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Description of new Platynini from the montane cloud forest of Ecuador, with a redefinition of the genera *Glyptolenus* Bates and *Glyptolenoides* Perrault (Coleoptera, Carabidae)

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Ecuador;
Andes.

Abstract. – The montane cloud forest of northern Ecuador, between 1500-2500 m a.s.l., hosts a high diversity of ground beetles, most of which have a narrow geographic distribution. Fourteen species restricted to this ecosystem are described as new and illustrated: six in the genus *Dyscolus* Dejean, 1831 (*D. fabrefactus* sp. nov., *D. liebherri* sp. nov., *D. osseus* sp. nov., *D. shpeleyi* sp. nov., *D. spinicauda* sp. nov., *D. variegatus* sp. nov.), six in the genus *Glyptolenus* Bates, 1878 (*G. allegroi* sp. nov., *G. arboricola* sp. nov., *G. calvus* sp. nov., *G. hector* sp. nov., *G. humicola* sp. nov., *G. resbecqi* sp. nov.) and two in the genus *Glyptolenoides* Perrault, 1991 (*G. calacali* sp. nov., *G. formicarius* sp. nov.). *Dyscolus aequinoctialis* Chaudoir, 1850, **bona** sp., is restored from synonymy with *D. subviolaceus* (Chaudoir, 1842), and the genus *Austroglyptolenus* Roig-Juñent, 2003, is considered a junior synonym of *Dyscolus* Dejean, 1831. Finally, the generic delimitation of *Glyptolenus* Bates, 1878 and *Glyptolenoides* Perrault, 1991 is discussed, based on tarsal morphology and female genitalia.

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Introduction

Tropical montane cloud forests, characterized by a high percentage of humidity and a persistent low-level cloud cover, are important reservoirs of plant and animal diversity, hosting plentiful endemic taxa (Doumenge et al., 1995; Karger et al., 2021). In equatorial Andes, this ecosystem extends at elevations between 1300 and 3000 m a.s.l. (Sierra, 1999).

The ground beetle tribe Platynini (Coleoptera Carabidae) is represented in the montane forests of equatorial Andes by four genera: *Dyscolus* Dejean, 1831 (including the subgenera *Dyscolidion* Moret, 1990 and *Stenocnemion* Moret, 1989, according to Moret & Murienne, 2021: 9), *Incagonum* Liebherr, 1994, *Glyptolenus* Bates, 1878 and *Glyptolenoides* Perrault, 1991. The only *Incagonum* species recorded so far from this ecosystem in northern Ecuador is *Incagonum aeneum* (Reiche, 1843), mostly found in riparian habitats. By contrast, *Dyscolus*, *Glyptolenus* and, to a lesser degree, *Glyptolenoides* are highly diverse in Ecuador's cloud forests. They live in a broad array of habitats, from gravelly banks of forest streams to leaf litter or arboreal epiphytes.

As a contribution to the knowledge of the carabid fauna of one of the most threatened ecosystems in the world, fourteen new species belonging to *Dyscolus*, *Glyptolenus* and *Glyptolenoides* are described hereafter. Most of them were collected in the Otonga Nature Reserve, located in the Cotopaxi Province, on the

western side of the Western Cordillera of the equatorial Andes, between 1600-2200 m a.s.l. (Jarrín, 2001), a well-managed and well-studied reserve where many faunistic surveys have been conducted over the last thirty years, leading to the discovery of a large series of endemic taxa (e.g. Duperré & Tapia, 2017; Lee et al., 2021, among others).

Material and Methods

The studied material is housed in the following museums and collections:

CGA: Gianni Allegro Collection, Moncalvo, Asti, Italy

CLP: Luca Picciau Collection, Torino, Italy

CMNC: Canadian Museum of Nature Collection, Ottawa, Canada

CMNH: Carnegie Museum of Natural History, Pittsburgh, Pennsylvania, USA

CPMG: Pier Mauro Giachino Collection, Torino, Italy

CPM: Pierre Moret Collection, Toulouse University, Toulouse, France

MNHN: Muséum National d'Histoire Naturelle, Paris, France

MZUF: Museo di Storia Naturale, Sezione di Zoologia "La Specola", University of Florence, Italy

QCAZ: Museo de Zoología, Pontificia Universidad Católica del Ecuador, Quito, Ecuador

SEMC: Snow Entomological Museum Collection, University of Kansas, Lawrence, USA

UASM: University of Alberta, Strickland Museum, Edmonton, Canada.

Reviewer:

Joachim Schmidt (*Institut für Biowissenschaften, Universität Rostock, Deutschland*) - <https://zoobank.org/10E53423-2414-4280-9558-A8806A7D4531>

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Specimens were examined and measured using a Zeiss Stemi 508 trinocular stereo microscope. Photographs were taken with a Zeiss AxioCam 105 microscope camera. Z-series of photographs were stacked using Helicon Focus Software (Helicon Soft Ltd), then enhanced with Photoshop©.

Abbreviations of measurements and body parts are as follows:

EL: elytral length, from the posterior apex of the scutellum to the apex of the left elytron.

EW: elytral width, at the widest point of the elytra.

MST1-5: first to fifth mesotarsomere.

MTT1-5: first to fifth metatarsomere.

PL: pronotal length, along the median sulcus of the pronotum.

PT1-5: first to fifth protarsomere.

PW: pronotal width, at the widest point of the pronotum.

Body size was measured from the tip of mandibles in closed position to the apex of elytra.

Taxonomic results

Almost all the species described below share the following characters, which are therefore not repeatedly mentioned in the descriptions: labrum with six apical setae; clypeus with two pairs of setae; two supraorbital setae each side; mentum with one pair of setae, submentum with two pairs of setae; pronotum with two pairs of lateral setae, the distal one located near the widest point of pronotum, the basal one near or at the laterobasal angle; parascutellar setiferous pore present.

Dyscolus Dejean, 1831

Dyscolus Dejean, 1831: 437.

Colpodes MacLeay: Chaudoir, 1859: 289; Chaudoir, 1878: 278.

Platynus Bonelli: Whitehead, 1973: 175.

Dyscolus Dejean: Moret, 1989: 143; Moret & Muriene, 2021: 10.

Austroglyptolenus Roig-Juñent, 2003: 44, **syn. nov.**

The type species of *Austroglyptolenus* Roig-Juñent, 2003, *A. mendozensis* Roig-Juñent, 2003, is a very close relative of the species treated below, *Dyscolus aequinoctialis* Chaudoir, 1850. The inclusion of *D. aequinoctialis* in the genus *Dyscolus* is supported by a phylogenetic analysis of the COI genetic marker (Moret & Muriene 2021, Fig. 2, SUM 193-18, under the name *Dyscolus subviolaceus*). *Austroglyptolenus* is therefore considered a junior synonym of *Dyscolus*.

Dyscolus aequinoctialis Chaudoir, 1850, **bona species**

(Fig. 1-3)

Dyscolus (Ophryodactylus) aequinoctialis Chaudoir, 1850: 382.

Colpodes aequinoctialis: Chaudoir, 1859: 339-340; Chaudoir, 1878: 339.

Platynus aequinoctialis: Whitehead, 1973: 188 (lectotype designation).

Dyscolus aequinoctialis: Moret, 1990: 198.

Dyscolus subviolaceus (Chaudoir, 1842): Perrault, 1990: 452 (synonymy).

Dyscolus subviolaceus: Arenas-Clavijo et al., 2021: 40.

Lectotype ♂, “Ex Musaeo Chaudoir”, without locality label, MNHN (Whitehead 1973: 188). According to the description, the type locality is in Colombia (“plaines de la Colombie”, Chaudoir, 1850: 383).

Dyscolus aequinoctialis is a conspicuous member of the riparian communities of the tropical montane forest in northern Andes: fully winged, 12-14.5 mm long, with metallic blue or bluish elytra (Fig. 1a). It was synonymized by Perrault (1990: 452) with *Dyscolus subviolaceus* (Chaudoir, 1842), a species described from Brazil (Chaudoir 1842: 834) and more precisely from Nova Friburgo and Cantagalo in the province of Rio de Janeiro (Chaudoir 1859: 340) (Fig. 1b). Apart from the type series, we have studied material of *D. subviolaceus* from São Leopoldo (Rio Grande do Sul, P. Buck leg., ex coll. Jacques Nègre, CPM). *D. subviolaceus* thus appears to belong to

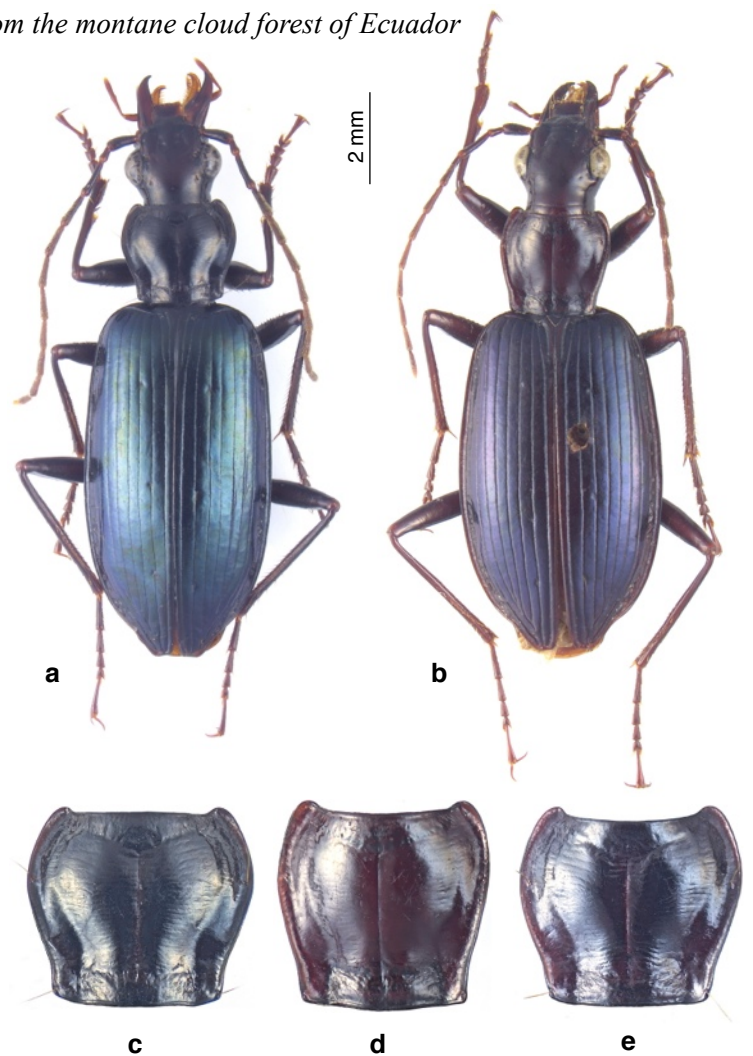


Fig. 1. Species group of *Dyscolus subviolaceus*, habitus and pronotum.

a, c. *D. aequinoctialis* Chaudoir, 1850, ♂, Otonga, Ecuador.

b, d. *D. subviolaceus* (Chaudoir, 1842), ♂, São Leopoldo, Brazil.

e. *D. mendozensis* (Roig-Juñent, 2003), ♀, Jujuy, Argentina.

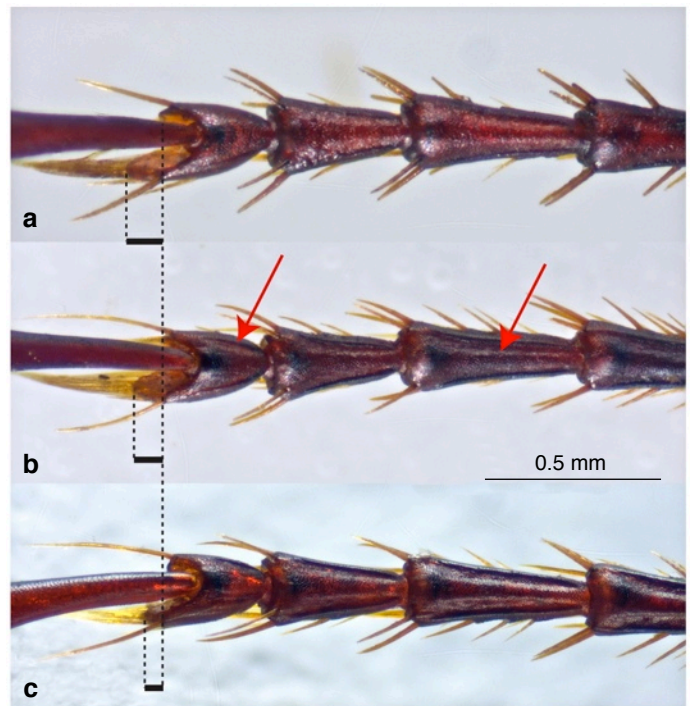


Fig. 2. Species group of *Dyscolus subviolaceus*, right metatarsus.

a. *D. aequinoctialis* Chaudoir, 1850, Otonga, Ecuador.

b. *D. subviolaceus* (Chaudoir, 1842), São Leopoldo, Brazil.

c. *D. mendozensis* (Roig-Juñent, 2003), Jujuy, Argentina.

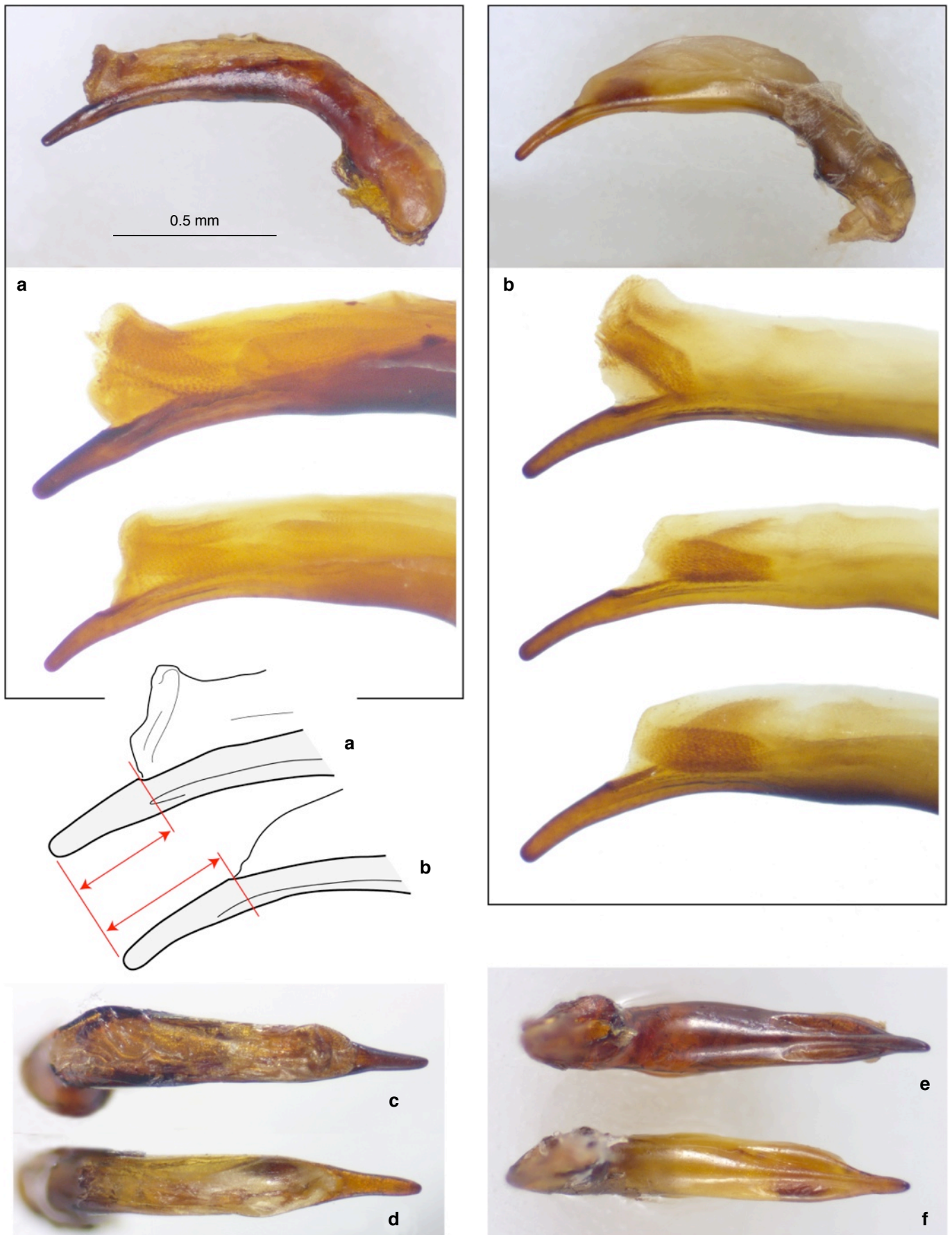


Fig. 3. Species group of *Dyscolus subviolaceus*, median lobe of the aedeagus.

a-b. Lateral view, with a magnified image of the distal half of several specimens). **c-d.** Dorsal view. **e-f.** Ventral view.

a, c & e. *D. subviolaceus* (Chaudoir, 1842), São Leopoldo, Brazil.

b, d & f. *D. aequinoctialis* Chaudoir, 1850, Otonga, Ecuador.

the fauna of the Mata Atlántica, quite distant from the tropical northern Andes. The only argument on which Perrault based this synonymy was the variability of the form of the pronotum and of the colour of the body, which supposedly overlapped between the two taxa. However, this statement was not based on precise measurements, and other characters, especially those of the male genitalia, were not taken in consideration. We think *Dyscolus aequinoctialis* must be reestablished as a valid species, based on the following character states.

Differential diagnosis

Colour. – In every studied population with more than 10 individuals, the upper surface of head and pronotum is black or piceous black in most of them; only a few individuals may have a brownish or reddish area on the vertex and on the sides of the pronotum (*subviolaceus*: integuments are never completely black, the colour varies from reddish-brown to dark brown). The elytra have a bright, metallic blue colour (Fig. 1a), less frequently greenish-blue or purplish-blue (*subviolaceus*: elytra submetallic purplish, sometimes quite dull, never bright blue).

Prothorax. – Pronotum more transverse (Fig. 1c), PL/PW = 0.84-0.87, arithmetic mean 0.85 (*subviolaceus*: PL/PW = 0.88-0.94, mean 0.91); sides strongly sinuate anterad hind angles (*subviolaceus*: sinuation more variable); lateral margins more explanate distally.

Elytra. – Sides subparallel (Fig. 1a), humeri strongly protruding (*subviolaceus*: sides slightly more oval, humeri more rounded); more elongate, EL/EW = 1.73-1.84, arithmetic mean 1.78 (*subviolaceus*: EL/EW = 1.62-1.73, mean 1.66).

Legs. – Metatarsi slightly narrower, almost carinate dorsally, dorsolateral sulci sharply engraved on articles 1-4 (Fig. 2b, red arrows) (*subviolaceus*: convex dorsally, dorsolateral sulci shallower, partly erased on MTT4, Fig. 2a). Outer apical lobe of MTT4 distinctly shorter (Fig. 2a-b, black dotted lines).

Male genitalia. – Median shaft bisinuate in lateral view, swollen at middle (*subviolaceus*: more evenly curved, almost straight at middle) (Fig. 3a-b); subapical carina of the ventral face of the median shaft narrower (Fig. 3e-f); apical blade thinner and longer (Fig. 3a-b, detail). Endophallus faintly squamose with a distinctly more sclerotized area, oval-shaped, on the left side of the subapical zone (Fig. 3b) (*subviolaceus*: endophallus evenly squamose, without any sclerotized area).

Habitat. – *Dyscolus aequinoctialis* is a riparian, fully winged species, widely distributed in the Andean humid montane forest between 1000-2500 m a.s.l.

Geographic distribution

- Colombia (Arenas-Clavijo et al., 2022: 40, as *Dyscolus subviolaceus*),
- Ecuador (Moret, 1990: 198),
- Peru (unpublished data).
- Specimens from Venezuela, the West Indies and Mexico, mentioned by Whitehead (1973: 188), may not be conspecific.
- Collection data from the Otonga Nature Reserve (Ecuador, Cotopaxi Province): Río Esmeraldas, 1800 m, 4.VII.2001, P. Moret leg. (CPM); Río Las Damas, 1800 m, 6.VII.2001, P. Moret leg. (CPM); 2000 m, 14.XII.1996, E. Tapia leg. (CAVT); VII-VIII.1998, I. Tapia leg. (QCAZ); Otonga, V.1998, A. Lara leg. (QCAZ); Río Esmeraldas, 0°25.455' S, 79°00.360' W, 1883 m, 13.VIII.2016; V. Crespo leg. (CPM).
- Other provinces in Ecuador:
 - Imbabura, Pichincha, Sucumbios, Napo, Chimborazo, Loja, Zamora-Chinchipe (data from CPM and QCAZ).

Taxonomic remarks. – In this study we have only examined two species-rank taxa of the *subviolaceus* group, those representing the populations of Brazil (Mata Atlántica) and of the equatorial Andes. A more complete revision is required to clarify the taxonomy of this supra-specific complex that is present in the Andes from Argentina to Colombia, in Venezuela, in the West Indies and in Mexico, with diversely differentiated populations that are probably the result of allopatric isolation events.

Dyscolus mendozensis (Roig-Juñent, 2003) **comb. nov.**, originally described as the type species of *Austrogyptolenus* Roig-Juñent, is

the available name for the southernmost lineage of the group. The type series of *D. mendozensis* contains material from the San Luis and Mendoza provinces in north-western Argentina (Roig-Juñent, 2003: 48). Additionally, we have studied specimens collected between 1950-1975 in the Argentinian provinces of Jujuy and Tucumán, and another one labelled “Macul / Santiago de Chile” (CPM, ex coll. Jacques Nègre). More material is needed to confirm the presence of this species in Chile. *Dyscolus mendozensis* shares characters both with *D. subviolaceus* and *D. aequinoctialis*. It has a brownish or reddish colour with faint metallic lustre on the elytra in most specimens, as *subviolaceus*, and on the other hand exhibits a transverse pronotum (Fig. 1e) and elongate elytra as *aequinoctialis*. Its most distinctive character is the reduced size of the outer lobe of MTT4, which is much shorter than in *D. subviolaceus* and *D. aequinoctialis* (Fig. 2c).

At the opposite, northern limit of the distribution area of the species group (Venezuela, West Indies, Mexico), specimens are externally very similar to *D. aequinoctialis*. An in-depth examination would be necessary to determine whether these populations are conspecific with *D. aequinoctialis* or not. Two names, currently treated as synonyms of *D. subviolaceus* (Chaudoir), might be available if needed: *Dyscolus silviae* (Zayas, 1988), described from Cuba, and *Dyscolus chalybicolor* (Chaudoir, 1878), described from Venezuela (see Lorenz 2019).

Diagnosis of the *Dyscolus subviolaceus* species group. – Fully winged; overall body length 11-15 mm; head and pronotum reddish-brown to piceous black, elytra metallic or submetallic with a purple or blue dominant colour (Fig. 1a-b); pronotum cordate, hind angles right-angled or slightly obtuse (Fig. 1, c-e); elytra elongate, striae sharply marked, third interval with 3 discal setae; fourth metatarsomere with a pair of strong subapical dorsolateral setae (Fig. 2); ventral face of the median lobe of the aedeagus with two subapical longitudinal grooves separated by a median smooth carina (Fig. 3, e-f); bursa copulatrix with a well-developed ring of luminal microtrichia. The position of this species group within the genus *Dyscolus* is supported by COI molecular evidence from a specimen of *D. aequinoctialis* collected in Zamora, southern Ecuador (Moret & Murienne 2021, Fig. 2, SUM 193-18, under the name *Dyscolus subviolaceus*).

Dyscolus liebherri sp. nov.

(Fig. 4a-c)

ZooBank : <https://zoobank.org/ABCD404E-6C00-4BBE-B70E-FB063361B0FA>

Holotype, ♂, Ecuador, Provincia Cotopaxi, Otonga, 79°00'W, 0°25'S, 1975 m, 11.VII.2007, trampa de luz, A.C. Proaño leg. // QCAZ-I 74256 (QCAZ).

Paratypes (4 ♂, 5 ♀)

- 1 ♂, Ecuador, Provincia Cotopaxi, Otonga, 1950 m, pyrethrum fogging, 3-5.VII.2001, P. Moret leg. (CPM, immature specimen);
- 2 ♂, Ecuador, Provincia Cotopaxi, Otonga, 1800 m, 20.X.2000, I.G. Tapia leg. (QCAZ, CPM);
- 2 ♀, Ecuador, Provincia Cotopaxi, La Otonga, 1800 m, 25.XII.1996, G. Onore leg. (QCAZ, CPM);
- 1 ♀, Ecuador, Provincia Cotopaxi, Otonga, 1975 m, 79°00.204'W, 0°25.166'S, 11.VII.2007, Fumigación, Proaño & Barragán leg. (QCAZ);
- 1 ♂, 2 ♀, Ecuador, Provincia Pichincha, vía Calacalí – Los Bancos, 2100 m, 23.VII.2008, E. Tapia leg. (CPMG, CPM).

Diagnostic combination. – *Dyscolus liebherri* sp. nov. can be distinguished from all congeners, except *D. shpeleyi* sp. nov., by the combination of fully winged condition, strongly constricted neck, almost rounded hind angles of pronotum, elytra dark brown with a metallic lustre, elytral striae punctate, discontinuous, third interval with 3 setae and asetose fifth tarsomere.

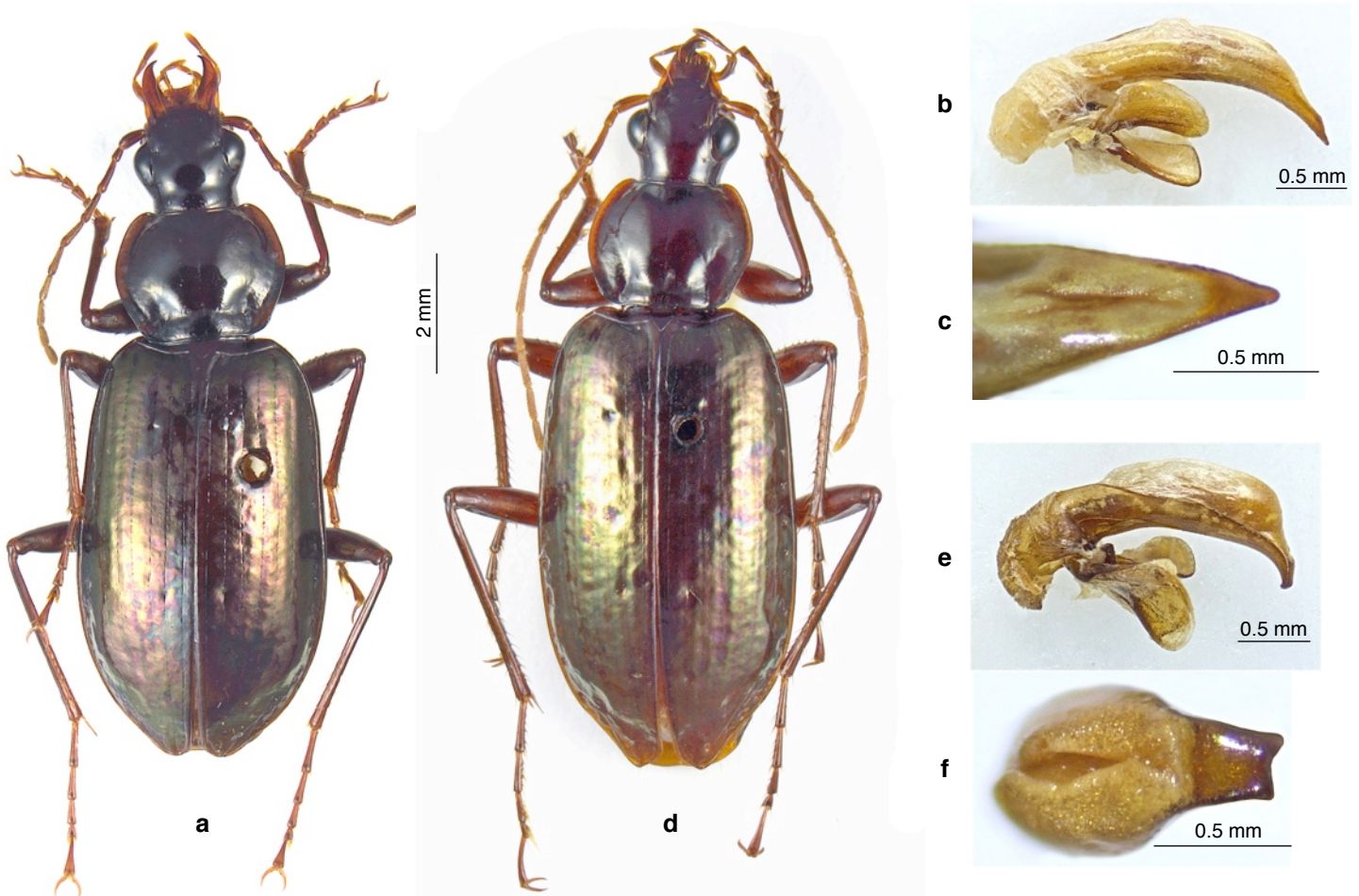


Fig. 4. *Dyscolus liebherri* sp. nov. and *D. shpeleyi* sp. nov.

a-c. *D. liebherri* sp. nov. a. Habitus, paratype, ♀, Otonga, Ecuador. b-c. Aedeagus. b. Lateral view. c. Apex of the median lobe in dorsal view. d-f. *D. shpeleyi* sp. nov. d. Habitus, holotype, ♂, Baeza, Ecuador. e-f. Aedeagus. e. Lateral view. f. Apex of the median lobe in dorsal view.

Among the fully winged members of *Dyscolus*, *D. lojaensis* Perrault, 1993, from southern Ecuador, is the species that is morphologically closest to *D. liebherri* sp. nov. and *D. shpeleyi* sp. nov. The overall facies is the same, but in *D. lojaensis* the elytra do not exhibit a metallic lustre, the posterior angles of the pronotum are completely rounded, the elytral striae are deeper and continuous, not punctate, and the fifth tarsomere bears ventral setae.

Description

Habitus. – Fig. 4a. Fully winged. Body length: 11.1-11.9 mm.

Colour. – Dorsal surface smooth and shiny; head black; pronotum piceous black with brownish lateral margins; elytra dark brown with a metallic lustre that varies from reddish to copperish or greenish. Femora dark brown with a reddish apex; tibiae and tarsi reddish brown to brownish; antennae and mouthparts reddish brown. Ventral surface testaceous.

Microsculpture, mesh pattern. – Head: transverse, obsolete on the disc, very faintly impressed in the basal area; pronotum: transverse, obsolete on the disc; elytra: transverse, consisting of very fine parallel lines, faintly impressed on the disc.

Head. – Convex, moderately broad; neck strongly constricted; eyes bulging, longer than the genae which are oblique, not convex; mandibles moderately long, acute; mentum tooth simple and acute. Antennae slender, with four antennomeres extending backward beyond the base of the pronotum; first antennomere 2.5 times longer than wide.

Prothorax. – Pronotum broad (PL / PW = 0.76-0.81), convex, as wide at base as at apex; basal and apical margins entirely bordered. Sides arcuate from middle to apex, straight in basal third, not sinuate; lateral margins broadly explanate; hind angles almost rounded; two pairs of lateral setae. Prosternal process not bordered.

Elytra. – Moderately elongate (EL / EW = 1.5-1.7), maximum width at 2/3 of their length; base slightly wider than the base of the pronotum, humeri broadly rounded. Striae thin and shallow, punctate, the first one continuous, the following interrupted between the punctures which extend longitudinally; intervals flat to subconvex; subapical sinuation evident; apex separately rounded. Third interval with 3 setae, the second one after the middle; umbilicate series of 18 to 20 setiferous punctures.

Abdomen. – Last visible abdominal ventrite with one pair (♂) or two pairs (♀) of setae along its apical margin, which is slightly emarginate.

Legs. – Slender; metafemora without setae on the anterior ridge and with two ventroposterior setae; metatarsomeres 1-3 dorsally smooth and convex, faintly sulcate externally, with no trace of an inner sulcus; fourth metatarsomere with a pair of strong subapical dorsolateral setae, apical lobes parallel, the outer lobe twice as big as the inner lobe. Fifth tarsomeres ventrally asetose.

Male genitalia. – Fig. 4b-c. Median lobe feebly and evenly arcuate throughout; apical blade acuminate, triangular in dorsal view; endophallus without sclerotized structures.

Female genitalia. – Unstudied.

Habitat. – Montane cloud forest, arboreal, between 1800-2100 m a.s.l.

Geographic distribution. – Southern end of the Chocó biogeographic region (Fagua & Ramsey 2019), on the western slope of the Cordillera Occidental. Only known from the Cotopaxi and Pichincha provinces in northern Ecuador.

Etymology. – This new species is named in honor of James K. Liebher, author of many important contributions to the knowledge of Carabidae.

***Dyscolus shpeleyi* sp. nov.**

(Fig. 4d-f)

ZooBank : <https://zoobank.org/1DE9C3A4-181D-4399-96AE-8CIA859A432F>

Holotype, ♂, Ecuador, Provincia Napo, Baeza, leaf litter in tree, swamp forest, 1859 m, 11.V.1982, #45, H. Frania & F. Sperling // “*Platymus 44*” (handwritten, G. Ball) // “*Dyscolus* sp. 2, P. Moret det. 1990 (UASM).

Paratype, 1 ♂, Ecuador, Provincia Sucumbíos, faldas Reventador, 1450 m, 4.XII.1992, G. Fletcher leg. (QCAZ).

Description

This species is externally very similar to *D. liebherri* sp. nov. Its description will therefore be differential and limited to diagnostic characters.

Habitus and colour. – Fig. 4d. Fully winged. Body length: 11.5–12.1 mm. Legs wholly testaceous, including femora (which are consistently darker than the tibiae in *D. liebherri* sp. nov.).

Head. – Neck narrower, eyes bigger, almost hemispherical; antennae longer and slenderer, the first antennomere 3.4 times longer than wide (2.5 in *D. liebherri* sp. nov.).

Prothorax. – Lateral margins of the pronotum narrower.

Elytra. – Separately projecting into a triangular apex with a blunt tip (rounded in *D. liebherri* sp. nov.). Elytral dorsal surface more irregular, with a well impressed transverse microsculpture; umbilicate series of only 16 setiferous punctures (18–20 in *D. liebherri* sp. nov.).

Legs. – Outer lobe of the fourth metatarsomere narrower and longer, three times bigger than the inner lobe (two times in *D. liebherri* sp. nov.).

Male genitalia. – Median lobe of the male genitalia quite different from *D. liebherri* sp. nov. (Fig. 4e-f), feebly arcuate basally, almost straight from the middle in lateral view, then abruptly bent ventrally at apex; apical blade hooked in lateral view, truncate and bifid in dorsal view.

Female genitalia. – Unstudied.

Habitat. – Montane cloud forest, arboreal, between 1450–1860 m a.s.l.

Geographic distribution. – Eastern slope of the Cordillera Oriental, only known from the Napo and Sucumbíos provinces in northern Ecuador. *Dyscolus liebherri* sp. nov. and *D. shpeleyi* sp. nov. seem to be vicariant species, one living on the western side, the other on the eastern side of the Andes, at the same latitude.

Etymology. – This new species is named in honor of Danny Shpeley, author with G.E. Ball of many important contributions to the knowledge of Carabidae.

***Dyscolus fabrefactus* sp. nov.**

(Fig. 5)

ZooBank : <https://zoobank.org/6F876D62-34A1-4767-8229-BD8B05E5F64C>

Holotype, ♂, Ecuador, Provincia Pichincha, Pahuma, 1720 m, 3.VI.1995, R. Montufar leg. (QCAZ).

Paratypes (12 ♂, 16 ♀)

- 1 ♂, 1 ♀, Ecuador, Provincia Cotopaxi, Otonga, 1800 m, Río Las Damas, berge, 3–5.VII.2001, P. Moret leg. (CPM);

- 2 ♂, Ecuador, Provincia Cotopaxi, Otonga, 1800 m, Río Esmeraldas, 3–5.VII.2001, P. Moret leg. (CPM);

- 1 ♂, 2 ♀, Ecuador, Provincia Cotopaxi, Las Pampas, 30.XI.1985, L. Coloma leg. (QCAZ);

- 1 ♀, Ecuador, Provincia Cotopaxi, El Corcovado, 25.X.1991, G. Onore leg. (CMNH);

- 1 ♀, Ecuador, Provincia Pichincha, Tandayapa, XI.1986, G. Onore leg. (QCAZ);

- 1 ♂, Ecuador, Provincia Pichincha, Tandayapa, XI.1986, F. Reyes leg. (QCAZ);

- 1 ♂, 3 ♀, Ecuador, Provincia Pichincha, Calacalí, 26.I.1989, M. Pallarés leg. (QCAZ, CPM);

- 1 ♂, Ecuador, Provincia Pichincha, Palmeras, 28.X.1988, L. Navarrete leg. (QCAZ);

- 1 ♂, Ecuador, Provincia Pichincha, Pahuma, 1800 m, 3.VI.1995, N.O. leg. (QCAZ);

- 1 ♀, Ecuador, Provincia Pichincha, Otongoro, 23.VI.1987, M. Gaybor. leg. (QCAZ);

- 2 ♀, Ecuador, Provincia Pichincha, Mindo, 78°46' W, 0°02' S, 1500 m, 2.II.2001, J. Barreiro leg. (QCAZ, CPM);

- 1 ♀, Ecuador, Provincia Pichincha, 10.4 km NW Nono, 0°3'28" S, 78°36'18" W, 2500 m, 26.X.1999, under stones near stream, Z.H. Falin leg., ECU1F99 021 // Loan from SEMC 10.11.00 // *Dyscolus* sp. det. G.E. Ball 2002 (UASM);

- 1 ♂, 3 ♀, Ecuador, Provincia Pichincha, tra San Juan e San José, 3.VII.2004, G. Caoduro leg. (CPMG, CGA);

- 1 ♂, Ecuador, Provincia Pichincha, Lloa, Río Blanco, 0°12'37.6"S, 78°40'01.0"W, 2470 m, 1.VIII.2006, G. Caoduro leg. (CPMG);

- 1 ♂, 1 ♀, Ecuador, Provincia Pichincha, Lloa, Río Blanco, 0°12'37.1"S, 78°40'01.9"W, 2410 m, 1.VIII.2006, P.M. Giachino leg. (CPMG, CPM);

- 1 ♀, Ecuador, Provincia Chimborazo, Pallatanga, 1800 m, VIII.1986, G. Onore leg. (QCAZ).

Diagnostic combination. – Body length > 12.5 mm, most frequently > 13 mm; pronotum cordiform; fourth metatarsomere longly bilobed, without subapical dorsolateral setae, the outer lobe 2 times longer than the inner lobe; gonocoxite 2 with two atrophied ensiform setae. This combination of characters is unique among the species of *Dyscolus* known to us.

Description

Habitus. – Fig. 5a. Fully winged. Body length: 12.6–13.9 mm.

Colour. – Body smooth and shiny, piceous-black; legs dark brown, femora apices reddish brown; palpi reddish brown, paler at apex of each article; antennomeres 1–2 reddish brown with testaceous apices; antennomeres 3–4 brownish with testaceous apices; antennomeres 5–11 reddish brown.

Microsculpture, mesh pattern. – Head: transverse, almost erased; pronotum: transverse, faintly impressed; elytra: narrowly transverse, shallowly impressed.

Head. – Broad, very convex, collar constriction conspicuous. Eyes bulging, genae flat, oblique, shorter than eyes. Mandibles robust, moderately long. Mentum tooth simple and acute. Antennae slightly longer than half of the body length.

Prothorax. – Pronotum slightly transverse (PL/PW = 0.92), cordiform. Hind angles right-angled with blunt or nearly rounded tops; anterior angles small and rounded; laterobasal impressions deeply impressed; lateral margin narrow, slightly reflexed; basal bead complete, apical bead interrupted at middle; two pairs of lateral setae. Prosternal process narrow with rounded lateral edges, not bordered.

Elytra. – Long and subparallel, fusiform at apex, humeri broadly rounded. Striae very thin and shallow, with an obsolete punctuation; third interval with 3, 4 or 5 setae inserted in small punctures; intervals flat to slightly convex. Subapical sinuation weak; apex separately rounded, or almost triangular with a blunt tip in some specimens. Umbilicate series comprising 17 to 19 setiferous punctures.

Abdomen. – Last visible abdominal ventrite with one pair (♂) or two pairs (♀) of setae along its apical margin (Fig. 5d).

Legs. – Slender, elongate. Metafemora without setae on the anterior ridge and with one or two ventroposterior setae. Dorsal face of all tarsi smooth and convex; fourth metatarsomere without subapical dorsolateral setae, apical lobes parallel, the outer lobe twice as long as the inner lobe. Fifth tarsomeres asetose ventrally.

Male genitalia. – Fig. 5b-c. Median lobe with a stout basal bulb and a long, feebly arcuate shaft; apex acuminate. Endophallus with a subapical ring-shaped squamose area, preceded by a patch of longer and slightly more sclerotized denticles on the dorsal side.

Female genitalia. – Gonocoxite 2 elongate, almost straight, concave dorsally, with two very small atrophied ensiform setae on the outer ridge and one small dorsolateral ensiform seta (Fig. 5d). Bursa copulatrix quite elongate, with a median band of luminal microtrichia covering the dorsal and lateral sides; ventral side with two reniform sclerotized areas. Spermatheca shorter than the spermathecal gland; a diverticulum precedes the spermatheca near the base of the seminal canal.

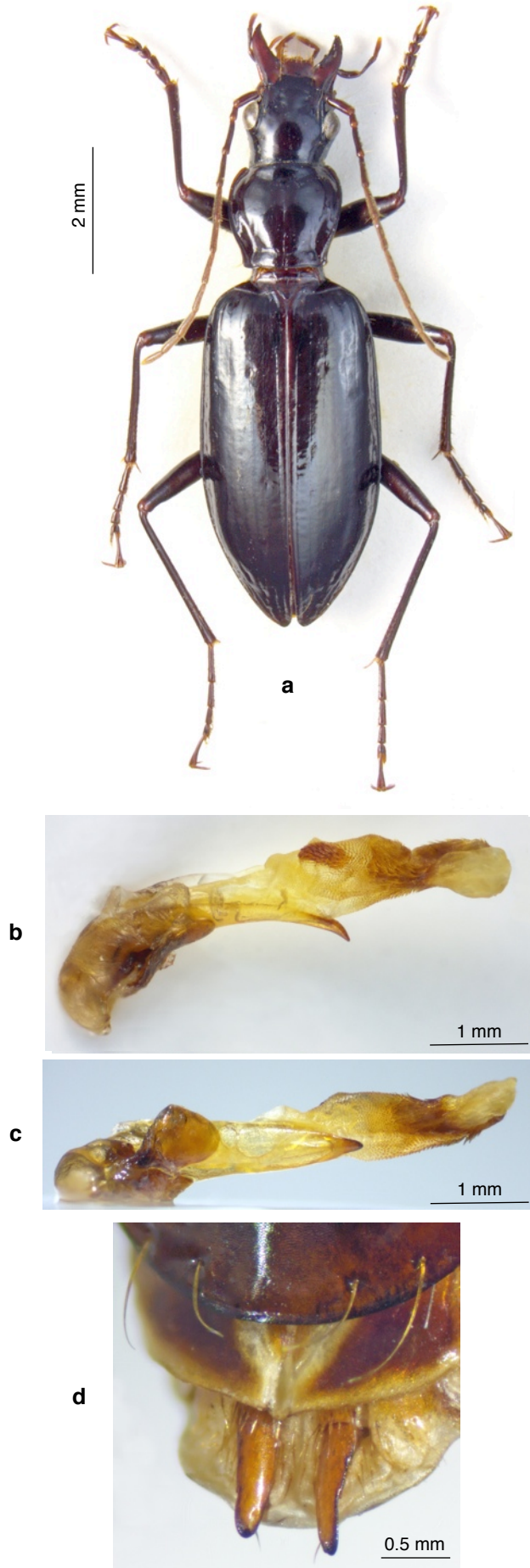


Fig. 5. *Dyscolus fabrefactus* sp. nov.

a-c. Paratype, ♂, Otonga, Ecuador a. Habitus. b-c. Aedeagus. b. Lateral. c. Ventral.

d. Paratype, ♀, Calacalí, Ecuador, last visible ventrite and gonocoxites.

Habitat. – Montane cloud forest between 1500-2500 m a.s.l., exclusively riparian along small forest streams.

Geographic distribution. – Western slope of the Cordillera Occidental, from the Pichincha to Chimborazo province (0°02' N to 2°01' S).

Etymology. – Latin adjective meaning “handsomely fashioned”.

Remarks. – Two specimens collected in the Carchi province, close to the border with Colombia (Tulcán-Maldonado road, 2420 m, 27.VII.1983, R. Davidson, CMNH), have a much more elongate pronotum with more protruding anterior angles. They probably belong to a different species, otherwise very close to *D. fabrefactus* sp. nov.

***Dyscolus osseus* sp. nov.**

(Fig. 6)

ZooBank : <https://zoobank.org/3EFAF719-F37E-47E8-8ED0-09FAFA775C46>

Holotype, ♂, Ecuador, Provincia Cotopaxi, Las Pampas, XI.1988, G. Onore leg. (QCAZ).

Paratypes (3 ♂, 7 ♀)

- 1 ♂, 1 ♀, Ecuador, Provincia Cotopaxi, Otonga, 2000 m, 7.VII.1998, I. Tapia leg. (photo 1: male tibiae tordus) (QCAZ);

- 1 ♂, 1 ♀, Ecuador, Provincia Cotopaxi, Otonga, 2000 m, 79°05'W, 0°27'S, 2.V.1997, C. Pérez leg. (QCAZ, CPM) (photo 2);

- 1 ♀, Ecuador, Provincia Cotopaxi, Las Pampas, XII.1984, G. Onore leg. (QCAZ);

- 1 ♀, Ecuador, Provincia Cotopaxi, Otonga, 1950 m, berge de ruisseau, 3-5.VII.2001, P. Moret leg. (CPM);

- 1 ♂, Ecuador, Provincia Cotopaxi, Otonga Nature Reserve, 1800-2200 m, 9.VII.2023, G. Allegro leg. (CGA);

- 1 ♀, Ecuador, Provincia Pichincha, Río Guajalito, 1200 m, 1.XII.1996, F. Guamán leg. (QCAZ);

- 1 ♀, Ecuador, Provincia Pichincha, Palmeras, 1800 m, 26.X.1991, T. Santander leg. (CPM);

- 1 ♀, Ecuador, Provincia Pichincha, Palmeras, 1800 m, 24.XI.1992, D. Sánchez leg. (CPM).

Diagnostic combination. – Wingless; pronotum oval, lacking the basal pair of lateral setae; elytral third interval asetose or with only one subapical seta; fourth metatarsomere longly bilobed, without subapical dorsolateral setae, the outer lobe twice as long as the inner lobe; endophallus with two sclerotized, squamose dorsal lobes. This combination of characters is unique among the species of *Dyscolus* known to us.

Description

Habitus. – Fig. 6a. Wingless. Body length: 9.9-11.9 mm.

Colour. – Body surface smooth, moderately shiny; head and pronotum piceous-black, elytra dark brown; femora dark brown with reddish brown apices; tibiae, tarsi and antennomeres 1-3 reddish brown; palpi and antennomeres 5-11 flavotestaceous.

Microsculpture, mesh pattern. – Head: slightly transverse, faintly impressed; pronotum: slightly transverse; elytra: narrow transverse meshes.

Head. – Moderately convex, with a broad vertex between the eyes, collar constriction dorsally distinct. Eyes bulging, genae slightly convex, oblique, shorter than eyes. Mandibles robust, moderately long. Mentum tooth simple and acute. Antennae longer than half of the body length, as long as the elytra.

Prothorax. – Pronotum large, convex, oval-shaped, transverse (PL/PW = 0.9), with a narrow base. Sides slightly and briefly sinuate posterad, hind angles obtuse and blunt; lateral margin broad, strongly reflexed; anterior angles broadly rounded. Laterobasal depressions moderately deep, not punctate; basal bead almost complete, apical bead only visible laterally. Anterior pair of lateral setae present, basal pair absent. Prosternal process narrow with rounded lateral edges, not bordered.

Elytra. – Subparallel, tightly locked together, narrow at base, humeri rounded. Striae deeply impressed, not punctate; third interval asetose or with one subapical seta; intervals strongly convex, subcarinate in a few cases. Subapical sinuation weak; apex separately triangular with an acute apical spine. Umbilicate series comprising 20 to 23 setiferous punctures.

Abdomen. – Last visible abdominal ventrite conspicuously emarginate in males, very weakly emarginate in females, with one pair (♂) or two pairs (♀) of setae along its apical margin.

Legs. – Long and slender. Metafemora without anterior and posterior setae. Dorsal face of all tarsi convex, externally sulcate on tarsomeres 1-3,

internally weakly sulcate only on tarsomere 1; fourth metatarsomere without subapical dorsolateral setae, apical lobes almost parallel, the outer lobe twice as long as the inner lobe. Fifth tarsomeres asetose ventrally.

Male genitalia. – Fig. 6b-c. Median lobe long, feebly arcuate; apex acuminate with a blunt tip. Endophallus with two sclerotized, squamose dorsal lobes.

Female genitalia. – Gonocoxite 2 elongate, almost straight, with 3 ensiform setae on the outer ridge. Bursa copulatrix elongate, with a dorsal pouch and a slightly sclerotized dorsal area, almost semi-circular in shape. A small diverticulum precedes the spermatheca near the base of the seminal canal.

Remarks. – Most specimens have the pronotal rugosities and the elytral striae filled with a hardened earthy crust, similar to the “environmental varnish” described for some *Glyptolenus* species (Will & Liebherr 2002).

Habitat. – Montane cloud forest between 1200-2000 m a.s.l., exclusively riparian along small forest streams.

Geographic distribution. – Western slope of the Cordillera Occidental in northern Ecuador, in the Pichincha and Cotopaxi provinces, from 0°01' N to 0°25' S.

Etymology. – Latin adjective meaning “bony”.

***Dyscolus spinicauda* sp. nov.**

(Fig. 7)

ZooBank : <https://zoobank.org/B765E306-2942-4BBA-9DD8-CF2010FEFC33F>

Holotype. ♀, Ecuador, Provincia Cotopaxi, Otonga, 2000 m, 79°00' W, 0°41'66" S, 27 February 2010, N. Muñoz leg. // QCAZ 256852 (QCAZ).

Paratype, 1 ♂, Ecuador, Provincia Sucumbíos, Santa Bárbara, 8 August 1996, G. Onore leg. (CPM).

The holotype lacks the left antenna and the right middle leg; the paratype is teneral with an overall pale colour.

Diagnostic combination. – Pronotum trapezoidal with rounded hind angles; anterior lateral seta of the pronotum absent; striae discontinuous; strong spine at the apex of the elytra; very long appendages; metafemora without any ventroposterior or anterior setae. This combination is unique, and at the present state of knowledge, *D. spinicauda* sp. nov. has no close relatives in Ecuador. *Dyscolus caulatus* Moret, 1993 shares with *D. spinicauda* sp. nov. a spinose elytral apex and foveate striae, but in *D. caulatus* the pronotum has a different shape, more elongate and with a narrow base, and the setation pattern is quite different (lateroposterior seta of the pronotum absent, 3^d elytral interval asetose).

Description

Habitus. – Fig. 7a. Fully winged. Body length: 14.2-14.8 mm.

Colour. – All the dorsal surface smooth and shiny, piceous black, with a metallic brownish-copperish lustre on the pronotum and the elytra; femora and tibiae reddish-brown; tarsi reddish, infuscated and almost black at apex; antennae and palpi testaceous. This description of the colour pattern is based on the holotype only, as the paratype is a teneral specimen.

Microsculpture, mesh pattern. – Head: slightly transverse on the vertex, more elongate and shallowly impressed on the sides; pronotum: superficial, transverse; elytra: thin transverse meshes, becoming almost isodiametric around the punctures.

Head. – Narrow, vertex and frons convex, sides of frons shallowly wrinkled anterad the anterior susocular seta. Eyes convex, moderately protruding, twice as long as genae which are feebly divergent, not convex. Mandibles long and robust, hardly arcuate. Antennae very long and slender, as long as two thirds of the body length, antennomere 3 as long as 1+2.

Prothorax. – Pronotum trapezoidal, markedly broader at base than at apex, sides straight in distal half, arcuate in basal half, with broad, flat lateral margins widening toward base; anterior angles rounded, slightly protruding in the holotype, not protruding in the paratype; hind angles rounded, laterobasal impressions deeply impressed; one pair of lateral setae (anterior

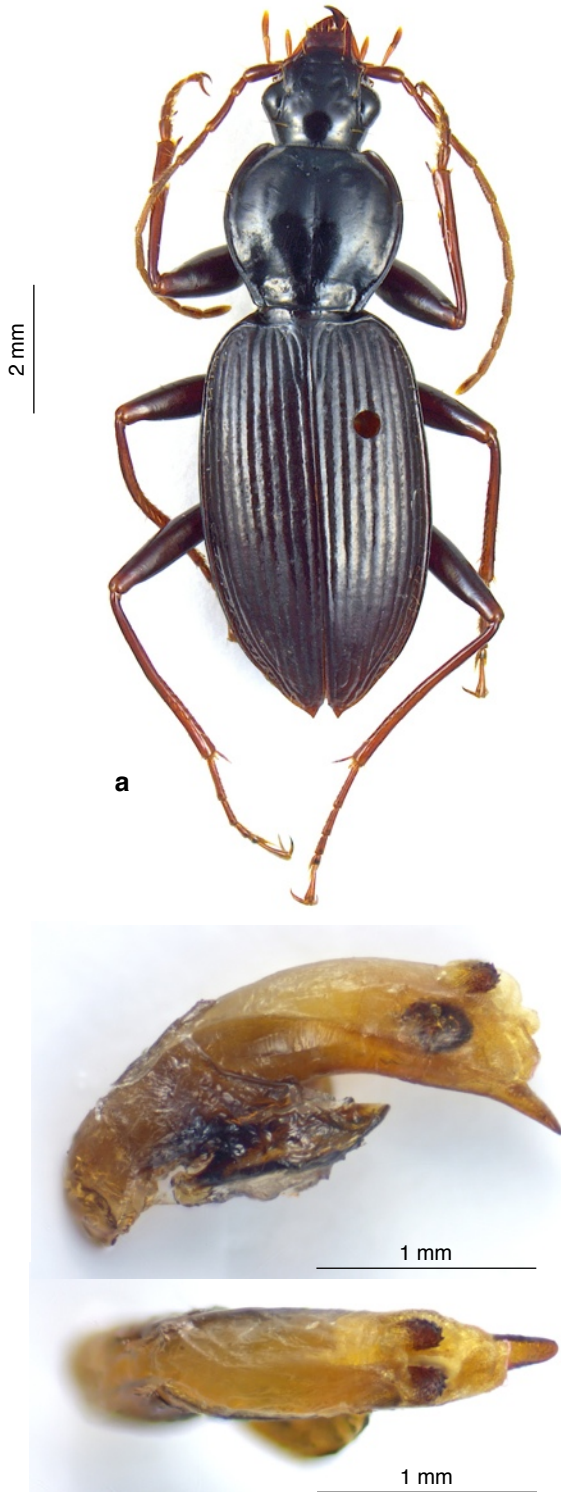


Fig. 6. *Dyscolus osseus* sp. nov., paratype, ♂, Otonga, Ecuador.
a. Habitus (with deformed left mesotibia).
b-c. Aedeagus. b. Lateral. c. Dorsal.

seta missing). Disc of the pronotum with transverse, shallow wrinkles; basal and apical margins entirely bordered.

Elytra. – Very convex, subparallel, elongate but much broader than pronotum; humeri broadly rounded; a strong protuberance in the seventh and eighth interval at 2/3 of the elytra length; subapical situation deep; apex prolonged into a long, acute and slightly arcuate spine in the extension of the third interval (Fig. 7b). Striae nearly foveate, discontinuous, impunctate, alternating deep dashes, 0.1–0.3 mm long, with smooth interruptions, 0.2–0.4 mm long; intervals flat; third interval with 3 setae, the first one at 1/5 of elytra length, the second one at 2/3, the third one near apex. Umbilicate series comprising 16 setiferous punctures.

Abdomen. – Last visible abdominal ventrite with two pairs (♂) or five pairs (♀) of setae along its apical margin (Fig. 7c).

Legs. – Long and slender; metafemora without any ventroposterior or anterior setae; dorsal face of all tarsi smooth and convex. Fourth metatarsomere: apical lobes moderately long, asymmetrical, the outer lobe less than 2 times longer than the inner lobe; subapical dorsolateral seta present on both apical lobes. Fifth tarsomeres asetose ventrally.

Male genitalia. – Teneral, not studied.

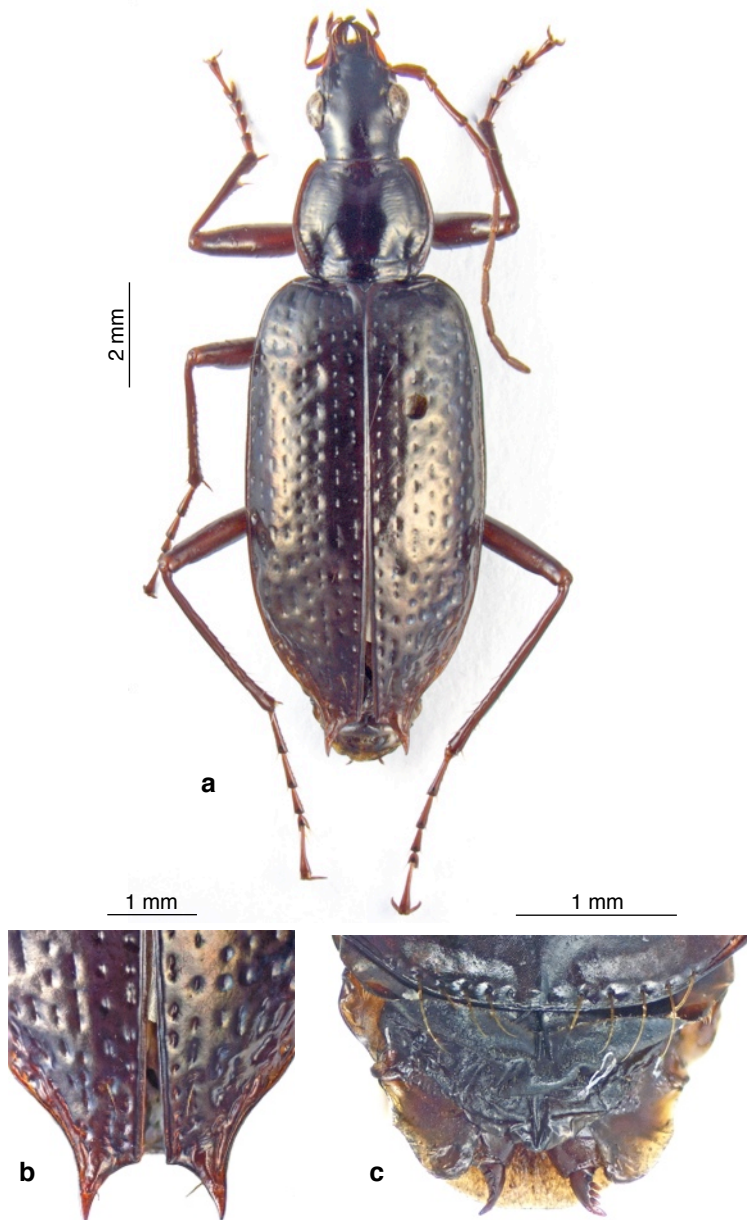


Fig. 7. *Dyscolus spinicauda* sp. nov., holotype, ♀, Otonga, Ecuador.
a. Habitus. b. Apex of the elytra. c. Last visible ventrite and gonocoxites.

Female genitalia. – Gonocoxite 2 strongly arcuate, with 3 ensiform setae on the outer ridge (Fig. 7d). The rest of the genitalic apparatus was not studied.

Habitat. – Montane cloud forest at around 2000–2500 m a.s.l. Biology unknown.

Geographic distribution. – Western side of the Cordillera Occidental and eastern side of the Eastern Cordillera, in northern Ecuador, from 0°39' N to 0°25' S.

Etymology. – Latin adjective meaning “with a caudal spine”.

Dyscolus variegatus sp. nov.

(Fig. 8)

ZooBank : <https://zoobank.org/61EAA70A-B553-4276-A6E2-0EE592D38A24>

Holotype. ♂, Ecuador, Provincia Cotopaxi, Otonga, 1900 m, 79°00' W, 00°25' S, 10 May 1998, J. Bravo leg. (QCAZ). The holotype and only known specimen lacks eight articles of the right antenna and the three last articles of the right protarsus.

Diagnostic combination. – *Dyscolus variegatus* sp. nov. is closely related to *D. variabilis* Chaudoir, 1837, widespread in Mexico (Whitehead 1973) and also known from Guatemala (D. Shpeley, personal communication). Differences are as following: *D. variegatus* sp. nov. has piceous-black to brownish integuments (dark brown to reddish-brown in *D. variabilis*, Fig. 8a); the hind angles of the pronotum are right-angled and sharp (slightly obtuse and blunt in *D. variabilis*); the apical bead of the pronotum is interrupted at middle (complete in *D. variabilis*); the elytral striae are shallow, punctate, with slightly convex intervals (striae deeper, continuous, not punctate, with flat intervals in *D. variabilis*); the lobes of the fourth metatarsomere are shorter in *D. variabilis* (Fig. 8d–e).

Description

Habitus. – Fig. 8b. Fully winged. Body length: 11.3 mm.

Colour. – Head, pronotum and ventral sclerites black, elytra coloured by a moderately bright, green-yellowish metallic reflection; legs entirely piceous-black; antennomeres 1–4 piceous-black with a reddish apex, 5–11 brownish; palpi piceous-black with a reddish apex. Upper surface of the body smooth and shiny.

Microsculpture, mesh pattern. – Head and pronotum: transverse, very faintly impressed to almost obsolete; elytra: long and narrow meshes, slightly more impressed.

Head. – Elongate; eyes big and convex, genae short and flat, hardly separated from the neck, collar constriction shallow. Mandibles large, curved at apex. Mentum tooth simple with a broad and blunt apex. Antennae moderately long, with four antennomeres extending backward beyond the base of the pronotum.

Prothorax. – Pronotum transverse (PL/PW = 0.8), cordiform. Hind angles sharp and right-angled, the setigerous pore close to it; anterior angles protruding, broadly rounded; laterobasal impressions deep, simple; lateral margins broad, reflexed in basal half, explanate in distal half; basal bead complete, apical bead interrupted at middle; two pairs of lateral setae. Shallow oblique or transverse wrinkles in the basal area and on the sides of the disc. Sides of the prosternal process distinctly bordered.

Elytra. – Subparallel in first 2/3, fusiform at apex, humeri broadly rounded. Striae thin and shallow, punctate, with short interruptions between the punctures which are small, scarcely broader than the stria itself; third interval with 3 setae; intervals slightly convex. Subapical situation weak; apex separately rounded. Umbilicate series of 19 to 20 setiferous punctures.

Abdomen. – Last visible abdominal ventrite evenly rounded apically, with one pair of setae along its apical margin.

Legs. – Slender; metafemora without setae on the anterior ridge and with two ventroposterior setae. Dorsal face of all tarsi almost flat, squamose, with

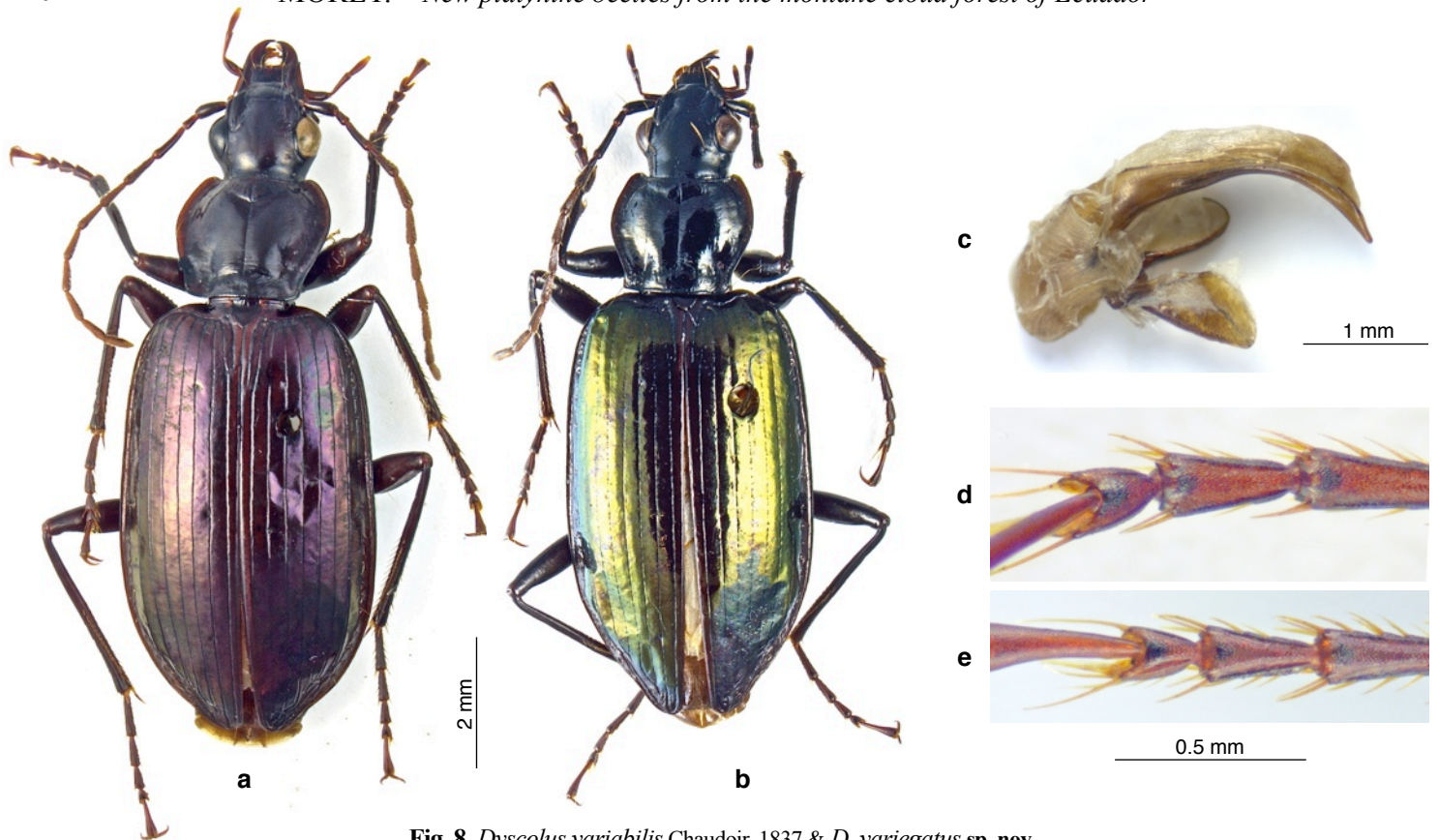


Fig. 8. *Dyscolus variabilis* Chaudoir, 1837 & *D. variegatus* sp. nov.

a, e. *D. variabilis* Chaudoir, 1837. **a.** Habitus, ♀, Toluca, Mexico. **e.** Detail of right metatarsus.

b, c-d. *D. variegatus* sp. nov., holotype, ♂, Otonga, Ecuador. **b.** Habitus. **c.** Aedeagus, lateral. **d.** Detail of right metatarsus, dorsal.

lateral sulci on both sides; fourth metatarsomere with a pair of subapical dorsolateral setae, apical lobes large, the outer lobe twice as long as the inner lobe (Fig. 8d). Fifth tarsomeres asetose ventrally.

Male genitalia. – Fig. 8c. Basal bulb of the median lobe moderately broad; first half of the median shaft almost straight, second half strongly arcuate in lateral view; apex acuminate, triangular in dorsal view. Endophallus without sclerotized structures.

Female genitalia. – Unknown.

Habitat. – Montane cloud forest at around 1900 m a.s.l. Biology unknown.

Geographic distribution. – Western slope of the Cordillera Occidental in northern Ecuador (Cotopaxi province).

Etymology. – Latin adjective meaning “varied”, in reference to the elytral colour, and in echo to the name of its closest relative, *D. variabilis*.

Glyptolenus Bates, 1878

Glyptolenus Bates, 1878: 595.

Glyptolenus Bates: Whitehead, 1974: 123; Perrault, 1991: 44; Liebherr, 1997: 90; Moret, 1999: 294; Will & Liebherr, 2002: 60; Moret & Murienne, 2020: 9.

Sculpturia Straneo: Will & Liebherr, 2002: 59 (synonymy).

Type species: *Glyptolenus rugicollis* Bates, 1878, by monotypy.

Taxonomic remarks. – *Glyptolenus* Bates, as redefined by Whitehead (1974: 123), comprises platynine species with anterior tibia dorsally canaliculate and male genitalia basally melanistic (especially the base of the parameres). Perrault added three characters to this diagnosis: submentum quadrisetose, fourth protarsomere bilobate, and bursa copulatrix without a dense band of lumenal microtrichia (Perrault 1991: 44). Furthermore, Perrault split *Glyptolenus* into two genera, based on the form and setation of the fourth

metatarsomere (MTT4). He left in *Glyptolenus* the species with a dense brush of setae covering the ventral surface of MTT4, and moved to a new genus, *Glyptolenoides*, the species with two parallel rows of fewer and stronger setae on the ventral face of the same article (Perrault 1991: 47). This separation, accepted in Moret (1999) and Will & Liebherr (2002), was based on only one character: the ventral setation of MTT4.

However, an ongoing integrative taxonomic study (Moret & Murienne 2020 and unpublished data) shows that the tarsal setation pattern is highly variable in *Glyptolenus* and that the two-rowed character state (Fig. 11b-c) coexists with the brush-like character state (Fig. 10b-c) in different species groups that are firmly supported by other characters, especially those of the female genitalia. The morphology of MTT4 thus appears to have been subject of convergent evolutions in several clades of the *Glyptolenus* complex. Consequently, including all the species exhibiting a two-rowed MTT4 setation pattern in the genus *Glyptolenoides* would make it polyphyletic. According to a preliminary phylogenetic analysis based on the COI marker (Moret & Murienne, 2020: 9), *Glyptolenoides* can only be accepted as a monophyletic taxon if it is limited to the type species, *G. azureus* (Chaudoir, 1859), and a few related species which, in addition to the two-rowed condition of MTT4, exhibit asymmetric tarsomeres (Fig. 14b-c) and a distinctive female genitalic pattern (Fig. 9f-g).

In view of the pending revision of these two genera, we thought it would be useful to describe several species that illustrate the morphological variability of *Glyptolenus* and *Glyptolenoides*. A preliminary diagnosis of both genera is given below. The undifferentiation of the spermatheca's basal duct (Fig. 9f-g) and the asymmetry of MTT1–3, due to an oblique cut of the outer side of the article (Fig. 14b-c), are the principal synapomorphies that characterize *Glyptolenoides*. Conversely, the dorsal sculpture of the tibiae, the melanistic base of the parameres and the transformation of tarsal trichoid sensilla into translucent, flattened

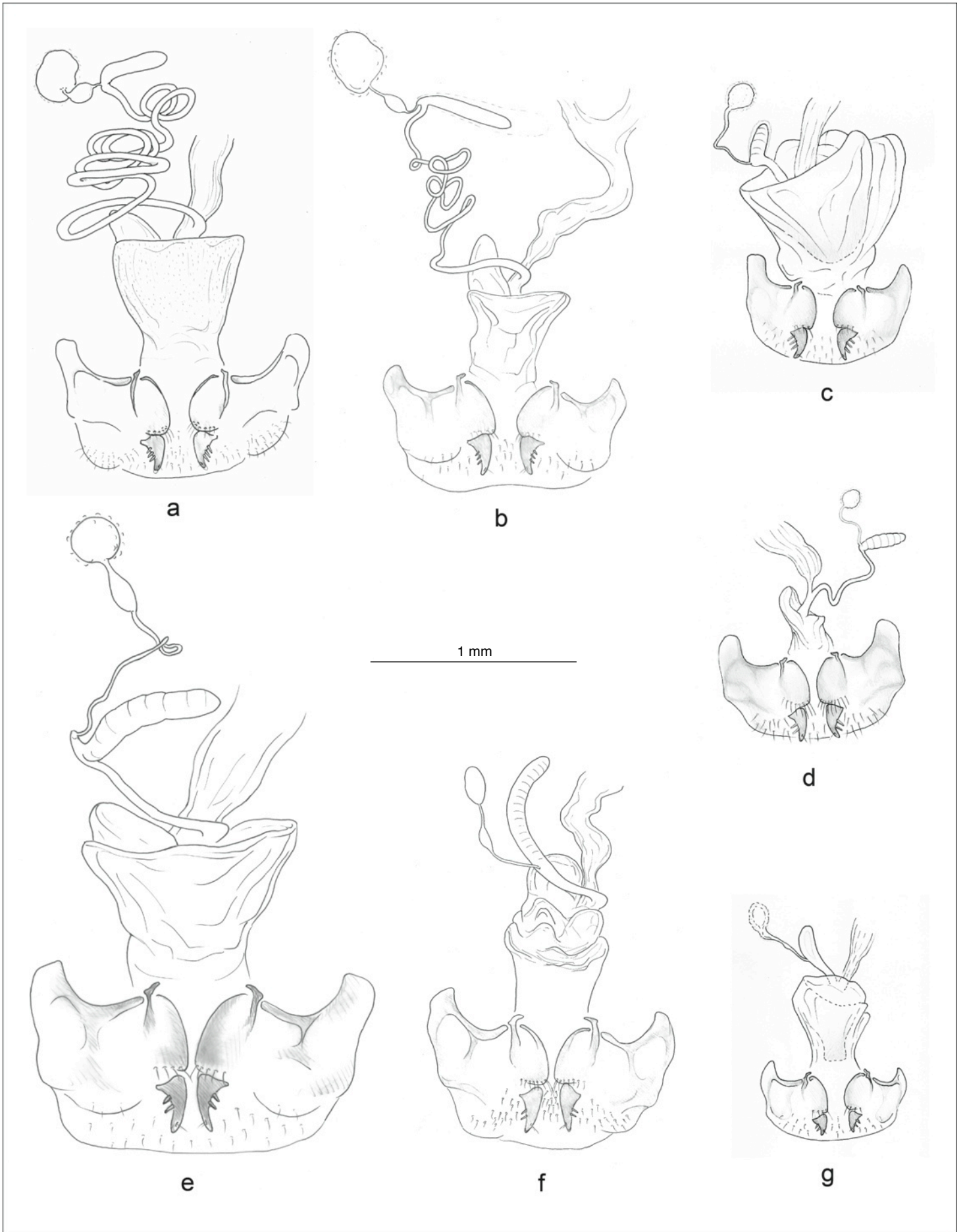


Fig. 9. Female genitalia in ventral view.

a. *Glyptolenus rugicollis* Bates, 1878. **b.** *D Glyptolenus calvus* sp. nov. **c.** *Glyptolenus arboricola* sp. nov. **d.** *Glyptolenus resbecqi* sp. nov. **e.** *Glyptolenus hector* sp. nov. **f.** *Glyptolenoides azureus* Chaudoir, 1859. **g.** *Glyptolenoides formicarius* sp. nov.

strips on the apical lobes of PT4 and MST4 (Deuve 2019) are characters shared by *Glyptolenus* and *Glyptolenoides*.

Diagnosis of *Glyptolenus* Bates, 1878. – Submentum quadrisetose. Pro- and mesotibiae dorsally canaliculate, or sulcate, or simply flattened. MTT4 variable, bilobed or not, ventrally with two rows of setae (Fig. 11b-c) or with a dense cover of unordered setae (Fig. 10b-c); apical lobes of PT4 and MST4 with long and more or less spatuliform hyaline phanera (Deuve 2019); apex of MTT4 with variable hyaline phanera on the outer lobe, and with or without hyaline setae on the inner lobe. Sides of MTT1–3 symmetric. Male genitalia diorchid; median lobe of the aedeagus and parameres basally melanistic (Fig. 10d-e and 12c-d). Bursa copulatrix conical or cylindrical, with or without luminal microtrichia (Fig. 9a-e); spermatheca elongate, tubular, rarely bipartite (*G. chalybaeus* (Dejean, 1831), see Liebherr, 1997: 94); basal duct of the spermatheca very variable in length, from shorter than the spermatheca (*G. arboricola* sp. nov., Fig. 9c) to ca. 10 times longer (*G. rugicollis* Bates, 1878, type species, Fig. 9a), but always distinct and forming an angle with the spermatheca (Fig. 9a-e).

N.B. The protibial and mesotibial extra furrow of *Glyptolenus* and *Glyptolenoides* is located on the dorsal face of the tibia (Perrault 1991, Deuve 2019). Referring to it as “external” (Whitehead 1974, Liebherr 1997, Will & Liebherr 2002) is less accurate. The canaliculate structure of this furrow (i.e., a sulcus delimited laterally by two sharp, elevated ridges) is more consistent on the mesotibiae than on the protibiae. In some species the sculpture of the dorsal face of the protibiae is almost completely obsolete (e.g. hereafter *Glyptolenus hector* sp. nov.), whereas the mesotibiae exhibit a distinct groove. The epithets canaliculate, sulcate and flattened correspond to different states of erosion of this character.

***Glyptolenus allegroi* sp. nov.**

(Fig. 10a-d)

ZooBank : <https://zoobank.org/BDC69FA4-8DB9-4B59-8E10-6973CE2F1CC2>

Holotype, ♂, Ecuador, Provincia Napo, near San Rafael, 1360 m, 0.105° S, 77.597° W, 28.X.2010, DRM 10.177, D.R. & W.P. Maddison leg. // PM503 NAP2 (QCAZ).

Paratype, 1 ♂, Ecuador, Provincia Napo, km 37 Tena-Baeza road, Cocodrilos, 1860 m, 21.VII.1998, P. Moret leg. // Ruisseau en forêt, berge humide (CPM).

Diagnostic combination. – *Glyptolenus allegroi* sp. nov. belongs to the species group of *G. rugicollis* Bates, 1878, which is the type species of the genus (Fig. 10g). The main distinctive characters of the *rugicollis* group are: presence of deep frontal pits; surface of pronotum rugose and/or wrinkled; elytral striae deeply impressed; elytra much wider than pronotum; elytral sides lacking preapical sinuation; all femora with an oval preapical depression on the upper side; sides of tarsomeres 1-4 parallel in all legs, MTT1 as long as MTT2+3+4, MTT4 with long apical lobes, lacking subapical dorsolateral setae (Fig. 10b-c); very long spermathecal duct (Fig. 9a-b). *Glyptolenus allegroi* sp. nov. differs from any other member of this group, except *Glyptolenus calvus* sp. nov., by the following set of characters: anterior supraocular setae absent; anterior pronotal setae absent; metathoracic wings vestigial; base of elytra narrow, humeri obliquely rounded; only one seta on the third interval.

Description

Habitus. – Fig. 10a. Brachypterous. Body length: 6.5-6.9 mm.

Colour. – Head, pronotum and elytra brownish to piceous black, with more reddish zones on frons, margins of the pronotum, sutura and lateral margins of the elytra; femora and tibiae reddish-brown; tarsi flavo-testaceous; antennae yellowish except antennomere 1 which is reddish;

palpi yellowish. Upper surface smooth on the head, rugose on the pronotum, irregular on the elytra.

Microsculpture, mesh pattern. – Head: very shallow, slightly transverse, in some parts almost isodiametric; pronotum: transverse, obsolete; elytra: long, narrow meshes, almost obsolete.

Head. – Broad; eyes big and convex, bordered by a deep supraocular furrow; genae oblique, almost flat, half as long as the eyes; collar constriction shallow. Vertex convex; frontal pits deep; anterior supraocular pair of setae absent. Mentum tooth simple, acutely triangular. Antennae moderately long, with three antennomeres extending backward beyond the base of the pronotum.

Prothorax. – Pronotum transverse (PL/PW = 0.85), cordiform. Surface entirely rugose and transversally wrinkled. Hind angles obtuse and almost sharp, the setigerous pore anterior to hind angle; sides subsinuate, almost straight in basal half, strongly arcuate in distal half; anterior angles small, obtuse, not protruding forwards. Laterobasal impressions shallow; lateral margins narrow; basal bead obsolete, apical bead interrupted at middle; laterobasal pair of setae present, anterior pair of setae absent. Sides of the prosternal process not bordered.

Meso- and metathorax. – Elytra broad, convex, oval-shaped, much wider than pronotum (EW/PW = 1.67). Base narrow, humeri obliquely rounded, apex fusiform; sides evenly arcuate in distal half, without preapical sinuation. Striae broad and deeply impressed, with very faint traces of punctation; intervals almost flat on the disc, convex basally and subconvex apically. Parascutellar setiferous pore present; third interval with only one seta near middle. Umbilicate series of 15 setiferous punctures, distributed 6-6-3. Metathoracic wings vestigial.

Abdomen. – Last visible abdominal ventrite evenly rounded apically, with one pair of setae along its apical margin (setation of females unknown).

Legs. – Relatively short. All femora with an oval preapical depression on the upper side. Metafemora asetose. Protibiae, mesotibiae and metatibiae dorsally canaliculate. Protarsi of males with adhesive spatulate setae only on the ventral face of the first article. Dorsal face of all tarsi with a median longitudinal furrow separate from the inner and outer sulci; sides of tarsomeres 1-4 parallel in all legs, MTT1 as long as MTT2+3+4 MTT4 with long, parallel apical lobes, lacking subapical dorsolateral setae, outer lobe twice as long as inner lobe (Fig. 10b-c). Ventral face of MTT4 with a dense cover of unordered setae and a pair of apical hyaline phanera. Fifth tarsomeres asetose ventrally.

Male genitalia. – Fig. 10d. Median lobe feebly arcuate; apex short, triangular with a blunt tip. Endophallus without sclerotized structures.

Female genitalia. – Unknown.

Remarks. – In both specimens the pronotal rugosities and the elytral striae were filled with a hardened earthy crust, similar to the “environmental varnish” described for other *Glyptolenus* species (Will & Liebherr 2002).

Habitat. – Montane cloud forest between 1300-1900 m a.s.l. The paratype was found on the edge of a small forest stream.

Geographic distribution. – Eastern (Amazonian) slope of the Cordillera Oriental in northern Ecuador (Napo province).

Etymology. – This new species is named in honor of our good friend and distinguished specialist of Carabidae, Gianni Allegro.

***Glyptolenus calvus* sp. nov.**

(Fig. 9b & 10e-f)

ZooBank : <https://zoobank.org/78BF1964-6621-4628-8BCC-24B7FA250ECE>

Holotype, ♂, Ecuador, Provincia Cotopaxi, Otonga, 2000 m, 79°00' W, 0°25' S, 11.VII.2007, A.C. Proaño leg. // QCAZ-I 74258 (QCAZ).

Paratype, 1 ♀, Ecuador, Provincia Manabi, Bachillero, 900 m, 80.21214° W, 0.76115° S, 22.VII.2007, A. Barragán leg. // QCAZ-I 251780 (QCAZ).

Diagnostic combination. – *Glyptolenus calvus* sp. nov. belongs to the species group of *G. rugicollis* Bates, where it stands

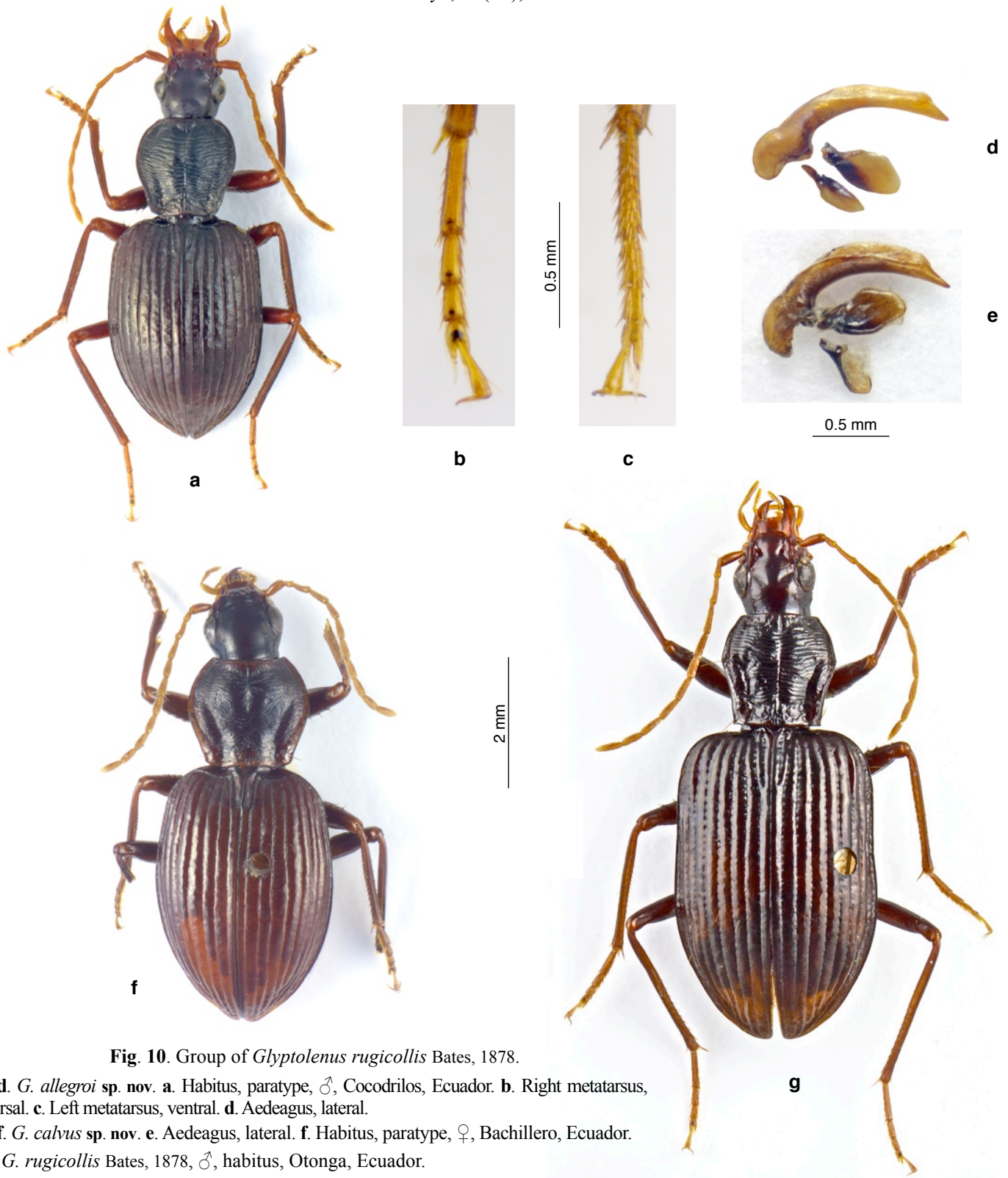


Fig. 10. Group of *Glyptolenus rugicollis* Bates, 1878.

a-d. *G. allegroi* sp. nov. **a.** Habitus, paratype, ♂, Cocodrilos, Ecuador. **b.** Right metatarsus, dorsal. **c.** Left metatarsus, ventral. **d.** Aedeagus, lateral.

e-f. *G. calvus* sp. nov. **e.** Aedeagus, lateral. **f.** Habitus, paratype, ♀, Bachillero, Ecuador.

g. *G. rugicollis* Bates, 1878, ♂, habitus, Otonga, Ecuador.

close to *G. allegroi* sp. nov. It shares with *G. allegroi* sp. nov. the reduction of the metathoracic wings and a reduced number of setae on the head (anterior lacking), the pronotum (anterior lacking) and the elytra (only one seta on interval 3). The following diagnosis is limited to differential characters; those not mentioned are identical in *G. allegroi* sp. nov. and *G. calvus* sp. nov.

Habitus. – Fig. 10f. Bigger and stouter, body length = 7.1–7.2 mm.

Microsculpture, mesh pattern. – Same pattern, but more distinctly impressed.

Head. – Vertex more convex, eyes less protruding. Frontal pits shallower. Margins of the eyes sulcate, not deeply grooved as in *G. allegroi* sp. nov. Antennae thicker.

Prothorax. – Pronotum more transverse, PL/PW = 0.88 (*G. allegroi* sp. nov.: 0.85), differently shaped. Apex emarginate with sharp, protruding anterior angles (*G. allegroi* sp. nov.: apical margin straight, anterior angles effaced, not protruding); lateral margin broader and more explanate distally. The wrinkles that cover the disc are shallower, more irregular and less transverse. Pore of the laterobasal seta in a recessed angle of the side of the pronotum (*G. allegroi* sp. nov.: in a protruding angle).

Elytra. – Intervals more convex. Umbilicate series of 15 setiferous punctures, distributed 6–9.

Abdomen. – Last visible abdominal ventrite with one pair of setae in males, as in *G. allegroi* sp. nov., and with two pairs of setae in females, the interior seta distant from margin.

Legs. – Protarsi of males with adhesive spatulate setae on the ventral face of articles 1-4 (*G. allegroi* sp. nov.: spatulate setae only on the first article).

Male genitalia. – Fig. 10e. Apex of the median lobe thinner and slightly longer.

Female genitalia. – Fig. 9b. Gonocoxite 2 arcuate, with 3 ensiform setae on the outer ridge. Bursa copulatrix short, glabrous, with a big basal lobe on the right side. Spermathecal duct very long, coiled, *ca.* seven times longer than the spermatheca itself; spermatheca straight, fusiform; spermathecal gland with a short duct entering at the base of the spermatheca.

Habitat. – Montane cloud forest (holotype) and coastal dry forest (paratype). These environments are very different, suggesting a broad ecological range. Biology unknown.

Geographic distribution. – Hills of the coastal range and western slope of the Cordillera Occidental, in northern Ecuador. *Glyptolenus calvus* sp. nov. and *G. allegroi* sp. nov. seem to be vicariant species, one living on the western side, the other on the eastern side of the Andes, at the same latitude.

Etymology. – Latin adjective meaning “bald”, in reference to the absence of the anterior supraocular pair of setae.

***Glyptolenus hector* sp. nov.**

(Fig. 9e & 11)

ZooBank : <https://zoobank.org/1A3F13F3-473D-4F94-9244-3A5CC61DBC9E>

Holotype, ♂, Ecuador, Provincia Pichincha, La Victoria, 79.063336°W, 0.47747°S, 2104 m, 1.V.2003, I.G. Tapia leg. // QCAZ-I 74244 (QCAZ).

Paratypes (7 ♂, 9 ♀)

- 1 ♀, Ecuador, Provincia Cotopaxi, Otonga, 1950 m, Rotten log in forest, 3-5.VII.2001, P. Moret leg. (immature specimen) (CPM);
- 1 ♂, Ecuador, Provincia Cotopaxi, San Francisco de las Pampas, 1300-1500 m, II.1993, Num. mag. 1406, L. Bartolozzi leg. (MZUF);
- 1 ♀, Ecuador, Provincia Cotopaxi, Otonga, 2000 m, 7.VII.1998, I. Tapia leg. (QCAZ);
- 1 ♂, Ecuador, Provincia Cotopaxi, Otonga, 2000 m, 7.VII.1998, I. Tapia leg. (QCAZ);
- 1 ♂, 1 ♀, Ecuador, Provincia Cotopaxi, Las Pampas, Bosque Integral Otonga, 11-12.VII.2007, W. Rossi leg. (CPM);
- 1 ♀, Ecuador, Provincia Cotopaxi, Otonga Nature Reserve, 1800-2200 m, 9.VII.2023, G. Allegro leg. (CGA);
- 1 ♀, Ecuador, Provincia Pichincha, Tandayapa, Bellavista Lodge, 0°0'56.6"S, 78°40'49.1"W, 2250 m, 2.XI.2015, epiphytes fogging, P. Moret leg. (CPM);
- 1 ♂, Ecuador, Provincia Pichincha, Tandayapa, Bellavista Lodge, 0°0'56.6S, 78°40'49.1"W; 2250 m, 2.XI.2015, epiphytes fogging, P. Moret leg. // Voucher PM 081-04 (CPM);
- 1 ♂, Ecuador, Provincia Pichincha, La Victoria, 79.063336°W, 0.47747°S, 2104 m, 1.V.2003, I.G. Tapia leg. // QCAZ-I 74260 (CPM);
- 1 ♀, Ecuador, Provincia Pichincha, W. Chiriboga, old road Quito – Santo Domingo, rotting palm fronds, 2164-2286 m, 10.VI.1982, # 111 // Ecuador Exp. 1982, H.E. Frania leg. // “*Platynus* sp. (*Cyrtolaus*-like)” G.E. Ball 2002 (UASM);
- 1 ♀, 1 ♂, Ecuador, Provincia Pichincha, Nanegalito, 12 km S, Bellavista Nature Reserve, 0°0'54"S, 78°40'56"W, 2200 m, 28.X.1999, ECU1F99 035, pyrethrum fogging fungusy log, Z.H. Falin leg. // Loan from SEMC 10.11.00 (UASM);
- 2 ♀, Ecuador, Provincia Pichincha, vía Calacalí–Los Bancos, 2100 m, 23.VII.2008, E. Tapia leg. (CGA, CPMG);
- 1 ♂, Ecuador, Provincia Imbabura, Los Cedros, 78.46760°W, 0.18500°S, 1300 m, 17.XII.2005, A. Rubio leg. // QCAZ-I 12725 (QCAZ).

Diagnostic combination. – Large body size; cychroid head with very long mandibles and elongate mouthparts; lateral margins of pronotum broad, explanate and reflexed (Fig. 11a). Dorsal sculpture of the tibiae obsolete (protibiae) or blunt

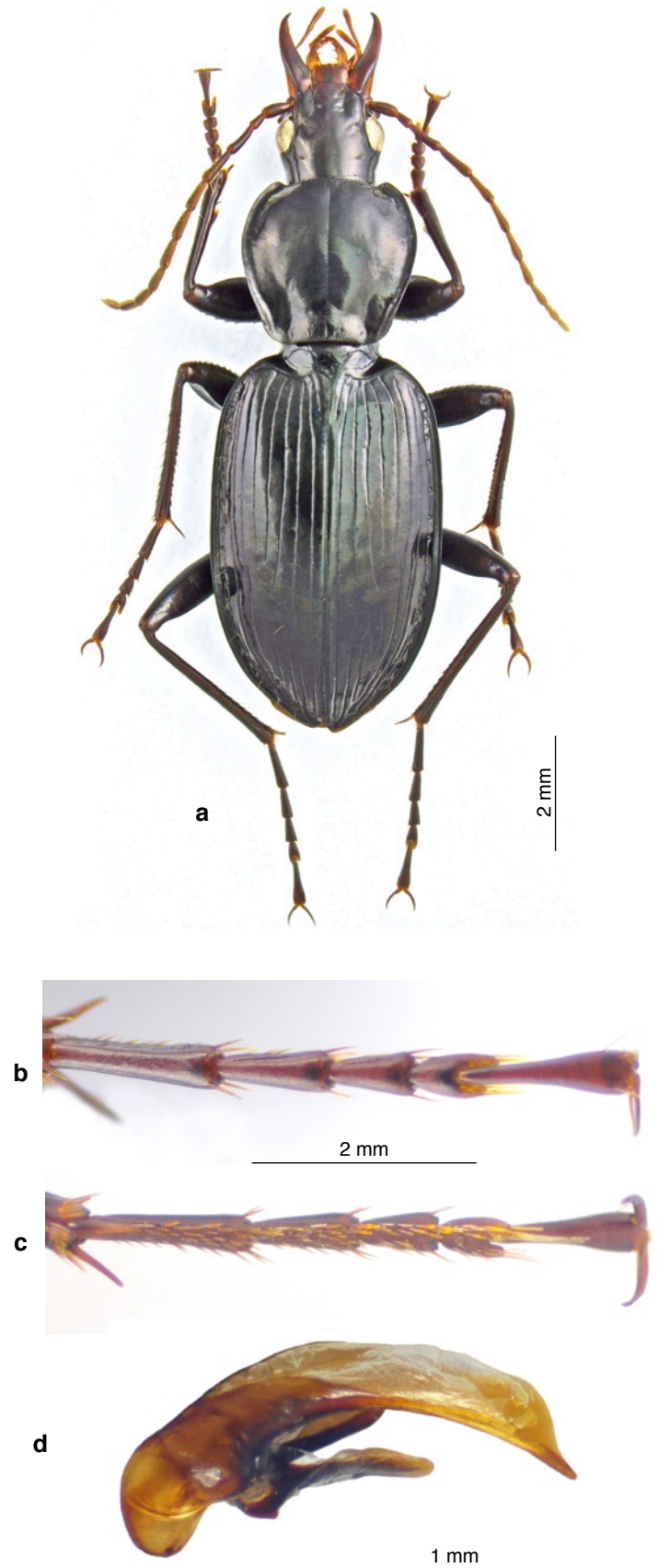


Fig. 11. *Glyptolenus hector* sp. nov.

- a.** Habitus, paratype, ♂, San Francisco de las Pampas, Ecuador.
b-c. Right metatarsus. **b.** Dorsal. **c.** Ventral. **d.** Aedeagus, lateral.

(mesotibiae). MTT1 shorter than MTT2+3 (Fig. 11b). MTT4 bilobate, its ventral face with two clusters of numerous unordered setae (Fig. 11c). Spermathecal duct as long as the spermatheca; duct of the spermathecal gland inserted at the tip of a small diverticulum (Fig. 9e).

Description

Habitus. – Fig. 11a. Brachypterous. Body length: 11.4–13.1 mm.

Colour. – Head, pronotum and elytra black or piceous black, pronotum and elytra with a faint spectral iridescence; femora and tibiae dark brown, tarsi reddish-brown; antennomeres 1–3 reddish basally and dark brown distally, 4–11 testaceous; palpi reddish. Upper surface of the body smooth and shiny.

Microsculpture, mesh pattern. – Head: slightly transverse basally, more or less isodiametric near the anterior setae; pronotum: obsolete; elytra: obsolete.

Head. – Elongate, cychroid; frons flat, vertex convex. Eyes large, moderately convex; genae slightly convex. Frontal furrows shallow. Labrum apically bisinuate. Mandibles very long (as long as the head measured from collar constriction to clypeus apex), almost straight, briefly curved and acute at apex. Lacinia and palpi thin and elongate. Mentum tooth simple, acute, with a well impressed marginal bead. Antennae relatively short, with a little more than two antennomeres extending backward beyond the base of the pronotum.

Prothorax. – Pronotum slightly transverse (PL/PW = 0.92); hind angles completely rounded; sides almost straight in basal third, arcuate at middle and in the apical third; anterior angles rounded, weakly protruding. Lateral margins broad, explanate and reflexed throughout; basal bead almost completely erased, apical bead obsolete medially. Laterobasal impressions deep. Two pairs of lateral setae; basolateral setae slightly anterior to angle. Sides of the prosternal process smooth, not bordered.

Meso- and metathorax. – Elytra oval-shaped, fusiform at apex; base narrow, basal bead strongly arcuate, humeri reduced and rounded. Subapical sinuation very shallow, elytral margin almost straight before apex. Striae thin, well impressed throughout, with very faint traces of punctation; intervals flat on most parts of the elytra, depressed near apex. Parascutellar setiferous pore present; third interval with 2 or 3 small setiferous punctures: the first at basal fifth or fourth (sometimes absent on one elytron or on both), the second just before the middle or at middle, the third just after the middle or at apical third. Umbilicate series of 18 to 20 setiferous punctures. Metathoracic wings vestigial, reduced to 2 mm long narrow strips.

Abdomen. – Last visible abdominal ventrite evenly rounded apically, with one pair (♂) or two pairs (♀) of setae along its apical margin.

Legs. – Robust, moderately long; metafemora without setae on the anterior ridge and with one ventroposterior seta. Dorsal face of protibiae vaguely depressed, of mesotibiae bluntly sulcate. Dorsal face of all tarsi convex, slightly squamose and bisulcate. MTT1 shorter than MTT2+3. Apex of PT4, MST4 and MTT4 bilobate; apical lobes of PT4 and MST4 with spatuliform hyaline phanera; apex of MTT4 asymmetrically bilobate, with a pair of hyaline ventroapical setae; ventral face of MTT4 with two clusters of numerous unordered setae (Fig. 11b-c). Fifth tarsomeres asetose ventrally.

Male genitalia. – Fig. 11d. Median lobe moderately curved, apex very short, acuminate. Endophallus without sclerotized structures.

Female genitalia. – Fig. 9e. Gonocoxite 2 elongate, with 2 ensiform setae on the outer ridge. Bursa copulatrix conical, glabrous, with a basal lobe on the right side. Spermathecal duct as long as the spermatheca; spermatheca rather big, vermiform; spermathecal gland with a long duct entering at the base of the spermatheca at the tip of a small diverticulum.

Habitat. – Montane cloud forest between 1300–2250 m a.s.l. This species has been found on the forest ground in rotten, fungusy logs or in rotting palm fronds, and also by fogging epiphytes on mossy branches.

Geographic distribution. – Western slope of the Cordillera Occidental in northern Ecuador (Cotopaxi, Imbabura and Pichincha provinces).

Etymology. – This new species is dedicated to Hector Deysson (noun in apposition).

Glyptolenus arboricola sp. nov.

(Fig. 9c & 12a-d)

ZooBank : <https://zoobank.org/CD084CC2-6543-4EF0-B38C-04D95856E918>

Holotype, ♂, Ecuador, Provincia Cotopaxi, Cantón Sigchos, Las Pampas, Bosque integral de Otonga, 11.VII.2007, C. Proaño & A. Barragán leg. (QCAZ).

Paratypes (18 ♂, 21 ♀)

- 4 ♀, 1 ♂, same data as the holotype (QCAZ);

- 2 ♀, 4 ♂, Ecuador, Provincia Cotopaxi, Otonga, 1950 m, arboreal, pyrethrum fogging, 3-5.VII.2001, P. Moret leg. (CPM);

- 5 ♂, 5 ♀: Ecuador, Cotopaxi, Otonga, 00°26.166'S, 79°00.204'W, 1975 m, 1.VI.2007, fumigación, C. Proaño & A. Barragán leg. (CGA);

- 1 ♀, Ecuador, Provincia Cotopaxi, Cantón Sigchos, Las Pampas, Bosque Integral Otonga, 11.VII.2007, C. Proaño & A. Barragán leg. // Laboulbeniales, n. 3138, Walter Rossi (CPM);

- 1 ♀, Ecuador, Provincia Cotopaxi, Cantón Sigchos, Las Pampas, Bosque integral Otonga, 2.VI.2007, C. Proaño & A. Barragán leg. // Laboulbeniales, n. 3139, Walter Rossi (CPM);

- 1 ♀, Ecuador, Provincia Cotopaxi, Cantón Sigchos, Las Pampas, Bosque integral Otonga, 2.VI.2007, C. Proaño & A. Barragán leg. (QCAZ);

- 2 ♀, Ecuador, Provincia Cotopaxi, Otonga, 0°25'07.1"S, 79°00'14.0"W, 2065 m, 21-23.VII.2006, P.M. Giachino leg. (CPMG);

- 1 ♂, Ecuador, Pichincha (*sic*), Otonga, 1870 m, 23.VII.2006, L. Picciau leg. (CLP);

- 1 ♂, Ecuador, Provincia Cotopaxi, La Otonga, 2000 m, ex: mosses, IX.1996, F. Nisch leg. (QCAZ);

- 1 ♂, Ecuador, Provincia Cotopaxi, Otonga, 2000 m, ex: mosses, 2.X.1996, F. Nisch leg. (QCAZ);

- 1 ♂: Ecuador, Prov. Cotopaxi, Otonga Nature Reserve, 1800–2200 m, 9.VII.2023, G. Allegro leg. (CGA);

- 3 ♂, 5 ♀: Ecuador, Cotopaxi, Otonga, 0°25.012'S, 79°00.140'W, 2065 m, 4.VI.2008, G. Onore leg. (CGA);

- 1 ♂, Ecuador, Provincia Pichincha, Tandayapa, Bellavista Lodge, WP81, 0°0'56.6"S, 78°40'49.1"W; 2250 m, 2.XI.2015, *Bromelia* fogging, P. Moret leg. // Voucher PM 081-06 (CPM);

- 1 ♂, Ecuador, Provincia Pichincha, Tandayapa, Bellavista Lodge, WP81, 0°0'56.6"S, 78°40'49.1"W; 2250 m, 2.XI.2015, epiphytes fogging, P. Moret leg. (CPM).

Diagnostic combination. – *G. arboricola* sp. nov. can be distinguished from all congeners, except *G. humicola* sp. nov., by the combination of the following characters: Pronotum elongate, slightly longer than wide; basolateral setae far anterior to angle, inserted at 1/3 of the pronotum length. Humeri effaced; basal bead of elytra obsolete between the scutellum and the third stria; third elytral interval asetose. Apex of MTT4 emarginate, without protruding ventral lobes; ventral face of MTT4 with two parallel rows of three setae each; MTT5 with two pairs of long ventral setae.

Description

Habitus. – Fig. 12a. Brachypterous. Body length: 6.0–6.6 mm.

Colour. – Head, pronotum and elytra reddish-brown, the head slightly lighter and more reddish in most specimens; femora reddish-brown to brownish, tibiae and tarsi flavo-testaceous to rufo-testaceous; antennae and palpi yellowish. Upper surface of the body smooth and shiny.

Microsculpture, mesh pattern. – Obsolete on head, pronotum and elytra.

Head. – Convex, relatively broad; eyes small, weakly convex, genae flat, half as long as the eyes; collar constriction slightly developed. Mandibles long, thin and acute. Mentum tooth simple. Antennae slender, moderately long, with four antennomeres extending backward beyond the base of the pronotum.

Prothorax. – Fig. 12b. Pronotum elongate, slightly longer than wide (PL/PW = 1.05). Hind angles completely rounded; sides evenly arcuate;

anterior angles obtuse, not protruding at all. Laterobasal impressions obsolete, reduced to a very shallow transverse concavity; lateral margins very narrow; basal and apical beads almost completely erased. Two pairs of lateral setae; basolateral setae far anterior to angle, inserted at 1/3 of the pronotum length. Sides of the prosternal process not bordered.

Meso- and metathorax. – Elytra ovoid; humeri effaced; basal bead very short, erased between the scutellum and the third stria. Striae thin and shallow, obsolete basally except the first one, faintly and shallowly punctate, with short interruptions between the punctures. All intervals flat on the disc, intervals 3-6 slightly depressed near apex. Parascutellar setiferous pore present; third interval asetose. Subapical sinuation very weak; apex separately and shortly rounded. Umbilicate series of 15 setiferous punctures (grouped 6-2-7 or 6-9). Metathoracic wings vestigial.

Abdomen. – Last visible abdominal ventrite evenly rounded apically, with one pair (♂) or two pairs (♀) of setae along its apical margin.

Legs. – Slender; metafemora with one or two setae on the anterior ridge and with two ventroposterior setae. Dorsal face of protibiae flattened apically, feebly sulcate basally; mesotibiae dorsally canaliculate; metatibiae dorsally carinate. Dorsal face of all tarsi bisulcate, sculpture partly erased. Apex of PT4 and MST4 bilobate; apex of MTT4 emarginate, without protruding ventral lobes. Apical lobes of PT4 and MST4 with long, relatively narrow hyaline phanera; apex of MTT4 with two long dorsolateral setae and one long hyaline ventrolateral seta on the outer side; ventral face of MTT4 with two parallel rows of three setae. Fifth tarsomeres with two pairs of long ventral setae.

Male genitalia. – Fig. 12c-d. Median lobe short and thick, evenly arcuate in lateral view; apex very short, broad, subtriangular in dorsal view with a blunt tip (almost rounded in specimens from Otonga). Endophallus without sclerotized structures.

Female genitalia. – Fig. 9c. Gonocoxite 2 arcuate, with 3 ensiform setae on the outer ridge. Bursa copulatrix conical, as long as wide, with a curved zone of small lumenal microtrichia. Spermathecal duct short; spermatheca small, fusiform; spermathecal gland's duct connected to the base of the spermatheca.

Habitat. – Montane cloud forest between 1800-2250 m a.s.l. Exclusively arboreal, common at Otonga in epiphytes (especially Bromelias) and mosses. This species was never collected by sieving leaf litter or in pitfall traps.

Geographic distribution. – Western slope of the Cordillera Occidental in northern Ecuador (Cotopaxi and Pichincha provinces).

Etymology. – Modern Latin adjective meaning “living in the trees”.

Glyptolenus humicola sp. nov.

(Fig. 12e-h)

ZooBank : <https://zoobank.org/914BESD6-3D70-49E7-AD4A-68E464418C90>

Holotype, ♂, Ecuador, Provincia Pichincha, 14.0 km NW Nono, 0°01'58"S, 78°39'19"W, 2000 m, 24.X.1999, montane forest litter 204b, R. Anderson leg. (CMNC).

Paratypes (6 ♂, 10 ♀).

- 1 ♀, Ecuador, Provincia Cotopaxi, Otonga, 1950 m, forest ground at night, 3-5.VII.2001, P. Moret leg. (CPM);

- 1 ♀, Ecuador, Provincia Cotopaxi, Otonga, 0°25'07.1"S, 79°00'14.0"W, 2065 m, 21-23.VII.2006, P.M. Giachino leg. (CPMG);

- 1 ♀, Ecuador, Provincia Cotopaxi, Otonga, foresta nublada, 2000 m, 23-30.VII.2004, G. Osella leg. (CPMG);

- 1 ♀, Ecuador, Provincia Cotopaxi, Otonga, 1800 m, 20.X.2000, I. Tapia leg. (QCAZ);

- 1 ♀, Ecuador, Provincia Cotopaxi, La Otonga, 2000 m, ex: mosses, IX.1996, F. Nisch leg. (QCAZ);

- 1 ♀, Ecuador, Cotopaxi, San Francisco de las Pampas, Otonga, 2000 m, 29.IV.2014, O. Maioglio leg. (CGA);

- 1 ♂, 1 ♀, Ecuador, Cotopaxi, San Francisco de las Pampas, Otonga, 2000 m, 5.V.2014, O. Maioglio leg. (CGA);

- 2 ♂: Ecuador, Cotopaxi, Otonga, 0°25.012'S, 79°00.140'W, 2065 m, 4.VI.2008, G. Onore leg. (CGA);

- 2 ♂: Ecuador, Cotopaxi, Otonga, 0°26.166'S, 79°00.204'W, 1975 m, 1.VI.2007, fumigación, C. Proaño & A. Barragán leg. (CGA);

- 1 ♀, Ecuador, Provincia Pichincha, Nanegalito, 12 km S, Bellavista Nature Reserve, 0°0'54"S, 78°40'56"W, 2200 m, 28.X.1999, ECU1F99 069, ex yellow pan trap, S. Marshall leg. // Loan from SEMC 10.11.00 (UASM);

- 1 ♀, Ecuador, Provincia Pichincha, Bellavista Reserve, 12 km S Nanegalito, 0°00'32"S, 78°41'08"W, 2150 m, 30.X.1999, 215e, cloud forest litter, R. Anderson leg. // Loan from CMNC 26.02.02 // “Lachnophorini gen.? G.E. Ball 2002” (UASM);

- 1 ♂, Ecuador, Provincia Pichincha, Bellavista Reserve, 12 km S Nanegalito, 0°00'32"S, 78°41'08"W, 2150 m, 30.X.1999, 215c, cloud forest litter, R. Anderson leg. // Loan from CMNC 26.02.02 (UASM);

- 1 ♀, Ecuador, Provincia Pichincha, Bellavista Reserve, Ridge trail, 12 km S Nanegalito, 0°00'54"S, 78°40'56"W, 2250 m, 28.X.1999, 211a, cloud forest litter, R. Anderson leg. // Loan from CMNC 26.02.02 (UASM);

- 1 ♂, Ecuador, Provincia Pichincha, Bellavista Reserve, Ridge trail, 12 km S Nanegalito, 0°00'54"S, 78°40'56"W, 2250 m, 28.X.1999, 211d, cloud forest litter, R. Anderson leg. // Loan from CMNC 26.02.02 (CPM).

Description

This species is externally very similar to *G. arboricola* sp. nov. Its description will therefore be differential and limited to diagnostic characters, the main ones being the absence of the pronotal lateroposterior pair of setae and the quite different form of the apex of the median lobe of the aedeagus.

Habitus. – Fig. 12e. Brachypterous. Body thinner and slightly smaller in average: 5.3-6.2 mm.

Colour. – Head, pronotum and elytra reddish-brown to brownish; legs entirely flavo-rufous to rufo-testaceous; antennae and palpi yellowish.

Microsculpture, mesh pattern. – Head: slightly transverse, very shallow; pronotum and elytra: transverse, almost obsolete.

Head. – Eyes smaller and less convex; genae nearly as long as the eyes (*G. arboricola* sp. nov.: half as long).

Pronotum. – Fig. 12f. More elongate (PL/PW = 1.09); basal and apical beads faintly impressed but visible; lateroposterior pair of setae absent.

Elytra. – Humeri more effaced; striae erased basally, including the first one; Subapical sinuation completely absent. Umbilicate series of 15 setiferous punctures (grouped 5-1-9 or 6-9).

Legs. – Protibiae and mesotibiae dorsally canaliculate; metatibiae dorsally carinate.

Male genitalia. – Fig. 12g-h. Median lobe thinner; first half of the median shaft strongly arcuate in lateral view, second half almost straight; apex very different, much longer, spatulate in dorsal view. Endophallus without sclerotized structures. The colour difference in the illustrated specimens (Fig. 12c-d and g-h) might be due, in the case of *G. arboricola* sp. nov., to the non-definitive chitinization of a teneral specimen.

Habitat. – Montane cloud forest between 1800-2250 m a.s.l. This species appears to be predominantly ground-dwelling, mainly in forest leaf litter, according to habitat information provided by the labels of the type specimens. Only two of them were collected by pyrethrum fogging on mossy branches.

Geographic distribution. – Western slope of the Cordillera Occidental in northern Ecuador (Cotopaxi and Pichincha provinces).

Etymology. – Modern Latin adjective meaning “living in or on the ground”.

Remarks. – Based on the sympatry of *G. arboricola* sp. nov. and *G. humicola* sp. nov. in the same localities (Otonga, Bellavista) and on their different ecological specialization, the former being strictly arboreal, the latter predominantly ground-dwelling, it can be hypothesised that they underwent in the same geographic area a speciation process based on ecological niche shift.

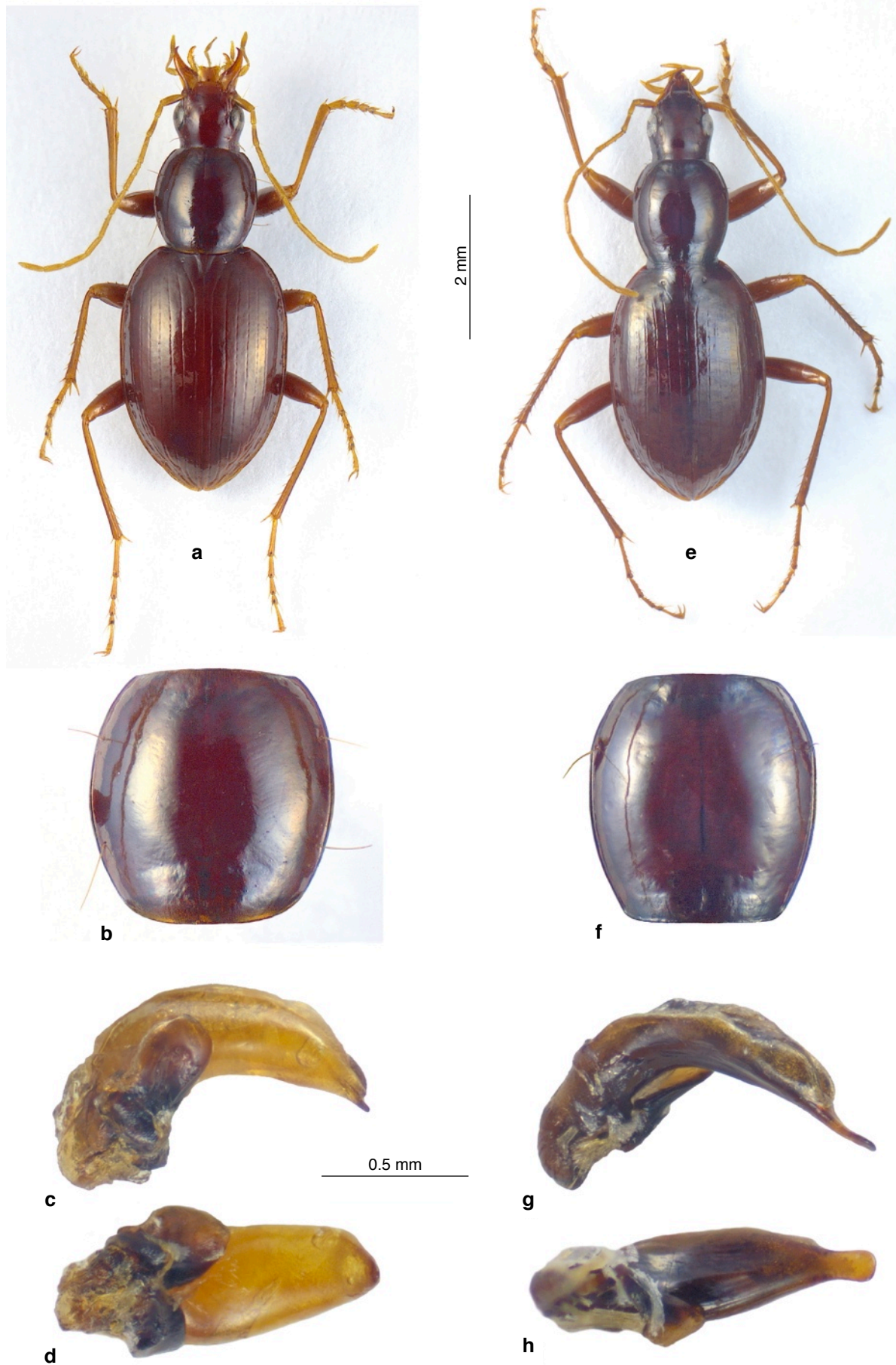


Fig. 12. *Glyptolenus arboricola* sp. nov. & *G. humicola* sp. nov.

a-d. *Glyptolenus arboricola* sp. nov., ♂ paratype, Otonga. a. Habitus. b. Pronotum. c-d. Genitalia. c. Lateral. d. Ventral.
 e-h. *Glyptolenus humicola* sp. nov., ♂ paratype, Bellavista. e. Habitus. f. Pronotum. g-h. Genitalia. g. Lateral. h. Ventral.

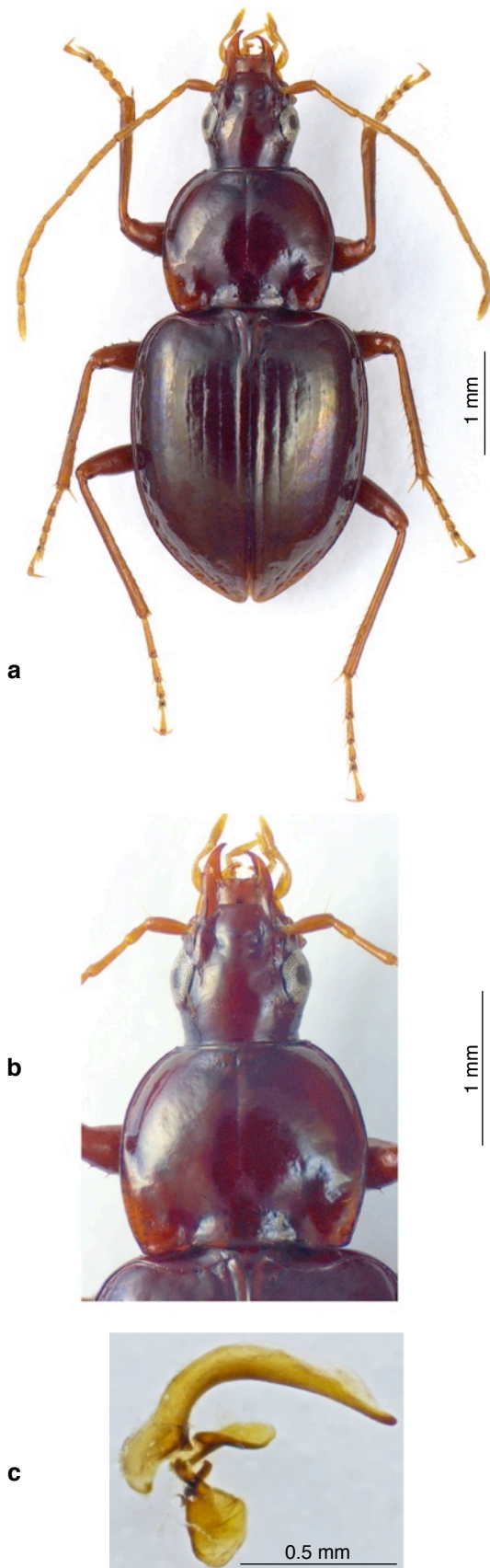


Fig. 13. *Glyptolenus resbecqi* sp. nov.

a. Habitus, paratype, ♂, Otonga, Ecuador. b. Detail of head and pronotum. c. Aedeagus, lateral.

***Glyptolenus resbecqi* sp. nov.**

(Fig. 9d & 13)

ZooBank : <https://zoobank.org/45BBD46B-B345-4661-818F-E88C77DD8E8E>

Holotype, ♂, Ecuador, Provincia Cotopaxi, Otonga, foresta nublada, 2000 m, 29.VII.2004, G. Osella leg. (QCAZ).

Paratypes (23 ♂, 15 ♀)

- 4 ♀, 6 ♂, Ecuador, Provincia Cotopaxi, Otonga, 1950 m, pyrethrum fogging, 3-5.VII.2001, P. Moret leg. (CPM);

- 1 ♀, 1 ♂, Ecuador, Pichincha (*sic*), Otonga, 1870 m, 23.VII.2006, L. Picciau leg. (CLP);

- 2 ♀, Ecuador, Provincia Cotopaxi, Otonga, 0°25'07.1"S, 79°00'14.0"W, 2065 m, 21-23.VII.2006, P.M. Giachino leg. (CPMG);

- 2 ♀, Ecuador, Provincia Cotopaxi, Otonga, foresta nublada, 2000 m, 23-30.VII.2004, G. Osella leg. (CPMG);

- 1 ♀, Ecuador, Provincia Cotopaxi, Otonga, 1800-2200 m, 29-31.VII.2004 // Vaglio lettiera, bosque nublado // C. Belló, B. Osella & M. Pogliano leg. (CPMG);

- 1 ♀, 4 ♂, Ecuador, Provincia Cotopaxi, Cantón Sigchos, Las Pampas, Bosque Integral de Otonga, 11.VII.2007, C. Proaño & A. Barragán leg. (QCAZ);

- 1 ♂, Ecuador, Provincia Cotopaxi, Otonga, 2000 m, 7.VII.1998, I. Tapia leg. (QCAZ);

- 10 ♂, 4 ♀: Ecuador, Cotopaxi, Otonga, 00°26.166'S, 79°00.204'W, 1975 m, 1.VI.2007, Fumigación, C. Proaño & A. Barragán leg. (CGA);

- 1 ♂: Ecuador, Prov. Cotopaxi, Otonga Nature Reserve, 1800-2200 m, 9.VII.2023, G. Allegro leg. (CGA).

Diagnostic combination. – Small size; brachypterous; habitus reminiscent of an Attelabidae, with a narrow head, broad rounded pronotum and short, broad-based elytra (Fig. 13a); lateroapical setae of pronotum absent, laterobasal setae missing in $\frac{3}{4}$ of specimens; umbilicate series of only 14 setiferous punctures; protibiae dorsally subcarinate, not distinctly canaliculate; apex of MTT4 shortly bilobate, without hyaline phanera.

Description

Habitus. – Fig. 13a. Brachypterous. Body length: 5.4-6.1 mm.

Colour. – Head, pronotum and elytra reddish-brown, with faint copperish reflections on the elytra; antennae and palpi flavo-testaceous; legs rufo-testaceous. Upper surface smooth and shiny.

Microsculpture, mesh pattern. – Head: slightly transverse, very shallow; pronotum: obsolete; elytra: transverse, almost obsolete.

Head. – Elongate and narrow (Fig. 13b); eyes large but weakly convex; genae flat, hardly separated from the neck; vertex convex, collar constriction obsolete dorsally. Mandibles moderately long, acute at apex. Mentum tooth simple, triangular. Antennae moderately long, with three antennomeres extending backward beyond the base of the pronotum.

Prothorax. – Pronotum markedly transverse (PL/PW = 0.84), rounded, much wider at base than at apex, widest at middle. Hind angles obtuse, almost rounded, forming a lobe that protrudes backwards; sides evenly arcuate throughout; anterior angles completely effaced. Laterobasal impressions short and deep; lateral margins explanate basally, then gradually narrowing; base not bordered, apical margin bordered by a narrow, blunt bead. Lateroapical setae absent; laterobasal setae missing in $\frac{3}{4}$ of specimens (18 out of 24), but a small pore is always present close to the hind angle. Sides of the prosternal process not bordered.

Meso- and metathorax. – Elytra very short (EL/EW = 1.15), much broader than pronotum (EW/PW = 1.42); base truncate with bulging humeri, apex fusiform, separately rounded at tip, with no trace of subapical sinuation. Striae thin, shallow and faintly punctate on the disc, becoming gradually obsolete basally and laterally, and more deeply impressed near apex; interval 1 convex on the disc, intervals 2 and 3 subconvex, the following ones flat; all intervals convex or subconvex near apex. Parascutellar setiferous pore present; third interval with 2 or 3 small setiferous punctures: the first at basal fourth, the second at middle

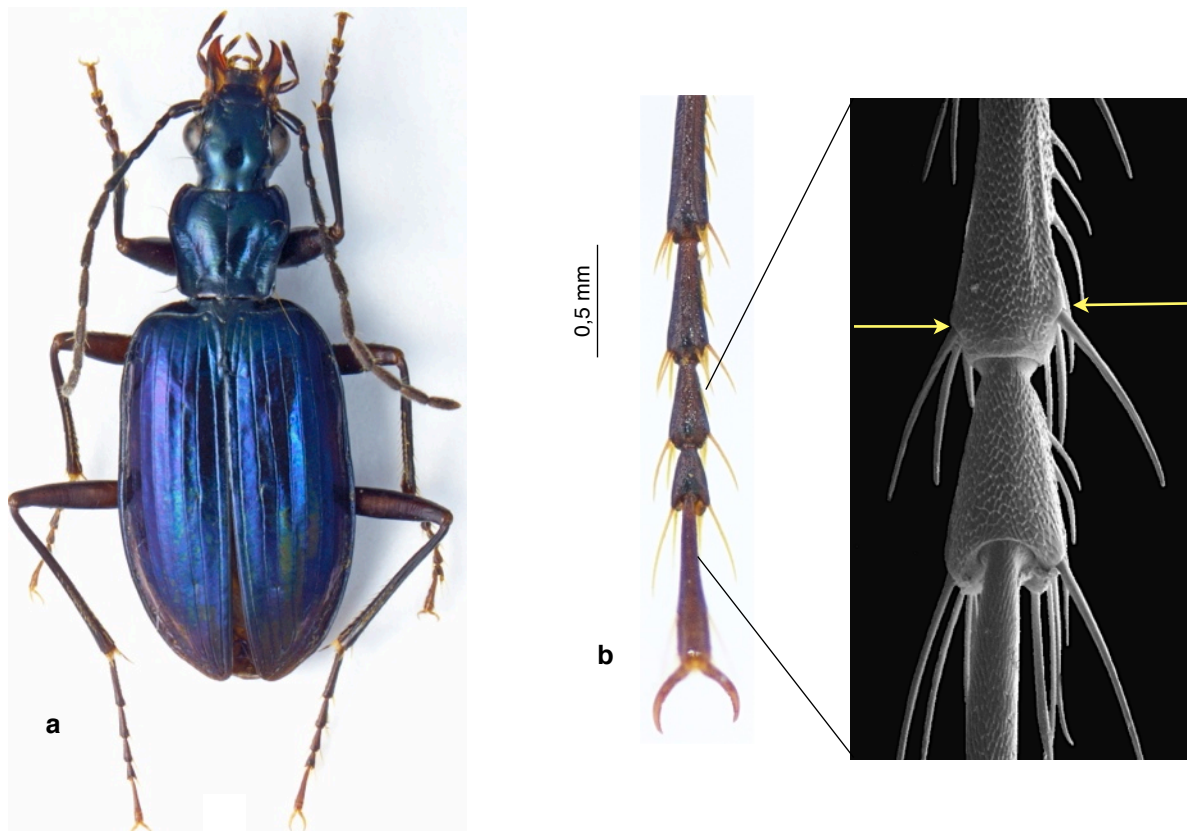


Fig. 14. *Glyptolenoides azureus* (Chaudoir, 1859), type species of the genus *Glyptolenoides*. **a.** Habitus, ♂, Zamora-Chinchipe, Ecuador. **b-c.** Right metatarsus, dorsal.

(sometimes absent) and the third near apex. Umbilicate series of 14 setiferous punctures, distributed 6-8 or 5-2-7. Metathoracic wings vestigial.

Abdomen. – Last visible abdominal ventrite arcuate apically, with one pair (♂) or two pairs (♀) of setae along its apical margin.

Legs. – Moderately slender; metafemora without setae on anterior ridge. Protibiae dorsally subcarinate, not distinctly sulcate or canaliculate; and mesotibiae dorsally sulcate. Dorsal face of all tarsi convex, smooth, faintly sulcate laterally. MTT1 as long as MTT2+3. Apex of PT4, MST4 and MTT4 bilobate; apical lobes of PT4 and MST4 with long, spatuliform hyaline phanera; apex of MTT4 shortly bilobate, with a pair of normal (not hyaline) ventroapical setae; ventral face of MTT4 with two parallel rows of two setae. Fifth tarsomeres asetose ventrally.

Male genitalia. – Fig. 13c. Median lobe elongate, median shaft strongly arcuate basally, then almost straight distally in lateral view; apex very short, relatively thick in lateral view, rounded in dorsal view. Endophallus without sclerotized structures.

Female genitalia. – Fig. 9d. Gonocoxite 2 arcuate, with 2 strong ensiform setae on the outer ridge. Bursa copulatrix very small, asymmetric, glabrous, with a basal lobe on the right side. Spermathecal duct nearly 3 times longer than the spermatheca; spermatheca small, fusiform; spermathecal gland with a moderately long duct connected to the base of the spermatheca.

Habitat. – Montane cloud forest at around 1900-2000 m a.s.l., in the leaf litter and above ground in mosses and epiphytes.

Geographic distribution. – Western slope of the Cordillera Occidental in northern Ecuador, only known from the Otonga reserve (Cotopaxi province).

Etymology. – This very distinctive new species is named in honor of the renowned specialist of Carabidae Thierry Deuve, whose genuine patronymic name is Thierry de Resbecq, as explained in his fascinating memoirs (Deuve 2023), as a token of admiration and friendship.

Glyptolenoides Perrault, 1991

Glyptolenoides Perrault, 1991: 47.

Glyptolenoides Perrault: Moret, 1999: 292; Deuve, 2019: 51; Moret & Muriene, 2020: 9.

Type species: *Colpodes azureus* Chaudoir, 1859, by original designation (Perrault, 1991: 47).

Diagnosis. – Submentum quadrisetose. Sides of pronotum sinuate basally; insertion of the basolateral seta of pronotum close to the angle, in a buttonhole-shaped depression. Pro- and mesotibiae dorsally canaliculate, or sulcate, or flattened. Apical lobes of PT4 and MST4 with long and spatuliform hyaline phanera; apex of MTT4 with a pair of non-modified dorsolateral setae and one or two ventroapical thin hyaline setae. MTT1 as long as MTT2+MTT3 (Fig. 14a and 15d). Ventral face of MTT1–4 with two parallel rows of setae. Apex of MTT4 emarginate, with small triangular ventral lobes (most species), or bilobed, with two long and subequal ventral lobes (*G. balli* Moret, 2005). MTT1–3 asymmetrical, outer side obliquely truncate at apex, so that the outer apical dorsolateral seta is displaced further back than the inner dorsolateral seta (Fig. 14b-c and 15d). Male genitalia diorchid; part of the base of the median lobe and base of the parameres melanistic (Fig. 15c and 16b). Bursa copulatrix with or without luminal microtrichia; spermatheca vermiform or claviform, slightly arcuate, fused with the basal duct which is not differentiated by a smaller diameter and a different orientation (Fig. 9f-g).

This diagnosis does not take in consideration the subgenus *Cuevadytes* Deuve, 2019, a Peruvian cave-dwelling taxon that exhibits several autapomorphies, most of which are related to its subterranean habitat. However, the female genitalic morphology of *Cuevadytes* fully corresponds to *Glyptolenoides*. At the current state of our knowledge, the described species that

can be surely assigned to *Glyptolenoides* s. str. are *G. azureus* (Chaudoir, 1859), *G. balli* Moret, 2005, *G. purpuripennis* (Chaudoir, 1878), and the two following new species.

***Glyptolenoides calacali* sp. nov.**

(Fig. 15)

ZooBank : <https://zoobank.org/B19CCD57-404D-4023-94BD-6649995420AC>

Holotype, ♂, Ecuador, Provincia Pichincha, Carretera Calacali–La Independencia, R. Pahuma, 2000 m, 78°41'W, 0°00'S, 1-3.III.2001, G. Buitrón J. leg. (QCAZ). Only known specimen.

Diagnostic combination. – Brachypterous; dorsum dark brown to piceous black; eyes very small and flattened; genae flat, almost twice as long as the eyes; very long antennae; pronotum slightly longer than wide; apex of metatarsomeres asymmetrical only on articles 1-3.

Description

Habitus. – Fig. 15a. Brachypterous. Body length: 6.6 mm.

Colour. – Head, pronotum and ventral sclerites piceous black, elytra dark brown; legs brownish, slightly paler at the junction between tibiae and femora; antennae and palpi testaceous. Upper surface of the body smooth and shiny, slightly wrinkled on the pronotum.

Microsculpture, mesh pattern. – Head: transverse, partly obsolete; pronotum: transverse; elytra: transverse.

Head. – Fig. 15b. Elongate, cylindrical; eyes very small, weakly convex; genae flat, almost twice as long as the eyes; no angle between eyes and genae. Vertex moderately convex, collar constriction shallow, hardly visible laterally. Mandibles long, thin and pointed. Mentum tooth

broad and short, bifid with blunt apices. Antennae quite long, extending backward to the middle of the elytra; 4th antennomere as long as 1+2. Palpi very thin.

Prothorax. – Pronotum slightly longer than wide (PL/PW = 1.02), cordiform (Fig. 15b). Sides moderately arcuate in distal half, deeply sinuate basally; hind angles prominent but broadly rounded; anterior angles small, weakly protruding. Laterobasal impressions deep, simple; lateral margins narrow, slightly reflexed; basal bead completely erased except near the hind angles, apical bead shortly interrupted at middle. Two lateral setae, the posterior setigerous pore in a deep buttonhole-shaped depression, the anterior setigerous pore well forward, at 3/4 of the length of the pronotum. Sides of the prosternal process not bordered.

Meso- and metathorax. – Elytra much wider than pronotum, subparallel in first half, fusiform at apex, humeri obliquely truncate. Striae deep and well impressed, intervals slightly convex basally and on the disc, flat in the apical zone. Parascutellar setiferous pore present; third interval with 3 small setiferous punctures. Subapical situation weak; apex subtriangular. Umbilicate series of 16 (left) or 15 (right) setiferous punctures, distributed 5-1-10 or 5-1-9; penultimate seta very long. Metathoracic wings vestigial.

Abdomen. – Last visible abdominal ventrite feebly arcuate apically, with one pair of setae along its apical margin.

Legs. – Long and slender; metafemora without setae on the anterior ridge and with two ventroposterior setae. Protibiae and mesotibiae dorsally canaliculate (protibiae: sculpture obsolete on apical third); metatibiae dorsally carinate. Tarsi dorsally convex; MTT1 as long as MTT2+3 (Fig. 15d). PT4 and MST4 apically bilobed, prolonged by hyaline spatuliform phanera that are twice as long as the apical lobes. Apex of MTT4 emarginate with small triangular ventral lobes, the outer lobe twice as long as the inner lobe; with a pair of strong apical dorsolateral setae, hyaline ventroapical setae at the tip of the lobes and 2 ventral setae each side in parallel rows. MTT1–3 asymmetrical, outer side obliquely truncate at apex,

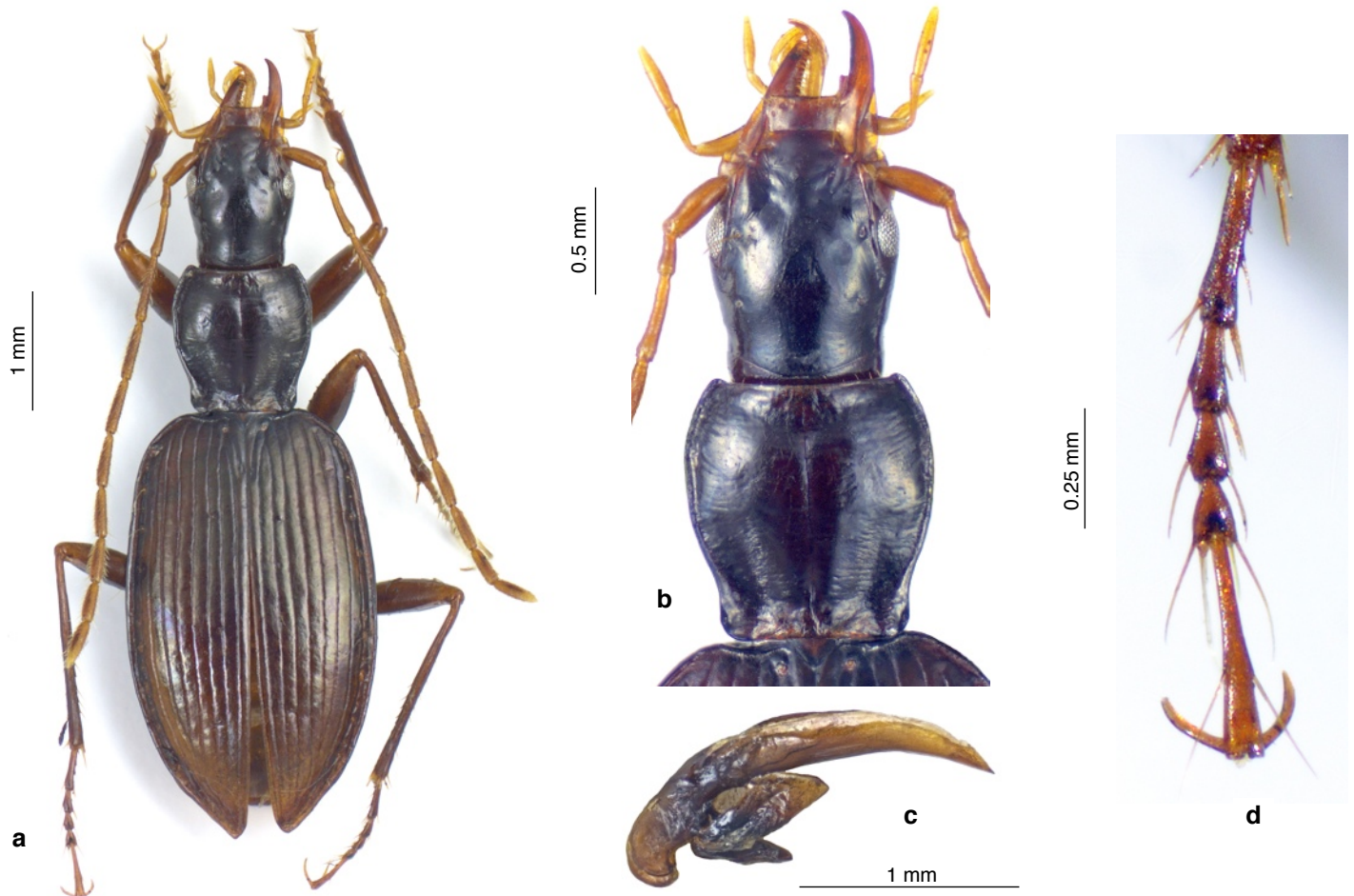


Fig. 15. *Glyptolenoides calacali* sp. nov.

a. Habitus, holotype, ♂, Pahuma, Ecuador. **b.** Detail of head and pronotum. **c.** Aedeagus, lateral. **d.** Left metatarsus, dorsal.

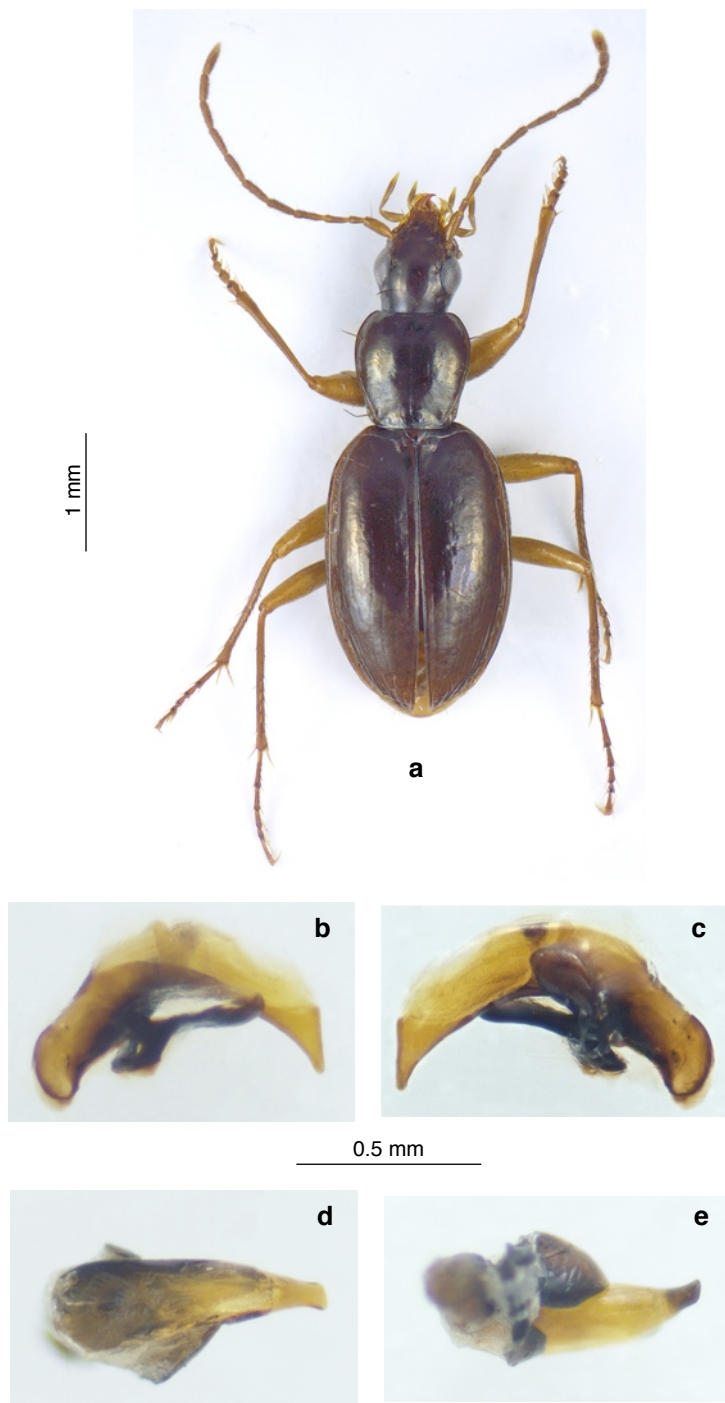


Fig. 16. *Glyptolenoides formicarius* sp. nov.

a. Habitus, paratype, ♂, Bellavista, Ecuador. **b-e.** Aedeagus. **b-c.** Lateral. **d.** Dorsal. **e.** Ventral.

so that the outer apical dorsolateral seta is displaced significantly further back than the inner dorsolateral seta (Fig. 15d). Fifth tarsomeres asetose ventrally.

Male genitalia. – Fig. 15c. Median lobe: basal bulb of moderate size, recurved; median shaft almost straight in lateral view, then slightly bent downward before apex; ventral face carinate; apex acuminate, subtriangular in dorsal view, pointed in lateral view. Endophallus without sclerotized structures.

Female genitalia. – Unknown.

Habitat. – Montane cloud forest at around 2000 m a.s.l. Biology unknown. Flightlessness and eye reduction suggest this species may be an inhabitant of the leaf litter.

Geographic distribution. – Western slope of the Cordillera Occidental in northern Ecuador (Pichincha province). If the collection site is Reserva Pahuma, on the road from Calacalí to La Independencia as indicated on the locality label, the correct coordinates of the type locality are around 0°01'N, 78°38'W.

Etymology. – The name on the nearest town to the type locality, Calacalí, is used as a noun in apposition.

***Glyptolenoides formicarius* sp. nov.**

(Fig. 9g & 16)

ZooBank : <https://zoobank.org/DD5FE709-0BBC-4904-8FCF-9BFE4EB02A60>

Holotype. ♂, Ecuador, Provincia Pichincha, Bellavista Reserve, 12 km S Nanegalito, 00°00'32"S, 78°41'08"W, 2150 m, 30.X.1999, 215, cloud forest litter, R. Anderson leg. (CMNC).

Paratypes (10 ♂, 12 ♀)

- 1 ♂, Ecuador, Provincia Cotopaxi, San Francisco de las Pampas, Otonga, 2000 m, 27.VII.1999, I.G. Tapia leg. (QCAZ);

- 1 ♀, Ecuador, Provincia Cotopaxi, Otonga, foresta nublada, 2000 m, 29.VII.2004, G. Osella leg. (CPMG);

- 1 ♂: Ecuador, Otonga, 0°42.261'S, 79°01.507'W, 2015 m, 26.VI.2014, pitfall, E. Tapia leg. (CGA);

- 1 ♀: Ecuador, Otonga, 2015 m, pitfall, 3-14.VIII.2014, E. Tapia leg. (CGA);

- 1 ♂, Ecuador, Provincia Pichincha, Bellavista Reserve, Ridge trail, 12 km S Nanegalito, 0°0'54"S, 78°40'56"W, 2250 m, 28.X.1999, ECU1A99 2111, R. Anderson leg. // Loan from SEMC 10.11.00 (UASM);

- 1 ♀, 1 ♂, Ecuador, Provincia Pichincha, Bellavista Reserve, 12 km S Nanegalito, 00°00'32"S, 78°41'08"W, 2150 m, 30.X.1999, 215, cloud forest litter, R. Anderson leg. // Loan from CMNC 26.02.02 (UASM);

- 1 ♀, Ecuador, Provincia Pichincha, Nanegalito, 12 km S, Bellavista Nature Reserve, 0°0'54"S, 78°40'56"W, 2200 m, 28.X.1999, ECU1F99 069, ex yellow pan trap, S. Marshall leg. // Loan from SEMC 10.11.00 (UASM);

- 8 ♀, 7 ♂, Provincia Pichincha, Bellavista Reserve, Ridge trail, 12 km S Nanegalito, 00°00'54"S, 78°40'56"W, 2250 m, 28.X.1999, 211a-g, cloud forest litter, R. Anderson leg. // Loan from CMNC 26.02.02 (UASM, CPM).

Diagnostic combination. – Brachypterous; very small size (4.5-4.7 mm); dorsum brownish with faint copperish reflections; eyes moderately flattened; basal sinuation of the sides of the pronotum weak; elytral striae obsolete basally, intervals 5-7 canaliculate apically; MTT4 very shortly bilobed.

Description

Habitus. – Fig. 16a. Brachypterous. Body length: 4.5-4.7 mm.

Colour. – Head, pronotum and elytra light brown, with very faint copperish reflections; antennae, mouthparts and legs flavo-testaceous. Upper surface smooth and shiny.

Microsculpture, mesh pattern. – Head: slightly transverse, very shallow; pronotum: transverse, almost obsolete; elytra: narrow transverse meshes, shallowly impressed.

Head. – Broad, convex; eyes large but moderately bulging; genae flat, oblique, half as long as the eyes; collar constriction distinct on the dorsal face. Supraocular setae especially thick and strait. Mandibles long and acute. Mentum tooth simple, triangular, with a blunt apex. Palpi relatively short. Antennae moderately long, with four antennomeres extending backward beyond the base of the pronotum.

Prothorax. – Pronotum as long as wide, cordiform, sides weakly sinuate in basal third. Hind angles very obtuse, almost rounded, the basolateral setigerous pore in a large and deep buttonhole-shaped depression; anterior angles rounded, not protruding; laterobasal impressions shallow; lateral margins narrow, slightly reflexed; basal and apical beads almost obsolete, interrupted at middle; two pairs of lateral setae. Sides of the prosternal process smooth, not bordered.

Meso- and metathorax. – Elytra oval-shaped, humeri narrow, subapical sinuation very weak. Striae obsolete basally and laterally, very shallow and

irregularly interrupted on the disc; intervals flat except in apical fourth where the intervals 5-7 are depressed, almost canaliculate. Parascutellar setiferous pore present; third interval with 2 or 3 small setiferous punctures: at basal fourth (sometimes absent), at middle and near apex. Umbilicate series of 13 to 15 setiferous punctures, forming three groups: humeral with 5 or 6 setae, median with one, subapical with 7 or 8. Metathoracic wings vestigial.

Abdomen. – Last visible abdominal ventrite evenly rounded apically, with one pair (♂) or two pairs (♀) of setae along its apical margin.

Legs. – Long and slender. Metafemora asetose. Protibiae and mesotibiae dorsally canaliculate; metatibiae dorsally carinate. Tarsi moderately convex dorsally, tarsomeres 1-3 bisulcate; MTT1 as long as MTT2+3. PT4 and MST4 apically bilobed, with a pair of narrow, hyaline spatuliform phanera. Apex of MTT4 emarginate with small ventral lobes, the outer lobe slightly longer than the inner lobe; with a pair of strong apical dorsolateral setae, and only one hyaline ventroapical seta, as long as MTT5, at the tip of the outer lobe; 2 ventral setae each side in parallel rows. MTT1–3 slightly asymmetrical, not distinctly truncate at apex, but the outer apical dorsolateral seta is displaced significantly further back than the inner dorsolateral seta. Fifth tarsomeres asetose ventrally.

Male genitalia. – Fig. 16b-e. Median lobe strongly arcuate; apex triangular in lateral view, spatulate in dorsal view. Endophallus with a small, sclerotized structure, located medially when the endophallus is not everted.

Female genitalia. – Fig. 9g. Gonocoxite 2 short, broad basally, almost triangular, with 2 ensiform setae on the outer ridge. Bursa copulatrix elongate, with a faintly sclerotized dorsal pouch. Spermathecal duct undifferentiated; spermatheca arcuate, claviform, broadest at apical 2/3; spermathecal gland entering at basal 1/3 of the spermatheca.

Habitat. – Montane cloud forest between 1900-2250 m a.s.l., in the leaf litter.

Geographic distribution. – Western slope of the Cordillera Occidental in northern Ecuador (Cotopaxi and Pichincha provinces).

Etymology. – Modern Latin adjective meaning “ant-like”, in reference to the peculiar habitus of this species.

Discussion

The species described hereabove represent but a small glimpse into the amazing diversity of Andean montane forest platynines. Taking the example of Otonga, a reserve located on the western slope of the Andes, sampling performed in an area of only ten square km and in a vertical range of four hundred metres (1800-2200 m) yielded the impressive result of 36 platynine species living in this small forest sanctuary. Four genera are involved: *Incagonum* with one species, *Dyscolus* with 17 (including one still undescribed species), *Glyptolenus* with 16 (including 8 undescribed species) and *Glyptolenoides* with two. Twenty-three species are fully winged, whereas 13 species – more than one third – are brachypterous (5 *Dyscolus*, 7 *Glyptolenus* and 1 *Glyptolenoides*).

All the flightless species collected at Otonga but one are local endemics, which means that they are restricted to the western (pacific) slope of the Andes without any record on the eastern (amazonian) slope, and that their latitudinal range along the Cordillera is under *ca.* 200 km south-north, in several cases under *ca.* 100 km. The only exception is *Dyscolus asphaltinus* which has been found in northern Ecuador and in southern Colombia. Among the 23 fully winged species found at Otonga, 5 have a wide distribution in the tropical Andes, entering Mesoamerica in some cases, 4 are endemic to the Northern Andes in a broad sense (Ecuador, Colombia and part of Venezuela), 4 are endemic to the Chocó ecoregion in southern Colombia and northern Ecuador, and 4 are local endemics. Finally, 6 species have an unknown distribution, either local (northern half of Ecuador) or regional (Chocó ecoregion). All in all, nearly half of the species (at least 16 out of 36) are local endemics.

Assuming that the proportion of local endemics is approximately the same throughout this area, it can be inferred from these data

that the number of platynine species living in the cloud forest of Ecuador, i.e. along a 600 km-long section of the Andes, both on the pacific slope and on the amazonian slope between 1600-2600 m a.s.l., might be well over a hundred. So far, only 46 described species have been recorded from this ecosystem within the limits of Ecuador.

Regarding the ecology of the cloud forest platynines, the species observed at Otonga occupy a wide range of habitats.

– Riparian species: *Incagonum aeneum* (Reiche, 1843), *Dyscolus aequinoctialis* Chaudoir, 1850, *D. asphaltinus* (Chaudoir, 1878), *D. atratus* (Chaudoir, 1859), *D. fabrefactus* sp. nov., *D. giselae* Moret, 2020, *D. osseus* sp. nov., *D. rivinus* Moret, 2020, *Glyptolenoides azureus* (Chaudoir, 1859).

– Brachypterous inhabitants of the leaf litter in the undergrowth: *Glyptolenoides formicarius* sp. nov., *Glyptolenus humicola* sp. nov., *Glyptolenus resbecqi* sp. nov.

– One species seems to prefer rotten logs and decaying vegetation on the ground: *Glyptolenus hector* sp. nov.

– Arboreal, small brachypterous species living in mosses and epiphytes: *Glyptolenus arboricola* sp. nov., *Glyptolenus resbecqi* sp. nov.

– Several generalist, fully winged species can be found by day hiding in above-ground vegetation, especially in bromelias, or under logs, or even under stones in riparian environments, and by night foraging among the vegetation: *Dyscolus eleonorae* Moret, 2020, *Dyscolus purpuratus* Reiche, 1842, *Glyptolenus apicestriatus* (Reiche, 1843).

The rest of the collected species lack habitat data.

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Résumé

Moret P., 2024. – Description de nouveaux Platynini de la forêt de nuages de l'Équateur et redéfinition des genres *Glyptolenus* Bates et *Glyptolenoides* Perrault (Coleoptera, Carabidae). *Faunitaxys*, 12(63): 1 – 23.

La forêt de nuages des Andes du nord de l'Équateur, entre 1500 et 2500 m d'altitude, abrite une grande diversité de coléoptères carabiques dont la plupart ont une aire de répartition très réduite. Quatorze espèces inféodées à cet écosystème sont décrites et illustrées : six dans le genre *Dyscolus* Dejean, 1831 (*D. fabrefactus* sp. nov., *D. liebherr* sp. nov., *D. osseus* sp. nov., *D. shpeleyi* sp. nov., *D. spinicauda* sp. nov., *D. variegatus* sp. nov.), six in the genus *Glyptolenus* Bates, 1878 (*G. allegroi* sp. nov., *G. arboricola* sp. nov., *G. calvus* sp. nov., *G. hector* sp. nov., *G. humicola* sp. nov., *G. resbecqi* sp. nov.) et deux dans le genre *Glyptolenoides* Perrault, 1991 (*G. calacali* sp. nov., *G. formicarius* sp. nov.). *Dyscolus aequinoctialis* Chaudoir, 1850, précédemment mis en synonymie de *D. subviolaceus* (Chaudoir, 1842), est rétabli comme **bona species**, et le genre *Austroglyptolenus* Roig-Juñent, 2003 est considéré comme un synonyme plus récent de *Dyscolus* Dejean, 1831. Enfin, une nouvelle définition des genres *Glyptolenus* Bates, 1878 et *Glyptolenoides* Perrault, 1991 est proposée, fondée notamment sur la morphologie des tarses et sur les genitalia femelles.

Mots-clés. – Coleoptera, Carabidae, *Dyscolus*, *Glyptolenus*, *Glyptolenoides*, taxonomie, systématique, description, nouvelle synonymie, nouvelles espèces, carabiques, endémisme, Équateur, Andes.

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SOMMAIRE

Description de nouveaux Platynini de la forêt de nuages de l'Équateur et redéfinition des genres *Glyptolenus* Bates et *Glyptolenoides* Perrault (Coleoptera, Carabidae).

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Description of new Platynini from the montane cloud forest of Ecuador, with a redefinition of the genera *Glyptolenus* Bates and *Glyptolenoides* Perrault (Coleoptera, Carabidae).

Pierre Moret 1 – 23



Illustration de la couverture :

Stream in a montane cloud forest of Ecuador.

Crédits:

Pierre Moret : Fig. 1-16 & couverture.