Genus	Vol. 20(2): 341-347	Wrocław, 15 VII 2009

Two new species of *Charidotella* Weise with black dorsal pattern (Coleoptera: Chrysomelidae: Cassidinae: Cassidini)

Lech Borowiec
Department of Biodiversity and Evolutionary Taxonomy, Zoological Institute, University of Wrocław, Przybyszewskiego 63/77, 51-148 Wrocław, Poland, e-mail: cassidae@biol.uni.wroc.pl

Abstract. Two new species of *Charidotella* s. str. are described: *Charidotella atromarginata* from Mexico and *Charidotella nigripennis* from Venezuela. Both belong to the group of species with a black pattern on dorsum.

Key words: entomology, taxonomy, Coleoptera, Chrysomelidae, Cassidinae, Cassidini, *Charidotella*, new species, Mexico, Venezuela.

INTRODUCTION

The genus *Charidotella* was proposed by Weise (1896) for *Cassida zona* Fabricius, 1801, a species widespread in the northern part of South America. Many Neotropical species described in the genera *Coptocycla* and *Metriona* were transferred subsequently to the genus *Charidotella*. First catalogue of the genus, diagnostic characters and division into subgenera was proposed by Borowiec (1989). He listed 91 species, including three described as new. Later, one new species in the subgenus *Metrionella* was described by Borowiec (1995) and one species added to the genus in the World Catalogue of Cassidinae (Borowiec 1999). After the catalogue five new species were described (Borowiec 2002, 2004, 2007; Maia and Buzzi 2005) thus actually the genus *Charidotella* comprises 97 species (Borowiec and Świętojańska 2009). Most species of the genus are small, yellow cassids, very uniform and difficult to identify. Only few species have distinct dorsal pattern. Colour photographs of most species are available in Borowiec and Świętojańska (2002).

In material studied recently I found two new species of the genus *Charidotella* Weise belonging to two subgenera with very characteristic and distinct dorsal black pattern. Their description is given below.

Colour photographs were prepared used Helicon Focus software. Pictures were digitally corrected for better appearance. Measurements were taken with an ocular micrometer. Body length was measured from the anterior corner of the pronotum to the apex. Pronotal length was taken from the anterior corner to the base of the pronotum, and pronotal width was measured as the distance between the basal corners. Length ratio of antennal segments was measured as a percent of length of each segment to the length of the first segment. Male genitalia were not examined because they are not diagnostic within the genus *Charidotella*.

Label data is verbatim, and data from different lines is separated by a single slash (/). Each type is clearly labelled with a red label.

Charidotella atromarginata n. sp.

Etymology

Named after broadly black explanate margin of elytra.

Diagnosis

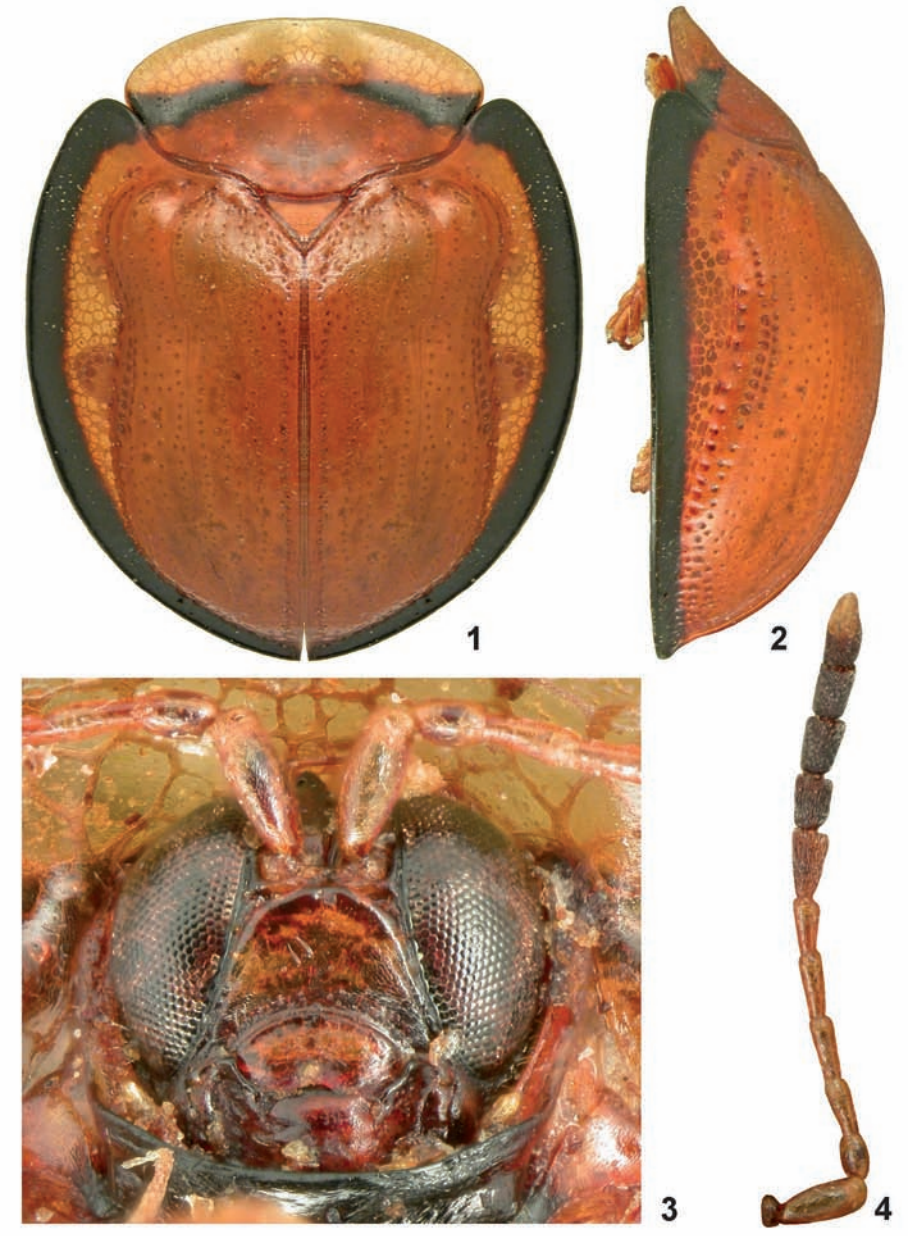
A member of the subgenus *Chaerocassis* Spaeth in Hincks, 1952. *Charidotella atromarginata* differs from all species of the subgenus *Chaerocassis* and all other species of the genus *Charidotella* in unique dorsal pattern forming broad black band along margin of elytra and two narrow black bands along bases of explanate margin of pronotum. Black pattern on explanate margin of elytra occurs in some species of the nominotypical subgenus e.g. *Ch. actiosa* (Champion, 1894) but it forms humeral spot or arch-shaped band on underside of the explanate margin, never on dorsal side.

Description

Length 5.1-5.6 mm, width 4.2-4.65 mm, length of pronotum 1.8-2.0 mm, width of pronotum 3.1-3.35 mm, length/width ratio 1.20-1.23, width/length ratio of pronotum 1.65-1.78. Body broadly oval, sexual dimorphism indistinct (fig. 1).

Pronotum and scutellum uniformly yellow. Elytra yellow, on underside with black pattern occupying a great part of elytral surface, except marginal interval, anterior part of humerus, a large yellow ring in centre of disc, and yellow sutural intervals between scutellum and the yellow ring. Each elytral puncture with black centre and black areola, elytra appear distinctly punctate with black. Clypeus yellow with black basal corners. Prothorax yellow except black external margins of procoxal cavities. Mesothorax yellow, metathorax in the middle black, at sides with large yellow spots. Epimera and episterna of mesothorax yellow except black margins, lateral plates of metasternum brown to black. Abdomen in the middle black, sides and apex broadly yellow. Coxae partly infuscate to black, trochanters yellow, legs uniformly yellow. Antennal segments 1-7 yellow, 8-10 brown to black, segments 10 and 11 ventrally paler than dorsally.

Pronotum moderately broad, 1.65-1.78 times as wide as long. Anterior margin forms distinct arch, sides narrowly rounded, maximum width of pronotum in basal 2/5 length. Whole surface of pronotum smooth, shiny, explanate margin with honeycomb structure.



1-4. *Charidotella atromarginata* n. sp.: 1 – habitus dorsal, 2 – habitus lateral, 3 – head, 4 - antenna

Scutellum triangular, without sulci or impressions. Base of elytra distinctly wider than base of pronotum. Humeri rounded, moderately protruding anterad. Elytral disc distinctly, almost regularly convex with the top of convexity in postscutellar point (fig. 2). Puncturation of disc regular, on top of disc moderately coarse, in the middle of sides coarse, punctures gradually decreasing from top of disc to slope. Punctures on sides of disc approximately thrice coarser than in two sutural rows. Interspaces 1-3 broad, three to four times as wide as rows, lateral interspaces partly only twice as wide as rows. Surface of intervals flat, smooth, and mirror. Principal impression distinct, moderately deep with 4-6 coarse punctures. Explanate margin of elytra broad, in widest part slightly wider than half width of disc of elytron, moderately declivous. Surface of the margin smooth, mirror, with honeycomb structure. Apex of elytral epipleura bare.

Clypeus moderately broad, approximately 1.3 times as wide as long. Clypeal lines fine, well visible from base to 1/3 length of clypeus (fig. 4). Margins of clypeal plate slightly elevated, surface of clypeal plate from base to apex gradually impressed thus apex of clypeal plate distinctly elevated. Anterior margins of clypeal plate converging in soft arch. Surface of clypeal plate impunctate, shiny. Eyes large, occupying whole sides of head, gena invisible. Labrum very shallowly emarginate. Antennae moderately long, length ratio of antennal segments: 100:50:39:55:50:44:50:47:47:50:97. Segment 2 almost 1.3 times longer than segment 3, segment 4 approximately 1.43 times as long as segment 3, segments 9 and 10 slightly longer than wide. Prosternal collar short, forms regular arch. Prosternal process typical for the genus *Charidotella*, broad, not constricted in the middle, apex only slightly expanded laterally, central part shallowly impressed. Surface of prosternal process regular, smooth, without punctures. All claws with large basal tooth.

Type material

Holotype: "Mexico / Soconusco / 25.VIII / Purpus S.V."; paratype "[Mexico] / Misantla / 6"; paratype: "[Mexico] / Xomotla / 6" (all preserved at the Department of Biodiversity and Evolutionary Taxonomy, Zoological Institute, University of Wrocław, Poland). All localities are placed in Veracruz-Llave province.

***Charidotella nigripennis* n. sp.**

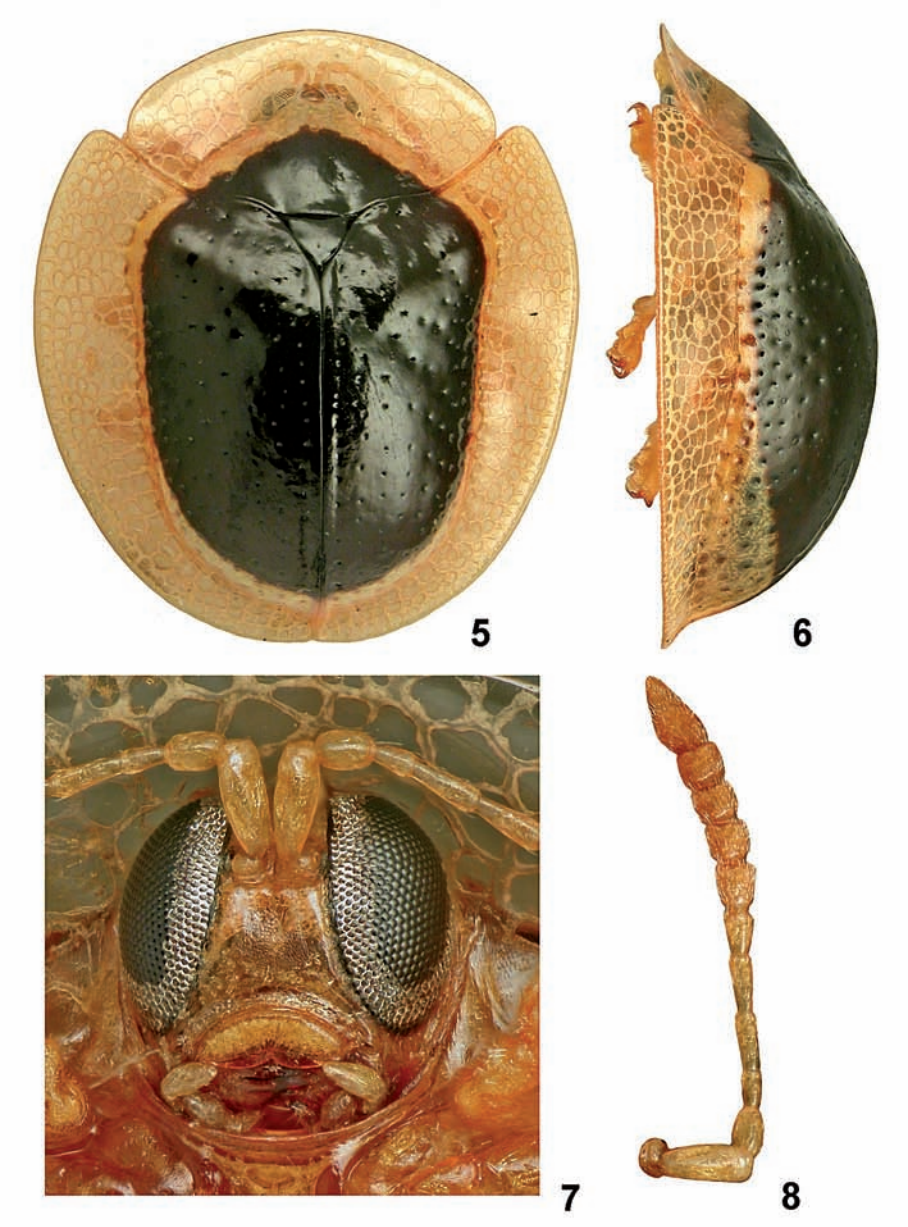
Etymology

Named after mostly black elytral disc.

Diagnosis

A member of nominotypical subgenus. *Charidotella nigripennis* n. sp. and *Ch. semiatrata* (Boheman, 1862) are the only species with pronotum and elytra mostly black. At first glance both species look very similar but *Ch. semiatrata* differs in yellow scutellum (black in *Ch. nigripennis*) and mostly black thorax (uniformly yellow in *Ch. nigripennis*). In *Ch. semiatrata* whole pronotal disc is black while in *Ch. nigripennis* the black colour forms on pronotal disc large triangle which occupies ¾ basal surface

of disc. In *Ch. semiatrata* black on elytral disc on sides extends to marginal row while in *Ch. nigripennis* the black spot extends only to submarginal row. Several species of the subgenus *Xenocassis* Sp. have dorsal pattern of black colour but it usually forms more or less complete ring with top of disc always yellow.



5-8. *Charidotella nigripennis* n. sp.: 5 – habitus dorsal, 6 – habitus lateral, 7 – head, 8 - antenna

Description

Length: male 5.15-5.4 mm, female 5.7-6.2, width: male 4.4-4. 5 mm, female: 4.75-5.5 mm, length of pronotum: male 1.9 mm, female: 2.0-215 mm, width of pronotum: male 3.2-3.25 mm, female 3.3-3.7 mm, length/width ratio: male 1.17-1.23, female 1.13-1.20, width/length ratio of pronotum: male 1.68-1.71, female 1.65-1.72. Body almost circular, sexual dimorphism distinct, males smaller than females (figs. 5, 6).

Pronotum and scutellum uniformly yellow. Elytra yellow, on underside with two small, black at top. Ventrites and legs uniformly yellow. Antennal segments 1-8 yellow, 9-11 more or less infuscate, segment 11 slightly paler than segments 9 and 10.

Pronotum moderately broad, 1.65-1.72 times as wide as long, widest at mid length. Anterior margin forms distinct arch, sides narrowly rounded, maximum width of pronotum slightly behind middle. Whole surface of pronotum smooth, shiny, explanate margin with honeycomb structure.

Scutellum triangular, without sulci or impressions. Base of elytra distinctly wider than base of pronotum. Humeri rounded, moderately protruding anterad. Elytral disc distinctly, slightly irregularly convex with the top of convexity in postscutellar point (fig. 7). Puncturation of disc regular, on almost whole surface fine, only in row above lateral fold on short distance punctures distinctly coarser than those of top of disc. Distance between punctures in rows several times wider than puncture diameter. Interspaces very broad, mostly four to six times as wide as rows. Surface of intervals flat, smooth, and mirror. Principal impression distinct, deep with 3-4 fine punctures. Explanate margin of elytra broad, in widest part thrice narrower than width of disc, moderately declivous. Surface of the margin smooth, mirror, with honeycomb structure. Apex of elytral epipleura bare.

Clypeus moderately broad, approximately 1.4 times as wide as long. Clypeal lines fine, well visible from base to 1/3 length of clypeus (fig. 8). Margins of clypeal plate slightly elevated, surface of clypeal plate in apical half impressed thus apex of clypeal plate distinctly elevated. Anterior margins of clypeal plate converging in soft arch. Surface of clypeal plate impunctate, shiny. Eyes large, occupying whole sides of head, gena invisible**.** Labrum very shallowly emarginate. Antennae moderately long, length ratio of antennal segments: 100:47:44:53:53:42:47:42:42:42:90. Segment 2 not or only slightly longer than segment 3, segment 4 approximately 1.2 times as long as segment 3, segments 9 and 10 slightly longer than wide. Prosternal collar short, forms regular arch. Prosternal process typical for the genus *Charidotella*, broad, not constricted in the middle, apex only slightly expanded laterally, central part shallowly impressed. Surface of prosternal process regular, smooth, without punctures. All claws with large basal tooth.

Type material

Holotype: “VENEZUELA / Trujillo, Guaramacal / m 1500, Boconò / 26.V.1980” (preserved at the Department of Biodiversity and Evolutionary Taxonomy, Zoological Institute, University of Wrocław, Poland).

ACKNOWLEDGEMENTS

This paper was supported by scientific grant of the Zoological Institute, University of Wrocław, 1018/IZ/2009.

REFERENCES

BOHEMAN, C. H., 1862. Monographia Cassididarum. Tomus quartus. Holmiae, 504 pp.

BOROWIEC, L., 1989. Three new species of *Charidotella* WEISE (Coleoptera, Chrysomelidae, Cassidinae), with checklist of the genus. Pol. Pismo Entomol., **59**: 203-222.

—, 1995. *Charidotella* (*Metrionaspis*) *santaremi* n. sp., from Brazil (Coleoptera: Chrysomelidae: Cassidinae). Genus, Wrocław, **6**: 441-446.

—, 1999. A world catalogue of the Cassidinae (Coleoptera: Chrysomelidae). Biologica Silesiae, Wrocław, 476 pp.

—, 2002. New records of Neotropical Cassidinae, with description of three new species (Coleoptera: Chrysomelidae). Genus, Wrocław, **13**: 43-138.

—, 2004. *Charidotella* (*Philaspis*) *marginepunctata*, a new species from Brazil (Coleoptera: Chrysomelidae: Cassidinae). Genus, Wrocław, **15**: 253-256.

—, 2007. Two new species of *Charidotella* WEISE (Coleoptera: Chrysomelidae: Cassidinae: Cassidini), with a key to *Charidotella sexpunctata* group. Zootaxa, **1586**: 59-66.

BOROWIEC, L., ŚWIĘTOJAŃSKA, J., 2009. Cassidinae of the world - an interactive manual (Coleoptera: Chrysomelidae). Available from: www.biol.uni.wroc.pl/cassidae/katalog%20internetowy/index.htm (last modification 3 April 2007)

MAIA, O.M. DE ANDRADE, BUZZI, Z.J., 2005. Uma nova espécie de *Charidotella* (*Charidotella*) WEISE (Coleoptera,Chrysomelidae, Cassidinae) de Curitiba, Parana, Brasil. Rev. Bras. Zool., **22**: 571-572.

CHAMPION, G. C., 1893-1894. Biologia Centrali-Americana. Insecta. Coleoptera. Vol. VI. Part 2. Phytophaga. Cassididae and appendix to Hispidae. 1893: 125-164, 1894: 165-249, tab. 5-13.

HINCKS, W. D., 1952. The genera of the Cassidinae (Coleoptera: Chrysomelidae). Trans. R. Entomol. Soc. Lond., **103**: 327-358.

WEISE, J., 1896. Feststellung einiger Cassiden-Gattungen. Deutsche Entomologische Zeitschrift, **1896**: 10-15.