Three new species of *Helluobrochus* Reichardt, 1974 and a distributional record (Coleoptera: Carabidae: Helluonini)

Oldřich HOVORKA

Středočeské muzeum v Roztokách u Prahy, Zámek 1,
CZ-252 63 Roztoky u Prahy, Czech Republic
e-mail: zoolog@muzeum-roztoky.cz

Taxonomy, description, new species, faunistics, Carabidae, Helluonini, *Helluobrochus*, Panama, Argentina, Venezuela

Abstract. *Helluobrochus panamensis* sp. nov. from Panama (Colón Prov.), *H. argentinensis* sp. nov. from Argentina (Corrientes Prov.) and *H. venezuelensis* sp. nov. from Venezuela are described and illustrated. The new species are illustrated and compared with theirs supposedly most relative congeners. *Helluobrochus cribratus* (Reiche, 1842) is recorded as a species new to the fauna of Panama.

INTRODUCTION

The Neotropical genus *Helluobrochus* Reichardt, 1974 is represented by 26 species; half of them were described by the Reichardt (1974) in his Monograph of Neotropical Helluonini. All the species occur in continental South America, with only one species occurring in Central America and Mexico. The genus was divided by Reichardt (1974) in the mentioned Monograph into 4 species groups. The purpose of the present short paper is to describe three new species of *Helluobrochus*, one from Colón province of Panama, belonging to the *brasiliensis*-group as defined by Reichardt (1974: 270), and two species belonging to the *lacordairei*-group - one from north-eastern Argentina (Corrientes Province) and second species from Venezuela.

MATERIAL AND METHODS

Material examined is housed in the following collection:
cOH private collection of O. Hovorka, Dobříš and Praha, Czech Republic.

Measurements were made by using an ocular micrometer in an MBS 10 stereobinocular microscope.

Total body length (TL) was measured from apex of the left mandible to the apex of longer elytron; the length of the head (HL) as the distance from anterior margin of the labrum to the level of constriction posteriad the eyes; the width of the head (HW) as the maximum linear distance across the head, including the compound eyes; the length of the pronotum (PL) from the anterior margin to the posterior one along the midline; the length of the elytra (EL) from the anterior margin at first stria to the apex of the longer elytron; the width of the pronotum (PW) and the elytra (EW) at their broadest point.

The microsculpture was examined under a magnification of 56x. Dissection was made with standard technique; male genitalia are glued on card with the specimen studied or on the small card beneath the specimen.

The type specimen of newly described species are provided with locality label and one red printed label: "*Helluobrochus panamensis* (or *argentinensis* or *venezuelensis*) sp. nov., HOLOTYPE, det. O. Hovorka, 2016".

DESCRIPTION OF NEW SPECIES

Helluobrochus panamensis sp. nov.

(Figs. 1-3)

Type material. Holotype (♀) labelled: „Panama, Colon Prov., Sherman Forest Reserve, 79°58'W, 9°17'N; 130 m a.s.l., lgt. Čížek & Hauck, 6.vi.-10.vii. 2002", (cOH).

Description. Habitus (Fig. 1): Smaller (TL 10.8 mm), elongate, brown to black species.

Coloration - head and pronotum black-brown, elytra brown on disc with darker, black-brown lateral margins; coxae, trochanters, femora and terminal antennomeres brown, tibiae, tarsomeres, palpomeres, labrum, mandibles and four basal antennomeres red-brown. Ventral side black, basal abdominal sternites laterally widely brown-red, posterior ones with brown-red lateral spots. Head, pronotum and most of elytral surface dorsally shining, without visible microsculpture (magnification 56x), only extreme elytral base with indistinct traces of isodiametric to transverse microsculpture. Body with yellow-red long setae, mostly abraded in studied specimen.

Head slightly transverse (HL/HW 0.88). Eyes large and prominent, occiput very short. Frons convex, anterior part smooth to the level of anterior margin of eye, posterior part and vertex distinctly, strongly punctate. Clypeus transverse, with distinct, not sharply delimited concavity (pit) in the middle and with two pairs of large setae and transverse row of smaller setae along anterior margin. Labrum large, rounded-triangular, transverse (1.45 times wider than long), convex lateral sides meeting anteriorly in central part forming knob-like process (Fig. 2). Terminal labial palpomere (Fig. 3) large, strongly widened, but not globose. Antennae average for the member of genus; third antennomere only very slightly (1.10 times) longer than fourth antennomere, terminal antennomere 2.25 times longer than wide.

Pronotum transverse, strongly wider than long (PW/PL 1.46) and distinctly wider than head (PW/HW 1.19), distinctly and relatively densely punctured on whole surface, more densely along margins than on disc. Anterior pronotal margin slightly incised, concave, anterior angles rounded. Lateral pronotal margin rounded and convex in anterior two thirds, incised posteriad, hind angles distinct, in form of very small and sharp, laterally oriented spine. Proepisternites only sparsely punctured and setose on anterior half, prosternite more densely punctured, especially in central part. Scutellum elongate, triangular, not punctured. Prosternal process laterally slightly margined, with two pairs of punctures, apex not margined with central unpaired puncture (pit). Metepisternites narrow, elongated, about 2.3 times longer than wide. Hind wings fully developed.

Elytra elongate, nearly twice longer than wide (EL/EW 1.9) and distinctly wider than pronotum (EW/PW 1.3); greatest elytral width at three quarters of length. Elytral humerus rounded but distinct. Elytral striae distinct, sulcate, not punctured; intervals convex, with two dense and almost regular rows of punctures along adjacent striae. Elytral apex margined with translucent membrane.

Male genitalia unknown.

Differential diagnosis. *Helluobrochus panamensis* sp. nov. differs from all congeners by the following combination of characters: last maxillary palpomere ± normal, not extremely large and globose; elytral striae distinct, sulcate; elytral intervals punctate and pubescent; head and pronotum of the same colour as elytra; femora of the same colour as body, dark; integument

generally black-brown; fourth tarsomere bilobed; eyes normal for the genus, not bulging; head distinctly punctate; pronotum strongly and densely punctate; labrum of typical shape (Fig. 2). The only other member of the genus known so far from Central America, *H. cribratus* (Reiche, 1842), is larger (15.5-16.0 mm), differs by the shape of labrum, sparser punctuation on head and pronotum, pronotal shape and proportions, completely black elytra and legs etc.

Relationships. *Helluobrochus panamensis* sp. nov. belongs to somewhat heterogeneous *brasiliensis*-group, which was defined by Reichardt (1974: 270). Only species of *brasiliensis*- and *subrostratus*-groups have bilobed fourth tarsomere, but species of *subrostratus*-group have not sulcate elytral striae. Two subgroups of *brasiliensis*-group are recognisable in male sex only. Within this group, the new species seems to be most closely related to *H. bacchus* (Reichardt, 1972). Both species share most of characters mentioned above in previous paragraph, including the general shape of labrum, which is infrequent in *Helluobrochus*. Another species with similar shape of labrum are *H. linearis* (Bates, 1871) and *H. subrostratus* (Bates, 1871) from *subrostratus*-group, and *H. anthracinus* (Klug, 1834) from *lacordairei*-group, easily recognisable by large size (26-27 mm), emarginate four tarsomere etc. Moreover none of mentioned species have the tip of labrum in form of knob-like process like *panamensis* sp. nov.

Name derivation. The specific epithet is derived from the name of country where the specimen was collected - Panama.

Fig. 1: *Helluobrochus panamensis* sp. nov., habitus of holotype.

Helluobrochus argentinensis sp. nov.

(Figs. 4-8)

Type material. Holotype (♂) labelled: „Argentina NE, S of Corrientes, river Parana, lgt. Snížek 16.i.2009", (cOH).

Description. Habitus (Fig. 4): Medium sized (TL 14.0 mm), elongate, black species.

Coloration - black; antennomeres starting fifth one brown; mandibles, palpomeres and tarsomeres brown to brown-black; apex of terminal palpomeres red-brown. Ventral side black to brown-black. Head and pronotum dorsally shining, without visible microsculpture (magnification 56x), elytra with distinct isodiametric microsculpture. Body with sparse, short, inconspicuous yellow-brown setae, more distinct on ventral parts.

Head slightly transverse (HL/HW 0.88). Eyes large and prominent, occiput very short. Frons convex, almost smooth, but with few setigerous punctures laterally along eyes and in transverse row between anterior ocular setae, posterior part of vertex punctate and setose too. Clypeus transverse, with distinct, not sharply delimited concavity (pit) in the middle near front margin, and with two pairs of large setae and transverse row of smaller setae along anterior margin. Labrum large, transverse (1.56 times wider than long), standard for the genus (with triangular central dentiform process - Fig. 5. Terminal labial palpomere (Fig. 6) large, apically widened, but not globose, nearly 2 times longer than wide. Antennae average for the member of genus; third antennomere only very slightly (1.10 times) longer than fourth antennomere, terminal antennomere elongate, 2.36 times longer than wide.

Pronotum transverse, strongly wider than long (PW/PL 1.42) and only very slightly wider than head (PW/HW 1.04), distinctly and relatively densely punctured along margins, sparsely punctured on disc. Anterior pronotal margin slightly incised, concave, anterior angles rounded. Lateral pronotal margin rounded and convex in anterior two thirds, strongly incised posteriad, sides divergent towards hind angle, which has form of very small and sharp, laterally oriented spine, similarly as in previous species. Proepisternites with few (± 10) punctures on anterior half, prosternite more densely punctured. Scutellum triangular, microscopically punctured on basal part. Prosternal process laterally not margined, with ten irregularly distributed punctures. Metepisternites narrow, elongate, about 2.3 times longer than wide. Hind wings fully developed.

Elytra elongate, much longer than wide (EL/EW 1.70) and distinctly wider than pronotum (EW/PW 1.59); greatest elytral width at two thirds of length. Elytral humerus rounded but distinct. Elytral striae distinct, sulcate, distinctly punctured; intervals convex, with two sparse, irregular rows of punctures along adjacent striae. Elytral apex margined with yellowish translucent membrane.

Male genitalia as on Figs. 7-8.

Differential diagnosis. *Helluobrochus argentinensis* sp. nov. differs from all congeners by the following combination of characters: last maxillary palpomere normal, not large and globose; elytral striae distinct, sulcato-punctate; elytral intervals punctate and pubescent, but pubescence short and inconspicuous; head and pronotum of the same colour as elytra; femora of the same colour as body, black; integument generally black to black-brown; fourth tarsomere emarginate; eyes normal for the genus, not bulging; head punctate only laterally and posteriad; pronotum on disc sparsely punctate; third mesotarsomere of male with adhesive hairs; labrum and aedeagus of typical shape (Figs. 4, 7-8).

Relationships. *Helluobrochus argentinensis* sp. nov. belongs to somewhat heterogeneous *lacordairei*-group, which was defined by Reichardt (1974: 270). Only species of *lacordairei*- and *oopselaphus*-groups have emarginate fourth tarsomere, but species of *oopselaphus*-group have globose and oval terminal maxillary palpomere. Within *lacordairei*-group, the new species seems to be most closely related to *H. lacordairei* (Dejean, 1831), *H. negrei* Reichardt, 1974 and *H. inconspicuus* (Chaudoir, 1848). All these species share most of characters mentioned above in previous paragraph, except few points: in the *lacordairei* and *inconspicuus* is elytral pubescence long and conspicuous and none of the three mentioned species have third mesotarsomere of male with adhesive hairs, which are present in *argentinensis* sp. nov.

Name derivation. Specific epithet is derived from the name of country where the specimen was collected - Argentina.

4

Fig. 4: *Helluobrochus argentinensis* sp. nov., habitus of holotype.

***Helluobrochus venezuelensis* sp. nov.**

(Figs. 9-13)

Type material. Holotype (♂) labelled: „Venezuela, February 1996, Ing. Pavel Senft lgt., 88 km", (cOH).

Description. Habitus (Fig. 9): Medium sized (TL 14.3 mm), elongate, black species.

Coloration - black; antennomeres starting fifth one brown; labrum and apical part of mandibles

brown-red, femora and trochanters red-brown. Ventral side black to brown-black. Head, pronotum and basal 0.2 of elytra dorsally shining, without visible microsculpture (magnification 56x), elytra from basal fifth with indistinct isodiametric microsculpture near striae and punctures, becoming gradually distinct on whole surface towards apex; terminal part of elytra dull through strong isodiametric microsculpture. Body with sparse, short, inconspicuous brown setae.

Head transverse (HL/HW 0.83). Eyes large and prominent, occiput very short. Frons convex, almost smooth, with sparse setigerous punctures laterally along eyes, vertex punctate and setose only sparsely too. Clypeus transverse, with indistinct, very shallow, not sharply delimited concavity in the middle, with two pairs of large setae and with transverse row of shorter setae along anterior margin. Labrum (Fig. 10) large, transverse (1.52 times wider than long), standard for the genus (i.e. with triangular central dentiform process). Terminal labial palpomere (Fig. 11) large, apically widened, but not globose, 1.8 times longer than wide. Antennae average for the member of genus; third antennomere only slightly (1.25 times) longer than fourth antennomere, terminal antennomere elongate, 2.19 times longer than wide.

Pronotum transverse, strongly wider than long (PW/PL 1.45) and only slightly wider than head (PW/HW 1.07), distinctly and relatively strongly and densely punctured, punctuation sparse on disc. Anterior pronotal margin slightly incised, concave, anterior angles rounded. Lateral pronotal margin rounded and convex in anterior two thirds, strongly incised posteriad, sides then almost parallel, only very slightly divergent towards hind angles, which are sharp, but not forming laterally projecting spine. Proepisternites with punctures on anterior half only, prosternite more densely punctured. Scutellum triangular, elongated. Prosternal process laterally not margined, with about dozen of irregularly distributed punctures. Metepisternites narrow, elongate, about 2.7 times longer than wide. Hind wings fully developed.

Elytra elongate, much longer than wide (EL/EW 1.72) and distinctly wider than pronotum (EW/PW 1.45); greatest elytral width at two thirds of length. Elytral humerus rounded but distinct. Elytral striae distinct, sulcate, distinctly punctured; intervals convex, with two sparse, irregular rows of punctures along adjacent striae. Elytral apex margined with translucent membrane.

Male genitalia as on Figs. 12-13.

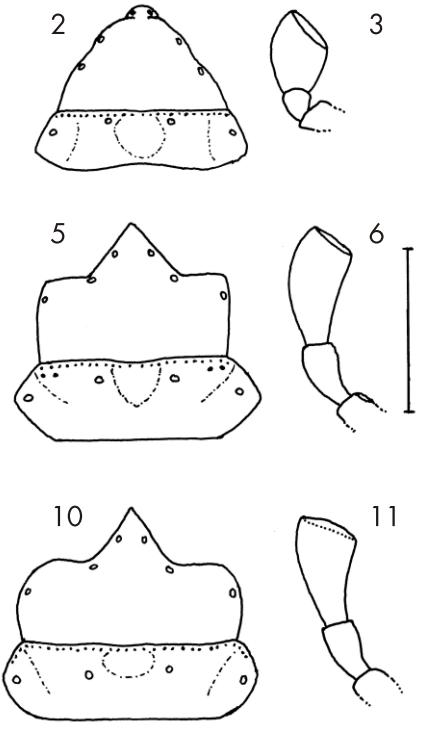
Differential diagnosis. *Helluobrochus venezuelensis* sp. nov. differs from all congeners by the following combination of characters: last maxillary palpomere normal, not large and globose; elytral striae distinct, sulcato-punctate; elytral intervals punctate and pubescent, but pubescence short and inconspicuous; head and pronotum of the same colour as elytra; femora red-brown, contrasting with colour of body; integument generally black; fourth tarsomere emarginate; eyes normal for the genus, not extremely convex and bulging; head punctate only laterally and posteriad; pronotum punctate on disc; third mesotarsomere of male with adhesive hairs; labrum and aedeagus of typical shape (Figs. 10, 12-13).

Relationships. *Helluobrochus venezuelensis* sp. nov. belongs, like previous species, to heterogeneous *lacordairei*-group. Within *lacordairei*-group, the new species seems to be most closely related to *H. cribricollis* (Chaudoir, 1872) and *H. darlingtoni* Reichardt, 1974. *H. cribricollis* differs by brownish to red head, which is densely and coarsely punctate, by leathery, opaque elytra, both second and third male mesotarsomeres with adhesive hairs etc.; *H. darlingtoni* differs by presence of conspicuous yellow elytral pubescence and by third mesotarsomere of male without adhesive hairs.

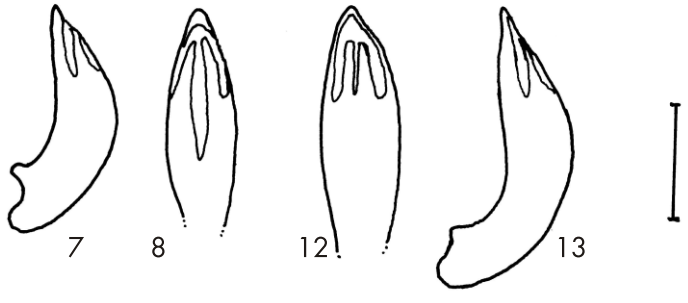
Name derivation. Specific epithet is derived from the name of country where the specimen was collected - Venezuela.

9

Fig. 9: *Helluobrochus venezuelensis* sp. nov., habitus of holotype.



Figs. 2-3, 5-6, 10-11. *Helluobrochus panamensis* sp. nov.: 2- clypeus and labrum (only setigerous pores depicted, setae omitted); 3- two terminal maxillar palpomeres. *Helluobrochus argentinensis* sp. nov.: 5- clypeus and labrum (only setigerous pores depicted, setae omitted); 6- two terminal maxillar palpomeres. *Helluobrochus venezuelensis* sp. nov.: 10- clypeus and labrum (only setigerous pores depicted, setae omitted); 11- two terminal maxillar palpomeres. Scale bar: 1.0 mm.



Figs. 7-8, 12-13. *Helluobrochus argentinensis* sp. nov.: 7- median lobe of aedeagus, lateral view; 8- median lobe of aedeagus, dorsal view; *Helluobrochus venezuelensis* sp. nov.: 12- median lobe of aedeagus, dorsal view; 13- median lobe of aedeagus, lateral view. Scale bar: 1.0 mm.

DISTRIBUTIONAL RECORD

Helluobrochus cribratus (Reiche, 1842)

Studied material. „Panama, Colon Prov., Ft. Sherman, x.2003, 130 m a.s.l., lgt. Čížek", 1 ♂, (cOH).

Distribution. Mexico, El Salvador, Nicaragua, Costa Rica, Venezuela, Guyana, Suriname, French Guiana, Peru, Colombia, Brazil (Blackwelder 1944, Reichardt 1974). A species new to Panama.

ACKNOWLEDGEMENTS. Sincere thanks are due to David Hauck (Brno, Czech Republic) and Miroslav Snížek (České Budějovice, Czech Republic) for providing me with interesting material of Carabid beetles, and to Jan Hrdlička (Babice u Říčan, Czech Republic) for macrophotographs of type specimens.

REFERENCES

BLACKWELDER R. E. 1944: Checklist of the Coleopterous Insects of Mexico, Central America, the West Indies, and South America. Part I. *United States National Museum Bulletin* 185: xii + 188 pp.

REICHARDT H. 1974: Monograph of the Neotropical Helluonini, with notes and discussions on Old World forms (Coleoptera: Carabidae). *Studia Entomologica* 17 (1-4): 211-302.

Published: 31.8.2016