

## **A new species of *Mesus* CHEVROLAT, 1858 (Coleoptera: Carabidae) from South America**

Alexander DOSTAL

### **Abstract**

*Mesus hornburgi* sp.n. from Apure, Venezuela, is described. It is closely related to *Mesus gigas* REICHARDT, 1974 and *Mesus pseudogigas* VIERA & BELLO, 2004. The genus is divided into three species groups. A key to the species of *Mesus* is provided.

Key words: Coleoptera, Carabidae, Scaritinae, Clivinini, *Mesus*, new species, species groups, Venezuela, determination key.

### **Zusammenfassung**

*Mesus hornburgi* sp.n. aus Apure, Venezuela, wird beschrieben. Die nächstverwandten Arten sind *Mesus gigas* REICHARDT, 1974 und *Mesus pseudogigas* VIERA & BELLO, 2004. Die Gattung wird in drei Artengruppen gegliedert. Eine Bestimmungstabelle für alle *Mesus*-Arten wird vorgestellt.

### **Introduction**

The genus *Mesus* CHEVROLAT, 1858 was first revised by REICHARDT (1974) for a single described species (*Mesus rugatifrons* CHEVROLAT, 1858 from Argentina, southern Brazil, Paraguay, and Uruguay) and three additional new species from Brazil: one from the northern part (*Mesus mesus* REICHARDT, 1974 from Roraima) and two from south of the Amazon River (*Mesus gigas* REICHARDT, 1974 from Mato Grosso; *Mesus nanus* REICHARDT, 1974 from Bahia). VIEIRA & BELLO (2004) described a fourth southern species, *Mesus pseudogigas* VIERA & BELLO, 2004, from Mato Grosso do Sul. In this study I report a second species that is restricted to the area north of the Amazon River.

### **Material and methods**

Preserved specimens from collections are used which are mounted on commercially available triangular paper cards. The abdomen is removed and mounted, ventral side up, beside the specimen, because of the more convenient investigation of the abdominal distinguishing characters. Male and female genital organs were dissected and also glued to the cards beneath the specimens from which they were removed.

Label data for examined material are given in full length, with exact label wording, except for the date, which is transcribed to the format “dd.mm.jjjj”.

Measurements were taken with a calibrated Leica ocular scale at absolute magnifications of 39.1× for pronotal length and width, and 19.4× for all other measurements.

- L total body length in mm, from apex of mandible to apex of elytra.  
W maximum body width in mm (situated at apical third or near mid-length of elytra).  
PL maximum pronotum length in mm, measured along median line from base of anterior bristle fringe to base of posterior one.  
PW maximum pronotum width in mm, measured normal to midline (situated in most cases near posterior angles).  
P-LW length-width-index of pronotum (length : width); if the value is smaller than 1, it means that the pronotum is wider than long, for values above 1, the pronotum is longer than wide.

E-LW length-width-index of both elytra, calculation same as previous.

Characters: The species descriptions are based on the most distinguishing external characters as defined by BAEHR (2008: 9). Frontal keels: The number of keels is counted along a virtual line between the eyes at mid-eye level, the supraorbital ridge is not counted as a keel. The variation ranges from more or less flat, fine, and irregular to clearly raised ridges, well separated from each other. the frontal keels are more conspicuous at sides, in the middle more flat, in some species the middle field of the frons is smooth from anterior part to neck (*M. pseudogigas*), in others the middle part of frons is more or less irregularly wrinkled and the posterior part free of any keels. Number of dorsal setiferous punctures of the third interval are counted including the preapical puncture.

Digital photographs were taken with a Leica DFC camera attached to a Leica MZ16 binocular microscope with the help of Leica Application Suite V3, and stacked with Zerene Stacker 64-bit. Processing of images was performed with Adobe Photoshop 7.0.

## Taxonomy

### *Mesus hornburgi* sp.n. (Figs. 1–7)

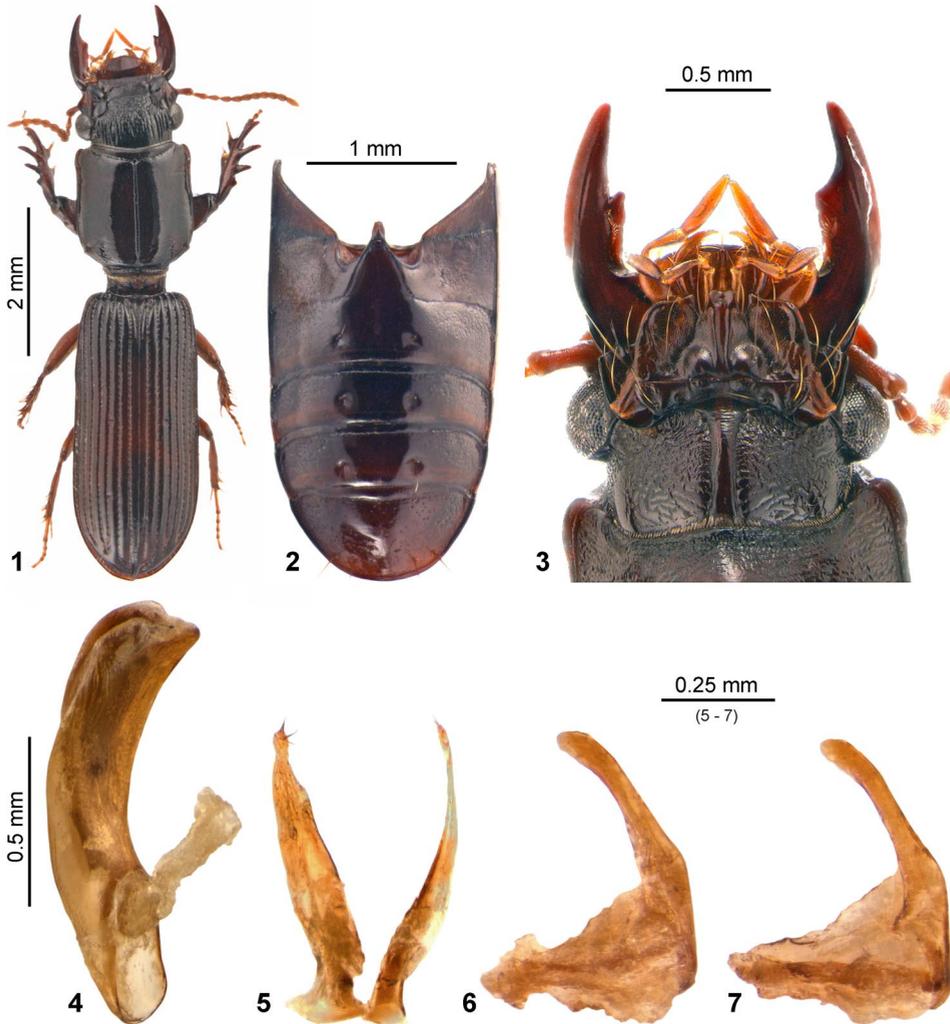
Material examined: Holotype (male): Venezuela, Edo, Apure, Los Ljanos, Sta. Juana / Rio Capanarapu, 07°01'34" N 67°33'55" W, 60m, 20.10.2005, leg M. Hornburg, in coll. Dostal (Vienna). Paratype: 1 female, Venezuela, San Fernando de Apure, L. Laglaize, 05.10.1897, in coll. Dostal (Vienna).

Recognition: A petite species closely related to *Mesus gigas* REICHARDT, 1974, distinguishable by its clypeus middle part rectangularly produced and distinctly differentiated from lateral clypeus wings, and by the frons bearing about 3–5, more or less rounded keels on each side.

Description: Measurements: Body: L = 7.96 mm (holotype), 7.85 (paratype); W = 1.79 mm (holotype), 1.73 (paratype). Pronotum: PL = 1.77 mm (holotype), 1.78 (paratype); PW = 1.72 mm (holotype), 1.68 (paratype).

Colour: Unicolorous piceous-brown; middle and hind legs, antennae, and mouthparts except mandibles lighter, reddish-brown.

Microsculpture: none, glossy. Labium in basal half and ventral sterna 2–6 glossy with fine traces of isodiametric microreticulation in the middle and with distinct microreticulation at sides.



Figs. 1–7: *Mesus hornburgi* sp.n. (1–5: holotype, male; 6–7: paratype, female): (1) Habitus, dorsal view. (2) Head, ventral view. (3) Abdomen, ventral view. (4) Median lobe of aedeagus, ventrolateral view. (5) Parameres, ventral view. (6) Left stylus, ventral view. (7) Right stylus, dorsal view.

Head (Figs. 1, 2): Antenna short, approximately extending over two thirds of pronotal length; antennomeres 5–10 submoniliform, slightly longer than wide; antennomeres 3–11 pubescent, without glossy areas in middle. Mandibles long, with acute apices, almost equal in width; lateral edge slightly convex and higher than mesal edge, mesal one almost straight; both mandibles mesally with a flat, longitudinal, knife-like cutting edge, which extends over one third of mandibles' length; the left cutting edge trapezoid, with obtuse anterior angle, the right one parallelogram-like with anterior angle acute. Anterior edge of labrum triangularly produced, laterally with eight spatula-like setae, basally with two setae at sides. Clypeus smooth and shiny, delimited from supraantennal plates by a very

fine oblique suture; middle part trapezoidally raised; each side with a single seta; basal border to frons with transverse declivity. Anterior margin of clypeus straight, unbordered, middle part rectangularly produced and distinctly separated from rectangular “wings”. Supraantennal plate with a distinct longitudinal edge from the lateral angle of clypeus wing to inner margin of the eye, laterally triangularly produced, not reaching eye level; lateral margin unbordered. Frons irregularly punctured and wrinkled in anterior third, becoming flatter in the central third, posterior third smooth in the middle, but with 3–5 more or less blunt keels on each side, which are laterally bordered by a short and stocky ridge. Supraorbital sulcus fine; two supraorbital setae inserted on the ground of deep foveae. Neck not constricted, smooth. Eye slightly spherical. Postorbital area not developed; posterior edge of eye and neck forming a right angle.

Ventral surface of head (Fig. 2): Gula parallel, smooth, microreticulated anteriorly. Adjacent sides of head capsule strongly microreticulated and wrinkled. Submentum transversally microreticulated, with two setae at each side. Median tooth of mentum slightly more protruding than sides, triangularly truncated, apex incised, at base with one pair of setae. Mentum isodiametrically microreticulated, anterior corner acute, anterior edge oblique, lateral angle rounded, border smooth. Mentum with flat paramedian ridges, basally with a bullous paramedian swelling, laterally with one seta on each side. Apex of glossa triangular, bisetose in the middle. Penultimate labial palpomere with one seta at middle of mesal edge; last labial palpomere spindle-shaped, widest approximately at mid-length, slightly shorter than penultimate one. Last maxillary palpomere spindle-shaped, widest approximately at mid-length; penultimate one shorter, about two thirds as long as last palpomere; basal maxillary palpomere distinctly thickened.

Pronotum (Fig. 1) parallel-sided, hardly longer than wide ( $P-LW = 1.03$  in paratype,  $1.06$  in holotype), with short declivity to base. Surface glossy, without microreticulation on disc, with some traces of reticulation at base. Anterior corner slightly produced forward. Posterior corner rounded, slightly denticulate. Base and sides finely bordered; lateral channel distinctly broader between marginal and postangular pore, surface transversely wrinkled. Basal border close to peduncle. Base with fine transverse ridges, with a short, flat longitudinal impression on each side, bearing some punctures. Anterior transverse sulcus oblique, deep, crenulate. Median line deeply impressed. Epipleura very small, smooth. Proepisternum broad, somewhat wider than half of the height of pronotum in lateral view, glossy, with traces of isodiametric microreticulation, separated from prosternum by a distinct suture. Proepisternum flat, transversely to irregularly wrinkled, with irregular coarse punctures in anterior two thirds, less and smoother in the posterior one. Prosternum glossy, with deep transverse furrow along anterior margin, here and in the anterior quarter irregularly wrinkled; prosternal intercoxal processus rhomboid, flattened, unbordered, without setae.

Elytra (Fig. 1) more than twice as long as wide ( $E-LW = 2.32$  in paratype,  $2.34$  in holotype), cylindrical, strongly convex; sides parallel, basal declivity strongly vertical. Surface glossy, smooth, without microreticulation. Base mostly unbordered; the short lateral border ending at interval five. A longitudinal tubercle at base of interval 2. Scutellar striole present. Scutellar pore present at the anterior end of first stria. Striae straight, deeply engraved from base to apex, with coarse punctures. Elytra with four pores in interval 3. Umbilical pores in lateral channel (interval 9) close together at humeri and apex, more loosely spaced in the middle. Intervals 6 and 7 keeled at humerus, interval 8 small and keeled throughout its length.

Legs (Fig. 1): All trochanters unisetose. Protibia with four teeth, proximal denticle small, triangular; upper surface glossy, with fine microreticulation and very shallow longitudinal sulcus from proximal end of incision to base. Surface of lower side with two denticles at middle of distal half, basal half with longitudinal edge. Basal tarsomere of foreleg conically shaped, not incised or petiolate, about as long as tarsomeres 2–5 together, without pubescence on dorsal surface except two distal setae, at each side with 5–7 long and thick setae. Upper outer edge of mesotibia with 7–8 long and thick setae and 6 finer ones at upper inner edge, distally with a setiferous spur. Meso- and metatibia at inner side without setae. Meso- and metatarsomeres glossy, without ridges or pubescence on dorsal surface.

Ventral surface: Peduncle glossy in the middle, at sides microreticulated, lateral cavity with coarse punctures. Mesosternum without setae. Elytral epipleura broader in basal third, towards apex evenly narrowed; glossy, with traces of microreticulation, with irregular row of a few coarse punctures along midline at anterior part. Metepisternum with lateral margin about 1.8× as long as anterior one, constricted towards apex, glossy, with few scattered punctures and flat wrinkles, anteriorly finely bordered, centrally with an area of coarse obliquely meshed microreticulation. Metasternum smooth and glossy, with some irregular coarse punctures and very fine wrinkles at sides; below mesocoxae triangular, distinctly bordered, without setae; intercoxal processus smooth, without setae anteriorly; antecoxal suture fine, but distinct in the middle, more or less obsolete at sides. Meso- and metacoxa bisetose. Abdominal sterna (Fig. 3) glossy; in both sexes sternum 1 completely microreticulated, 2 as well except for its middle part, 3–5 only at sides, sternum 6 along lateral margin. Sterna 3–6 smooth and glossy in the middle in males, in females with traces of microreticulation in the middle. Sternum 2 with paramedian suture, suture to sternum 3 more indistinct between the paramedian sutures. Sterna 3–6 with irregular puncturation at sides, sternum 6 with few scattered punctures in the middle, sterna 4–6 with basal transverse sulcus. Sterna 3–5 each with one pair of paramedian setae originating from deep foveae. Anal sternum in both sexes apically with two closely set setae.

Male genitalia: Median lobe of aedeagus (Fig. 4) slightly curved, dorsally open in distal two thirds; distal half dorso-ventrally flattened, ligula-like; apical part triangular, tip narrowly rounded in ventral aspect. Internal sac basally with sclerotized, slender Y-shaped basal sclerite, distally with a field of dense hairs. Parameres (Fig. 5) long and slender, evenly narrowed towards apex. Left paramere slightly wider than right one. Both parameres with two apical setae.

Female genitalia (Figs. 6, 7): Stylomere 2 long and slender, at base about twice as wide as the apex, slightly clavate; apex rounded, below middle with two large setae on ventral side, apical margin with two short setae.

Geographical distribution: Central Venezuela.

Collecting circumstances: Unknown.

Specific epithet: Latinized adjective, an eponym based on the surname of my colleague and specialist for Buprestidae, Michael Hornburg (Berlin, Germany).

Differential diagnosis: Based on striking differences in the head structures, *Mesus* is here divided into three species groups. The *M. rugatifrons* group (with *M. rugatifrons* only) is distinguishable from the other two by the complete coverage of the head by numerous, irregular and fine longitudinal ridges. The *M. mesus* group and the *M. gigas* group differ from each other by the anterior edge of the clypeus which is straight in the first one, but rectangularly produced medially and distinctly differentiated from

its wing-shaped sides in the second one. Moreover, in the *M. gigas* group the head is triangularly extended in front of eyes.

The new species is distinguishable from the other two species of the *M. gigas* group by small size and a reduced number of frontal keels (see key).

### Key to the species of the genus *Mesus* CHEVROLAT, 1858

Note: In the key of VIEIRA & BELLO (2004: 244) *M. mesus* is mixed up with *M. nanus*.

- 1 Clypeus anterior edge straight, middle part not differentiated from wings; head rounded in front of eyes, not triangularly extended. (*M. mesus* and *M. rugatifrons* species group) .. 2
- Clypeus middle part rectangularly produced and distinctly differentiated from wings; head in front of eyes significantly triangularly extended. (*M. gigas* species group) ..... 4
- 2 Frons smooth in the middle, along border to clypeus with fine, irregular wrinkles, at sides with 4–5 regular, longitudinal ridges. Body length 9.0–10.8 mm. Brazil (Roraima). ..... *M. mesus*
- Frons entirely covered with irregular or regular ridges. .... 3
- 3 Ridges of frons numerous, irregular and fine. Body length 9.3–13.9 mm; Argentina, Uruguay, Paraguay. .... *M. rugatifrons*
- Ridges of frons sharp and clear, in total about 12–14. Body length 8.3–10.8 mm. Brazil (Bahia, Rio Grande do Norte, Sergipe) ..... *M. nanus*
- 4 Frons with about 3–5, more or less rounded keels on each side; anterior third of frons with fine, irregular wrinkles and strong irregular punctures, middle third almost smooth with inconspicuous longitudinal wrinkles, posterior third smooth. Pronotum 1.1× as long as wide. Small species, length 7.8 mm. Venezuela (Apure). *M. hornburgi* sp.n.
- Frons with about 6–8, more clearly raised keels on each side. Larger species, length above 14 mm. .... 5
- 5 Larger species, body length 15.2–19.5 mm. Triangular extension of head in front of eyes reaching outer edge of eye. Frons with 7–8 keels on each side; middle field broad, in anterior half with wrinkles that are irregular anteriorly and more longitudinal posteriorly; the posterior half smooth. Brazil (Mato Grosso). ..... *M. gigas*
- Smaller species, body length 14.0–16.0 mm. Triangular extension of head in front of eyes not reaching outer edge of eye. Frons with 6–7 keels on each side; middle field narrow and smooth. Brazil (Mato Grosso do Sul). ..... *M. pseudogigas*

### Acknowledgements

I am very grateful to Mag. Harald Bruckner (Vienna, Austria) for taking the photographs, and to Alice Laciny, MSc (Vienna, Austria), Hilde Seyfert (Vienna, Austria), and Dr. Herbert Zettel (Vienna, Austria) for reviewing the manuscript.

### References

- BAEHR M., 2008: The Australian Clivinini 1. The genera *Ancus* PUTZEYS, *Aspidoglossa* PUTZEYS, *Clivinarchus* SLOANE, *Platysphyrus* SLOANE, *Pseudoclivina* KULT, *Rhysocara* SLOANE, *Syleter* ANDREWES, the subgenera *Paraclivina* KULT, *Semiclivina* KULT, and the *atrata*-, *biplagiata*-, *brevicornis*-, *coronata*-, *coryzoides*-, *cribrosa*-, *debilis*-, *denticollis*-, *grandiceps*-, *incerta*-, *lobata*-, *obliquata*-, *obsoleta*-, *orbitalis*-, *planiceps*-, *sulcaticeps*-, *tranquebarica*-,

and *wurrgae*-groups of the genus *Clivina* LATREILLE. With a note on a record of the genus *Parathlibops* BASILEWSKY (Scapterini) (Carabidae, Scaritinae). – *Coleoptera* 12: 1–220.

REICHARDT H., 1974: Revision of *Mesus* CHEVROLAT, 1858, with the description of three new species (Coleoptera, Carabidae). – *Revista Brasileira de Entomologia* 18(3): 77–84.

VIEIRA L.M. & BELLO A., 2004: Una nova especie do genero *Mesus* CHEVROLAT do Mato Grosso do Sul, Brasil (Coleoptera, Carabidae, Scaritini). – *Revista Brasileira de Entomologia* 48(2): 243–245.

Author's address: Dr. Alexander DOSTAL, Ducheckgasse 39, 1220 Vienna, Austria.  
E-mail: [dostal.alexander@aon.at](mailto:dostal.alexander@aon.at)

# ZOBODAT - [www.zobodat.at](http://www.zobodat.at)

Zoologisch-Botanische Datenbank/Zoological-Botanical Database

Digitale Literatur/Digital Literature

Zeitschrift/Journal: [Zeitschrift der Arbeitsgemeinschaft Österreichischer Entomologen](#)

Jahr/Year: 2016

Band/Volume: [68](#)

Autor(en)/Author(s): Dostal Alexander

Artikel/Article: [A new species of Mesus Chevrolat, 1858 \(Coleoptera: Carabidae\) from South America 57-63](#)