

## A new species of *Dellia* Stål (Orthoptera: Acrididae) from Eastern Dominican Republic

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ABSTRACT. The new grasshopper species *Dellia bayahibe*, from the Eastern region of the Dominican Republic, Hispaniola, is described and illustrated.

Key words: Orthoptera, Acrididae, *Dellia*, grasshoppers, new species, Hispaniola, Greater Antilles.

### INTRODUCTION

Including the new species described herein, the grasshopper genus *Dellia* has as presently understood eight valid described species, all Greater Antillean: *D. insulana* (Cuba), *D. gemmicula*, *D. karstica* and *D. maroona* (Jamaica), and *D. dominicensis*, *D. monticola*, *D. roseamaculata*, and *D. bayahibe* (Dominican Republic) (Stål 1878; Rehn and Hebard, 1938; Amédégnato *et al.*, 1995; Pérez *et al.*, 1995; Pérez-Gelabert and Otte 1999; 2001). An undescribed species of *Dellia* recorded from San Salvador, Bahamas by Pérez-Gelabert (2000), is the only record of the genus out of the Greater Antilles. The new species *D. bayahibe* is the fourth species of *Dellia* described from Hispaniola. It is based on specimens collected in the seasonal dry forest of the Caribbean coastal plain, in Eastern Dominican Republic.

### MATERIAL AND METHODS

For identification the specimens were compared with paratypes of the three known Hispaniolan *Dellia*. The holotype of *D. bayahibe* plus some paratypes are deposited in the collection of the Academy of Natural Sciences, Philadelphia (ANSP). Paratypes are in the collection of the National Museum of Natural History, Washington, DC (NMNH), the Carnegie Museum of Natural History, Pittsburgh (CMNH), the Museo Nacional de Historia Natural, Santo Domingo (MHND), and the collection of the author (DEPG). Photographs were taken with a Diagnostic Instruments Spot RT<sup>®</sup> model 2.2.1 camera mounted on an Olympus SZX12 stereoscope. Male genitalia were extracted and cleared according to standard procedures using 10% Sodium Hydroxide, washed in water and preserved in 80% alcohol. Measurements are in millimeters and were made using an ocular micrometer with precision to 0.01 mm, on an Olympus SZH stereoscope.

## SYSTEMATIC

*Dellia bayahibe* sp. nov.

(Figs. 1-10)

**Diagnosis.** Closely related to *D. dominicensis* and *D. monticola*, sharing a similar coloration pattern, lack of tegminae and a sub-quadrangular and flattened supragenital plate (epiproct). Males of *D. bayahibe* sp. nov. are most easily differentiated for having a broad white band running dorsally over the abdomen. In *D. dominicensis* this area is colored white-yellowish and is dissected medially by a thin black band, while in *D. monticola* the abdominal dorsum is all light brown. The long tegminae in both sexes of *D. roseomaculata* and its distinct coloration, clearly differentiate it from the three species above. Females of the four Hispaniolan *Dellia* species have the abdominal dorsum light brown. Habitus of male holotype is shown in Fig. 1.

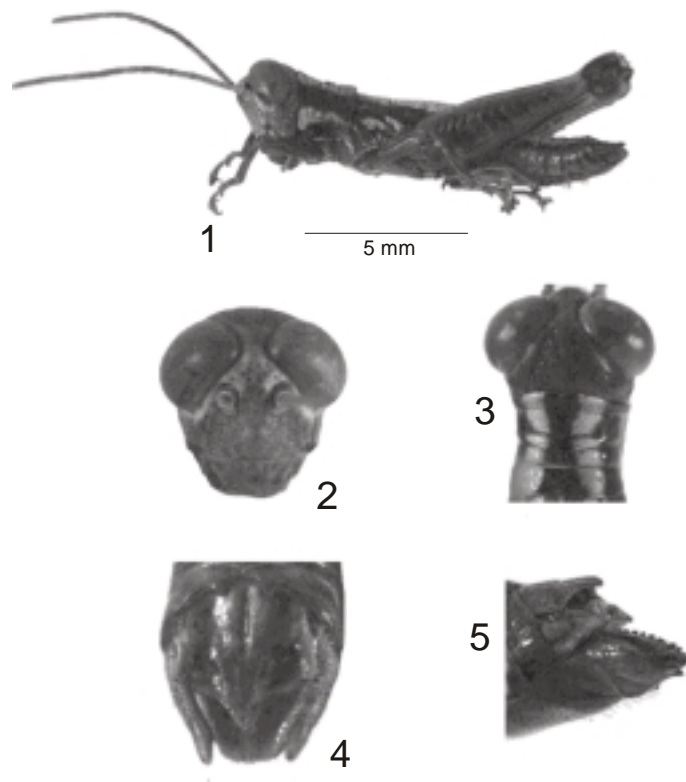
**Description of male holotype.** Coloration. Head dorsally reddish and green. Face olive green, with small thin yellowish bands under the eyes. Palps light green. Pronotum dorsally with a broad black to brown median band flanked by white lateral bands; side with wide black band, delimited below by a narrower white band and then a greenish black area on lateral margin. Epimeron 3 colored white centrally and along superior margin. All legs olive green, the posterior femora more brilliantly colored, these with knees black, tibiae light blue and tarsi reddish. Abdomen dorsally colored white by a broad band that stops before epiproct. Three most anterior abdominal tergites laterally with a black streak that disappears after the fifth segment, the rest of abdomen olive green and yellowish. Furculae green, epiproct green and brown.

**Morphology.** Antennae longer than combined length of head and pronotum. Head globose, much wider than pronotum, with eyes protruding. Face coarsely punctate and shaped as shown in Fig. 2. Interocular distance slightly greater than escape length. Pronotum (Fig. 3) saddle-shaped and transversally dissected by three well-marked sulci; metanotum and anterior margin of pronotum marked by superficial and coarse punctuations. Tegminae completely absent. Furculae small, slightly rounded. Supragenital plate (Fig. 4) flattened and wide, posterolaterally excavated and terminally pointed. Cerci robust and cylindrical, slightly curved up, extended over abdominal end.

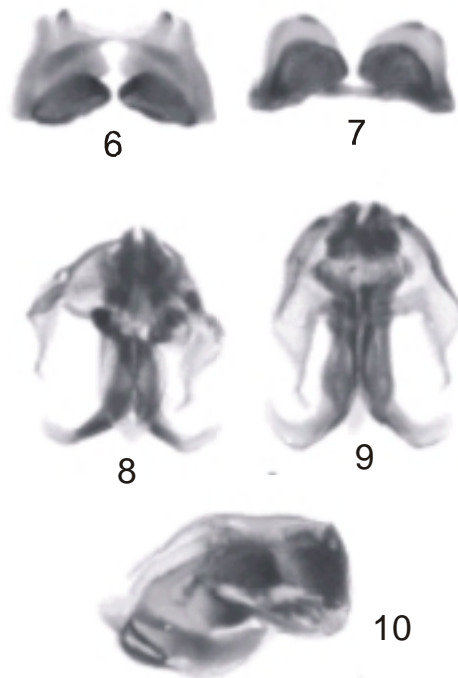
**Internal genitalia.** (Figs. 6-10). Epiphallus bridge-like with small ancorae and well-developed and rounded lophi. Lateral plates large, rounded and thickened, joined by a rather narrow bridge.

**Female.** Slightly larger and more robust than males. Usually less brightly colored, their abdominal dorsum always light brown. Valves of ovipositor rather short, with six small, rounded dorsal teeth.

**Etymology.** The species epithet "bayahibe" is the name of the town and beach area closest to the forest inhabited by this species.



Figs. 1-5. *D. bayahibe* sp. nov. 1. Habitus of male holotype. 2. Face (male). 3. Dorsal view of head and pronotum (male). 4. Male supragenital plate (epiproct). 5. Lateral view of female ovipositor.



Figs. 6-10. Male internal genitalia of *Delia bayahibe* sp. nov. 6. Epiphallus (dorsal). 7. Epiphallus (ventral). 8-10. Phallic complex (dorsal, ventral, and lateral).

**Types.** **Holotype** male, DOMINICAN REPUBLIC, 2 km N Bayahibe, La Altagracia Prov., 18°23.86'N 68°50.38'W, 26.ix.1999, D. Perez, R. Bastardo (ANSP). **Paratypes.** DOMINICAN REPUBLIC: four males and six females, same data as holotype (most specimens collected at night) (ANSP, DEPG, MHND). Three males, La Altagracia, 2 km N Bayahibe, 18-23N, 68-51W, 10 m, 3.vii.1992, colls. C. Young, R. Davidson, S. Thompson and J. Rawlins. Dry seasonal forest on limestone (these specimens are decolored by alcohol preservation) (CMNH). Four juvenile males, 1 km N Bayahibe, La Altagracia Prov., seasonal dry forest, 14.iii.1999, coll. D. E. Pérez (decolored by alcohol preservation) (NMNH). Three males, one adult and one juvenile female, 2 km N Bayahibe, La Altagracia Prov., 11.ix.1999, colls. D. E. Pérez and R. Bastardo (DEPG). One male, Juanillo, La Altagracia Prov., 1.vii.2000, coll. R. Bastardo (DEPG). Three females, Boca de Yuma, Parque Nacional del Este, 18°21.84'N 68°37.11'W, 25.vii.2001, coll. D. E. Pérez (DEPG).

Measurements (Mean and range in mm). Males (n=5). Body length 14.35 (13.50–14.75); head length 2.33 (2.25–2.38); pronotum length 2.33 (2.25–2.38); Interocular distance 0.48 (0.44 – 0.49); hind femur length 8.68 (8.50– 8.88); hind tibia length 7.63 (7.5 –7.88). Females (n=5) Body length 19.08 (17.50– 20.13); head length 2.23 (1.88–2.88); pronotum length 2.50 (2.13–2.88); Interocular distance 0.59 (0.59– 0.59); hind femur length 9.65 (9.25–10.50); hind tibia length 8.53 (8.25 – 9.38).

**Distribution.** Actually known from the Eastern areas of Dominican Republic (Fig. 11).



Fig. 11. Known distribution of *D. bayahibe* sp. nov. in Eastern Dominican Republic.

**Comments.** Besides the several morphological and coloration characteristics shared by *D. bayahibe* sp. nov. with *D. dominicensis* and *D. monticola*, their populations share habitat conditions with many features in common despite the difference in elevation of their respective environments. These three species are found in the Southern half of the island, inhabiting bushes of semi-dry forests that go from near the coast (*D. bayahibe* sp. nov.), to hills farther from the coast some 500 meters (*D. dominicensis*), to about 1000 m in elevation, at Sierra de Bahoruco (*D. monticola*).

Like many other insects in the subtropical environment of Hispaniola, *Dellia* populations exhibit marked fluctuations at particular sites through the year. In general adults seem to be more common from July to December. *Dellia* can be difficult to spot in the forest, as they are small grasshoppers that hide from collectors behind leaves and twigs. On hot and sunny hours of the day these grasshoppers are jumpy and very fast, usually being difficult to capture. In September 1999 in the forest near Bayahibe, I discovered that *Dellia* species may be more easily collected at night, when individuals are usually found not in hiding positions but on top of leaves. Also they are not so prone to escape as during the day. For the first time we observed some individuals feeding and somewhat aggregated on a particular plant. The plant (without flowers or fruits) was preliminarily identified at the National Botanical Garden of Santo Domingo as a member of the genus *Bourreria* (Boraginaceae).

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