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Two new genera of hispines (Coleoptera: Chrysomelidae: Cassidinae) from Ecuador

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from Ecuador

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Two new genera of hispines (Coleoptera: Chrysomelidae: Cassidinae) from Ecuador

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Abstract. *Bicristispa gracilis*, new genus and new species, and *Orbispa confluens*, new genus and new species (Coleoptera: Chrysomelidae: Cassidinae), both from canopy fogging material from Ecuador are described and illustrated. Comparative notes distinguishing them from similar genera are provided.

Key words: New genus, new species, hispines, Chrysomelidae, Cassidinae.

Introduction

Hispines comprise half of the subfamily Cassidinae Gyllenhal, 1813 (*sensu lato*) in the family Chrysomelidae within the order Coleoptera (Staines 2002). Until recently, most authors treated the group as a separate subfamily but recent work has shown that there is no biological or morphological reason to retain sub-familial status (Staines 2002). The combined subfamily consists of 6000 species placed in 42 tribes (Staines 2002).

The combination of the Hispinae with the Cassidinae (*sensu stricto*) has created difficulty in having a handy term to use for these beetles. Several have been proposed but they are cumbersome. Until an easily used term is coined for this group, we continue to use “hispines” in the traditional sense of the genera and species in the former subfamily Hispinae (see Seeno and Wilcox 1982 for a list of genera).

The new genera are both in the tribe Chalepini Weise, 1910 which is distinguished by the clypeus being more or less long and the labrum reduced; with 3 to 11 antennomeres; a seta is present on a small tubercle on the anterior margin of the pronotum; the elytra are denticulate laterally and posteriorly, with 7 to 10 rows of punctures at base, scutellar row present or absent, usually with punctures in double rows separated by a costa, but some genera have with irregular puncture rows and tuberculate costae. This study is an outgrowth of the summer internship project comparing the species composition of Cassidinae (*sensu lato*) in various localities by L. Zamorano.

Materials and Methods

Material used in this study came from a canopy arthropod biodiversity study conducted in Ecuador by T. L. Erwin (Erwin et al. 2005). The sample sites are extremely diverse moist lowlands, primary *terra firma* (non-floodplain) rainforest in the Amazon Basin. Precipitation is somewhat seasonal (2.7 meters per year) with the dry season running from November to April and the wet season from May to October (Lucky et al. 2002).

In identifying material from fogging samples specimens of these two new genera were discovered. For this study, measurements were taken with an ocular micrometer. Pronotal length and width were measured along the midlines. Elytral width was measured at the humeri. Elytral length was measured from the base to the apex along the midline. Total length was measured from the base of the antennae to the apex of the elytra. In recording label data from type specimens, a slash (/) separates data on different labels; brackets () include explanatory or label color information.

***Bicristispa* Staines and Zamorano, new genus**

(Figures 1–6)

Generic Description. Body elongate, parallel-sided. Antenna: with 4-antennomeres, apical antennomere with acutely pointed at apex. Head: vertex with ridge on each side of medial sulcus. Pronotum: trapezoidal; lateral margin slightly rounded; basal impression present. Elytra: broadly enlarged apically; with 8 rows of punctures; with 3 costae, none unite; exterior apical angle with broad flattened tooth. Venter: anterior margin of prosternum not projecting forward to partially cover mouth.

Etymology. A combination of bi (Latin = two) crista (Latin = ridge) and hispa (a common ending for genera in this group of beetles) for the two ridges on the vertex of the head. The word is feminine.

Comparative notes. *Bicristispa* keys to *Acanthispa* Chapuis, 1875 (= *Acanthodes* Baly, 1864) in Staines (2002) but differs in the following combination of characters: The body is not wedge-shaped, the elytra without extra rows of punctures between rows 5 and 7, the pronotum is not transverse, the base of the pronotum without an excavation present on each side, and the head is slightly longer than wide.

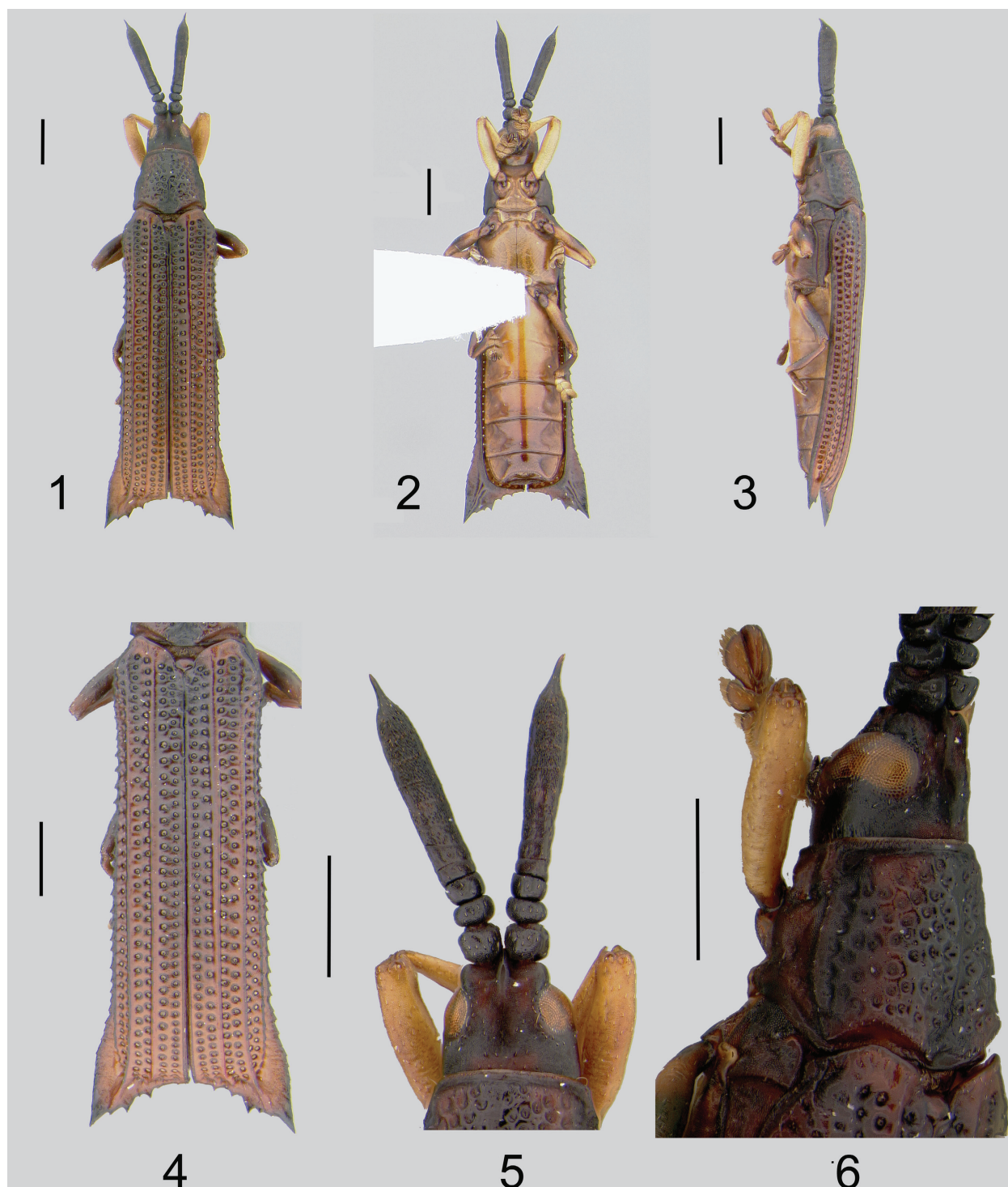
Type species. *Bicristispa gracilis* Staines and Zamorano, new species.

***Bicristispa gracilis* Staines and Zamorano, new species**

Figures 1–6

Holotype (♂): Ecuador, Orellana Department, Rio Piraña Bridge, Reserva Etnica Waorani, Onkane Gare camp, 226 m above sea level, 00°39'25.7"S, 076°27'108"W, 22-Oct-2005, in the canopy of *Iriarte deltoidea*/ HISP #118, LOT #2082, Tiputini Station Ecuador, Det. M. C. Pimienta, 2003/ HOLOTYPE *Bicristispa gracilis* Staines & Zamorano, des. 2011 [red label] to be deposited in the Museo de Historia Natural, Escuela Politécnica Nacional (EPNC), held in trust at National Museum of Natural History, Smithsonian Institution (USNM).

Description. Total length 8.8 mm (n=1). Elytral length 6.1 mm; elytral width 2.0 mm. Pronotal length 1.4 mm; pronotal width 1.5 mm. Body color reddish-brown with lateral and basal margins of pronotum black; pronotum with a darker line medially; elytra with lateral margin darker and suture darker on basal 1/3, apical 1/3 of elytra lighter reddish-orange; head and antennae black; head with a reddish colored bar at the base of the antennae and a larger one at their apices; mouthparts reddish; venter orangish with apical sternite slightly darker; forelegs entirely yellowish, mesolegs and metalegs reddish, with lighter coloration basally (Fig. 1–3). Antenna (Fig. 5): with 4-antennomeres, subequal in width; antennomeres 1–3 smooth with white setae; 1 globular, larger than 2 or 3; 2 subglobose; 3 longer than 2, wider than long; apical antennomere long, twice length of antennomeres 1, 2 and 3 combined, with punctures, transverse sulci (which resemble sutures of the fused antennomeres), not laterally compressed, reddish setae on apex, acutely pointed down-curved apex. Head (Fig. 5–6): flattened, compressed; with pronounced projection present between eyes; medial sulcus present; row of setae present around eyes and mesad of anterior margin; sulcus absent on outer margin of eye; sulcus present on the inner margin of eye; row of setae present on each side of middle; frons not projecting, punctate; pronounced ridge present on each side of middle. Pronotum (Fig. 5): as wide as long in the middle; widest at the base; trapezoidal; shallow punctures over entire surface; lateral margin slightly rounded; seta present in anterior angle; basal margin bisinuate; basal impression present; row of setae present along the basal



Figures 1–6. *Bicristispa gracilis*, n. sp. 1) Dorsal. 2) Ventral. 3) Lateral. 4) Elytra. 5) Antennae, head and pronotum. 6) Head lateral.

margin. Scutellum: pentagonal, sparsely punctate. Elytra (Fig. 4): parallel-sided, broadly enlarged apically, with 5–6 spines on flattened exterior apical angle; spine darker apically; with 8 puncture rows, punctures markedly separated, round; with 3 costae, costa 2 more pronounced than 1 or 3, intersecting costa 3 as it curves onto exterior apical angle ending at penultimate marginal tooth; lateral margin serrate; exterior apical angle expanded, acute, flattened, apical margin strongly dentate; sutural angle

with minute tooth, angulate. Venter (Fig. 2): smooth; abdominal sterna 5-6 with row of setae along each apical margin, 5 with scattered setae in the middle; apical three sterna with depression on each side.

Etymology. Gracilis (Latin = slender, thin) for the slender body form of this species.

Host plant. Taken fogging the canopy of *Iriartea deltoidea* Ruiz. and Pav. (Arecaceae).

Distribution. Ecuador.

Remarks. The sample was collected in a *terra firma* forest (non-floodplain) with a forest column of 30–35m. Mostly bare green leaves, some of them with a covering of lichenous or bryophytic plants. *Chalepus bellulus* (Chapuis) is the only species of Chalepini which has been associated with a species of Aracaceae (Staines 2011).

***Orbispa* Staines and Zamorano, new genus**

(Figures 7–12)

Generic Description. Elongate; parallel-sided. Antenna: with 8-antennomeres, not laterally compressed; antennomere 2 subglobose; 8 longest. Head: medial sulcus present; not depressed between eyes row of white setae present around eyes; sulcus absent on inner and outer margin of eye. Pronotum: wider than long; with narrow basal impression. Elytron: with 8 rows of punctures; 3 costae; lateral and apical margins serrate. Venter: anterior margin of prosternum not projecting forward to partially cover mouth.

Etymology. From orbis (Latin = ring or circle) plus hispa (a common ending for genera in this group of beetles) for the ring of setae surrounding the eyes. The word is feminine.

Comparative notes. *Orbispa* keys to *Bothrispa* Uhmann, 1940 in Staines (2011) but differs in the following combination of characters: head without depression between eyes with medial sulcus present, antennomere 1 not laterally compressed, antennomere 2 not cylindrical, elytra with 8 continuous rows of punctures, and elytra with sutural margin not carinate.

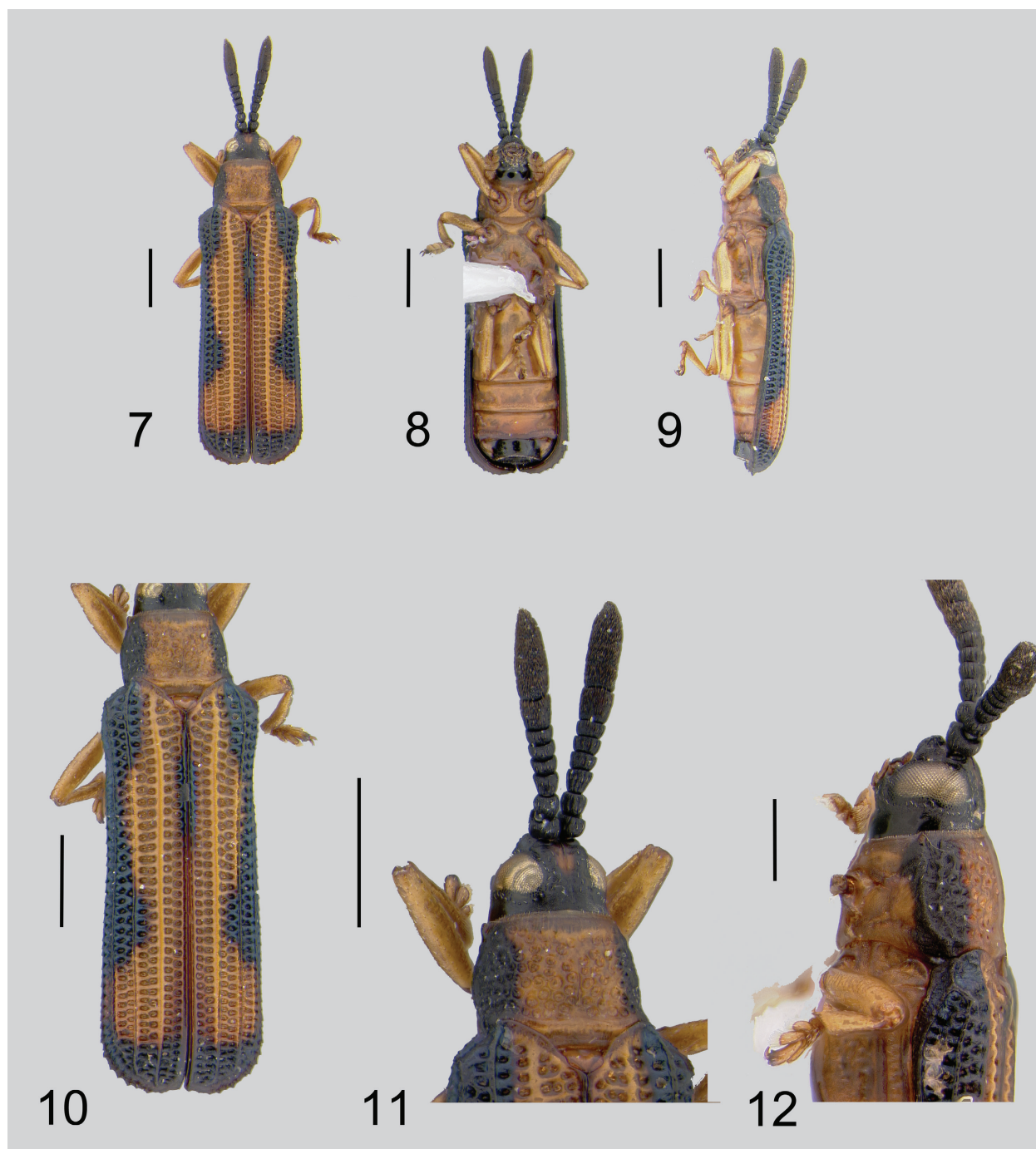
Type species. *Orbispa confluens* Staines and Zamorano, new species.

***Orbispa confluens* Staines and Zamorano, new species**

Figures 7–12

Types. Holotype (♂): Ecuador, Orellana Department, Tiputini Biodiversity Station near Yasuní National Park, 220–250 m above sea level, 00°37'55"S, 076°08'39"W, 5-Feb-1999, in the canopy of *Trattinnickia rhoifolia* var. *lancifolia*/ HISP #244, LOT #3069, Tiputini Station Ecuador, Det. Laura Sarmiento-Zamorano 2011 [green label]/ HOLOTYPE *Orbispa confluens* Staines & Zamorano, des. 2011 [red label]; to be deposited in the Museo de Historia Natural, Escuela Politécnica Nacional (EPNC), held in trust at National Museum of Natural History, Smithsonian Institution (USNM). **Paratype** (♀): Ecuador, Orellana Department, Tiputini Biodiversity Station near Yasuní National Park, 220-250 m above sea level, 00°37'55"S, 076°08'39"W, 5-Feb-1999, in the canopy of *Trattinnickia rhoifolia* var. *lancifolia*/ HISP #244, LOT #3253, Tiputini Station Ecuador, Det. Laura Sarmiento-Zamorano 2011 [green label]/ PARATYPE *Orbispa confluens* Staines & Zamorano, des. 2011 [red label]; to be deposited in the Museo de Historia Natural, Escuela Politécnica Nacional (EPNC), held in trust at National Museum of Natural History, Smithsonian Institution (USNM).

Description. Total length 5.2–5.7 mm (n=2). Elytral length 4.0–4.5 mm; elytral width 1.5–1.7 mm. Pronotal length 0.7–0.8 mm; pronotal width 1.1–1.2 mm. Body color reddish-orange with lateral margins of pronotum and elytra black; elytra with suture black on basal 1/3 and apical margin broadly black; head and antennae black with reddish-orange spot at base of antennae; venter yellowish with apical



Figures 7–12. *Orbispa confluens*, n. sp. **7)** Dorsal. **8)** Ventral. **9)** Lateral. **10)** Elytra. **11)** Antennae, head and pronotum. **12)** Head lateral. **Figures 7–11,** Scale bar = 1 mm; **Figure 12,** Scale bar = 0.5 mm.

sternite black and penultimate sternite black in middle; legs entirely yellowish; mouthparts reddish (Fig. 7–9). Antenna (Fig. 11): with 8-antennomeres; antennomeres 1–2 subglobose, punctate with white setae; 2 shorter than 1, with a few shallow sulci; 3 longer than 2 or 4, widens apically, with punctures, white setae, and sulci; 4–6 transverse, subequal in length and width, with white setae, punctures, and sulci; 7 as wide as long, longer than 5 and 6 combined, setose, setae reddish; 8 longest, longer than 4–7 combined, setose, setae reddish, tapering to apex. Head (Fig. 11–12): medial sulcus present; row of white setae present submedially; microsculpture alutaceous; frons projecting, punctate. Pronotum (Fig. 11): wider than long, widest just before middle; anterior angle with tooth, seta present in anterior angle;

posterior margin rounded; surface with large, shallow punctures except on anterior margin; narrow basal impression present; lateral margin rounded;. Scutellum: oblong-oval; smooth. Elytron (Fig. 10): with 8 puncture rows plus short scutellar row, punctures oblong, some confluent; with 3 costae, costa 1 wide, flat, 2 and 3 narrow, sharp; lateral margin serrate; exterior apical angle rounded, serrate; apical margin serrate, not laminate; sutural angle not produced; apices conjointly rounded. Venter (Fig. 8): smooth; abdominal sterna 2-3 with row of punctures along apical margin, white seta in each puncture; 4 with scattered white setae in middle and fringe of setae on apical margin; 5 with scattered white setae. Legs: coxa, femur, and tibia punctate with white seta in each puncture; tarsi with two claws.

Etymology. Confluens (Latin = place where two streams meet) for the confluent elytral punctures in this species.

Host plant. Taken fogging the canopy of *Trattinnickia rhofolia* Willd. var. *lancifolia* Cuatrec. (Burseraceae).

Distribution. Ecuador.

Remarks. The sample was collected in a *terra firma* forest (non-floodplain) with a forest column of 30-35m. Mostly bare green leaves, some of them with a covering of lichenous or bryophytic plants. No Chalepini have been associated with Burseraceae (Staines 2011).

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