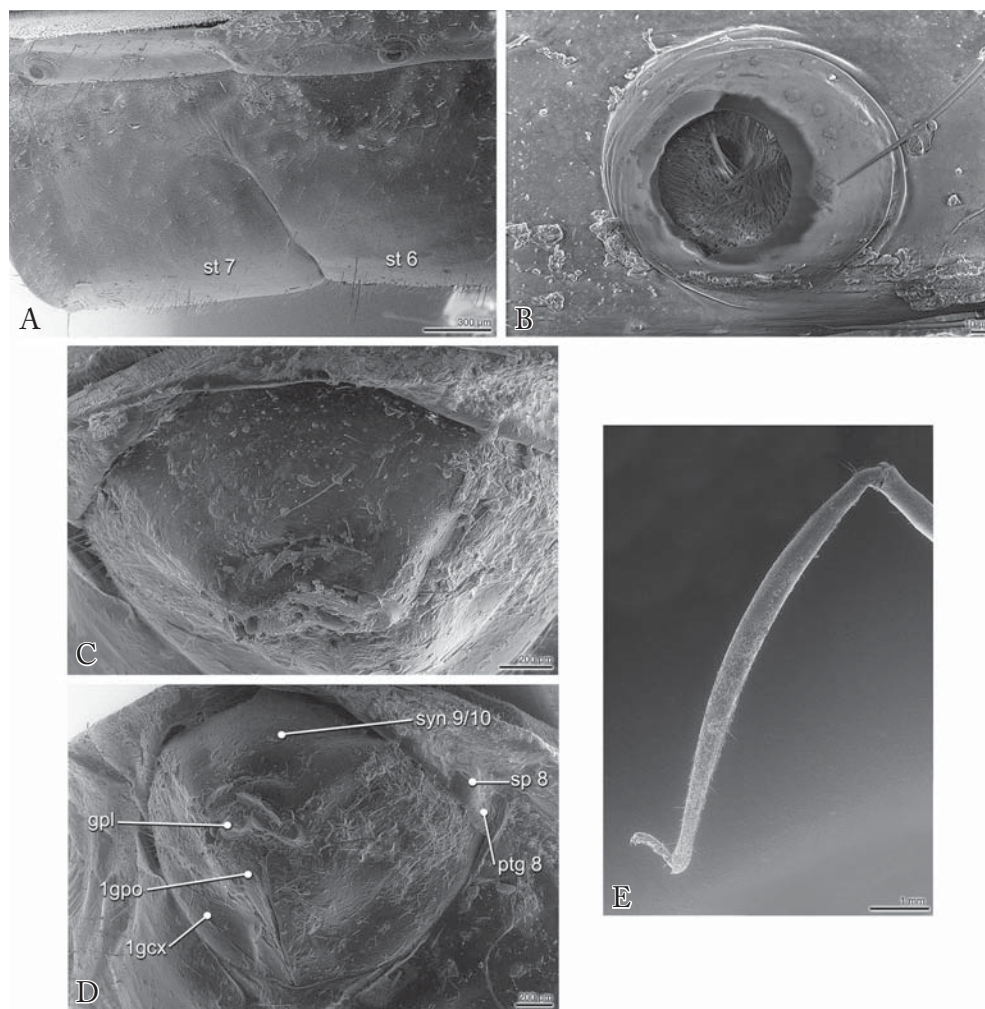


Fig. 3: *Aristatblus imperatorius*, male. SEM. **A.** Sternites 6 and 7, lateral view. **B.** Spiracle on sternite 3. *Aristatblus regalis*, female. **C.** Syntergite 9/10, posterior view. **D.** Apex of abdomen, lateroventral view. **E.** Left, hind tibia. Scales as indicated. Abbreviations: 1gpx, first gonacoxa; 1gpc, first gonapophysis; gpl, gonoplac; ptg 8, paratergite 8; sp 8, spiracle 8; st 6-7, sternites 6 and 7; syn 9/10, syntergite 9/10.

cies, although they did not cited any information regarding the two species of *Aristathlus*. The types are neither at the Finnish Museum of Natural History in Helsinki (L. HULDÉN, pers. com.) nor at the Muséum National d'Histoire Naturelle in Paris (E. GUILBERT, pers. com.), where Bergroth deposited some of his types. Because an extensive search for the types has not been carried out in other European collections, and because the identity of those species is not in doubt, we are not designating in this paper neotypes for both *Aristathlus* species.

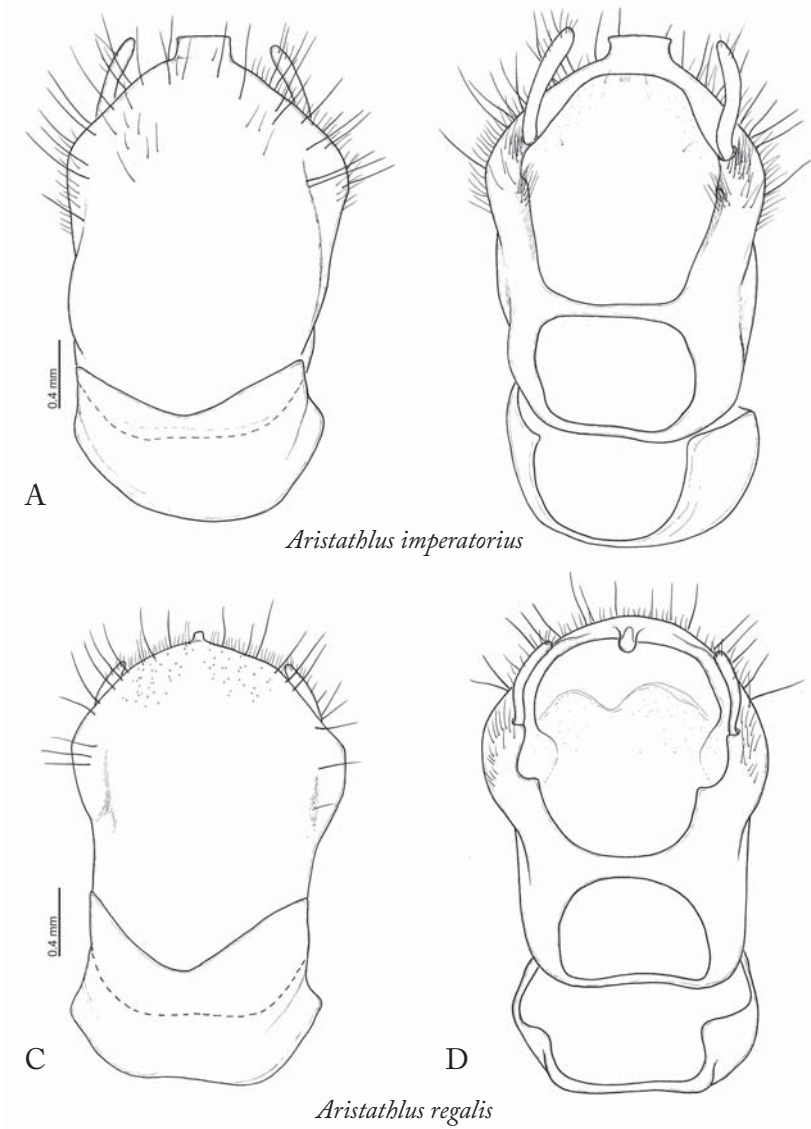


Fig. 4: Pygophore. **A-B:** *Aristathlus imperatorius*. **A.** Ventral view. **B.** Dorsal view. **C-D:** *Aristathlus regalis*. **C.** Ventral view. **D.** Dorsal view.

Males and females have resinous sticky substances on all tibiae, a fact that already BERGROTH (1913) noted. We do not know the origin of this substance, but it is probably produced by the insects and secreted by glandular pores in the tibiae as documented for the anterior tibia of *Zelus luridus* STÅL (WEIRAUCH 2006). An unidentified species of *Aristathlus* in French Guiana was associated with *Aparisthium cordatum* (Euphorbiaceae) (BÉRENGER & PLUOT-SIGWALT 1997), another probable source of the resinous substances on the legs.

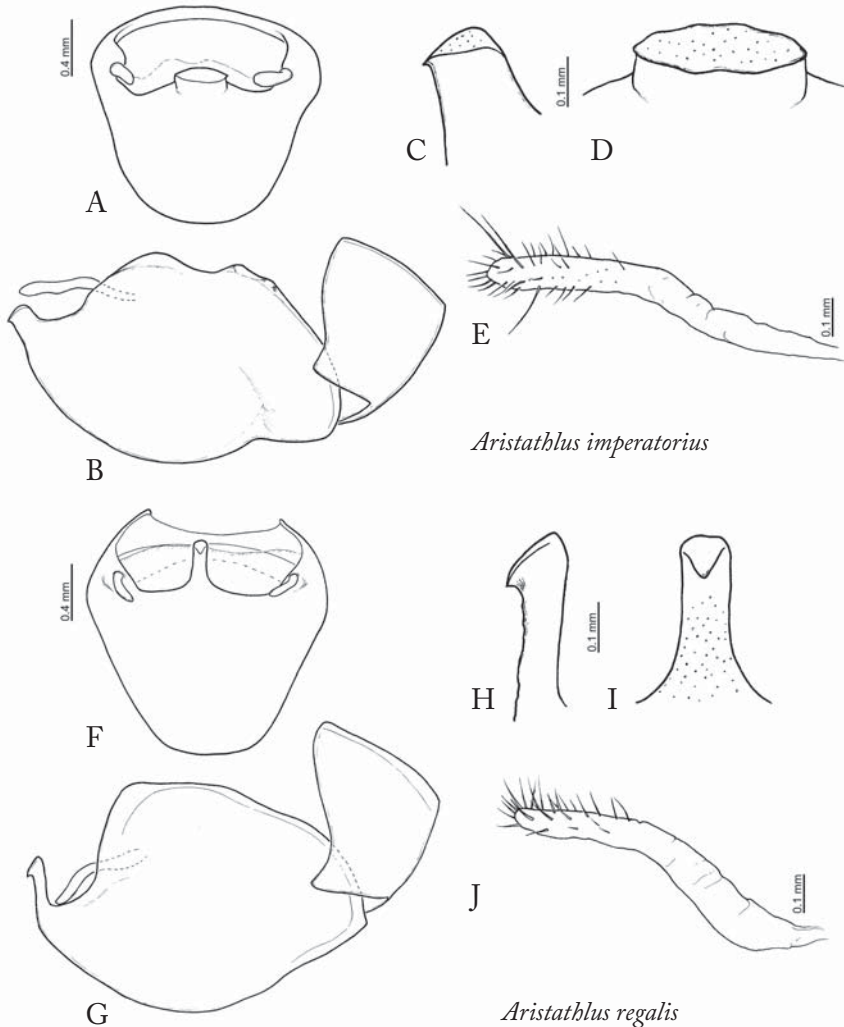


Fig. 5: A-E: *Aristathlus imperatorius*. A. Pygophore, posterior view. B. Pygophore and sternite eight, lateral view. C. Median process of pygophore, lateral view. D. Median process of pygophore, posterior view. E. Right paramere, lateral view. F-J: *Aristathlus regalis*. F. Pygophore, posterior view. G. Pygophore and sternite eight, lateral view. H. Median process of pygophore, lateral view. I. Median process of pygophore, posterior view. J. Right paramere, lateral view.

BERGROTH (1913) compared the particular structure of the flattened and expanded hind tibia in the females with that of *Ixopus* BERGROTH. This structure also resembles that of *Graptoclopius* STÅL and some species of *Notocyrtus* [e.g., *N. dorsalis* (GRAY), *N. camelus* STÅL, *N. clavipes* (FABRICIUS), see CARVALHO & COSTA (1993)]. The function of this structure is unknown.

Species of *Aristathlus* are probably mimetic of wasps with metallic wings (BERGROTH 1913).

DISTRIBUTION: *Aristathlus* is found exclusively in tropical areas of South America (Fig. 7). *Aristathlus imperatorius* and *A. regalis* are sympatric in their distribution, sometimes co-occurring in the same locality.

Aristathlus imperatorius BERGROTH, 1913

BERGROTH 1913: 241 [new species]; WYGODZINSKY 1949: 36 [catalog]; PUTSHKOV & PUTSHKOV 1985: 26 [catalog]; MALDONADO 1990: 166 [catalog]; GIL-SANTANA 2007: 61 [distribution, color variation].

DIAGNOSIS: Distinguished by the black hemelytra without yellow markings (Fig. 1A); mesosternum medially pale brown; metasternum brown; middle femur swollen at middle (Fig. 1A); head and thorax densely setose (Figs 1A, 2A, B); metepisternum with dorsal carina strongly impressed; basal plates of articulatory apparatus not fused dorsally (Fig. 6A); base of the struts short (Fig. 6A); dorsal phallothecal sclerite ovoid (Fig. 6A); median, apical process of dorsal phallothecal sclerite strongly acute (Figs 6A, C, arrow).

REDESCRIPTION: *Male*: COLORATION: Head: Dark brown; gula pale brown. Thorax: Pronotum with anterior lobe dark brown, paler on areas with dense setae; posterior lobe dark brown with an U-shaped pale yellow marking from the posterior margin of the pronotum and humeral angles projecting anteriorly to the transverse sulcus (Fig. 1A); raised cuticle of scutellum pale yellow; metanotum apically pale yellow; posterior portion of anterior coxal cavity and adjacent posterior pleural portion of pronotum pale yellow, remaining area dark brown; dorsal area of coxal suture of middle and posterior legs pale brown; stridulatory sulcus pale yellow; sternites brown, central area of mesosternum pale brown. *Hemelytra*: Black with metallic blue hues. *Legs*: Dark brown; tibiae apically darker; tarsi black. Abdomen: Tergites and laterotergites black; sternites and laterosternites red yellow. Genitalia: Pygophore and parameres black. STRUCTURE: Thorax: Anterolateral angles of pronotum blunt; dorsal carina of metepisternum strongly impressed. *Legs*: Middle femur strongly expanded medially (Fig. 1A). Genitalia: Basal plates of articulatory apparatus not fused dorsally (Fig. 6A); base of the struts short (Fig. 6A); dorsal phallothecal sclerite ovoid (Fig. 6A); median, apical process of dorsal phallothecal sclerite strongly acute (Figs 6A, C, arrow); dorsal endosomal processes not strongly stout (Figs 6A, B, C).

Female: Similar in structure and coloration to male. COLORATION: Genitalia: Syntergite 9/10 black, adjacent parts of first gonacoxa and gonapophysis black.

VARIABILITY: The pronotal color pattern is variable, ranging from a narrow, median U-shaped yellow marking, to a wider marking reaching the humeral angles (GIL-SANTANA 2007). The metanotum is sometimes black, not yellow.

DISTRIBUTION: *Aristatblus imperatorius* was originally described from Cayenne, French Guiana (BERGROTH 1913, MALDONADO 1990). GIL-SANTANA (2007) recorded this species from Brazil (Amazonas, Mato Grosso, and Pará). Specimens from Colombia and Peru represent new country records (Fig. 7).

MATERIAL EXAMINED: **BRAZIL**, 1♂, **Amazonas**, Manaus, 14 nov 1955, Elias & Roppa leg. (MNRJ); 1♂, **Mato Grosso**, Diamantino, Arinos River [14° 22' S - 56° 07' W], 16 nov 2002, E. Furtado leg. (MNRJ); 1♀, **Pará**, Óbidos, may 1956, F. Oliveira leg., [ex] Campos Seabra collection (MNRJ); 1♀, [no specific locality], Mus. Goeldi 17/10, D01 / "*Aristatblus imperatorius* det. Wygod." (AMNH). **COLOMBIA**, 1♂, **Meta**, Río Ocoa, selva, 100 m, 20 may 1945, L. Richter (ICN). **PERU**, 1♂, [**Huanuco**], Tingo María, Monzón Valley, 23 sep 1954, E.L. Schlinger & E.S. Ross collectors / "*Aristatblus imperatorius* det. Wygod." (AMNH).

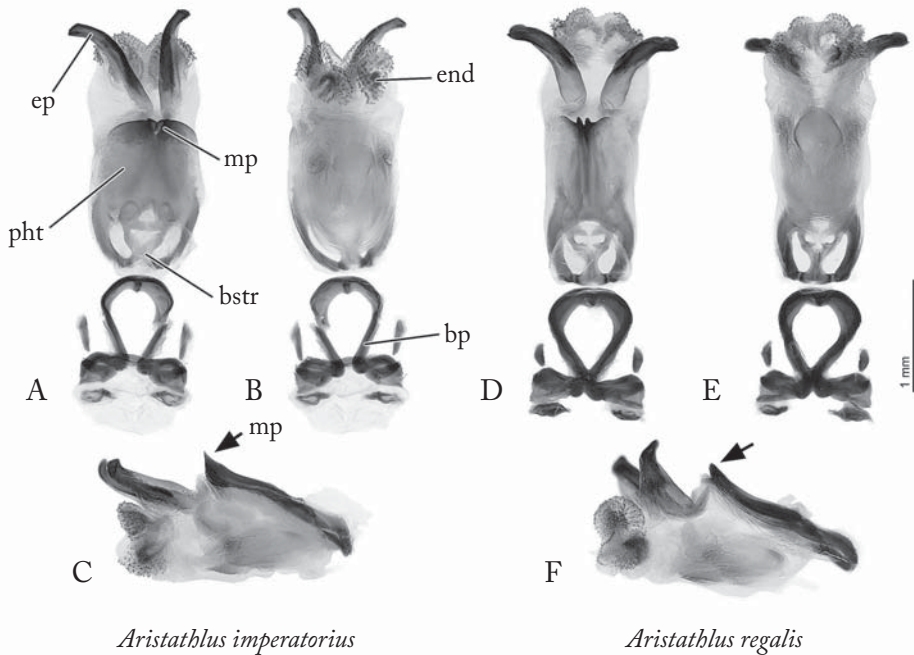


Fig. 6: Phallus, nearly completely everted. **A-C:** *Aristatblus imperatorius*. **A.** Dorsal view. **B.** Ventral view. **C.** Lateral view. **D-E:** *Aristatblus regalis*. **D.** Dorsal view. **E.** Ventral view. **F.** Lateral view. Scales as indicated. Abbreviations: bp, basal plates; bstr, base of struts; end, sclerotized processes of the apex of the endosoma; ep, lateral endosomal processes; mp, median apical process of the dorsal phallothecal sclerite; pht, lateral phallothecal sclerite. Arrows points to the difference between the mp in the two species.

Aristathlus regalis BERGROTH, 1913

BERGROTH 1913: 241 [new species]; WYGODZINSKY 1949: 36 [catalog]; PUTSHKOV & PUTSHKOV 1985: 26 [catalog]; MALDONADO 1990: 166 [catalog]; GIL-SANTANA 2007: 61 [distribution].

DIAGNOSIS: Distinguished by the yellow clavus (Fig. 1B); transverse yellow band on corium anterior to the membrane (Fig. 1B); mesosternum medially yellow, metasternum yellow; middle femur not greatly expanded at middle, nearly cylindrical (Fig. 1B); head and thorax not densely setose (Fig. 1B); metepisternum with dorsal carina not strongly impressed; basal plates of articulatory apparatus fused dorsally (Fig. 6D); base of the struts elongate (Fig. 6D); dorsal phallothecal sclerite elongate ovoid (Fig. 6D); median, apical process of dorsal phallothecal sclerite rounded, not acute (Figs 6D, F, arrow).

REDESCRIPTION: *Male:* **COLORATION:** Head: Dark brown; base of maxillary plate pale yellow; apex of gena pale; gula yellow; postocular portion with faint, longitudinal yellow line. Thorax: Anterior lobe of pronotum dark brown, apex of disc and longitudinal sulcus yellow, lateral margin with narrow yellow line; posterior lobe dark brown; with a U-shaped yellow marking, posterior margin of pronotum yellow; scutellum yellow, metanotum yellow; anterior coxal cavity yellow and adjacent posterior pleural portion of pronotum forming a yellow longitudinal area, remaining area dark brown; meso and metapleura yellow; coxal cavities of middle and hind legs pale yellow; stridulatory sulcus yellow, prosternal lateral areas dark brown; mesosternum medially yellow, laterally dark brown; metasternum yellow. *Hemelytra:* Dark brown; clavus yellow; apical half of corium yellow. *Legs:* Dark brown, nearly black, except for trochanters ventrally yellow. Abdomen: Yellow. **Genitalia:** Apical half of pygophore with inverted U-shaped black marking; parameres dark brown. **STRUCTURE:** Thorax: Anterolateral angles of pronotum produced as a small tubercle; dorsal carina of metepisternum not raised. *Legs:* Middle femur not strongly swollen medially (Fig. 1B). **Genitalia:** Basal plates of articulatory apparatus fused dorsally (Fig. 6D); base of the struts elongate (Fig. 6D); dorsal phallothecal sclerite elongate ovoid (Fig. 6D); median, apical process of dorsal phallothecal sclerite rounded, not acute (Figs 6D, F, arrow); dorsal endosomal processes strongly stout (Figs 6D, E, F).

Female: Similar to male in coloration and structure, except for the following. **COLORATION:** Abdomen: Pale brown. **Genitalia:** Syntergite 9/10 dark brown.

VARIABILITY: Some specimens may have a reddish rather than yellow marking on the pronotum.

DISTRIBUTION: *Aristathlus regalis* was originally described from Cayenne, French Guiana (BERGROTH, 1913). GIL-SANTANA (2007) recorded it from Brazil (Amazonas, Mato Grosso, and Pará). It is recorded for the first time from Colombia and Suriname. Additional localities are given from Brazil (Fig. 7).

MATERIAL EXAMINED: **BRAZIL**, 1 ♀, **Amazonas**, Tabatinga, aug-1955, E. S. Lima leg., [ex] Campos Seabra collection, "*Aristathlus* cf. *regalis* BERGROTH Wygodzinsky det."

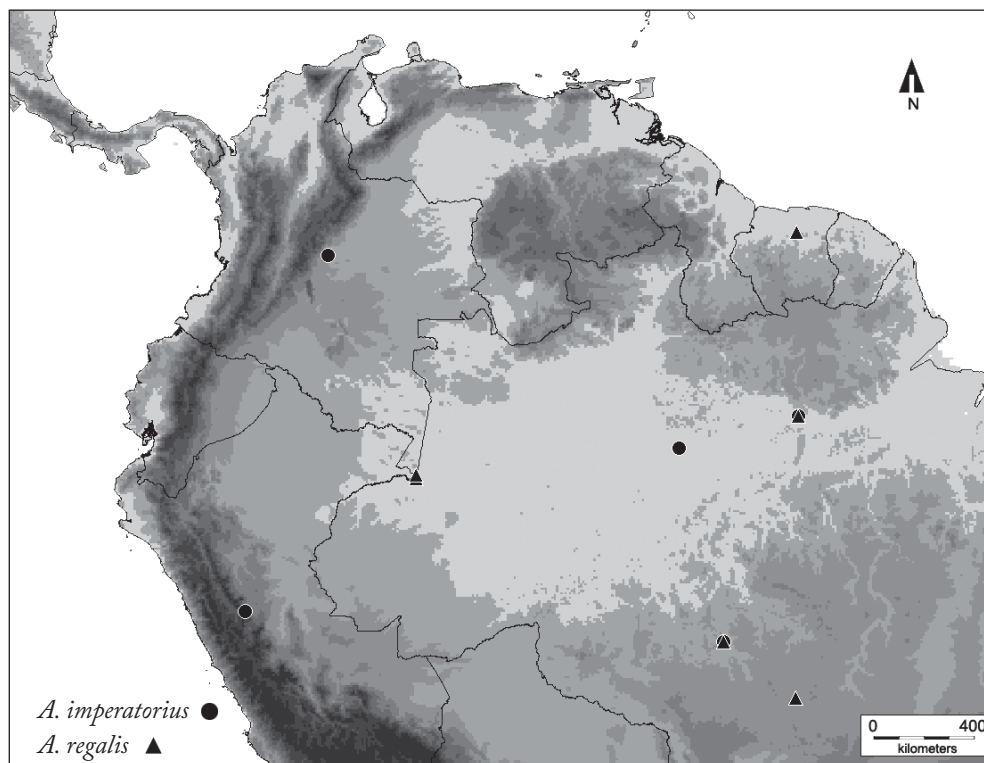


Fig. 7: Distribution map of species of *Aristathlus*.

(MNRJ); 1♂, **Pará**, Óbidos, Coleção Campos Seabra, 1955, F.M. Oliveira / “*Aristathlus* cf. *regalis* BERG. det. Wygodzinsky” (AMNH); 1♂, 2♀♀, Óbidos, 1955, F.M. Oliveira leg., [ex] Campos Seabra collection, “*Aristathlus* cf. *regalis* BERGROTH Wygodzinsky det.” (MNRJ); 1♂, 1 adult without abdomen, “Para” [without specific locality]/ PR Uhler collection / *Aristathlus regalis* BERGR. H.G. Barber” (USNM); 1♂, 1♀, **Mato Grosso**, 12°31’S 55°37’W, Sinop, Oct-1975, M. Alvarenga (AMNH); 1♂, Diamantino, Arinos River [14° 22’ S - 56° 07’ W], 20 oct 1983, Johann Becker leg. (MNRJ). **COLOMBIA**, 1♂, **Amazonas**, Leticia, Km 11 via Tarapacá, 100m, Sistematica Animal col. / 1.3.003 (ICN). **SURINAME**, 1♀, Brownsberg, 720 m, 18 jan 1972, G.F. Mees (RMNH).

List of acronyms used in the text:

AMNH – American Museum of Natural History, New York, USA.

ICN – Instituto de Ciencias Naturales, Universidad Nacional, Bogota, Colombia.

MNRJ – Museo Nacional, Rio de Janeiro, Brazil.

RMNH – Nationaal Natuurhistorisch Museum, “Naturalis”, Leiden, The Netherlands.

USNM – United States National Museum, Smithsonian Institution, Washington D.C., USA.

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РЕЗИОМЕ

Преописан е неотропичният род *Aristathlus* BERGROTH, 1913. Представени са дигитални фотографии на горзалния хабитус на двата изследвани вида: *A. imperatorius* BERGROTH и *A. regalis* BERGROTH. Избрани морфологични структури са документирани със снимки под сканиращ микроскоп. За първи път са документирани мъжките гениталии чрез дигитални микрофотографии и чрез рисунки. Представени са нови данни за разпространението на видовете от род *Aristathlus* в Южна Америка.

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