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Revision of the genus *Dellia* Stål, 1878 (Orthoptera: Acrididae). Part 1. Two redescriptions and seven new species from Cuba

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Abstract

The first part of the revision of genus *Dellia* Stål, 1878, comprising Cuba in the Greater Antilles, is presented here. *Dellia insulana* Stål, 1878, the type-species, is redescribed and illustrated for the first time. *Dellia multicolor* Carl, 1916 **stat. resurr.** is restored as valid species, redescribed from both sexes, illustrated for the first time, its type locality is defined and its geographical distribution is clarified. Seven new species are also described: *Dellia albida* n. sp., *Dellia atrostriata* n. sp., *Dellia brauni* n. sp., *Dellia megalapida* n. sp., *Dellia melici* n. sp., *Dellia siboney* n. sp., and *Dellia zephyra* n. sp. All nine species are described and compared in detail, supported by a thorough photographic complement.

Key words: Acrididae, grasshoppers, taxonomy, new species, Cuba, Greater Antilles.

Introduction

The grasshopper genus *Dellia* was described by Stål (1878) as monotypic, with its single, Cuban endemic member *Dellia insulana* Stål, 1878. Almost 40 years later, *Dellia multicolor* Carl, 1916 was described from two adult females collected by Henri de Saussure in "Cuba" (without further precision), but it was deemed a synonym of *D. insulana* by Amédégnato *et al.* (1995).

This genus remained known only from Cuba until *Dellia gemmicula* Rehn & Hebard, 1938 was described from Jamaica (Rehn & Hebard, 1938). But from late 20th Century on, eight species of this genus were described: *Dellia dominicensis* Pérez, Dominici, Hierro & Otte, 1995, *Dellia monticola* Perez-Gelabert & Otte, 1999, *Dellia roseomaculata* Perez-Gelabert & Otte, 1999, *Dellia bayahibe* Perez-Gelabert, 2002, *Dellia ciceroana* Perez-Gelabert & Otte, 2012 and *Dellia viridissima* Perez-Gelabert & Otte, 2012 from Hispaniola, plus *Dellia karstica* Perez-Gelabert, 2001 and *Dellia maroona* Perez-Gelabert, 2001 from Jamaica (Pérez *et al.*, 1995; Perez-Gelabert & Otte, 1999; Perez-Gelabert, 2001; Pérez-Gelabert, 2002; Pérez-Gelabert, 2003, Perez-Gelabert & Otte, 2012). Moreover, Perez-Gelabert (2000) recorded an undetermined species of *Dellia* from Bahamas (San Salvador Island).

Perez-Gelabert (2001) presented a good generic redefinition of *Dellia*, but explicitly based on the Hispaniolan and Jamaican species described or revised by himself. No mention was made to its Cuban type

species *D. insulana*, but anyway this redefinition is reliable due to the highly conservative morphology of its members.

No further additions or emendations to the taxonomy of *Dellia* have been produced thereafter, and the genus remains endemic from the Greater Antilles with 10 nominal species: six from Hispaniola (Dominican Republic only), three from Jamaica and one from Cuba. The undetermined *Dellia* sp. from Bahamas recorded by Perez-Gelabert (2000), is still awaiting a formal description.

The present author is currently conducting a thorough revision of some Caribbean orthopteroid groups, including the genus *Dellia*. As part of this, seven new species from Cuba are herein described, *D. insulana* is redefined and *D. multicolor* **stat. resurr.** is resurrected from synonymy and its adult male is described, following the current methodological standards in Acrididae taxonomy. Also, in this first part of the revision, the type locality of *D. multicolor* **stat. resurr.** is defined and the genus is confirmed to occur in multiple localities all over the main island of Cuba. Moreover, the first precise distribution records as well as abundant data on the natural history of most Cuban species are given. A thorough photographic complement of live and preserved specimens, habitat and microhabitat, detailed maps and dichotomic key to the identification of all species is also provided.

Material and Methods

The grasshoppers were detected mainly on the vegetation by diurnal, crepuscular and nocturnal direct search. Once spotted, high resolution, full-color digital photographs were taken (habitat included) with a Nikon Coolpix S8100 digital camera. Then, all specimens were sacrificed by either exposition to ethanol 70% vapors or immersion in the same liquid; final preservation was made either in ethanol 80% or dry-pinned.

Unless otherwise noted, the described coloration was taken following a methodology adapted from that used by herpetologists (see, e.g., Köhler & Hedges, 2016) and is detailed as follows. It is well-known that the two main methods of insect preservation, i.e., dry-pinned or stored in ethanol, cause some undesirable alterations to the morphology and/or coloration. On one hand, alcoholic preservation may cause loss or severe alteration of some colors and shades, which usually become either faded or greatly changed. On the other hand, dry-pinning brings the inherent risk that specimens and their labels may be destroyed, mutilated or fragmented by collection pests (rodents, dermestid beetles and psocids), become brittle and distorted due to dehydration, and setae are usually detached and lost. The best strategy is to take high-resolution, full-color photographs of the specimens still alive or just after being killed (i.e., before any color or shade becomes altered) for an accurate description of coloration, and then to preserve them in ethanol or isopropanol 80%. Permanent alcoholic preservation not only avoids all these problems of dry-pinning mentioned above, but also has the additional advantage of yielding more suitable specimens for dissection of genitalia and DNA extraction.

The specimens were studied, measured and photographed under a Zeiss Stemi 2000-C stereomicroscope, equipped with line scale and grid ocular micrometers, and a Canon PowerShot A620 digital camera. The digital images were processed with Adobe Photoshop CS3 only slightly, i.e., optimization of brightness and contrast parameters, background removal and plate composition.

Two structures proved difficult to measure accurately by being partially to largely hidden below pronotum: tegmina and mesonotum. The former could be reliably measured because in Cuban taxa they are always strikingly colored and could be observed with confidence through the translucent tegument of the pronotum. But the latter lacks any contrasting coloration or especial sclerotization and could not be measured.

Specimen labels were laser-printed in Spanish, but transcribed here into English for text coherence purposes. Precise coordinates and altitude of each locality were either directly taken *in situ* with a portable GPS device or extracted from updated 1:25 000 military topographic maps in Mapinfo 9.0.

The general terminology follows Capinera *et al.* (2004), Fontana *et al.* (2008) and Aguirre-Segura & Barranco Vega (2015); such diversity of sources is currently unavoidable because none of them covers the whole range of structures and terms. Taxonomic arrangement was verified using the Orthoptera Species File Online website (OSF), version 5.0/5.0 (Cigliano *et al.*, 2016). All meristic counts were given as fractions for left/right sides.

Depositories of types and other specimens are abbreviated using the following acronyms:

MHNG: Muséum d'Histoire Naturelle de Genève collection, Switzerland.

NHRS: Naturhistoriska Riksmuseet, Stockholm, Sweden.
SY: Personal collection of Sheyla Yong, Havana, Cuba.

Systematics

Family Acrididae MacLeay, 1821
Subfamily Copiocerinae Brunner von Wattenwyl, 1893
Tribe Clematodini Rehn & Eades, 1961
Genus *Dellia* Stål, 1878

Type species: *Dellia insulana* Stål, 1878; by original monotypy.

Dellia insulana Stål, 1878
Figs. 1, 2, 4a, 16–24.

Dellia insulana Stål, 1878: 83–84. Bolívar, 1888: 146. Bruner, 1908: 272. Rehn, 1909: 207. Rehn & Hebard, 1938: 223, 225. Kirby, 1910: 423. Sjöstedt, 1933: 36. Zayas, 1976: 100, fig. 101. Amédégnato *et al.*, 1995: 694. Yong & Perez-Gelabert, 2014a: 409. Yong & Perez-Gelabert, 2014b: 133.

Type. CUBA; Staudinger; 1♂ holotype (NHRS, dry pinned). **Notes.** The holotype bears seven labels (see fig. 4a herein), which textually read: **1)** "Cuba." [aged white card, printed in black ink]; **2)** "Staudinger." [aged white card, italics, printed in black ink]; **3)** "*Dellia insulana* Stål." [aged white card, handwritten in black ink]; **4)** "Typus" [red card with text box, printed in black ink]; **5)** "120 H" [red card, number printed in black ink, letter handwritten in blue ink]; **6)** "NRM-ORTH 0003513" [white card, printed in black ink]; **7)** "CSC · 1346" [white card, handwritten by Carlos S. Carbonell in black ink]. The holotype is accompanied by a small glass vial with cork stopper, which houses the dissected genitalia and a small white card label, handwritten in black ink by Carlos S. Carbonell and which textually reads "1346.". See in Remarks section below a detailed discussion on a second NHRS specimen erroneously labeled as a type.

Diagnosis (emended, based on a single male). Size medium for the genus (18 mm). **1)** Coloration predominantly pale olivaceous green, pronotum pale olivaceous green, with single lateromedian stripe on each side which is dark olivaceous brown and extends continuously through basal segments of abdomen below tegmina, epimera I and II each with conspicuous bright red spot, hind knees entirely black. **2)** Tegmina short and lanceolate, reaching posterior margin of abdominal segment I and base of the metafemur. **3)** Supra-anal plate medium-sized, subpentagonal, essentially as long as wide and apparently sparsely setose (most setae missing); anterior margin shallowly convex and medially moderately lobed, lateral margins almost straight and slightly convergent distally, posterior margin narrowly paraboloid; median sulcus present only in basal half, moderately deep and narrow, flanked by a pair of raised, coarse, parallel ridges. **4)** Furcula triangular, small and poorly developed.

Redescription (adult male holotype). Size medium for the genus (total length 18.00 mm, according to according to Stål "18 mill." and according to Carbonell's photo about 17.5 mm). General coloration (according to Stål, 1878) pale olivaceous green, antennae blackish with pale tips, scapus and pedicel pale olivaceous green (concolor with head); pronotum pale olivaceous green, with single lateromedian stripe on each side which is dark olivaceous brown and extends continuously through basal segments of abdomen below tegmina, epimera I and II each with conspicuous bright red spot; metafemur pale olivaceous green, with transversal ridges apparently not sharply contrasting, hind knees entirely black; metatibia bluish, progressively darker apically. See figure 2.

Head (figs. 16–18). Moderately large, wider than long (ratio = 1.2). Tegument shiny, rugose, sparsely and moderately punctate, with thin and short setae scattered all over. Vertex moderately convex in lateral view, subtriangular in dorsal view and moderately depressed between eyes in frontal view; fastigium prominent, wide in dorsal view, slightly convex in lateral view and strongly compressed in frontal view. Eyes very large, rounded and prominent; ocelli minute. Costa frontalis very well-marked, with lateral branches almost parallel and shallowly sinuose, i.e. upper portion wider and M-shaped, lower portion narrower and U-shaped. Genae almost straight in frontal view, but not flat. Frons coarsely and sparsely

punctate. Antennae (broken both at the level of seventh flagellomere) standard for Acrididae in shape and structure; scapus subcylindrical, longer than wide, oval in cross-section, essentially glabrous; pedicel clearly more than half the length of scapus.

Thorax (figs. 19–20). Tegument shiny, but densely and coarsely punctate and with thin, short setae scattered all over. Pronotum subrectangular in dorsal view, longer than wide (ratio = 1.1); anterior and posterior margins clearly bilobed, the former moderately notched medially, the latter deeply notched medially, lateral margins convex; median keel strong, lateral keels irregularly crenulate and deeply incised by the three transverse grooves. Metanotum wider than long (ratio = 2.5) and shorter than abdominal segment I (ratio = 0.8), rectangular in dorsal view, with tegument coarsely punctate and shiny. Tegmina short (reaching posterior margin of abdominal segment I and base of the metafemur), narrow and lanceolate, i.e., costal margin slightly convex, anal margin almost straight and tip angulose.

Legs (fig. 1). Covered all over by thin setae. Profemur slender, cylindrical and unarmed; protibia essentially as long as profemur, very slender and straight. Mid legs very similar to forelegs, but mesotibia slightly longer than mesofemur. Metafemur robust, longer than metatibia (ratio = 1.1), oval in cross-section; metatibia with 6:6 / 8:8 subapical spines and five inward-curved apical spurs: two small-sized laterodorsals, two medium-sized laterals, and one large ventral.

Abdomen. Moderately large and slender (conspicuously narrower than pronotum), subcylindrical and evenly tapering posteriorly. Tegument shiny but coarsely and densely punctate, with long setae scattered mainly in the ventral surface and abdominal segments, and with median carina very well marked. Furcula normally sclerotized, minute and triangular. Supra-anal plate (fig. 21) medium-sized, subpentagonal, about as long as wide (ratio = 1.0) and apparently sparsely setose (most setae missing in holotype); anterior margin shallowly convex and medially moderately lobed, lateral margins almost straight and slightly convergent backwards, posterior margin narrowly paraboloid; median sulcus present only in basal half, moderately deep and narrow, flanked by a pair of raised, coarse, parallel ridges. Shape of cerci unknown (in holotype not visible, apparently detached and subsequently lost. Subgenital plate (fig. 23) suboval, slightly longer than wide (length/width ratio = 1.1) and covered all over by thin and long setae; anterior margin almost straight, lateral margins shallowly convex, posterior margin strongly convex. See figures 1, 21–23.

Female: Unknown.

Comparisons. *D. insulana* is very easy to separate from the other 17 members of the genus by its unique color pattern, i.e., largely plain green, with no sharply contrasting patterns except for a single blurred dark lateral stripe along each side of the body (figs. 1–2).

Distribution (fig. 24). This species is known only from the holotype, whose label does not bear any precision on locality but "Cuba" (Stål, 1878).

Ecological notes. Nothing is known about the ecology of *D. insulana*. This requires its rediscovery and/or elucidation of its geographical occurrence.

Remarks. An adult female deposited at NHRS (see fig. 4b herein), is wrongly labeled as another type of *D. insulana*. It bears five labels (fig. 4b), that textually read: **1)** "Cuba." [aged white card, printed in black ink]; **2)** "Staudinger." [aged white card, italics, printed in black ink]; **3)** "Cotypus" [red card with text box, printed in black ink]; **4)** "114 ♀" [aged white card, handwritten in black ink]; **5)** "NRM-ORTH 0003514" [white card, printed in black ink].

Despite its type labels and code number from NHRS collection, this female is not an actual type of *D. insulana*. The original description was explicitly stated by Stål (1878: 83–84) to be based upon a single male specimen, which fulfils completely the Article 73.1.2 of the Code about holotype fixed by monotypy (ICZN, 1999: 65). This holotype is the same specimen examined here, as confirmed by its absolute coincidence with the characters and measurements given by Stål (1878: 83–84). Moreover, the female specimen is not even conspecific with *D. insulana* but can be referred to *D. multicolor* **stat. resurr.** instead, as it is evident from its very different color pattern (compare figs. 1–2 to 3 herein).

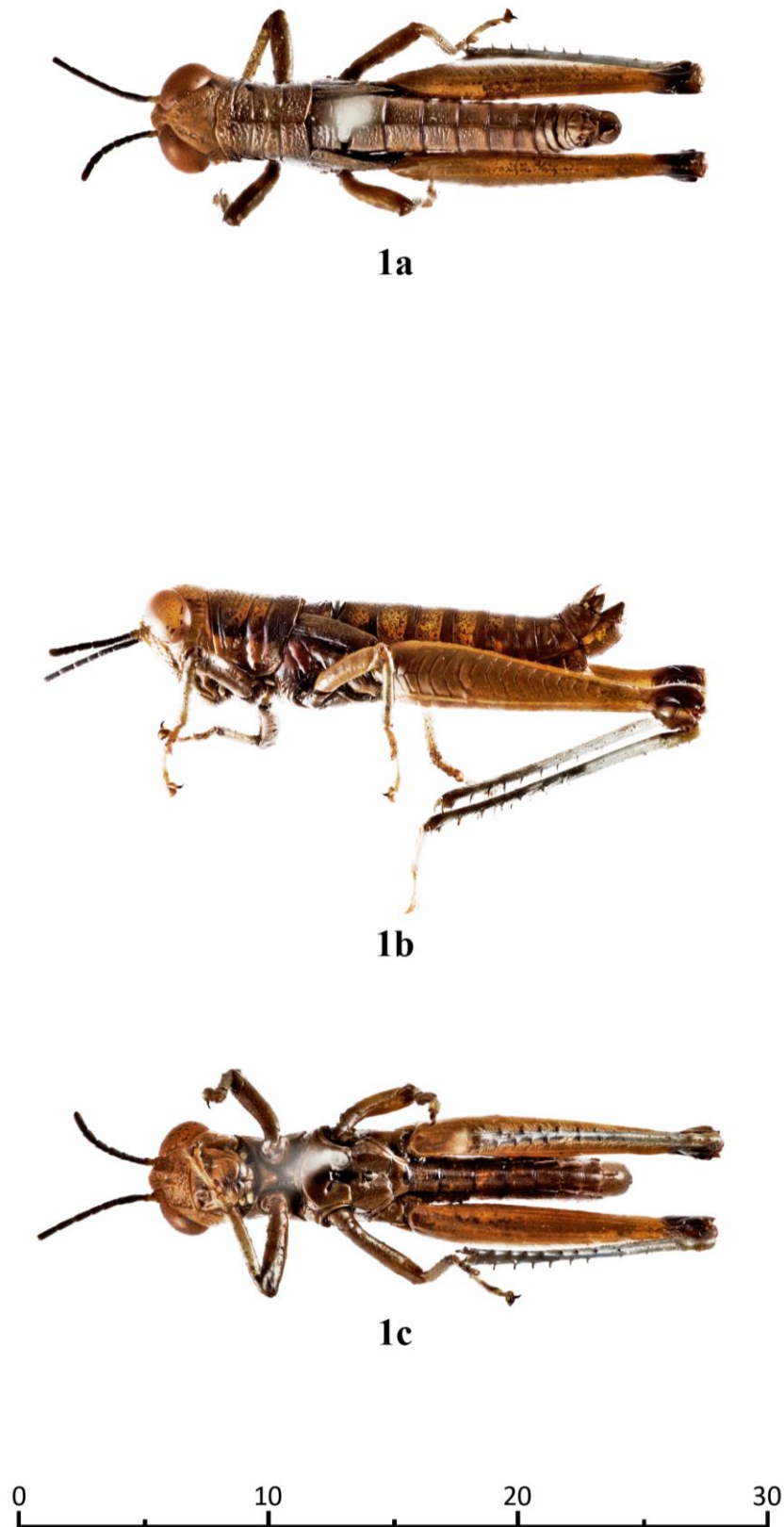


Fig. 1. Adult male holotype of *Dellia insulana*, full-body views: **a)** dorsal; **b)** lateral; **c)** ventral. Scale bar in millimeters. Photos courtesy G. Lindberg.

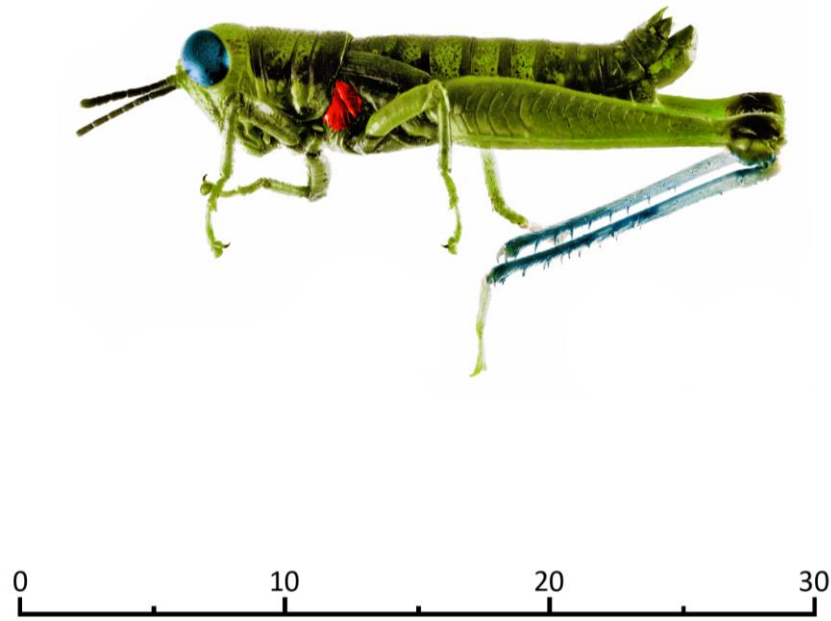


Fig. 2. Adult male holotype of *Dellia insulana*, full-body lateral view, with coloration reconstructed by the author from the original description of Stål (1878) upon a photo courtesy G. Lindberg. Scale bar in millimeters.

Dellia multicolor Carl, 1916 **status resurrected**

Figs. 4b– 6, 16–24, 25e–f, 26f. Table I

Dellia multicolor Carl, 1916: 512–513. Rehn & Hebard, 1938: 224.

Dellia insulana: Amédégnato *et al.*, 1995: 694 (misidentification).

Types (corrected). CUBA: somewhere between Havana City (Havana Province) and Limonar Town (Matanzas Province); January 29th through February 22th, 1855; H. de Saussure; 1♀ lectotype, 1♀ paralectotype (MHNG, dry pinned). **Notes.** The lectotype bears three labels handwritten in black ink that textually read: **1)** "Cuba Mr H de S." [aged white card]; **2)** "*Dellia multicolor* Carl" [green card]; **3)** "*Dellia multicolor* Carl. Holoelectotypus ♀ C S Carbonell - 1966" [red card, handwritten by Carlos S. Carbonell]. The precise data given above were not stated in the original description nor labels, but gathered from a reliable supplementary source (see detailed discussion below, in Remarks section).

Additional material examined. CUBA: Mayabeque Province: Santa Cruz del Norte Municipality: Boca de Canasí (23°08'36"N - 81°46'22"W, 20 m a.s.l.); transition from sea-grape to semideciduous forest, on *Zanthoxylum fagara* bush; 26/June/2014; S. Yong, I. Rodríguez, L. J. Forcelledo, L. Valdés, E. Fonseca; 2♂♂ (SY, dry pinned).

Diagnosis (emended). Size medium to moderately large for the genus (18–23 mm). **1)** Coloration predominantly light olivaceous green, with two irregular yellow lateral stripes on each side of the body, dorsum yellowish with a broad green median longitudinal stripe, epimera I–II each with a conspicuous bright yellow spot, tergites without conspicuous lateral spots, sternites red, hind femur pale olivaceous green, conspicuously darker on transversal ridges and upper and lower margins, hind knees with upper half blackish and lower half dark bluish, tarsomeres whitish. **2)** Tegmina very short and digitiform, reaching anterior margin of abdominal segment I. **3)** Supra-anal plate relatively large, subpentagonal, wider than long, and sparsely setose; anterior margin shallowly convex and medially moderately lobed, lateral margins straight and essentially parallel, posterior margin narrowly paraboloid; median sulcus complete, moderately deep and narrow, flanked by a pair of low, coarse, medially convergent ridges. **4)** Furcula short, strongly sclerotized, subtriangular with the apex curved inwards.

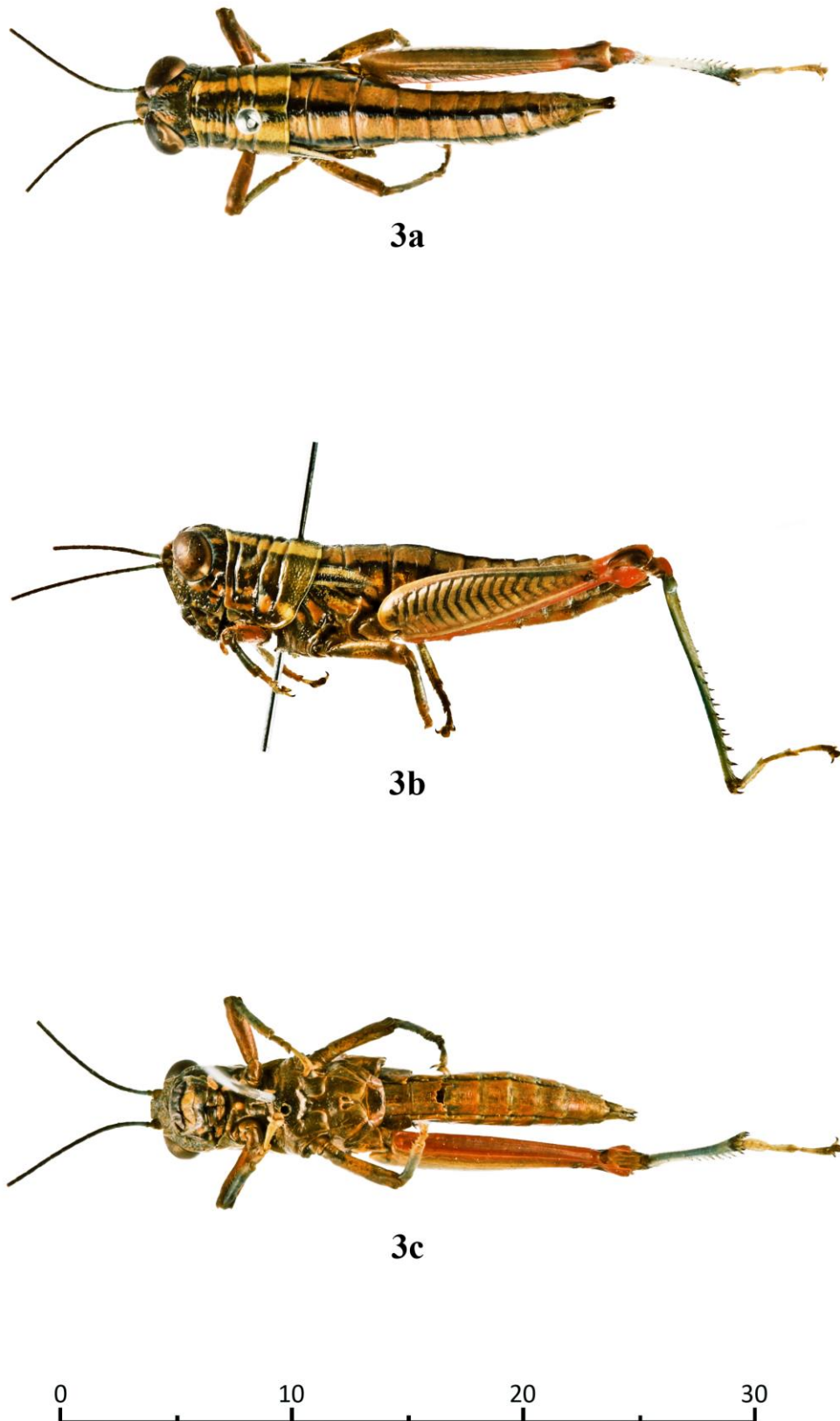


Fig. 3. Adult female of *Dellia* aff. *multicolor* **stat. resurr.**, wrongly labeled as paratype of *Dellia insulana* (see detailed discussion in the text), full-body views: **a)** dorsal; **b)** lateral, image horizontally reversed for orientation coherence; **c)** ventral. Scale bar in millimeters. Photos courtesy G. Lindberg.



Fig. 4. Original labels of: **a)** adult male holotype of *Dellia insulana*; **b)** adult female of *Dellia* aff. *multicolor* **stat. resurr.**, wrongly labeled as paratype of *Dellia insulana* (see detailed discussion in the text); **c)** adult female lectotype of *Dellia multicolor* **stat. resurr.** Photos courtesy G. Lindberg (a–b) and J. Hollier (c).

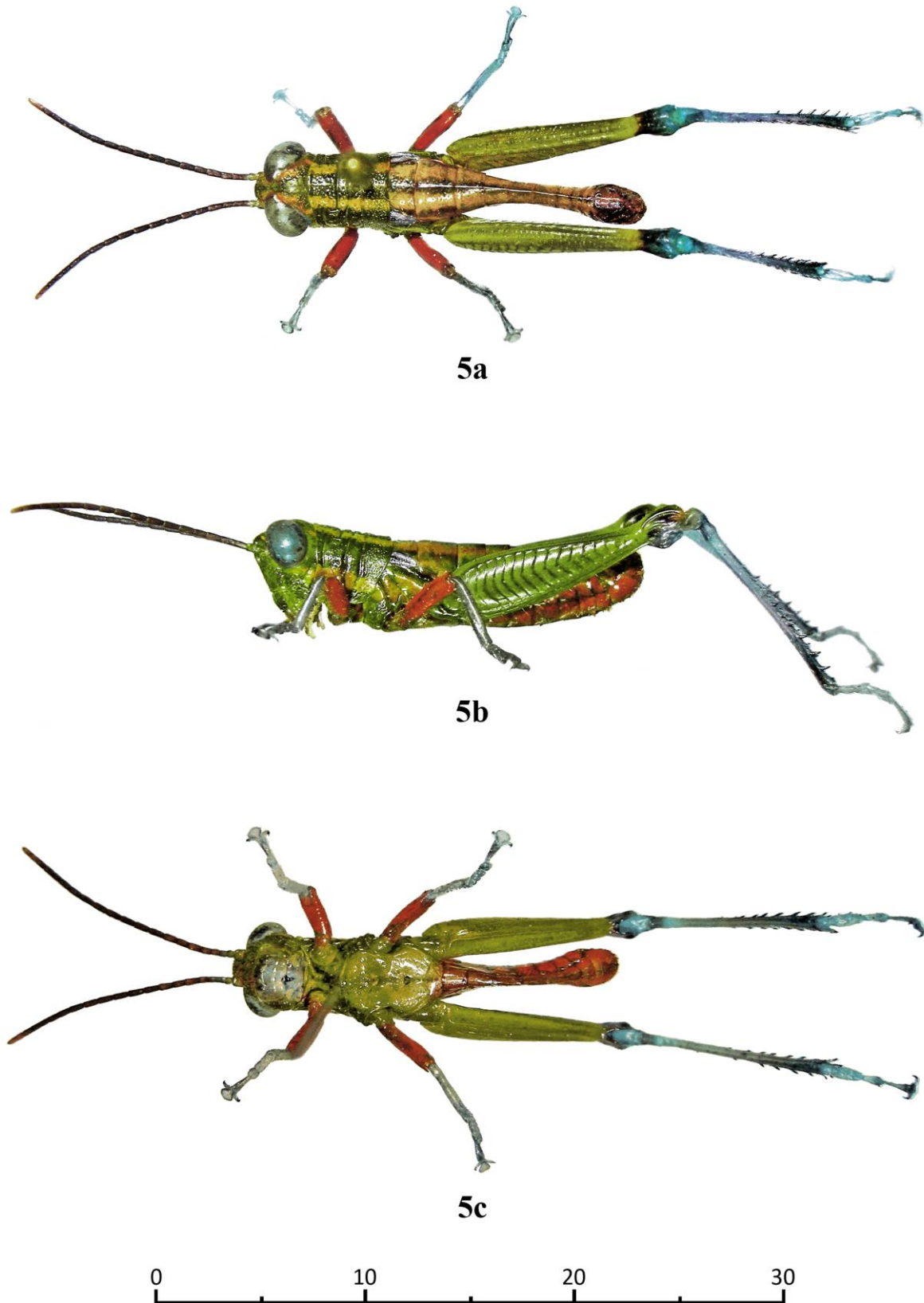


Fig. 5. Adult male topotype of *Dellia multicolor* stat. resurr., full-body views: **a)** dorsal; **b)** lateral; **c)** ventral. Scale bar in millimeters.

Description (adult male from Boca de Canasí). Size medium for the genus (total length 18.2 mm). **Coloration.** Head basically vivid olivaceous green, except as follows: labrum reddish, vertex with a pair of thin, irregular, longitudinal yellow stripes just above eyes, genae with a thick, irregular, longitudinal yellow stripe just below each eye; antennae blackish with whitish tips, scapus, pedicel and basal segments of flagellum pale bluish; eyes medium gray, with a bluish to greenish shade (depending on the view angle). Pronotum pale olivaceous green, with two irregular pale lateral stripes that are continuous with those on the head and extend continuously through epimera I–II and leg III coxae, these pale stripes are mostly yellow but alternate with bright white spots on anterior and posterior corners of pronotum and basal segments of abdomen, and are interrupted by the green transversal grooves. Epimera I and II each with a conspicuous bright yellow spot. Tegmina with a conspicuously bicolored, longitudinally striped pattern: three thin, equidistant black stripes (anterior, median and posterior), separated by two thick, white stripes. Fore and mid legs of same coloration: coxa and trochanter olivaceous green, femur light reddish, tibia and tarsomeres pale bluish with irregular infuscation; hind legs with coxa and trochanter olivaceous green, femur pale olivaceous green, conspicuously darker on transversal ridges and upper and lower margins, hind knees with upper half blackish and lower half dark bluish, tibia bright blue with spines blackish, tarsomeres whitish. Abdomen with complex longitudinally striped pattern on tergites: single dorsomedian (thin, dark bluish green), paired submedians (thick, pale reddish-cream), paired dorsolaterals (thin, dark bluish green) and paired laterals (thick, vivid red), lateral margins of tergites conspicuously infuscate; sternites vivid red, essentially immaculate. See figure 5, 25e–f and table I.

Head (figs. 16–18). Moderately large, wider than long (ratio = 1.3). Tegument shiny, but sparsely and coarsely punctate, with thin and short setae scattered all over. Vertex convex in lateral view, subtriangular in dorsal view; fastigium prominent, broad in dorsal view, semicircular in lateral view and strongly compressed in frontal view. Eyes very large, rounded and prominent; ocelli minute. Costa frontalis very well-marked and keyhole-shaped, with lateral branches almost parallel and shallowly sinuose, i.e., upper portion wider and inverted U-shaped, lower portion narrower and almost circular. Genae almost straight in frontal view, but not flat. Frons coarsely and sparsely punctate. Antennae standard for Acrididae in size and shape, with 18/18 flagellomeres; scapus subcylindrical, wider than long (ratio = 1.1), oval in cross-section, mostly glabrous; pedicel clearly of more than half the length of scapus.

Thorax (figs. 19–20). Tegument shiny, but densely and coarsely punctate and with thin, short setae scattered all over. Pronotum subrectangular in dorsal view, longer than wide (ratio = 1.1); anterior and posterior margins clearly bilobed, the former shallowly notched medially, the latter moderately notched medially, lateral margins shallowly sinuose; median keel strong, lateral keels irregularly crenulate and deeply incised by the three transverse grooves. Metanotum wider than long (ratio = 2.3) and shorter than abdominal segment I (ratio = 0.7), trapezoidal in dorsal view with tegument coarsely punctate and shiny. Tegmina very short (reaching anterior margin of abdominal segment I), narrow and digitiform, costal margin basically straight, anal margin slightly sinuose and tip rounded.

Legs (fig. 5). Covered all over by thin and short setae. Profemur slender, cylindrical and unarmed; protibia slightly shorter than profemur (ratio = 0.9), very slender and straight, ventral surface with 6:5 / 4:5 subapical spines and two small apical spurs. Mid legs very similar to forelegs, but mesotibia slightly longer than mesofemur and with 3:8 / 8:3 subapical spines. Metafemur robust, longer than metatibia (ratio = 1.1), oval in cross-section; metatibia with 6:8 / 8:5 subapical spines and five inward-curved apical spurs: two small-sized laterodorsals, two medium-sized laterals, and one large ventral.

Abdomen. Large and slender (conspicuously narrower than pronotum), subcylindrical and evenly tapering posteriorly. Tegument shiny but coarsely and densely punctate, with long setae scattered mainly in the ventral surface and abdominal segments with median carina very well marked. Tympanic organ large, rounded and located laterally on segment I. Furcula strongly sclerotized, short, curved inwards and with a sharp tip. Supra-anal plate (fig. 21) relatively large, subpentagonal, wider than long (ratio = 1.1), and sparsely setose; anterior margin shallowly convex and medially moderately lobed, lateral margins straight and essentially parallel, posterior margin narrowly paraboloid; median sulcus complete, moderately deep and narrow, flanked by a pair of low, coarse, medially convergent ridges. Cerci very short, conical and densely covered by thin setae, reaching posterior margin of Supra-anal plate but not surpassing abdomen tip. Subgenital plate (fig. 23) suboval, slightly wider than long (ratio = 1.1) and sparsely setose; anterior margin shallowly concave, lateral margins shallowly convex, posterior margin strongly convex. See figures 5, 21–23 and table I.

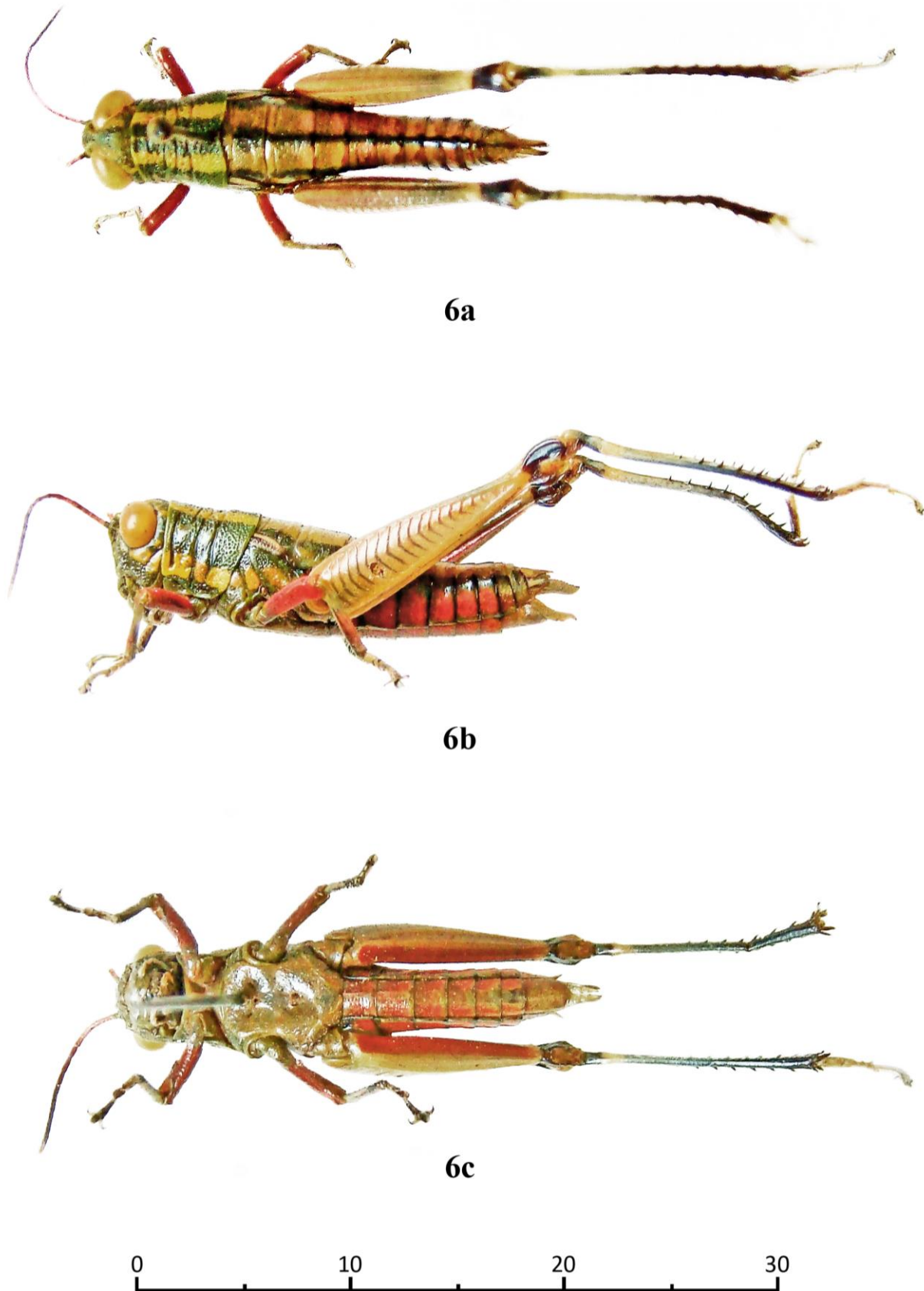


Fig. 6. Adult female lectotype of *Dellia multicolor* **stat. resurr.**, full-body views: **a)** dorsal; **b)** lateral; **c)** ventral. Scale bar in millimeters. Photos courtesy J. Hollier.

Table I. Measurements of five Cuban species of *Dellia*. Abbreviations: length (L), width (W), depth (H), not applicable (NA), incomplete count due to tip missing (*).

		<i>D. zephyra</i> sp. n.	<i>D.</i> <i>multicolor</i>	<i>D. brauni</i> sp. n.	<i>D. melici</i> sp. n.	<i>D. atrostriata</i> sp. n.
Dimensions (mm)		♀ holotype (Guanahaca bibes)	♂ topotype (Boca de Canasí)	♂ holotype (Pico San Juan)	♀ holotype (Boca Ambuila)	♂ holotype (La Platica)
Head	L / W /	3.00 / 4.00 /	2.75 / 3.50 /	2.60 / 3.35 /	2.85 / 4.05 /	2.60 / 3.80 /
	H	3.90	3.60	3.30	4.15	4.15
Interocular distance (minimum)	L	0.60	0.45	0.45	0.75	0.55
Scapus	L / W	0.50 / 0.45	0.50 / 0.54	0.50 / 0.54	0.40 / 0.45	0.40 / 0.50
Flagellomeres (number)	left /	19 / 19	18 / 18	18 / 18	11* / 18*	18 / 18
	right					
Thorax	L	4.70	4.90	5.10	5.25	5.45
Pronotum	L / W	3.70 / 4.35	3.65 / 3.60	3.85 / 3.45	3.95 / 4.40	4.00 / 3.90
Metanotum	L / W	1.00 / 3.35	1.25 / 2.90	1.25 / 2.75	1.30 / 4.00	1.45 / 3.50
Tegminae	L/W	2.50 / 0.75	1.25 / 0.95	1.45 / 0.80	2.25 / 0.85	3.60 / 0.95
Abdomen	L	8.60	10.55	11.70	11.15	11.15
Segment I	L / W	1.85 / 3.45	1.90 / 3.05	2.00 / 2.90	1.65 / 4.40	1.95 / 3.25
Supra-anal plate	L / W	1.75 / 1.35	1.60 / 1.75	1.30 / 1.45	1.65 / 1.55	1.90 / 1.55
Subgenital plate	L / W	1.70 / 1.60	1.55 / 1.70	1.70 / 1.55	2.15 / 2.40	1.75 / 1.50
Ovipositor	L	1.55	NA	NA	2.30	NA
Cercus	L	0.65	0.90	0.95	0.60	0.35
Profemur	L	3.00	3.25	3.00	3.10	3.50
Protibia	L	2.75	3.10	3.00	2.60	3.45
Mesofemur	L	3.00	3.20	3.45	3.55	4.20
Mesotibia	L	3.25	3.70	3.55	3.30	4.00
Metafemur	L	11.15	11.60	11.25	11.70	12.75
Metatibia	L	9.75	10.50	9.80	10.30	11.20
Body (total)	L	16.30	18.20	19.40	19.25	19.20

Female lectotype: Very similar to male, except as follows: slightly larger (23.0 mm), more robust, with tegmina slightly narrower. See original description by Carl (1916) and figs. 6, 16–23 herein.

Comparisons. *D. multicolor* **stat. resurr.** is easy to distinguish from the other 17 members of the genus by its unique color pattern, i.e., head and pronotum with four solid alternate stripes of vivid green and yellow, combined with lower half of abdomen uniformly bright red (figs. 5–6).

Distribution (fig. 24). This species is confirmed to occur only in northwestern Cuba, in northern Havana-Matanzas Coastal Plain.

Ecological notes. As usual for ordinary members of the genus, *D. multicolor* **stat. resurr.** seems to be rare and/or highly localized. The Havana-Matanzas Coastal Plain is undoubtedly the longest and most intensively sampled region in Cuba, but only four specimens have been collected and a single precise locality is confirmed. There at Boca de Canasí, the same situation holds true: despite multiple and intensive day-and-night searches, the two available specimens were found together at the same spot.

These specimens from Boca de Canasí were found at dusk, standing in close proximity on the same twig of the bush *Zanthoxylum fagara* (L.) Sarg., 1890 (Rutaceae), less than 1.0 m above the ground, in a sea grape forest. Repeated searches at the same spot and surroundings (including the adjacent semicaducifolious forest and xerophytic scrub), were totally unsuccessful.

One of the males from Boca de Canasí had an unidentified egg-like organism attached to right epimeron II. The other was taken as subadult and molted to adult at night, a few hours after collection.

Remarks. The comparison of the name-bearing types of *D. insulana* (holotype) and *D. multicolor* **stat. resurr.** (lectotype), plus two additional, fresh adult males of the latter, revealed that both taxa are clearly not conspecific. Such synonymy was introduced by Amédégnato *et al.* (1995) as follows: "*The synonymy of both specific names is unquestionable from the study of the types of both species and the comparison of their photographs. The differences annotated by Carl (1916) do not exist in the specimens with respect to the ovipositor. Its distinct coloration corresponds to that specified by Zayas (1976) and we believe it is due to intraspecific variability*" (Amédégnato *et al.*, 1995: 694; originally in Spanish, italics and English translation added herein). Nevertheless, such arguments were actually flawed:

1. Amédégnato *et al.* (1995) wrongly regarded the holotype and the false type of *D. insulana* (same two specimens examined herein) as conspecific and mistook the evident differences as intraspecific variation, apparently by regarding them as sexual dimorphism.
2. Because the false type of *D. insulana* is very similar in coloration to the lectotype of *D. multicolor* **stat. resurr.** designated by them (see figs. 3 and 6 herein), Amédégnato *et al.* (1995) also wrongly concluded that both taxa were conspecific, missing the crucial point that the identity of the former is indivisibly linked to its name-bearing type, i.e., the holotype male.
3. Amédégnato *et al.* (1995) trusted the *D. insulana* concept of Zayas (1976), who nevertheless did not study its holotype nor the (then) syntypes of *D. multicolor* **stat. resurr.** and even did not mention the latter. Strangely, they overlooked an interesting comment given on the same page: "*It looks like there are many species members of this genus...*" (Zayas, 1976: 100; originally in Spanish, italics and English translation added herein).

The present study of multiple samples where both sexes of the same species are included (e.g., *D. atrostriata* **n. sp.**, *D. megalapida* **n. sp.** and *D. multicolor* **stat. resurr.**, plus the available literature on Hispaniolan and Jamaican taxa) revealed that adult intraspecific variation is virtually nonexistent and sexual dimorphism is largely restricted to genitalia and does not affect the color pattern (i.e., males are slightly smaller and more slender than females and their coloration is only subtly brighter, but keeps exactly the same pattern).

On the basis of the argumentation given above, *D. multicolor* Carl, 1916 is herein restored as valid species and the following differences support its accurate distinction from *D. insulana*:

1. **General coloration.** *D. multicolor* **stat. resurr.**: sharply contrasting, head and pronotum with four solid alternating stripes of vivid green and yellow, abdomen with lower half uniformly bright red. *D. insulana*: plain, basically olivaceous green, only with a blurred pair of dark brown lateral stripes. See figs. 2, 5–6.
2. **Shape of pronotum.** *D. multicolor* **stat. resurr.**: anterior margin shallowly notched medially, lateral margins shallowly sinuose, posterior margin moderately notched medially. *D. insulana*: anterior margin moderately notched medially, lateral margins convex, posterior margin deeply notched medially. See figs. 19–20.
3. **Shape and length of tegmina.** *D. multicolor* **stat. resurr.**: digitiform and very short, not reaching posterior margin of metanotum. *D. insulana*: lanceolate and short, but reaching anterior margin of abdominal segment II. See figs. 19–20.
4. **Coloration of epimera I–II.** *D. multicolor* **stat. resurr.**: each with conspicuous bright yellow spot. *D. insulana*: each with conspicuous bright red spot. See figs. 2, 5–6.

5. **Furcula.** *D. multicolor* **stat. resurr.:** strongly sclerotized, short, falcate. *D. insulana*: normally sclerotized, minute, triangular. See fig. 21.
6. **Supra-anal plate.** *D. multicolor* **stat. resurr.:** wider than long, subrectangular, sparsely setose, median sulcus broad. *D. insulana*: as long as wide, subpentagonal, moderately setose, median sulcus narrow. See fig. 21.

The exact locality and collection date of the types of *D. multicolor* **stat. resurr.** were not stated in the original description, nor included in their labels (fig. 4c); nevertheless, there is a supplementary literature source that clarifies both data. Hollier & Hollier (2012: 238) reported that Saussure traveled to Cuba from January 29th through February 22th, 1855, and visited the following localities: Havana, Guanabacoa, Santa María del Rosario, Matanzas and Limonar.

All these sites are well-known cities and towns scattered across 100 km of the northern part of Havana-Matanzas Coastal Plain, in the northwestern region of Cuba (fig. 24). The types of *D. multicolor* **stat. resurr.** were most likely collected somewhere along this route, and following Article 76.2 and Recommendation 76A.1 of the Code (ICZN, 1999: 71), their originally vague type data are herein corrected accordingly (see above, in the Type data section). It is worth mentioning here that the single locality where specimens of this species have been found again (Boca de Canasí) is not only placed within Saussure's route, but roughly in its center (fig. 24).

Dellia albida **new species**

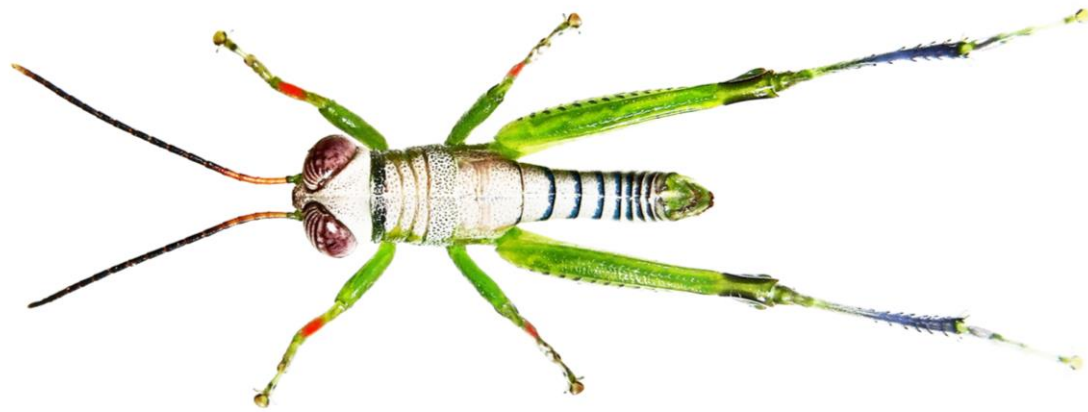
Figs. 7–8, 16–24, 25a, 26a. Table II

Types. Cuba: Santiago de Cuba Province: Guamá Municipality: Río Nima-Nima: Pozas de Juan González (19°58'36"N - 75°58'59"W, 207 m a.s.l.); nocturnal search, on the vegetation; 21/June/2017; S. Yong, R. Teruel, A. A. Méndez.; one adult ♂ holotype and one juvenile ♀ paratype (SY, in ethanol 80%).

Diagnosis (based on a single male). Size small for the genus (15 mm). **1)** Coloration predominantly green, without lateral stripes, dorsum bright white, head white, pronotum with anterior margin dark blue, epimera I–II without conspicuous spots, abdominal tergites dorsally and laterally bright white, with posterior margin dark blue, sternites green, hind femur green with small dark spots along transversal ridges, hind knees subtly infuscate medially with bluish gray. **2)** Tegmina short and spatulate, reaching posterior margin of abdominal segment I. **3)** Supra-anal plate medium-sized, paraboloid, longer than wide and sparsely setose; anterior margin almost straight and medially moderately lobed, lateral margins almost straight and strongly convergent backwards, gradually fusing with the posterior margin which is narrowly paraboloid; median sulcus complete, moderately deep and wide, flanked by a pair of low, coarse, medially divergent ridges. **4)** Furcula short and subtriangular, feebly sclerotized, with the apex of the lobes curved inwards.

Etymology. The specific epithet is a Latin adjective that literally means "white" and refers to the striking and unusual color pattern of this species.

Description (adult male holotype). Size small for the genus (total length 14.8 mm). **Coloration.** Head bright white, except as follows: maxillae and maxillary palps pale green; antennae blackish with pale brownish tips, scapus and pedicel pale green, basal segments of flagellum pale orange; eyes light pink to violaceous, with six thin, parallel, vertical, conspicuously darker stripes. Pronotum basically vivid green, dorsally bright white with anterior margin dark blue, anterior and posterior corners of pronotum with a conspicuous bright white spot, lateral margins subtly infuscate. Metanotum bright white, with posterior margin blue. Epimera I and II vivid green, immaculate. Tegmina bright white immaculate. Fore and mid legs of same color: coxa, trochanter and femur vivid green, tibia pale green with a large median pale red spot, tarsomeres pale greenish with irregular infuscation; hind legs with coxa and trochanter vivid green, femur vivid green with small dark gray spots along transversal ridges, hind knees only subtly infuscate medially with bluish gray, tibia vivid blue, apically darker and with basal portion pale green, spines bluish with darker tips, tarsomeres pale bluish to greenish. Abdomen: tergites dorsally and laterally bright white, laterally vivid yellow, posterior margin of each tergite dark blue, lateral margins yellow, immaculate; sternites vivid green, immaculate. See figure 7 and table II.



7a



7b



7c



Fig. 7. Adult male holotype of *Dellia albida* n. sp., full-body views: **a)** dorsal; **b)** lateral; **c)** ventral. Scale bar in millimeters.

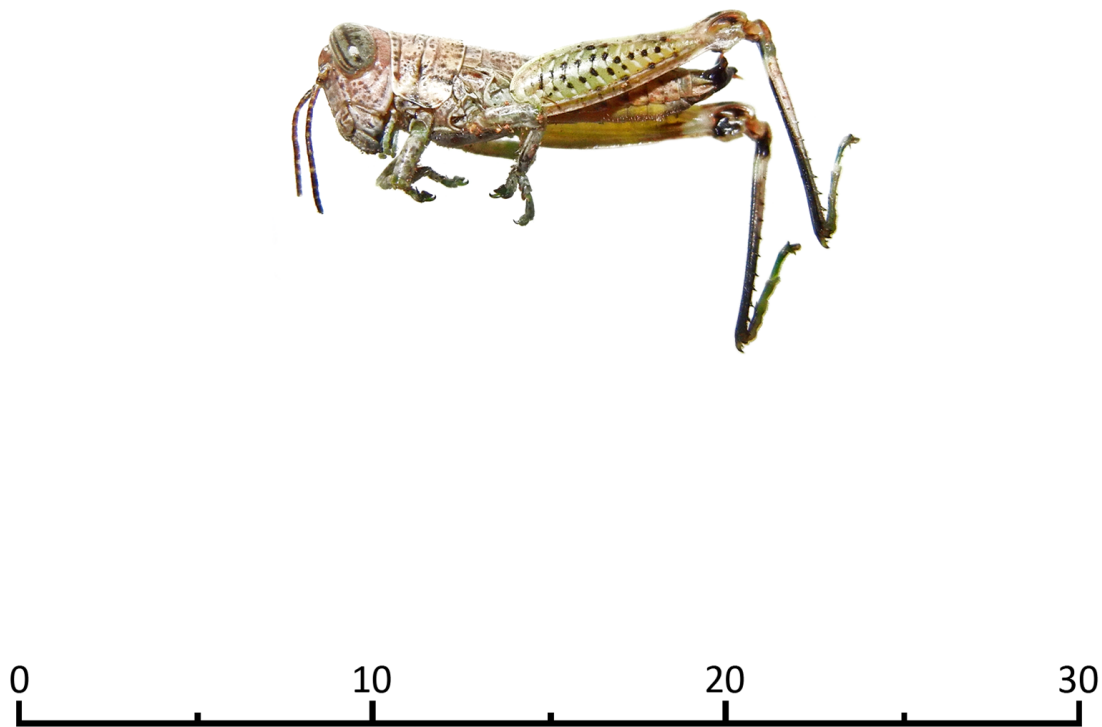


Fig. 8. Juvenile female paratype of *Dellia albida* n. sp., full-body views: **a)** dorsal; **b)** lateral; **c)** ventral. Scale bar in millimeters. See strikingly different coloration compared to adult.

Head (figs. 16–18). Moderately large, wider than long (ratio = 1.3). Tegument shiny, but sparsely and coarsely punctate, with thin and small scattered setae. Vertex moderately convex in lateral view, subtriangular in dorsal view; fastigium prominent, broad in dorsal view, semicircular in lateral view and strongly compressed in frontal view. Eyes very large, rounded and prominent; ocelli minute. Costa frontalis very well marked and horseshoe-shaped, i.e., upper portion wider and lower portion narrower. Genae basically straight in frontal view. Frons moderately and sparsely punctate. Antennae standard for Acrididae in size and shape, with 19/19 flagellomeres; scapus subcylindrical, wider than long (ratio = 1.7), oval in cross-section, essentially glabrous; pedicel clearly of more than half the length of scapus.

Thorax (figs. 19–20). Tegument shiny, but sparsely and coarsely punctate and with thin, small setae scattered all over. Pronotum subtrapezoidal in dorsal view, wider than long (ratio = 1.2) and slightly tapering anteriorly, anterior and posterior margins biconvex and shallowly incised medially, lateral margins shallowly sinuous; median keel weak, lateral keels coarsely crenulate and deeply incised by the three transverse grooves. Metanotum wider than long (ratio = 3.0) and shorter than abdominal segment I (ratio = 0.6), subrectangular in dorsal view with tegument coarsely punctate and shiny. Tegmina short (reaching posterior margin of abdominal segment I), narrow and spatulate, i.e., costal margin convex, anal margin almost straight and tip convex.

Legs (fig. 7). Covered all over by thin setae. Profemur slender, cylindrical and unarmed; protibia shorter than profemur (ratio = 0.9), very slender and straight, ventral surface with 4:3 / 3:4 subapical spines and two small apical spurs. Mid legs very similar to forelegs, but mesotibia with 3:5 / 6:3 subapical spines. Metafemur robust, larger than metatibia (ratio = 1.2), oval in cross-section; metatibia with 6:8 / 7:6 subapical spines and five inward-curved apical spurs: two small-sized laterodorsals, two medium-sized laterals, and one large ventral.

Abdomen. Large and slender (conspicuously narrower than pronotum), subcylindrical and evenly tapering posteriorly. Tegument shiny but feebly punctate, scattered with small setae and abdominal segments with median carina very well marked. Tympanic organ large, oval, and located laterally on segment I.

Furcula normally sclerotized, short, curved inwards and with rounded tip. Supra-anal plate (fig. 21) medium-sized, paraboloid, longer than wide (ratio = 1.4) and sparsely setose; anterior margin almost straight and medially moderately lobed, lateral margins almost straight and strongly convergent backwards, gradually fusing with the posterior margin which is narrowly paraboloid; median sulcus complete, moderately deep and wide, flanked by a pair of low, coarse, medially divergent ridges. Cerci very short, conical and densely covered by thin setae, reaching the posterior margin of the Supra-anal plate and not surpassing apex of abdomen. Subgenital plate (fig. 23) suboval, as wide as long (ratio = 1.0) with thin setae scattered all over; anterior, lateral and posterior margins shallowly convex. See figures 7, 21–23 and table II.

Female. Adult unknown, only an early-instar juvenile available (fig. 8).

Variation. The small juvenile female paratype has a strikingly different coloration (fig. 8): almost the entire body and appendages light gray with a dense pattern of small dark grey spots, except for the antennae (annulated all along in dark grey and pale green), sternites (pale green) and hind leg femur and tibia (the former pale green with blackish spots on outer surface mostly over transverse ridges, the latter pale gray, basally blackish and with ventral half conspicuously infuscate). This specimen also has very short tegmina that barely reach the posterior margin of mesonotum, a common eval variation in Acrididae.

Comparisons. This species is most closely related to *D. siboney* **n. sp.**, sharing color pattern and morphological features such as the coloration of pronotum, transverse ridges of the hind femur, abdominal tergites and general shape of the body. Nevertheless, *D. albida* **n. sp.** can be easily distinguished from the latter by the following characters:

1. **Coloration of body.** *D. albida* **n. sp.**: predominantly vivid green, with head and dorsum of thorax bright white, anterior margin of pronotum concolor. *D. siboney* **n. sp.**: predominantly reddish, including head and dorsum of thorax, anterior margin of pronotum sharply outlined with bright white. See figs. 7, 14.
2. **Size of eyes.** *D. albida* **n. sp.**: in dorsal view, larger and bulkier with respect to the head. *D. siboney* **n. sp.**: in dorsal view, smaller and less bulky with respect to the head. See fig. 16.
3. **Shape of thorax.** *D. albida* **n. sp.**: trapezoidal in dorsal view, with sides markedly divergent backwards. *D. siboney* **n. sp.**: subrectangular in dorsal view, with sides only slightly divergent backwards. See fig. 19.
4. **Furcula.** *D. albida* **n. sp.**: short, falcate. *D. siboney* **n. sp.**: very short, straight. See fig. 21.
5. **Supra-anal plate.** *D. albida* **n. sp.**: longer than wide, paraboloid. *D. siboney* **n. sp.**: wider than long, subpentagonal. See fig. 21.
6. **Subgenital plate.** *D. albida* **n. sp.**: longer than wide, suboval. *D. siboney* **n. sp.**: wider than long, paraboloid. See fig. 21.

Distribution (fig. 24). This species is known only from the type locality, on the southern slope of the eastern edge of the Cordillera del Turquino. This chain represents the main western subdivision of the Sierra Maestra Range.

Ecological notes. The two available specimens were found during a nocturnal search with standard white-LED headlamps (about 22:00 h Eastern Daylight Time), sleeping on twigs of the thorny bush *Acacia farnesiana* (L.) Willd., 1806 (Fabaceae). Both specimens were located on separate plants at different heights above the ground (male 2.2 m, juvenile 1.5 m), just facing each other at opposite sides of a trail.

The collecting site is the transitional zone between subcoastal semicaducifolious forest and secondary thorny scrub on volcanic sandy soil, on a steep south-facing slope of a montane ravine (fig. 26a), at a low altitude of 210 m a.s.l.

Dellia atrostriata **new species**
Figs. 9, 16–24, 25b–c, 26b. Table I

Type. Cuba: Santiago de Cuba Province: Guamá Municipality: La Platica (20°00'42"N – 76°53'27"W, 870–900 m a.s.l.); diurnal net-sweeping of the vegetation; October/2015; R. Núñez; one adult male holotype (SY, dry pinned).

Diagnosis (based on a single male). Size medium for the genus (19 mm). **1)** Coloration predominantly black, with irregular white longitudinal stripes, pronotum with seven bright white longitudinal stripes, epimera I–II each with a conspicuous bright greenish-white spot, hind femur vivid red, conspicuously darker on transversal ridges and upper margin, hind knees with upper half blackish and lower half reddish, tarsomeres pale blue. **2)** Tegmina short and lanceolate, surpassing slightly posterior margin of abdominal tergite I. **3)** Supra-anal plate relatively large, subpentagonal, longer than wide, shallowly concave and sparsely setose; anterior margin shallowly convex and medially weakly lobed, lateral margins straight and parallel, posterior margin angulose and narrowly paraboloid; median sulcus complete, deep and narrow, flanked by a pair of raised, coarse, undulate ridges. **4)** Furcula strongly sclerotized, shortly triangular, with digitiform and inward-curved apex.

Etymology. The specific epithet is a Latinized compound adjective that literally means "striped in black" and refers to the striking color pattern of the body of this species.

Description (adult male holotype). Size medium for the genus (total length 19.2 mm). **Coloration.** Head basically greenish black, except as follows: frons dark greenish, clypeus, labrum, maxillae and maxillary palps pale yellowish, vertex with fastigium yellow continuing into a pair of thin, solid yellow longitudinal stripes just above the eyes, genae irregularly spotted with yellow; antennae blackish with whitish tips, scapus and pedicel vivid green; eyes bright blue, with small dark spots. Pronotum black, with seven bright white longitudinal stripes interrupted by black transversal grooves: a single dorsomedian (very thin, complete), paired dorsolaterals (thick, complete), paired lateromedians (thin, incomplete anteriorly and posteriorly), and paired laterals (thick, incomplete anteriorly), lateral margins dark greenish. Epimera I and II black, each with a conspicuous bright greenish-white spot. Tegmina with a conspicuous bicolor, longitudinally striped pattern: three black stripes (thin anterior, thick median and thin posterior), separated by two white stripes (upper one much thicker). Fore and mid legs of same color: coxa and trochanter vivid green, femur vivid yellowish green, tibia vivid green with a large pale blue median spot, tarsomeres yellowish green with irregular infuscation; hind legs with coxa and trochanter olivaceous green, femur vivid red, conspicuously darker on transversal ridges and upper margin, hind knees with upper half blackish and lower half reddish, tibia vivid blue with blackish spines, tarsomeres pale blue. Abdomen with striped pattern on tergites continued from that on thorax (see above): single dorsomedian (very thin and irregular, whitish) and on each side paired submedians (thin, black), paired dorsolaterals (thick, bright white), and paired lateromedians (thick, black); lateral areas vivid green with margins not infuscate; sternites immaculate vivid green. See figure 9 and table I.

Head (figs. 16–18). Moderately large, wider than long (ratio = 1.5). Tegument shiny, but rugose and coarsely punctate. Vertex moderately convex in lateral view, subtriangular in dorsal view; fastigium prominent, broad in dorsal view, semicircular in lateral view and strongly compressed in frontal view. Eyes very large, suboval and prominent; ocelli minute. Costa frontalis very well marked, narrow and large, reaching upper margin of clypeus, with lateral branches almost parallel and shallowly sinuose, i.e., upper portion inverted U-shaped and lower portion almost rounded. Genae moderately convex in frontal view. Frons coarsely punctate and rugose. Antennae standard for Acrididae in size and shape, with 18/18 flagellomeres; scapus subcylindrical, wider than long (ratio = 1.3), oval in cross-section, essentially glabrous; pedicel clearly more than half the length of scapus.

Thorax (figs. 19–20). Tegument shiny, but densely and coarsely punctate and with thin short setae. Pronotum subrectangular in dorsal view and slightly longer than wide (ratio = 1.0), tapering anteriorly; anterior margin essentially convex, posterior margin shallowly convex and medially incised, lateral margins shallowly sinuose; median keel strong, lateral keels coarsely crenulate and deeply incised by the three transverse grooves. Metanotum wider than long (ratio = 2.4) and shorter than abdominal segment I (ratio = 0.7), subrectangular in dorsal view with tegument smooth and shiny. Tegmina short (surpassing slightly

posterior margin of abdominal tergite I), narrow and lanceolate, i.e., costal and anal margins slightly convex, tip rounded.

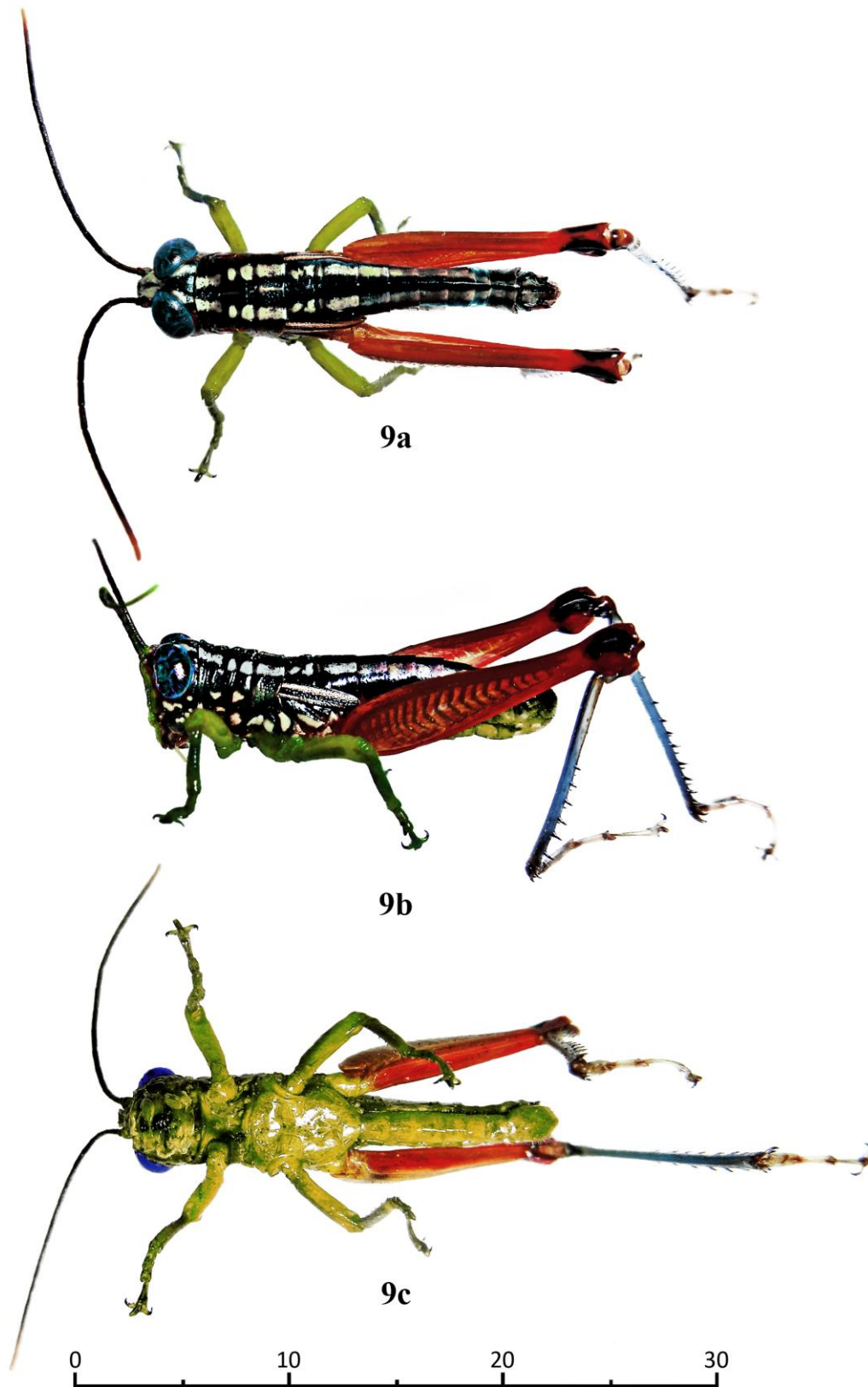


Fig. 9. Adult male holotype of *Dellia atrostriata* n. sp., full-body views: **a)** dorsal; **b)** lateral; **c)** ventral. Scale bar in millimeters.

Table II. Measurements of three Cuban species of *Dellia*. Abbreviations: length (L), width (W), depth (H), not applicable (NA), incomplete count due to tip missing (*).

			<i>D. albida</i> sp. n.	<i>D. megalapida</i> sp. n.			<i>D. siboney</i> sp. n.
Dimensions (mm)			♂ holotype (Juan González)	♂ holotype (La Gran Piedra)	♂ paratype (La Gran Piedra)	♀ paratype (La Gran Piedra)	♂ holotype (Siboney)
Head	L / W / H		2.75 / 3.45 / 3.55	2.50 / 2.90 / 3.00	2.35 / 3.10 / 3.25	2.65 / 3.65 / 3.50	2.50 / 3.05 / 3.15
Interocular (minimum) distance	L		0.40	0.45	0.40	0.65	0.35
Scapus	L / W		0.30 / 0.50	0.50 / 0.45	0.35 / 0.45	0.45 / 0.45	0.46 / 0.40
Flagellomeres (number)	left / right		19 / 19	19 / 19	17 / 17	18 / 18	19 / 19
Thorax	L		3.90	4.28	4.75	5.45	3.85
Pronotum	L / W		3.05 / 3.65	3.28 / 3.16	3.65 / 3.35	4.10 / 3.90	2.75 / 3.05
Metanotum	L / W		0.85 / 2.50	1.00 / 2.60	1.10 / 2.40	1.35 / 3.15	1.10 / 2.81
Tegminae	L/W		2.00 / 0.85	2.25 / 0.75	2.85 / 0.85	2.85 / 0.95	2.40 / 0.72
Abdomen	L		8.15	9.40	7.85	11.75	9.30
Segment I	L / W		1.50 / 2.55	1.50 / 2.27	1.60 / 2.40	2.00 / 3.40	1.50 / 2.74
Supra-anal plate	L / W		1.25 / 0.90	1.25 / 1.25	1.25 / 1.15	1.30 / 1.10	1.05 / 1.25
Subgenital plate	L / W		1.35 / 1.30	1.05 / 1.55	1.35 / 1.15	1.75 / 1.35	0.90 / 1.05
Ovipositor	L		NA	NA	NA	1.55	NA
Cercus	L		0.50	0.95	1.00	0.70	0.65
Profemur	L		3.05	2.65	3.15	3.10	2.45
Protibia	L		2.75	2.61	2.65	2.85	2.35
Mesofemur	L		3.40	3.17	3.00	3.55	2.95
Mesotibia	L		3.40	3.17	3.35	3.40	2.95
Metafemur	L		10.40	9.60	10.30	11.45	9.00
Metatibia	L		8.75	8.40	9.10	10.20	7.55
Body (total)	L		14.80	16.18	14.95	19.85	15.65

Legs (fig. 9). Covered all over by thin setae. Profemur slender, cylindrical and unarmed; protibia almost as long as profemur (ratio = 0.9), very slender and straight, ventral surface with 5:4 / 4:4 subapical spines and two small apical spurs. Mid legs very similar to forelegs, but mesotibia with 3:7 / 7:3 subapical spines. Metafemur robust, 1.1 times larger than metatibia, oval in cross-section; metatibia with 6:8 / 8:6 subapical spines and five inward-curved apical spurs: two small-sized laterodorsals, two medium-sized laterals, and one large ventral.

Abdomen. Large and slender (conspicuously narrower than pronotum), subcylindrical and evenly tapering posteriorly. Tegument shiny and smooth, with small scattered setae and abdominal segments with median carina very well marked. Tympanic organ large, rounded, and located laterally on segment I. Furcula strongly sclerotized, short, curved inwards and with rounded tip. Supra-anal plate (fig. 21) relatively large, subpentagonal, longer than wide (ratio = 1.2), shallowly concave and sparsely setose; anterior margin

shallowly convex and medially weakly lobed, lateral margins straight and parallel, posterior margin angulose and narrowly paraboloid; median sulcus complete, deep and narrow, flanked by a pair of raised, coarse, undulate ridges. Cerci very short, conical and densely covered by thin setae, almost reaching the posterior margin of the Supra-anal plate and not surpassing apex of abdomen. Subgenital plate (fig. 23) longer than wide (ratio = 1.2) and sparsely setose; anterior margin shallowly convex, lateral margins essentially straight, posterior margin convex. See figures 9, 21–23 and table I.

Female: Unknown.

Comparisons. *D. atrostriata* **n. sp.** is easy to distinguish from the 17 other members of the genus by the combination of its sharply contrasting coloration pattern, which is basically predominantly dark, pronotum with seven bright white longitudinal stripes, fore and mid legs same-colored and predominantly vivid green, hind femur vivid red and conspicuously darker on transversal ridges and upper margin, hind knees with upper half blackish and lower half reddish.

Distribution (fig. 24). This species is known from four nearby localities at the highest part of the Cordillera del Turquino, in Guamá Municipality, Santiago de Cuba Province. Besides the type locality, it has been found in El Cojo (20°01'29"N - 76°50'11"W, 1,400 m a.s.l.), Alto del Cardero (19°58'29"N - 75°51'16"W, 1,239 m a.s.l.) and Pico Turquino (19°59'21"N - 76°50'10"W, 1,972 m a.s.l.), see details below.

Ecological notes. According to the field notes of the collector (Rayner Núñez, pers. comm.), the holotype was captured while sweeping the grass with an entomological net. The primary vegetation around the site is montane rainforest and pine forest, both on volcanic terrain.

This species does not seem to be too rare, because it has been repeatedly found by different collectors from the early 1960's to date. The present author has seen at least five additional specimens of *D. atrostriata* **sp. n.** from Alto del Cardero and Pico Turquino, all deposited in the collections of IES and the late Fernando de Zayas. Moreover, on 29/November/2011, the collector of the holotype photographed another adult male at El Cojo (figs. 25b–c).

Dellia brauni **new species**

Figs. 10, 16–24, 25d, 26c. Table I

Type. Cuba: Cienfuegos Province: Cumanayagua Municipality: Guamuha Mountain Range: Pico San Juan (21°59'20.6"N - 80°08'51.0"W, 1,140 m a.s.l.); diurnal search (00:12 hrs) on the vegetation; 12/August/2015; T. M. Rodríguez-Cabrera, R. Marrero; one adult male holotype (SY, dry pinned).

Diagnosis (based on a single male). Size medium for the genus (19 mm). **1)** Coloration predominantly blue dorsally and yellow ventrally, with two solid lateral stripes (upper dark blue, lower white), dorsum with a yellow median longitudinal line, epimera I–II each with a vivid red spot with bright white lower margin, tergites without lateral spots, sternites olive-yellow, hind femur olive-yellow, with transversal ridges and upper margin vivid green, hind knees almost entirely black, only with lower half of outer surface brownish, tarsomeres pale blue. **2)** Tegmina very short and digitiform, hardly reaching posterior margin of metanotum. **3)** Supra-anal plate medium-sized, subpentagonal, wider than long and sparsely setose; anterior margin convex and medially narrowly lobed, lateral margins almost straight and parallel, posterior margin narrowly paraboloid; median sulcus present only in basal half, moderately deep and wide, flanked by a pair of raised, coarse, medially divergent ridges. **4)** Furcula short, subtriangular with the apex curved outward.

Etymology. The specific epithet is a patronym honoring Holger Braun (Museo de La Plata, Argentina), a high-expertise orthopterologist, prolific researcher and one of the authors of the Orthoptera Species File.

Description (adult male holotype). Size medium for the genus (total length 19.4 mm). **Coloration.** Head basically vivid light blue with a subtle greenish shade, except as follows: genae with small whitish spots below the eyes and a thick, irregular, longitudinal dark olive-blue stripe just behind each eye, maxillary palps with basal half green and distal half white; antennae black with bright white tips, scapus vivid light blue with

a subtle greenish shade; eyes vivid blue, with a dark central spot and six thin, parallel, conspicuously darker vertical stripes. Pronotum conspicuously tricolor as continued from head pattern: entire dorsal surface vivid light blue with a subtle greenish shade, lateral surfaces dark olive-blue with a thick, medially interrupted, bright white stripe on each side, lateral margins moderately infusate. Metanotum of same coloration and pattern as pronotum. Epimera I and II each with a large vivid red spot with bright white lower margin; a large, bright white spot just below each tegmen. Tegmina strikingly bicolor: upper third bright white, lower two-thirds black. Fore and mid legs same-colored, conspicuously bicolor: coxa, trochanter and femur vivid light olive-green, tibia and tarsomeres immaculate greyish-blue; hind legs with coxa, trochanter and femur vivid olive-yellow, transversal ridges and upper margin vivid green, hind knees almost entirely black, only with lower half of outer surface brownish, tibia vivid blue with extreme base greenish, spines bluish with blackish tips, tarsomeres immaculate pale blue. Abdomen resembling thorax in color pattern: tergites with dorsal surface vivid light blue with a subtle greenish shade, upper half of lateral surfaces dark olive-blue, lower half of lateral surfaces vivid olive-yellow, lateral margins immaculate, posterior margin of each tergite annulated with a thin dark blue stripe; sternites vivid olive-yellow, immaculate. See figure 10 and table I.

Head (figs. 16–18). Moderately large, wider than long (ratio = 1.3). Tegument shiny, but sparsely and coarsely punctate, essentially glabrous. Vertex moderately convex in lateral view, subtriangular in dorsal view; fastigium prominent, broad in dorsal view, semicircular in lateral view and strongly compressed in frontal view. Eyes very large, suboval and prominent; ocelli minute. Costa frontalis very well marked and relatively narrower, with lateral branches almost parallel and shallowly sinuose, i.e., upper portion U inverted-shaped and lower portion narrower and V-shaped. Genae essentially straight in frontal view. Frons coarsely punctate. Antennae standard for Acrididae in size and shape, with 18/18 flagellomeres; scapus subcylindrical, wider than long (ratio = 1.1), oval in cross-section, mostly glabrous; pedicel clearly more than half the length of scapus.

Thorax (figs. 19–20). Tegument shiny, but densely and coarsely punctate, and with scattered short and thin setae. Pronotum subrectangular in dorsal view, longer than wide (ratio = 1.1); anterior margin and posterior margin shallowly convex and medially incised, lateral margins S-shaped; median keel very strong, lateral keels coarsely crenulate and deeply incised by the three transverse grooves. Metanotum wider than long (ratio = 2.2) and shorter than abdominal segment I (ratio = 0.6), subtrapezoidal in dorsal view with tegument strongly punctate and shiny. Tegmina short (almost reaching posterior margin of metanotum), straight, narrow and oval-elongate, i.e., costal and anal margins slightly convex, tip angulose.

Legs (fig. 10). Covered all over by thin setae. Profemur slender, cylindrical and unarmed; protibia exactly as long as profemur (ratio = 1.0), very slender and straight, ventral surface with 5:4 / 4:5 subapical spines and two small apical spurs. Mid legs very similar to forelegs, but mesotibia with 3:7 / 7:3 subapical spines. Metafemur robust, larger than metatibia (ratio = 1.1), oval in cross-section; metatibia with 6:8 / 8:6 subapical spines and five inward-curved apical spurs: two small-sized laterodorsals, two medium-sized laterals, and one large ventral.

Abdomen. Large and slender (conspicuously narrower than pronotum), subcylindrical and evenly tapering posteriorly. Tegument shiny and smooth, scattered with small setae and abdominal segments with median carina very well marked. Tympanic organ large, rounded, and located laterally on segment I. Furcula normally sclerotized, short, curved outwards and with rounded tip. Supra-anal plate (fig. 21) medium-sized, subpentagonal, wider than long (ratio = 1.1) and sparsely setose; anterior margin convex and medially narrowly lobed, lateral margins almost straight and parallel, posterior margin narrowly paraboloid; median sulcus present only in basal half, moderately deep and wide, flanked by a pair of raised, coarse, medially divergent ridges. Cerci short, conical and densely covered by thin setae, surpassing the posterior margin of the Supra-anal plate but not surpassing apex of abdomen. Subgenital plate (fig. 23) suboval, longer than wide (ratio = 1.1) and sparsely setose; anterior margin shallowly concave, lateral and posterior margins convex. See figures 10, 21–23 and table I.

Female: Unknown.

Comparisons. This species is most closely related to *D. megalapida* **n. sp.**, *D. roseomaculata* and *D. zephyra* **n. sp.**, sharing a similar combination of color pattern (dorsum and venter of a different but rather uniform color, both separated by two solid stripes, i.e., upper dark and lower white, plus epimera I and II each with a large vivid red spot) and shape of the male Supra-anal plate (basal portion subrectangular, apical portion subtriangular). But *D. brauni* **n. sp.** can be easily distinguished by the following characters:

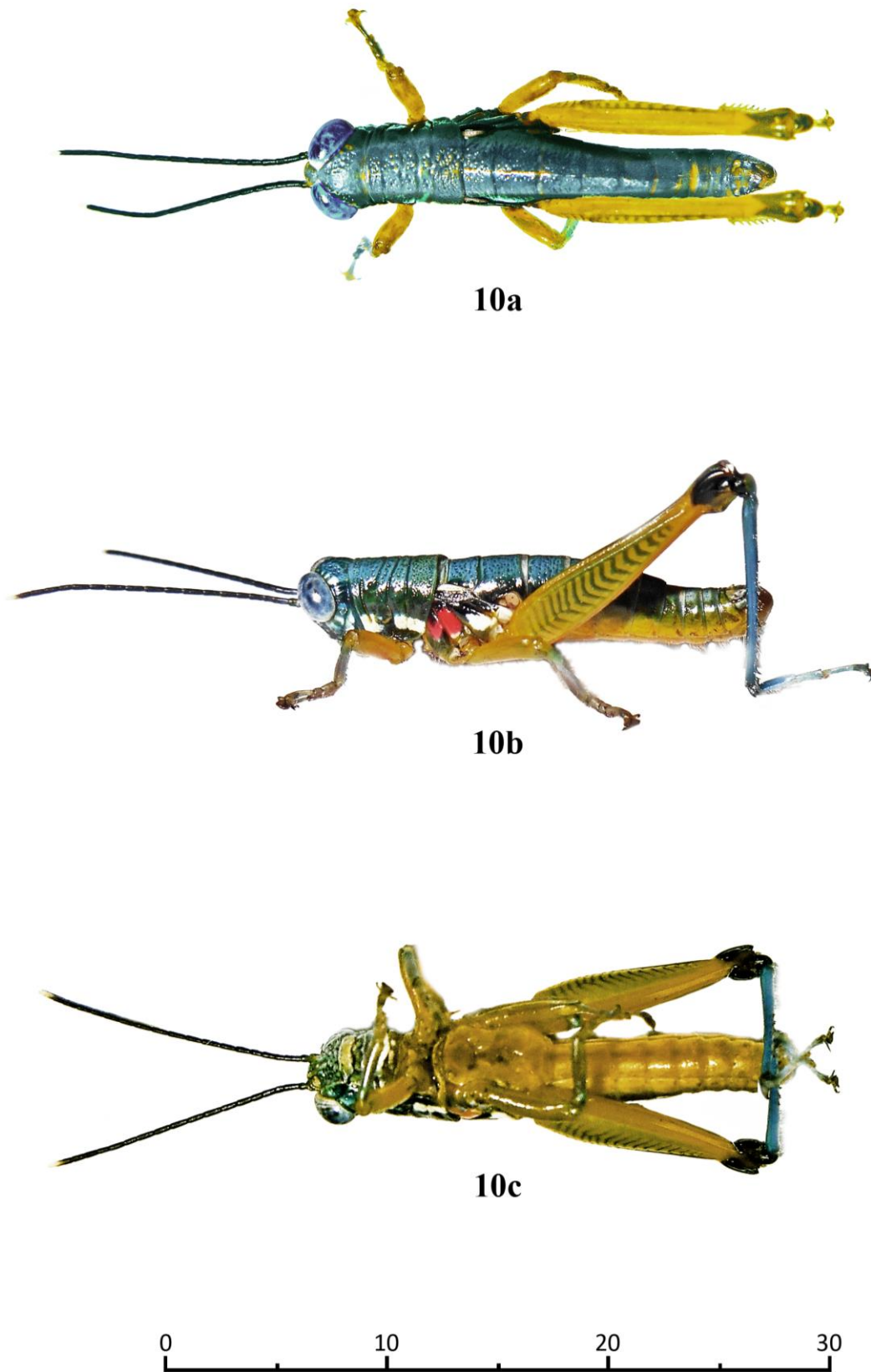


Fig. 10. Adult male holotype of *Dellia brauni* n. sp., full-body views: **a)** dorsal; **b)** lateral; **c)** ventral. Scale bar in millimeters.

- 1. Coloration of body dorsal surface.** *D. brauni* n. sp.: intense blue. *D. megalapida* n. sp.: pale blue. *D. roseomaculata*: grayish blue. *D. zephyra* n. sp.: light orange-brown.
- 2. Coloration of hind femur.** *D. brauni* n. sp.: vivid olive-yellow, transversal ridges and upper margin vivid green, hind knees almost entirely black, only with lower half of outer surface brownish. *D. megalapida* n. sp.: vivid yellowish-green with outer surface vivid green, transversal ridges immaculate, hind knees with upper margin vivid light red and lower margin with a small blackish spot. *D. roseomaculata*: reddish with outer surface dark olive-bluish, transversal ridges immaculate, hind knees reddish-brown. *D. zephyra* n. sp.: vivid green, slightly darker on transversal ridges and upper and lower margins, hind knees entirely black.
- 3. Coloration of ventral surface of the body.** *D. brauni* n. sp.: vivid olive-yellow, immaculate. *D. megalapida* n. sp.: vivid yellowish-green, immaculate. *D. roseomaculata*: pale green, irregularly spotted with brown. *D. zephyra* n. sp.: vivid olive-green, irregularly spotted with yellow.

Distribution (fig. 24). This species is known only from the type locality.

Ecological notes. The single available specimen of *D. brauni* n. sp. was captured at noon, on a twig of a low bush, in a grassy clearing within the montane rainforest (figs. 25d, 26c). Repeated and intensive day and night searches at the same site and surrounding forest were unsuccessful.

Pico San Juan is the highest peak of the Guamuha Massif and by extension also of the central region of Cuba (fig. 24). The primary vegetation is still well preserved, consisting of montane rainforest and cloud forest (Capote & Berazaín, 1984). The climate is temperate by day and in summer months, but cold at night and in winter.

Dellia megalapida new species

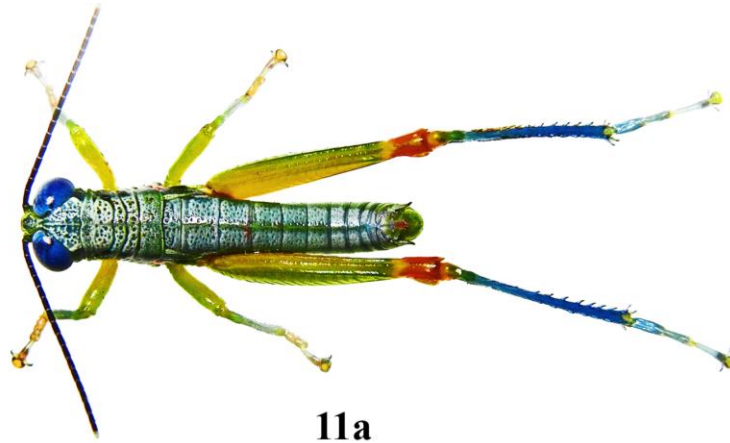
Figs. 11–12, 16–24, 25g–i, 26d. Table II

Types. Cuba: Santiago de Cuba Province: Santiago de Cuba Municipality: Sierra Maestra: La Gran Piedra Range: La Gran Piedra (20°00'35"N – 75°37'42", 1,200 m a.s.l.); diurnal search; 23/July/2017; S. Yong, R. Teruel; 1♂ holotype (SY, in ethanol 80%). Same data as holotype; one adult ♂, one adult ♀, 2♂♂ juvenile, 2 juvenile ♀♀ paratypes (SY, in ethanol 80%). Same locality; May/2016; Y. Ricardo; one adult ♂ paratype (SY, in ethanol 80%). Same locality; 6/July/2016; S. Yong, R. Teruel; 2♂♂ adult, one adult female, 2♂♂ juvenile, one juvenile ♀ paratypes (SY, in ethanol 80%). Same locality; 14/April/2017; S. Yong, R. Teruel, E. Fonseca; one juvenile ♀ paratype (SY, in ethanol 80%). Same locality; 23/May/2017; S. Yong, R. Teruel; one adult ♂, one adult ♀, 1 juvenile ♀ paratypes (SY, in ethanol 80%).

Diagnosis. Size small to medium for the genus (15–20 mm). **1)** Coloration predominantly blue dorsally and green ventrally, with two solid lateral stripes (upper blackish, lower white), dorsum with a green median longitudinal line, epimera I–II each with a vivid red spot, tergites without lateral spots, sternites green, hind femur yellowish-green with outer surface vivid green, transversal ridges immaculate, hind knees with upper margin red and lower margin with a small blackish spot, tarsomeres pale blue. **2)** Tegmina short and lanceolate, reaching the middle of abdominal segment I. **3)** Supra-anal plate of the male relatively small, subpentagonal, as long as wide and sparsely setose; anterior margin convex and medially weakly lobed, lateral margins shallowly concave and slightly divergent backwards, posterior margin angulose and narrowly paraboloid; median sulcus present only in basal half, moderately deep and narrow, flanked by a pair of low, coarse, medially divergent ridges. **4)** Supra-anal plate of the female medium-sized, paraboloid, longer than wide and sparsely setose; median sulcus present in basal half only, shallow and broad, flanked by a pair of low, coarse, medially divergent ridges. **5)** Furcula very short, weakly sclerotized and triangular.

Etymology. The specific epithet is a Latin compound noun in apposition that literally means "big stone" and refers to the name of the type locality of this species.

Description (adult male holotype). Size small for the genus (total length 16.2 mm). **Coloration.** Head basically vivid green, except as follows: vertex vivid pale blue with a subtle greenish shade, genae with a thick, solid, longitudinal blackish stripe behind each eye and a thick, irregular, longitudinal yellowish-white stripe just below the eyes, maxillary palps with basal half green and distal half white; antennae blackish-blue



11a



11b



11c



Fig. 11. Adult male holotype of *Dellia megalapida* n. sp., full-body views: **a)** dorsal; **b)** lateral; **c)** ventral. Scale bar in millimeters

with bright white tips, scapus and pedicel vivid green and extreme base of flagellum pale blue; eyes vivid light blue, with a dark central spot and six thin, parallel, vertical, slightly darker stripes. Pronotum complexly colored as continued from head pattern: dorsal surface vivid pale blue with a subtle greenish shade, lateral surfaces conspicuously trifasciate, with upper half blackish and lower half with a bright white stripe above a vivid green stripe, lateral margins not infuscate. Metanotum with the same coloration and pattern as pronotum. Epimera I and II each with a large vivid red spot; a large, bright white stripe just below each tegmen. Tegmina strikingly bicolor: upper third bright white, lower two-thirds black. Fore and mid legs same-colored: coxa, trochanter and femur vivid light green, tibia vivid blue with extreme base and apex vivid light green, tarsomeres greyish-blue, irregularly infuscate; hind legs with coxa and trochanter vivid yellowish-green, femur vivid yellowish-green with outer surface vivid green, transversal ridges immaculate, hind knees with upper margin vivid light red and lower margin with a small blackish spot, tibia vivid blue with extreme base green, spines blue with blackish tips, tarsomeres pale blue, immaculate. Abdomen with a thin, green, median longitudinal line and resembling thorax in color pattern: tergites with dorsal surface vivid pale blue with a subtle greenish shade, lateral surfaces vivid green with a faded dark stripe along upper half of basal segments, lateral margins immaculate, posterior margin of each tergite annulated with a thin dark blue stripe; sternites vivid yellowish-green, immaculate. See figure 11 and table II.

Head (figs. 16–18). Moderately large, wider than long (ratio = 1.2). Tegument shiny, but sparsely and coarsely punctate, with thin and short setae scattered all over. Vertex moderately convex in lateral view, subtriangular in dorsal view; fastigium prominent and broad in dorsal view, semicircular in lateral view and strongly compressed in frontal view. Eyes very large, suboval and prominent; ocelli minute. Costa frontalis very well marked, wide and U-shaped between the antennal sockets, each branch of the lower portion inverted monkey wrench-shaped. Genae moderately convex in frontal view. Frons coarsely and sparsely punctate. Antennae standard for Acrididae in size and shape, with 19/19 flagellomeres; scapus subcylindrical, slightly longer than wide (ratio = 1.1), oval in cross-section, essentially glabrous; pedicel basically of same length as scapus.

Thorax (figs. 19–20). Tegument shiny, but densely and coarsely punctate and essentially glabrous but with some scattered setae. Pronotum trapezoidal in dorsal view, slightly longer than wide (ratio = 1.0), slightly tapering anteriorly; anterior margin shallowly convex and sinuose, posterior margin shallowly convex, lateral margins S-shaped; median keel feebly marked, lateral keels coarsely crenulate and deeply incised by the three transverse grooves. Metanotum wider than long (ratio = 2.6) and shorter than abdominal segment I (ratio = 0.7), subtrapezoidal in dorsal view with tegument shiny but sparsely and coarsely punctate. Tegmina short, reaching the middle of abdominal segment I, narrow and lanceolate, i.e., costal and anal margins slightly sinuose and tip rounded.

Legs (fig. 11). Covered all over by thin setae. Profemur slender, cylindrical and unarmed; protibia almost as long as profemur (ratio = 0.9), very slender and straight, ventral surface with 5:4 / 4:5 subapical spines and two small apical spurs. Mid legs very similar to forelegs, but mesotibia with 3:7 / 7:3 subapical spines. Metafemur robust, larger than metatibia (ratio = 1.1), oval in cross-section; metatibia with 7:8 / 9:8 subapical spines and five inward-curved apical spurs: two small-sized laterodorsals, two medium-sized laterals, and one large ventral.

Abdomen. Large and slender (conspicuously narrower than pronotum), subcylindrical and evenly tapering posteriorly. Tegument shiny and smooth, with small scattered setae and abdominal segments with median carina very well marked. Tympanic organ large, rounded, located laterally on segment I. Furcula normally sclerotized, very short and triangular. Supra-anal plate (fig. 21) relatively small, subpentagonal, as long as wide (ratio = 1.0) and sparsely setose; anterior margin convex and medially weakly lobed, lateral margins shallowly concave and slightly divergent backwards, posterior margin angulose and narrowly paraboloid; median sulcus present only in basal half, moderately deep and narrow, flanked by a pair of low, coarse, medially divergent ridges. Cerci moderately short, conical, densely covered by thin setae, with the apex sclerotized, surpassing the posterior margin of the Supra-anal plate but not surpassing apex of abdomen. Subgenital plate (fig. 23) suboval, wider than long (ratio = 1.5) and sparsely setose; anterior margin shallowly concave, lateral margins shallowly convex, posterior margin strongly convex. See figures 11, 21–23 and table II.

Description of adult female paratype. Size medium for the genus (total length 19.8 mm). General coloration essentially identical to male. See figure 12 and table II.

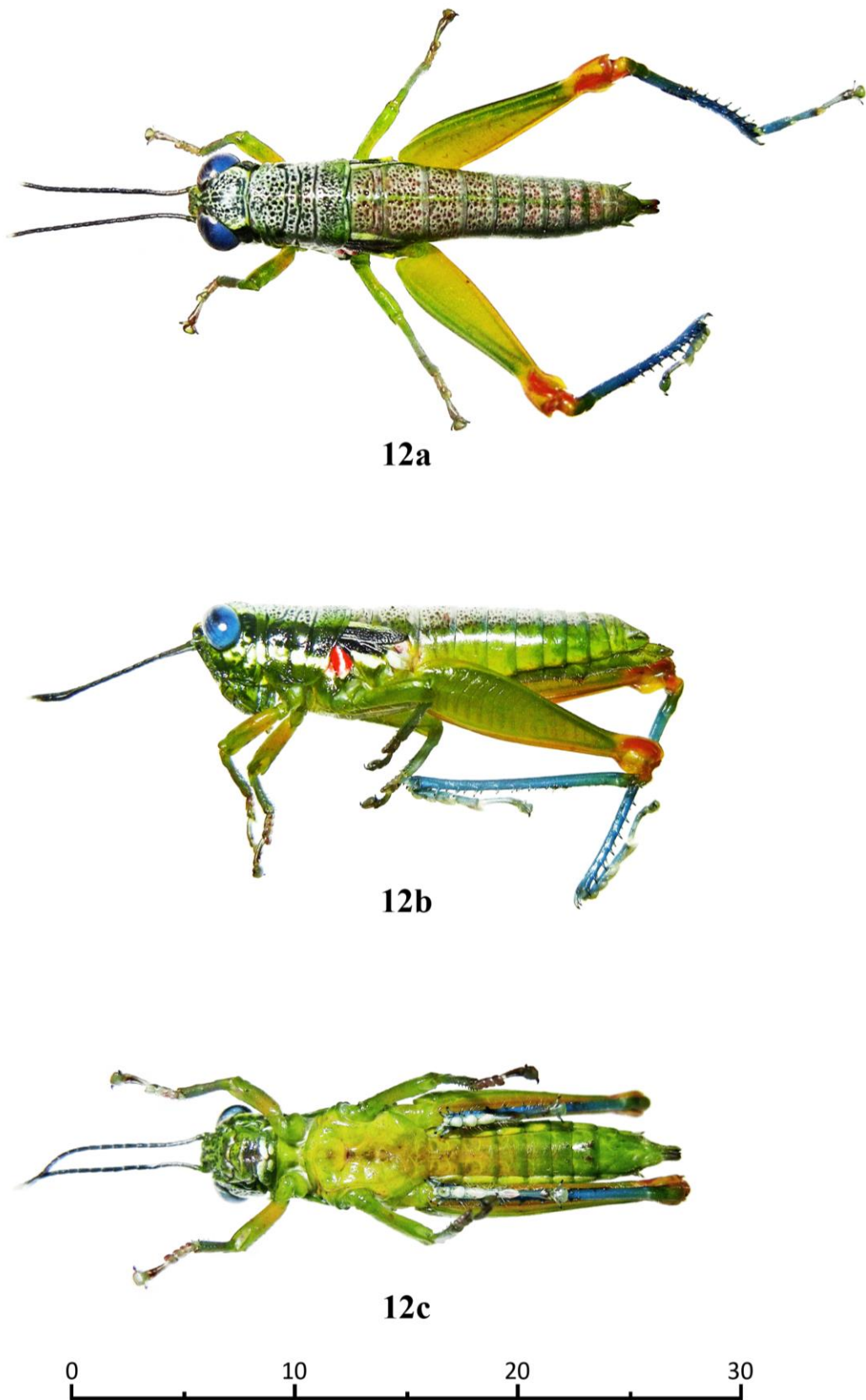


Fig. 12. Adult female paratype of *Dellia megalapida* n. sp., full-body views: **a)** dorsal; **b)** lateral; **c)** ventral. Scale bar in millimeters.

Head (figs. 16–18). Large, longer than wide (ratio = 1.4). Tegument shiny, but rugose, sparsely and coarsely punctate, essentially glabrous. Vertex, fastigium, eyes and ocelli as in male. Costa frontalis very well marked, wider and U-shaped, i.e., upper margin wide. Genae moderately convex in frontal view, frons rugose, coarsely and sparsely punctate. Antennae as in male.

Thorax (figs. 19–20). Tegument shiny, but densely and coarsely punctate, essentially glabrous but with some thin setae scattered all over. Pronotum trapezoidal in dorsal view, slightly longer than wide (ratio=1.0), slightly tapering anteriorly; anterior margin slightly convex, posterior margin undulate and widely incised medially, lateral margins S-shaped; median keel strongly marked, lateral keels coarsely crenulate and deeply incised by the three transverse grooves. Metanotum wider than long (ratio = 2.3) and shorter than abdominal segment I (ratio = 1.5), trapezoidal in dorsal view with tegument densely and coarsely punctate and shiny. Tegmina short (almost reaching posterior margin of abdominal segment I), narrow and knife-shaped, i.e., costal margin shallowly sinuose, anal margin almost straight and tip angulose.

Legs (fig. 12). Covered all over by thin setae. Profemur slender, cylindrical and unarmed; protibia shorter than profemur (ratio = 0.8), very slender and straight, ventral surface with 4:5 / 5:5 subapical spines and two small apical spurs. Mid legs very similar to forelegs, but mesotibia with 3:7 / 7:3 subapical spines. Metafemur robust, 1.1 times longer than metatibia, oval in cross-section; metatibia with 8:8 / 8:8 subapical spines and five inward-curved apical spurs: two small laterodorsals, two medium-sized laterals and one large ventral.

Abdomen. Large and slender (conspicuously narrower than pronotum), subcylindrical and evenly tapering posteriorly. Tegument shiny and smooth, densely and coarsely punctate, with small scattered setae and abdominal segments with median carina very well marked. Tympanic organ large, rounded, located laterally on segment I. Supra-anal plate (fig. 21) medium-sized, paraboloid, longer than wide (ratio = 1.2) and sparsely setose; median sulcus present in basal half only, shallow and broad, flanked by a pair of low, coarse, medially divergent ridges. Cerci very short, conical and densely covered by thin setae, almost reaching the posterior margin of the Supra-anal plate but not surpassing apex of abdomen. Subgenital plate (fig. 23), longer than wide (ratio = 1.3), paraboloid; anterior margin essentially straight, lateral margins shallowly convex and posterior margin strongly convex. Ovipositor in lateral view: each valve of the dorsal and ventral pairs with dorsal surface basically straight, with several indistinct, very low crenulations, dorsal pair apically weakly curved upwards, ventral pair apically curved downwards. See figures 12, 21–23 and table II.

Comparisons. This species is most closely related to *D. brauni* **n. sp.**, *D. roseomaculata* and *D. zephyra* **n. sp.**, by sharing a similar combination of color pattern (dorsum and venter of a different but rather uniform color, both separated by two solid stripes, i.e., upper dark and lower white, plus epimera I and II each with a large vivid red spot) and shape of the male Supra-anal plate (basal portion subrectangular, apical portion subtriangular). But *D. megalapida* **n. sp.** can be easily distinguished from them by the following characters:

1. **Coloration of body dorsal surface.** *D. megalapida* **n. sp.**: pale blue. *D. brauni* **n. sp.**: intense blue. *D. roseomaculata*: grayish blue. *D. zephyra* **n. sp.**: light orange-brown.
2. **Coloration of hind femur.** *D. megalapida* **n. sp.**: vivid yellowish green with outer surface vivid green, transversal ridges immaculate, hind knees with upper margin vivid light red and lower margin with a small blackish spot. *D. brauni* **n. sp.**: vivid olive-yellow, transversal ridges and upper margin vivid green, hind knees almost entirely black, only with lower half of outer surface brownish. *D. roseomaculata*: reddish with outer surface dark olive-bluish, transversal ridges immaculate, hind knees reddish-brown. *D. zephyra* **n. sp.**: vivid green, slightly darker on transversal ridges and upper and lower margins, hind knees entirely black.
3. **Coloration of ventral surface of the body.** *D. megalapida* **n. sp.**: vivid yellowish green, immaculate. *D. brauni* **n. sp.**: vivid olive-yellow, immaculate. *D. roseomaculata*: pale green, irregularly spotted with brown. *D. zephyra* **n. sp.**: vivid olive-green, irregularly spotted with yellow.

Distribution (fig. 24). This species is known only from the type locality, on the top of the Cordillera de La Gran Piedra. This chain represents the main eastern subdivision of the Sierra Maestra Range.

Ecological notes. All types of this species were found in the afternoon in the small garden of a house (meteorological station), surrounded by montane rainforest (fig. 26d). Repeated and intensive searches in surrounding areas with both primary and secondary vegetation (rainforest, pine forest, pasture and other

gardens), were totally unsuccessful. In this spot, *D. megalapida* **n. sp.** is nevertheless common, i.e., it is usual to spot several specimens per sampling, although a very careful search must be done to achieve success.

Individuals were found on different garden plants, even though most of them preferred a single undetermined species of Apiaceae (fig. 25i, 26d). All were standing on fine twigs and stems very close to the ground (not more than 0.3 m up), in normal activity, mostly feeding. One mating pair was found on 23/July/2017 (fig. 25h).

La Gran Piedra is the highest peak of the Cordillera de La Gran Piedra. The primary vegetation is still well preserved montane rainforest and cloud forest (Capote & Berazaín, 1984). The climate is temperate by day and in summer months, but cold at night and in winter.

Dellia melici **new species**

Figs. 13, 16–24, 25j–k, 26c. Table I

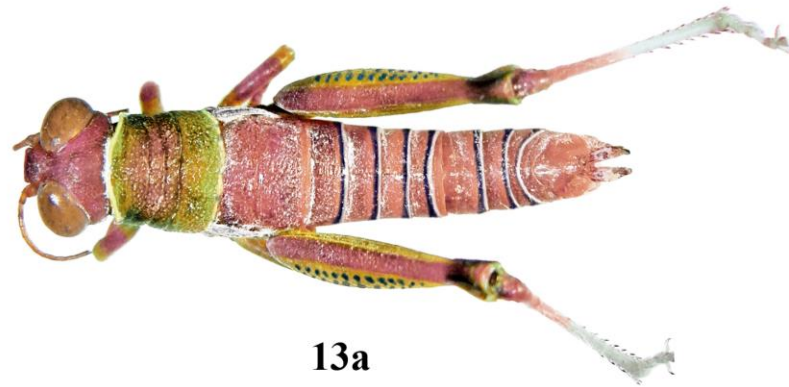
Type. Cuba: Cienfuegos Province: Cumanayagua Municipality: Boca Ambuila (21°57'43"N - 80°20'14"W, 15 m a.s.l.); nocturnal search, on the vegetation; 19/August/2015; T. M. Rodríguez-Cabrera.; one adult female holotype (SY, in ethanol 80%).

Diagnosis (based on a single female). Size medium for the genus (19 mm). **1)** Coloration predominantly pinkish brown, without lateral stripes, pronotum almost entirely green, with anterior and posterior margins sharply outlined in bright white, posterior corners with a conspicuous bright white spot, epimera I–II without conspicuous spots, abdominal tergites with posterior margin annulated with three thin stripes (dark blue/black/white), sternites pinkish brown, hind femur pinkish brown with external surface light olivaceous green and small dark spots along transversal ridges, hind knees yellowish brown with dorsoexternal ridge black. **2)** Tegmina very short and digitiform, reaching slightly anterior margin of abdominal tergite I. **3)** Supra-anal plate of the female medium-sized, paraboloid, longer than wide and sparsely setose; median sulcus complete, deep and broad, flanked by a pair of low, coarse, subparallel ridges.

Etymology. The specific epithet is a patronym honoring Antonio Melic (manager of the Sociedad Entomológica Aragonesa and editor-in-chief of its two journals: Boletín de la S.E.A. and Revista Ibérica de Aracnología), for his continuous support to the development of young researchers (especially from the developing countries) through these well-known and respected journals.

Description (adult female holotype). Size medium for the genus (total length 19.2 mm). **Coloration.** Head pinkish brown, except as follows: antennae dark brown with whitish tips, scapus, pedicel and basal half of flagellum pale yellowish brown; eyes pale creamy yellow, with irregular dark spots and six thin, parallel, vertical, conspicuously darker stripes. Pronotum complexly patterned: basically olivaceous green, dorsomedially pinkish brown, anterior and posterior margins pale yellow, anterior and posterior corners of pronotum with a conspicuous bright white spot, lateral margins subtly infuscate. Mesonotum and metanotum pinkish brown, immaculate. Epimera I pinkish brown, immaculate; epimera II pinkish brown, with a bright yellowish shade. Tegmina whitish, with coarse blackish punctures. Fore and mid legs of same color: coxa and trochanter medium brown, femur pinkish brown with apex and base vivid yellowish, tibia and tarsomeres pinkish brown with irregular infuscation; hind legs with coxa and trochanter medium brown, femur vivid pinkish brown with external surface light olivaceous green with small dark blue to blackish spots along transversal ridges, hind knees vivid yellowish brown with dorsoexternal ridge black, tibia vivid pinkish brown, spines pink with darker tips, tarsomeres pale pinkish. Abdomen: tergites bright pinkish brown, posterior margin of each tergite annulated with three thin stripes (dark grayish-blue/black/bright white), lateral margins immaculate yellowish; sternites pinkish brown, immaculate. See figure 13 and table I.

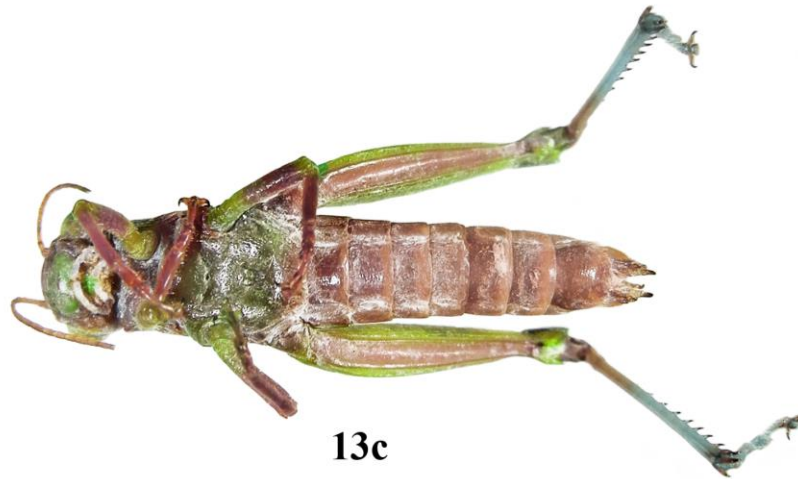
Head (figs. 16–18). Moderately large, wider than long (ratio = 1.4). Tegument shiny, but sparsely and coarsely punctate, essentially glabrous. Vertex convex in lateral view, subtriangular in dorsal view; fastigium prominent, paraboloid in dorsal view, semicircular in lateral view and strongly compressed in frontal view. Eyes very large, suboval and prominent; ocelli minute. Costa frontalis weakly marked and inverted horseshoe-shaped. Genae moderately convex in frontal view. Frons weakly and sparsely punctate. Antennae standard for Acrididae in size and shape, with 11/18 flagellomeres (right antennae broken); scapus



13a



13b



13c



Fig. 13. Adult female holotype of *Dellia melici* n. sp., full-body views: **a)** dorsal; **b)** lateral; **c)** ventral. Scale bar in millimeters.

subcylindrical, wider than long (ratio = 1.1), oval in cross-section, mostly glabrous; pedicel clearly of more than half the length of scapus.

Thorax (figs. 19–20). Tegument shiny but densely and coarsely punctate, mostly glabrous but with some scattered setae. Pronotum trapezoidal in dorsal view, wider than long (ratio = 1.1) produced and strongly tapering anteriorly; anterior margin bilobed and sinuose, posterior margin coarsely crenulate and medially shallowly incised, lateral margins convex and sinuose; median keel finely costate, lateral keels coarsely crenulate and deeply incised by the three transverse grooves. Metanotum wider than long (ratio = 3.0) and shorter than abdominal segment I (ratio = 0.8), trapezoidal in dorsal view with tegument smooth and shiny. Tegmina very short (hardly reaching anterior margin of abdominal tergite I), narrow and digitiform, i.e., costal and anal margin shallowly convex and tip convex.

Legs (fig. 13). Covered all over by thin setae. Profemur slender, cylindrical and unarmed; protibia shorter than profemur (ratio = 1.2), very slender and straight, ventral surface with 4:4 / 4:5 subapical spines and two small apical spurs. Mid legs very similar to forelegs, but mesotibia with 5:7 / 7:4 subapical spines. Metafemur robust, larger than metatibia (ratio = 1.1), oval in cross-section; metatibia with 6:8 / 8:8 subapical spines and five inward-curved apical spurs: two small-sized laterodorsals, two medium-sized laterals, and one large ventral.

Abdomen. Large and slender (conspicuously narrower than pronotum), subcylindrical and evenly tapering posteriorly. Tegument shiny and smooth, with small scattered setae and abdominal segments with median carina very well marked. Tympanic organ large, rounded, located laterally on segment I. Supra-anal plate (fig. 21) medium-sized, paraboloid, longer than wide (ratio = 1.1) and sparsely setose; median sulcus complete, deep and broad, flanked by a pair of low, coarse, subparallel ridges. Cerci very short, conical and densely covered by thin setae, almost reaching the posterior margin of the Supra-anal plate and not surpassing apex of abdomen. Subgenital plate (fig. 23), wider than long (ratio = 1.1), paraboloid; anterior margin shallowly concave, lateral margins shallowly convex, posterior margin convex. Ovipositor in lateral view: each valve of the dorsal and ventral pair with dorsal surface convex, with several indistinct, low crenulations, dorsal pair apically curved upwards, ventral pair apically curved downwards. See figures 13, 21–23 and table I.

Male: Unknown.

Comparisons. *D. melici* **n. sp.** is easy to distinguish from the other 17 members of the genus by its unique coloration pattern: predominantly pinkish brown without any longitudinal stripes, with pronotum and hind femur mostly green (figs. 13, 25j–k).

Distribution (fig. 24). This species is known only from the type locality, in the southern coast of the Guamuhaya Mountain.

Ecological notes. The single specimen known was found during a nocturnal search with standard white-LED headlamps (about 00:22 h Eastern Daylight Time), sleeping on a twig of a bush less than 1.5 m above the ground.

The collecting site is a coastal semicaducifolious forest, on a karstic limestone terrace (fig. 4b).

Dellia siboney **new species**
Figs. 14, 16–24, 26g. Table II

Type. Cuba: Santiago de Cuba Province: Santiago de Cuba Municipality: Siboney (19°57'56"N - 75°42'38"W, 125 m a.s.l.); diurnal net-sweeping of the vegetation; 25/October/2017; B. Lauranzón, J. L. Reyes; 1♂ holotype (SY, in ethanol 80%).

Diagnosis (based on a single male). Size small for the genus (16 mm). **1)** Coloration predominantly reddish, without lateral stripes, dorsum paler with faint bluish infuscation, head red, pronotum with anterior margin sharply outlined in bright white, anterior and posterior corners with a conspicuous bright white spot, epimera I & II without conspicuous spots, abdominal tergites dorsally and posteriorly faded to almost bright white,

with posterior margin dark blue, sternites yellowish green, hind femur yellowish green with small gray spots along transversal ridges, hind knees dark reddish brown, tarsomeres pale bluish. **2)** Tegmina short, almost reaching posterior margin of abdominal segment I. **3)** Supra-anal plate of the male relatively small, subpentagonal, wider than long and sparsely setose; anterior margin shallowly convex and medially moderately lobed, lateral margins almost straight and moderately convergent backwards, posterior margin broadly paraboloid; median sulcus present only in basal half, moderately deep and wide, flanked by a pair of raised, coarse, medially divergent ridges. **4)** Furcula short and subtriangular, with the apex sclerotized and curved outwards.

Etymology. The specific epithet is an indeclinable noun in apposition, directly taken from the toponym of the type-locality of this species.

Description (adult male holotype). Size small for the genus (total length 15.6 mm). **Coloration** (after two days of preservation in ethanol 80%). Head vivid but light red, except as follows: genae conspicuously paler, maxillae and maxillary palps pale yellowish green; antennae dark brown with whitish tips, scapus, pedicel and basal segments of flagellum pale orange; eyes light pink to violaceous, with six thin, parallel, vertical, conspicuously darker stripes. Pronotum vivid but light red, dorsally paler, anterior margin sharply outlined in bright white, anterior and posterior corners of pronotum with a conspicuous bright white spot. Metanotum light red, dorsally paler, with very faint dorsolateral bluish infuscation. Epimera I and II light red, immaculate. Tegmina pale yellowish, immaculate. Fore and mid legs with same coloration pattern: light yellowish green, tarsomeres with irregular infuscation; hind legs with coxa and trochanter light yellowish green, femur light yellowish green with small, faint dark gray spots along transversal ridges, hind knees dark reddish brown, tibia vivid blue, apically darker and with basal portion pale yellowish green, spines dark bluish with blackish tips, tarsomeres pale bluish. Abdomen: tergites light reddish, dorsally and posteriorly faded to almost bright white, with very faint dorsolateral bluish infuscation, posterior margin of each tergite dark blue, lateral margins yellowish green, immaculate; sternites yellowish green, immaculate. See figure 14 and table II.

Head (figs. 16–18). Moderately large, wider than long (ratio = 1.2). Tegument shiny, but sparsely and coarsely punctate, with thin and small scattered setae. Vertex convex in lateral view, subtriangular in dorsal view; fastigium prominent, broad in dorsal view, semicircular in lateral view and strongly compressed in frontal view. Eyes very large, rounded and prominent; ocelli minute. Costa frontalis well marked and inverted U-shaped, i.e., upper portion wide and lower portion divergent inward. Genae moderately convex in frontal view. Frons moderately and sparsely punctate. Antennae standard for Acrididae in size and shape, with 19/19 flagellomeres; scapus subcylindrical, slightly longer than wide (ratio = 1.5), oval in cross-section, essentially glabrous; pedicel clearly of more than half the length of scapus.

Thorax (figs. 19–20). Tegument shiny, but sparsely and coarsely punctate and with thin and small scattered setae all over. Pronotum subtrapezoidal in dorsal view, wider than long (ratio = 1.1), produced and slightly tapering anteriorly; anterior and posterior margins biconvex and shallowly incised medially, lateral margins convex and shallowly sinuose; median keel feebly marked, lateral keels coarsely crenulate and weakly incised by the three transverse grooves. Metanotum wider than long (ratio = 2.6) and shorter than abdominal segment I (ratio = 0.7), trapezoidal in dorsal view with tegument coarsely punctate and shiny. Tegmina short (almost reaching posterior margin of abdominal segment I), narrow and spatulate, i.e., costal margin slightly convex, anal margin slightly sinuose and tip angulose.

Legs (fig. 14). Covered all over by thin setae. Profemur slender, cylindrical and unarmed; protibia almost as long as profemur (ratio = 0.9), very slender and straight, ventral surface with 4:2 / 3:4 subapical spines and two small apical spurs. Mid legs very similar to forelegs, but mesotibia with 3:6 / 6:2 subapical spines. Metafemur robust, larger than metatibia (ratio = 1.2), oval in cross-section; metatibia with 6:8 / 8:6 subapical spines and five inward-curved apical spurs: two small-sized laterodorsals, two medium-sized laterals, and one large ventral.

Abdomen. Large and slender (conspicuously narrower than pronotum), subcylindrical and evenly tapering posteriorly. Tegument shiny but feebly punctate, with small scattered setae and abdominal segments with median carina very well marked. Tympanic organ large, oval, and located laterally on segment I. Furcula strongly sclerotized, short, straight and with tip rounded. Supra-anal plate (fig. 21) relatively small, subpentagonal, wider than long (ratio = 1.2) and sparsely setose; anterior margin shallowly convex and

medially moderately lobed, lateral margins almost straight and moderately convergent backwards, posterior margin broadly paraboloid; median sulcus present only in basal half, moderately deep and wide, flanked by a

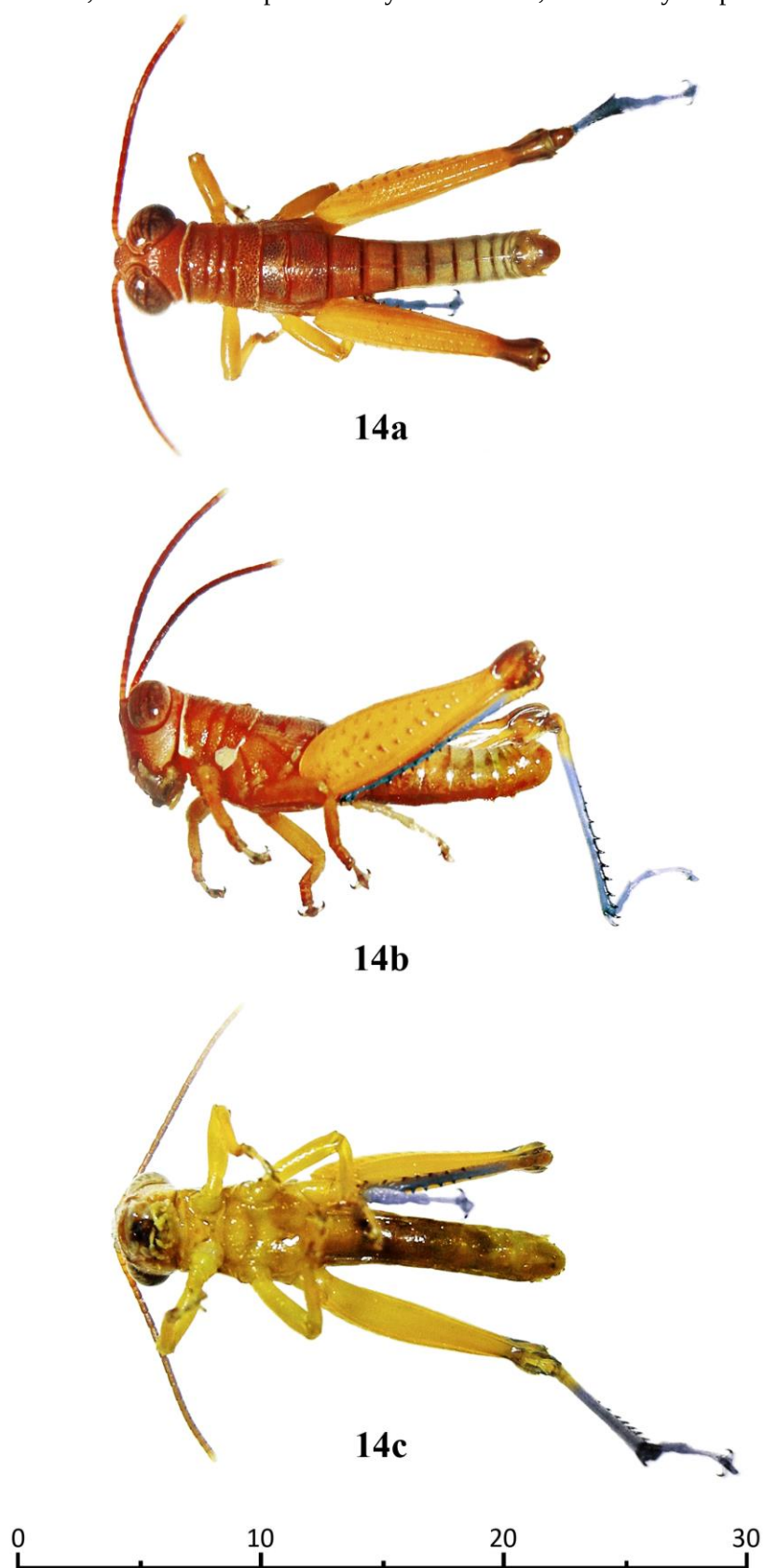


Fig. 14. Adult male holotype of *Dellia siboney* n. sp., full-body views: **a)** dorsal; **b)** lateral; **c)** ventral. Scale bar in millimeters. Coloration after two days of alcoholic preservation.

pair of raised, coarse, medially divergent ridges. Cerci moderately short, conical and densely covered by thin setae, surpassing the apex of the Supra-anal plate but not apex of abdomen. Subgenital plate (fig. 23) suboval, slightly wider than long (ratio = 1.2); anterior, lateral and posterior margins shallowly convex, with thin setae scattered all over. See figures 14, 21–23 and table II.

Female. Unknown.

Comparisons. This species is most closely related to *D. albida* **n. sp.**, sharing color pattern and morphological features such as the coloration of pronotum, transverse ridges of the hind femur, abdominal tergites and general shape of the body. Nevertheless, *D. siboney* **n. sp.** can be easily distinguished from the latter by the following characters:

1. **Coloration of body.** *D. siboney* **n. sp.**: predominantly reddish, including head and dorsum of thorax, anterior margin of pronotum sharply outlined with bright white. *D. albida* **n. sp.**: predominantly vivid green, with head and dorsum of thorax bright white, anterior margin of pronotum concolor. See figs. 7, 14.
2. **Size of eyes.** *D. siboney* **n. sp.**: in dorsal view, smaller and less bulky with respect to the head. *D. albida* **n. sp.**: in dorsal view, larger and bulkier with respect to the head. See fig. 16.
3. **Shape of thorax.** *D. siboney* **n. sp.**: subrectangular in dorsal view, with sides only slightly divergent backwards. See fig. 19. *D. albida* **n. sp.**: trapezoidal in dorsal view, with sides markedly divergent backwards.
4. **Furcula.** *D. siboney* **n. sp.**: very short, straight. *D. albida* **n. sp.**: short, falcate. See fig. 21.
5. **Supra-anal plate.** *D. siboney* **n. sp.**: wider than long, subpentagonal. *D. albida* **n. sp.**: longer than wide, paraboloid. See fig. 21.
6. **Subgenital plate.** *D. siboney* **n. sp.**: wider than long, paraboloid. *D. albida* **n. sp.**: longer than wide, suboval. See fig. 21.

Distribution (fig. 24). This species is known only from the type locality, in the southern coast of the Cordillera de La Gran Piedra.

Ecological notes. According to the field notes of the collectors (Beatriz Lauranzón and Jorge L. Reyes, pers. comm.), the single known specimen was captured in the backyard of an abandoned house, while sweeping with an entomological net the low bushes *Stachytarpheta jamaicensis* (L.) Vahl, 1804 (Verbenaceae). The primary vegetation around the site is microphyllous semicaducifolious forest and subcoastal xerophytic scrub, both on limestone karstic terrain (fig. 26g).

This species seems to be quite rare. No more specimens were found along with the holotype, despite net-sweeping during a whole day by two persons (Beatriz Lauranzón and Jorge L. Reyes, pers. comm.). Moreover, on 2/November/2017 and 1/December/2017, the present author and one skilled collaborator attempted to find *D. siboney* **n. sp.** again at the exact site and surroundings, but no success was achieved although the search was conducted continuously from morning through early night, including both net-sweeping and careful visual inspection of the vegetation.

Dellia zephyra **new species**
Figs. 15–24, 25l, 26h. Table I

Type. Cuba: Pinar del Río Province: Sandino Municipality: Península de Guanahacabibes, La Bajada, Cueva de las Perlas (21°55'44"N - 84°28'43"W, 10 m a.s.l.); July/2016; in dark zone of the cave; T. M. Rodríguez-Cabrera; one adult female holotype (SY, in ethanol 80%).

Diagnosis (based on a single female). Size moderately small for the genus (16 mm). **1)** Coloration predominantly dark olivaceous green, with two solid lateral stripes (upper very dark green, lower white), dorsum light orange-brown with a black median longitudinal line, epimera I–II each with a large pale red spot with bright white lower margin, tergites with conspicuous lateral yellow spots, sternites olive-green, hind femur light green, slightly darker on transversal ridges and upper and lower margins, hind knees

entirely black, tarsomeres immaculate pale red. **2)** Tegmina very short and digitiform, reaching anterior margin of abdominal segment I. **3)** Supra-anal plate of the female relatively large, narrowly paraboloid, longer than wide and sparsely setose; median sulcus complete, shallow and very narrow, flanked by a pair of low, coarse, parallel ridges.

Etymology. The specific epithet derives from the Latinized word "*Zephyrus*", the Greek god of the west wind. It alludes to the geographical distribution of this species, i.e., the western tip of Cuba.

Description (adult female holotype). Size small for the genus (total length 16.3 mm). **Coloration.** Head basically vivid dark olive-green, except as follows: vertex light orange-brown with dark brown coarse punctures, genae with small light yellow spots behind the eyes and a thick, irregular, longitudinal, bright white stripe just below each eye, maxillary palps with basal half green and distal half white; antennae blackish with whitish tips, scapus, pedicel and basal third of flagellum vivid light red; eyes dark brown, with six thin, parallel, vertical, conspicuously darker stripes. Pronotum with a thin, black, median longitudinal line, plate conspicuously tricolor as continued from head pattern: entire dorsal surface through upper half of lateral surfaces light orange-brown and lower half of lateral surfaces dark olive-green with a lateral pair of thick, creamy-white stripes, lateral margins moderately infuscate. Metanotum with the same coloration and pattern as pronotum. Epimera I and II each with a large pale red spot with bright white lower margin; a large yellowish white spot just below each tegmen. Tegmina whitish, with a thick, distally faded dark stripe. Fore and mid legs of same coloration, conspicuously bicolor: coxa, trochanter, femur and basal third of tibia vivid light green, distal two-thirds of tibia and whole tarsomeres pale red, immaculate; hind legs with coxa, trochanter and femur vivid light green, slightly darker on transversal ridges and upper and lower margins, hind knees entirely black, tibia vivid blue, basally and apically blackish, spines bluish with blackish tips, tarsomeres pale red, immaculate. Abdomen complexly colored, resembling thorax in pattern: tergites with a thin, black, longitudinal median line, entire dorsal surface through upper half of lateral surfaces light orange-brown, lower half of lateral surfaces olive-green with large yellow spots, lateral margins slightly infuscate, posterior margin of each tergite annulated with a thin black stripe; sternites vivid olive green, irregularly spotted with light yellow. See figure 15 and table I.

Head (figs. 16–18). Moderately large, wider than long (ratio = 1.3). Tegument shiny, but sparsely and moderately punctate, with thin and short setae scattered all over. Vertex moderately convex in lateral view, subtriangular in dorsal view; fastigium prominent, broad in dorsal view, slightly convex in lateral view and strongly compressed in frontal view. Eyes very large, rounded and prominent; ocelli minute. Costa frontalis weakly marked and invertedly U-shaped, i.e., upper portion wider and the lower portion narrower. Genae moderately convex in frontal view. Frons moderately punctate. Antennae standard for Acrididae in size and shape, with 19/19 flagellomeres; scapus subcylindrical, depressed, longer than wide (ratio = 1.1), oval in cross-section, essentially glabrous; pedicel clearly more than half the length of scapus.

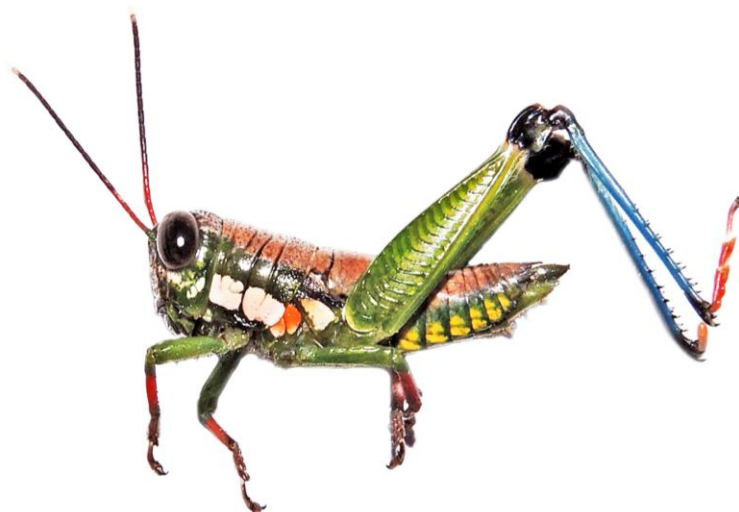
Thorax (figs. 19–20). Tegument shiny but densely and moderately punctate and mostly glabrous but with thin and short setae scattered all over. Pronotum sub-trapezoidal and slightly tapering anteriorly in dorsal view, wider than long (ratio = 1.2); anterior margin shallowly sinuose, posterior margin shallowly bilobed and incised medially, lateral margins convex sinuose; median keel deeply marked, lateral keels sparsely crenulate and deeply incised by the three transverse grooves. Metanotum wider than long (ratio = 3.3) and shorter than abdominal segment I (ratio = 0.5), rectangular in dorsal view, short, with tegument feebly punctate and shiny. Tegmina very short (reaching anterior margin of abdominal segment I), narrow and digitiform, i. e., costal and anal margins slightly convex and tip convex.

Legs (fig. 15). Covered all over by thin setae. Profemur slender, cylindrical and unarmed; protibia almost as long as profemur (ratio = 0.9), very slender and straight, ventral surface with 5:3 / 3:5 subapical spines and two small apical spurs. Mid legs very similar to forelegs, but mesotibia slightly surpassing the length of mesofemur and with 3:7 / 7:3 subapical spines. Metafemur robust, larger than metatibia (ratio = 1.1), oval in cross-section; metatibia with 3:7 / 7:3 subapical spines and five inward-curved apical spurs: two small-sized laterodorsals, two medium-sized laterals, and one large ventral.

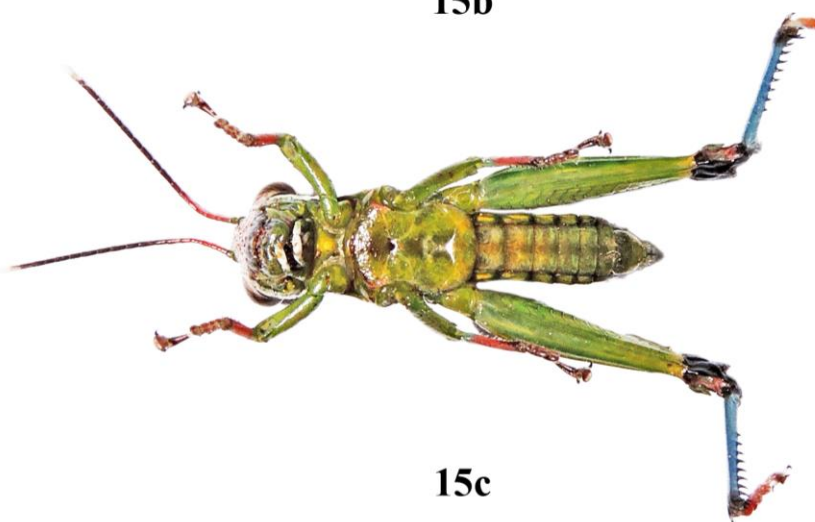
Abdomen. Moderately large and slender (conspicuously narrower than pronotum), subcylindrical and evenly tapering posteriorly. Tegument shiny and feebly punctate, with small scattered setae and abdominal segments with median carina very well marked. Tympanic organ large, oval, located laterally on segment I. Supra-anal plate (fig. 21) relatively large, narrowly paraboloid, longer than wide (ratio = 1.3) and sparsely setose; median sulcus complete, shallow and very narrow, flanked by a pair of low, coarse, parallel



15a



15b



15c



Fig. 15. Adult female holotype of *Dellia zephyra* n. sp., full-body views: **a)** dorsal; **b)** lateral; **c)** ventral. Scale bar in millimeters.



D. insulana ♂ (holotype)



D. nec insulana ♀ (false type)



D. albida ♂ (holotype)



D. multicolor ♂ (topotype)



D. multicolor ♀ (lectotype)



D. siboney ♂ (holotype)



D. megalapida ♂ (holotype)



D. megalapida ♀ (paratype)



D. atrostriata ♂ (holotype)



D. brauni ♂ (holotype)



D. zephyra ♀ (holotype)



D. melici ♀ (holotype)

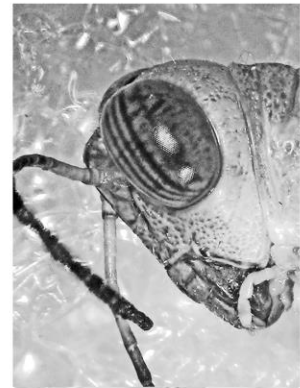
Fig. 16. Dorsal close-up of head and anterior margin of pronotum of all Cuban *Dellia* recognized in the present revision.



D. insulana ♂ (holotype)



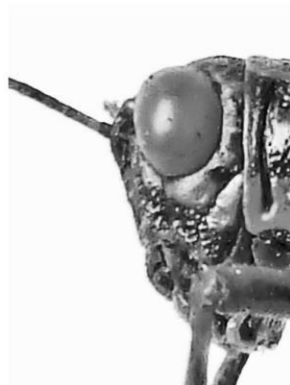
D. nec insulana ♀ (false type)



D. albida ♂ (holotype)



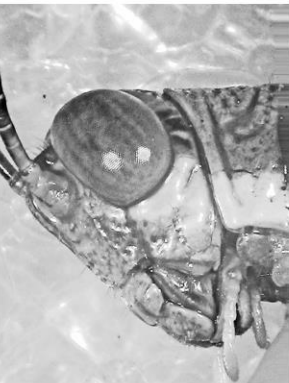
D. multicolor ♂ (topotype)



D. multicolor ♀ (lectotype)



D. siboney ♂ (holotype)



D. megalapida ♂ (holotype)



D. megalapida ♀ (paratype)



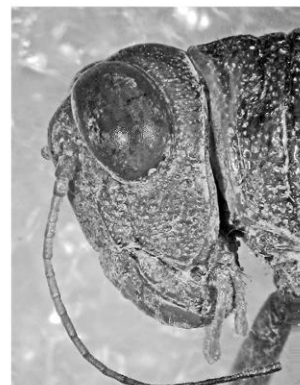
D. atrostriata ♂ (holotype)



D. brauni ♂ (holotype)



D. zephyra ♀ (holotype)



D. melici ♀ (holotype)

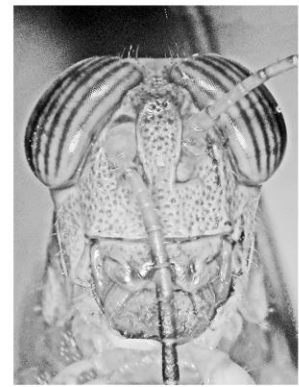
Fig. 17. Lateral close-up of head and anterior margin of pronotum of all Cuban *Dellia* recognized in the present revision.



D. insulana ♂ (holotype)



D. nec insulana ♀ (false type)



D. albida ♂ (holotype)



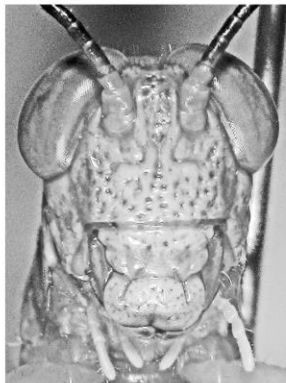
D. multicolor ♂ (topotype)



D. multicolor ♀ (lectotype)



D. siboney ♂ (holotype)



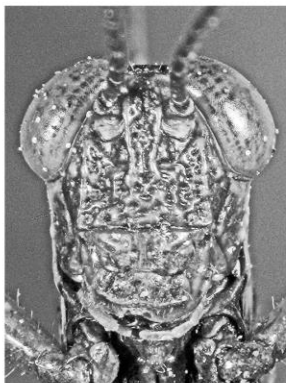
D. megalapida ♂ (holotype)



D. megalapida ♀ (paratype)



D. atrostriata ♂ (holotype)



D. brauni ♂ (holotype)



D. zephyra ♀ (holotype)



D. melici ♀ (holotype)

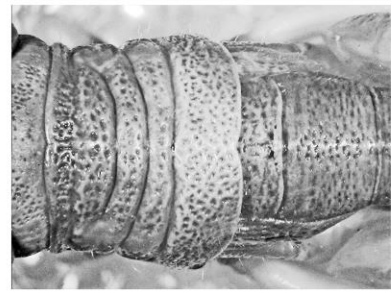
Fig. 18. Frontal close-up of head of all Cuban *Dellia* recognized in the present revision.



D. insulana ♂ (holotype)



D. nec insulana ♀ (false type)



D. albida ♂ (holotype)



D. multicolor ♂ (topotype)



D. multicolor ♀ (lectotype)



D. siboney ♂ (holotype)



D. megalapida ♂ (holotype)



D. megalapida ♀ (paratype)



D. atrostriata ♂ (holotype)



D. brauni ♂ (holotype)



D. zephyra ♀ (holotype)

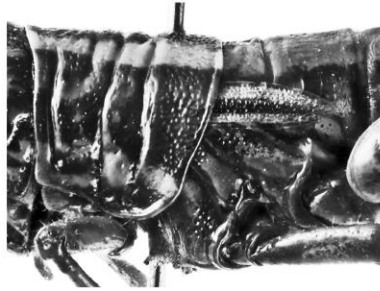


D. melici ♀ (holotype)

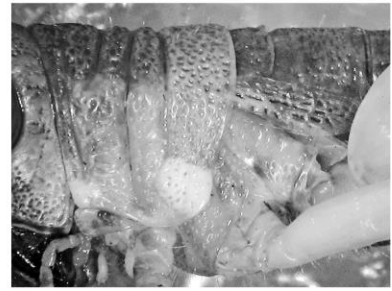
Fig. 19. Dorsal close-up of thorax and abdominal segment I of all Cuban *Dellia* recognized in the present revision.



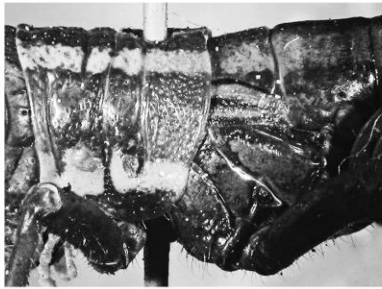
D. insulana ♂ (holotype)



D. nec insulana ♀ (false type)



D. albida ♂ (holotype)



D. multicolor ♂ (topotype)



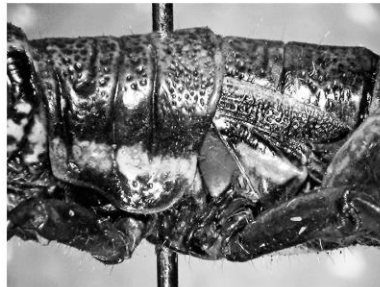
D. multicolor ♀ (lectotype)



D. siboney ♂ (holotype)



D. megalapida ♂ (holotype)



D. megalapida ♀ (paratype)



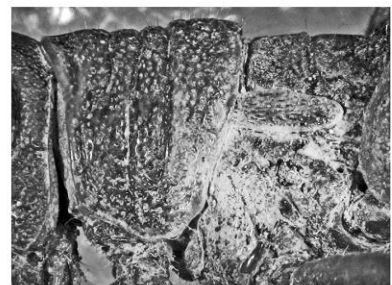
D. atrostriata ♂ (holotype)



D. brauni ♂ (holotype)



D. zephyra ♀ (holotype)



D. melici ♀ (holotype)

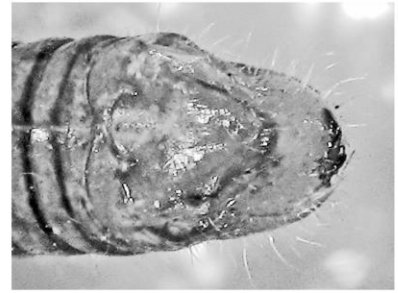
Fig. 20. Lateral close-up of thorax and abdominal segment I of all Cuban *Dellia* recognized in the present revision.



D. insulana ♂ (holotype)



D. nec insulana ♀ (false type)



D. albida ♂ (holotype)



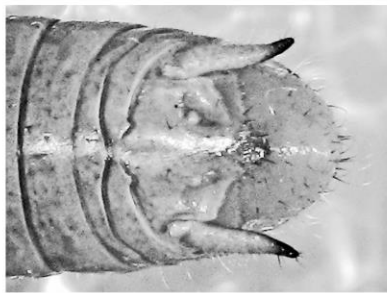
D. multicolor ♂ (topotype)



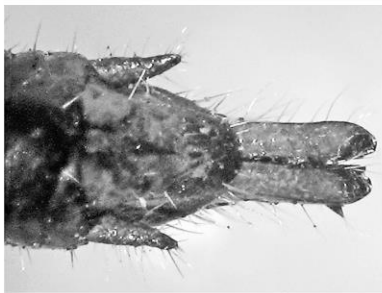
D. multicolor ♀ (lectotype)



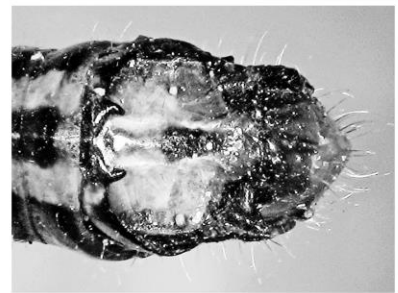
D. siboney ♂ (holotype)



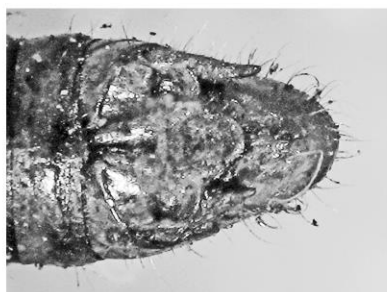
D. megalapida ♂ (holotype)



D. megalapida ♀ (paratype)



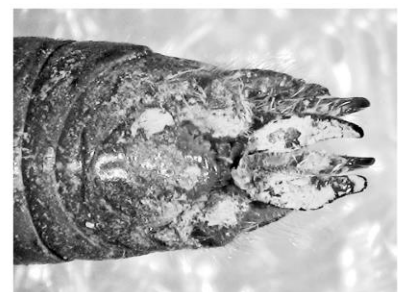
D. atrostriata ♂ (holotype)



D. brauni ♂ (holotype)

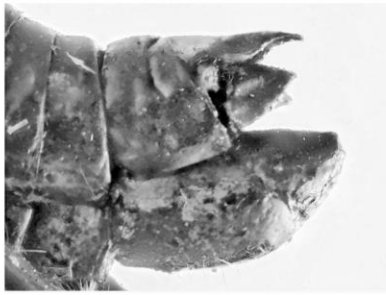


D. zephyra ♀ (holotype)



D. melici ♀ (holotype)

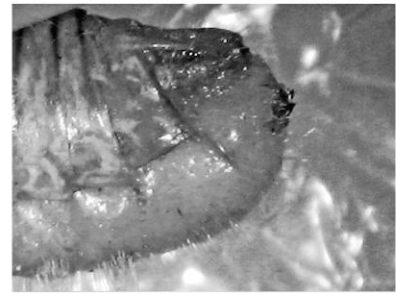
Fig. 21. Dorsal close-up of abdominal apex of all Cuban *Dellia* recognized in the present revision.



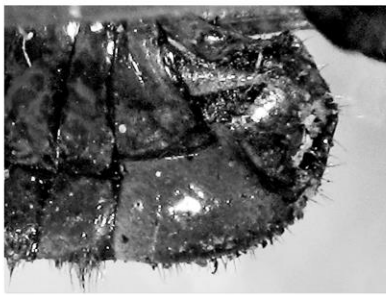
D. insulana ♂ (holotype)



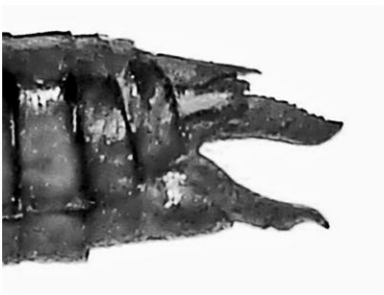
D. nec insulana ♀ (false type)



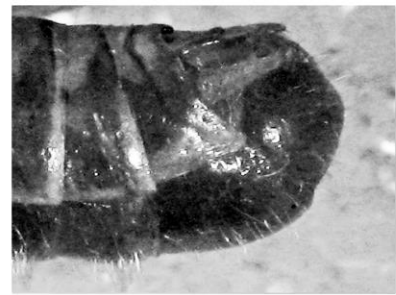
D. albida ♂ (holotype)



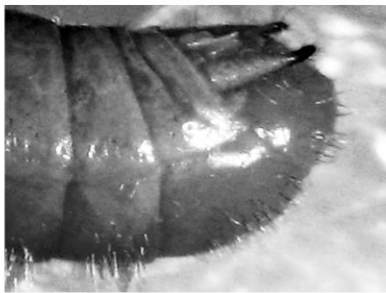
D. multicolor ♂ (topotype)



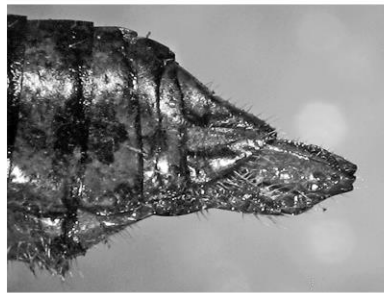
D. multicolor ♀ (lectotype)



D. siboney ♂ (holotype)



D. megalapida ♂ (holotype)



D. megalapida ♀ (paratype)



D. atrostriata ♂ (holotype)



D. brauni ♂ (holotype)



D. zephyra ♀ (holotype)



D. melici ♀ (holotype)

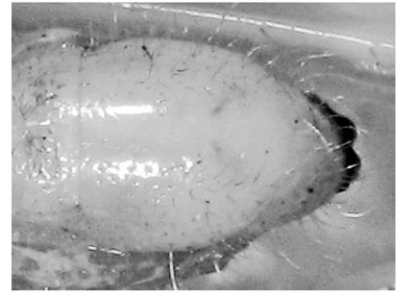
Fig. 22. Lateral close-up of abdominal apex of all Cuban *Dellia* recognized in the present revision.



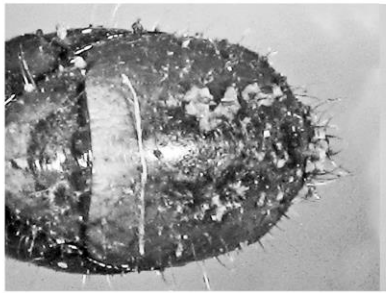
D. insulana ♂ (holotype)



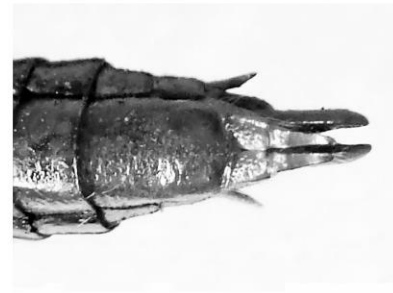
D. nec insulana ♀ (false type)



D. albida ♂ (holotype)



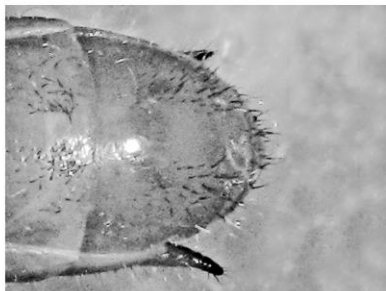
D. multicolor ♂ (topotype)



D. multicolor ♀ (lectotype)



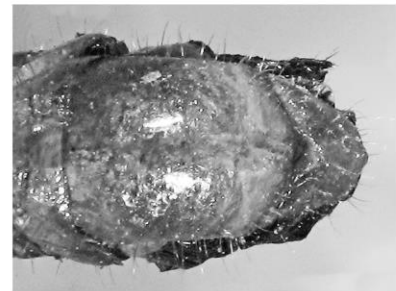
D. siboney ♂ (holotype)



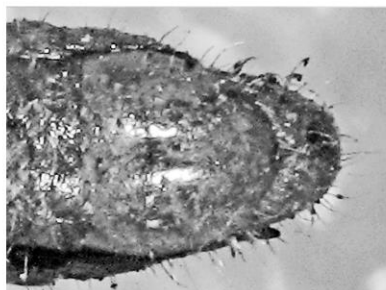
D. megalapida ♂ (holotype)



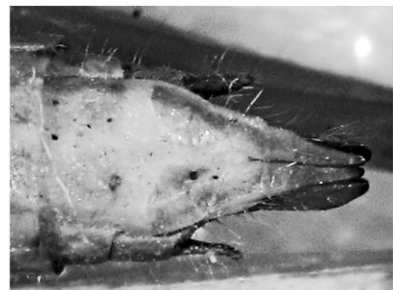
D. megalapida ♀ (paratype)



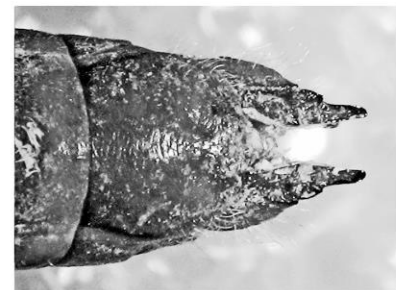
D. atrostriata ♂ (holotype)



D. brauni ♂ (holotype)



D. zephyra ♀ (holotype)



D. melici ♀ (holotype)

Fig. 23. Ventral close-up of abdominal apex of all Cuban *Dellia* recognized in the present revision.

ridges. Cerci very short, conical and densely covered by thin setae, not surpassing apex of posterior margin of supra-anal plate and abdomen. Subgenital plate (fig. 23), longer than wide (ratio = 1.0); anterior margin slightly convex, lateral margins essentially straight, posterior margin strongly convex and with a strong and thin V-shaped median projection. Ovipositor in lateral view: each valve of the dorsal pair with dorsal surface basically straight, with several indistinct, low crenulations and apically shallowly curved upwards; each valve of the ventral pair with ventral surface shallowly convex, with several crenulations and apically curved downwards. See figures 15, 21–23 and table I.

Male: Unknown.

Comparisons. This species is most closely related to *D. brauni* n. sp., *D. megalapida* n. sp. and *D. roseomaculata*, by sharing a similar combination of color pattern (dorsum and venter of a different but rather uniform color, both separated by two solid stripes, i.e., upper dark and lower white, plus epimera I and II each with a large vivid red spot) and shape of the male supra-anal plate (basal portion subrectangular, apical portion subtriangular). But *D. zephyra* n. sp. can be easily distinguished from them by the following characters:

1. **Coloration of dorsal body surface.** *D. zephyra* n. sp.: light orange-brown. *D. brauni* n. sp.: intense blue. *D. megalapida* n. sp.: pale blue. *D. roseomaculata*: grayish blue.
2. **Coloration of hind femur.** *D. zephyra* n. sp.: vivid green, slightly darker on transversal ridges and upper and lower margins, hind knees entirely black. *D. brauni* n. sp.: vivid olive-yellow, transversal ridges and upper margin vivid green, hind knees almost entirely black, only with lower half of outer surface brownish. *D. megalapida* n. sp.: vivid yellowish-green with outer surface vivid green, transversal ridges immaculate, hind knees with upper margin vivid light red and lower margin with a small blackish spot. *D. roseomaculata*: reddish with outer surface dark olive-bluish, transversal ridges immaculate, hind knees reddish-brown.
3. **Coloration of ventral surface of the body.** *D. zephyra* n. sp.: vivid olive-green, irregularly spotted with yellow. *D. brauni* n. sp.: vivid olive-yellow, immaculate. *D. megalapida* n. sp.: vivid yellowish-green, immaculate. *D. roseomaculata*: pale green, irregularly spotted with brown.

Distribution (fig. 24). This species is known only from the type locality, on the southern coast of the extreme western tip of Cuba.

Ecological notes. The holotype of *D. zephyra* n. sp. was captured deep inside the dark zone of a cave, sitting on a wall about 1.8 m above the ground (T. M. Rodríguez-Cabrera, pers. comm.). This is an obvious serendipity; this specimen clearly entered the cave by accident through any of the several skylights or small forested dolines existing along its main passage. The vegetation outside the cave is a well-preserved subcoastal semicaducifolious forest, on karstic limestone terraces.

Remarks. The private collection of the late Fernando de Zayas (Havana, Cuba) houses another female of this species, which was seen by the author in September 2013. Its origin is declared on the label as Guanahacabibes Peninsula only (without any precise locality) and it was not studied in detail, thus, it was not given type status herein.

General remarks

The following key is based on coloration of live specimens and allows a reliable identification of adults of all species:

- 1 Body coloration predominantly pinkish brown, without longitudinal stripes; pronotum sharply contrasted, largely green (figs. 13, 25j–k) *D. melici* n. sp.
- Body coloration very different, with other colors combined (green, blue, orange, yellow, white), mostly with dark and/or pale longitudinal stripes; pronotum similar in coloration to the rest of the body 2

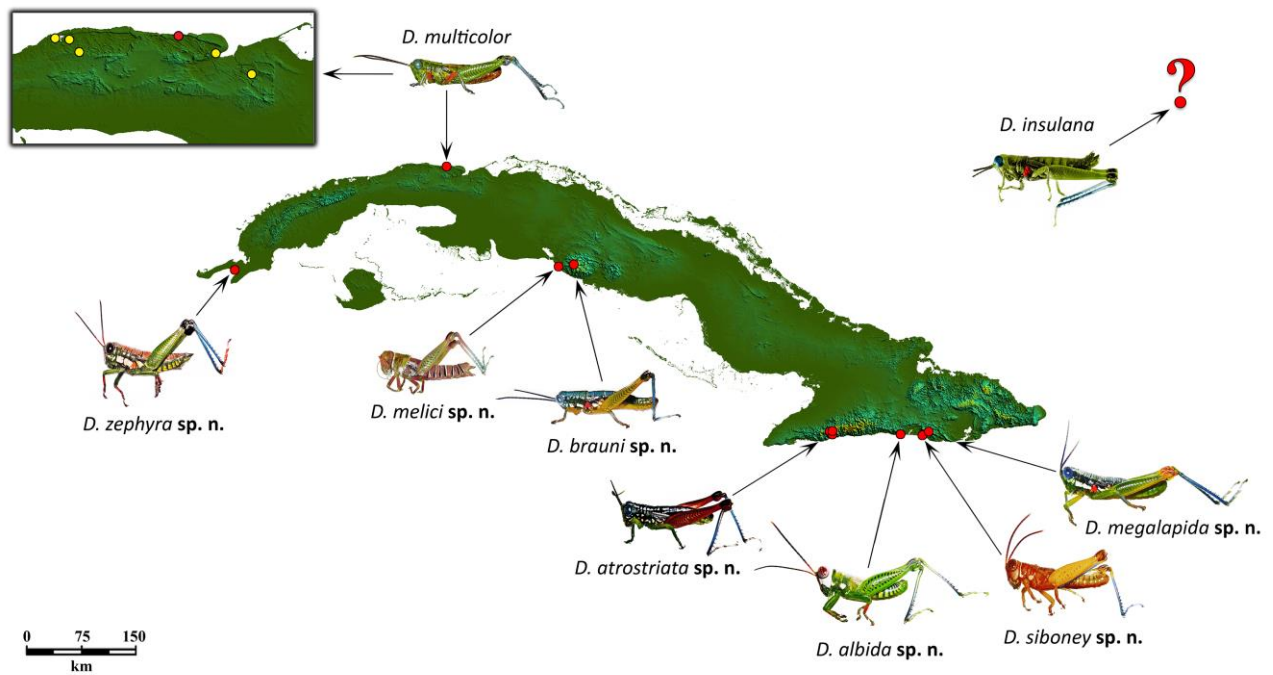


Fig. 24. Geographical distribution of all Cuban *Dellia* recognized in the present revision. Note three nearby localities for *D. atrostriata* **n. sp.** and precise occurrence still wanting for *D. insulana*. The upper left inset (frame equals to 150 x 75 km) depicts the single precise locality known for *D. multicolor* **stat. resurr.** (red symbol), superimposed to all sites visited by Saussure in 1855 (yellow symbols), from left to right: Havana, Guanabacoa, Santa María del Rosario, Matanzas and Limonar.

- | | | |
|---|--|-------------------------------------|
| 2 | Body strikingly bicolour with alternating black and white longitudinal stripes (figs. 9, 25b–c)..... | <i>D. atrostriata</i> n. sp. |
| - | Body with very different coloration | 3 |
| 3 | Epimera I–II each with a large red spot..... | 4 |
| - | Epimera I–II each either with a large yellow spot or without spots | 7 |
| 4 | General coloration largely plain green, without sharply contrasting patterns except for a single, blurred pair of dark lateral stripes along the body (fig. 2)..... | <i>D. insulana</i> |
| - | Dorsum and venter of a different but rather uniform color, both separated by two solid stripes (upper dark, lower pale)..... | 5 |
| 5 | Dorsum light orange-brown, with a thin black stripe along midline and conspicuous yellow lateral spots on abdomen; hind femur knee entirely black (figs. 15, 25l)..... | <i>D. zephyra</i> n. sp. |
| - | Dorsum intense to greenish blue, without black stripe along midline nor conspicuous lateral spots on abdomen; hind femur knee only with upper half black or entirely reddish..... | 6 |
| 6 | Dorsum intense blue; hind femur olive-yellow, outer surface only with transversal ridges contrastingly darker green, knee with upper half black; body ventrally olive-yellow (figs. 10, 25d)..... | <i>D. brauni</i> n. sp. |
| - | Dorsum pale to greenish blue; hind femur yellowish-green, outer surface uniformly darker green, knee entirely reddish with a small blackish ventrobasal spot; body ventrally yellowish green (figs. 11–12, 25g–h)..... | <i>D. megalapida</i> n. sp. |

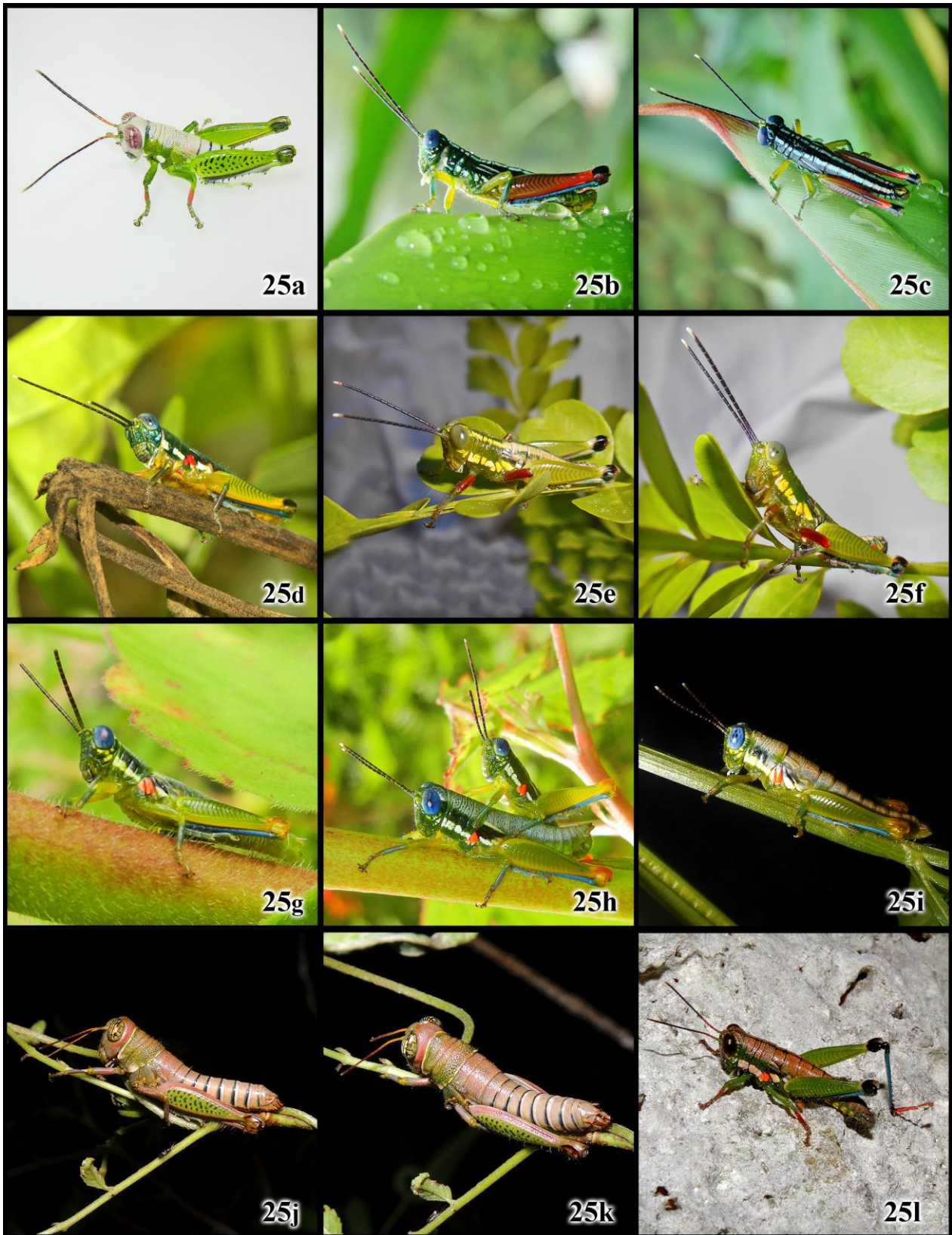


Fig. 25. Live habitus of: **a)** *Dellia albida* **n. sp.**, adult male holotype, in captivity; **b–c)** *Dellia atrostriata* **n. sp.**, adult male from El Cojo, in nature; **d)** *Dellia brauni* **n. sp.**, adult male holotype, in nature; **e–f)** *Dellia multicolor* **stat. resurr.**, adult male topotype, in nature; **g–i)** *Dellia megalapida* **n. sp.**, adult male holotype (g), adult male and adult female paratypes while mating (h), subadult female paratype (i), all in nature; **j–k)** *Dellia melici* **n. sp.**, adult female holotype, in nature; **l)** *Dellia zephyra* **n. sp.**, adult female holotype, in nature. Photos courtesy Rayner Núñez (b, c), Rubén Marrero (d), and Tomás M. Rodríguez (j, k, l).



Fig. 26. Habitat at the exact collecting site of: **a)** *Dellia albida* **n. sp.**; **b)** *Dellia atrostriata* **n. sp.**; **c)** *Dellia brauni* **n. sp.**; **d)** *Dellia megalapida* **n. sp.**, with the author and her collaborator Rolando Teruel while photographing some of the type specimens; **e)** *Dellia melici* **n. sp.**; **f)** *Dellia multicolor* **stat. resurr.**; **g)** *Dellia siboney* **n. sp.**; **h)** *Dellia zephyra* **n. sp.**, note the vegetated pits (micro-dolines or large skylights) all along Las Perlas cave, the holotype was found in the dark passage connecting two of these pits. Photos courtesy Rolando Teruel (b, f, h), Tomás M. Rodríguez (c, e), and Luis A. Casanella (d).

- 7 Epimera I–II each with a large yellow spot; head and pronotum with four solid alternate green and yellow longitudinal stripes; abdomen ventrally red (figs. 5–6, 25e–f).....*D. multicolor* **stat. resurr.**
- Epimera I–II without spot; head and pronotum without longitudinal stripes; abdomen ventrally green or yellowish green..... 8
- 8 Body predominantly green, with head and dorsum bright white; anterior margin of pronotum concolor (figs. 7, 25a)..... *D. albida* **n. sp.**
- Body predominantly reddish, including head and dorsum of thorax, anterior margin of pronotum sharply outlined with bright white (fig. 14) *D. siboney* **n. sp.**

The complete updated list of *Dellia* species follows in alphabetical order, along with their geographical distribution:

1. *Dellia albida* **n. sp.** CUBA.
2. *Dellia atrostriata* **n. sp.** CUBA.
3. *Dellia bayahibe* Pérez-Gelabert, 2002. HISPANIOLA (Dominican Republic).
4. *Dellia brauni* **n. sp.** CUBA.
5. *Dellia ciceroana* Perez-Gelabert & Otte, 2012. HISPANIOLA (Dominican Republic).
6. *Dellia dominicensis* Perez, Dominici, Hierro & Otte, 1995. HISPANIOLA (Dominican Republic).
7. *Dellia gemmicula* Rehn & Hebard, 1938. JAMAICA.
8. *Dellia insulana* Stål, 1878. CUBA.
9. *Dellia karstica* Perez-Gelabert, 2001. JAMAICA.
10. *Dellia maroona* Perez-Gelabert, 2001. JAMAICA.
11. *Dellia megalapida* **n. sp.** CUBA.
12. *Dellia melici* **n. sp.** CUBA.
13. *Dellia monticola* Perez-Gelabert & Otte, 1999. HISPANIOLA (Dominican Republic).
14. *Dellia multicolor* Carl, 1916 **stat. resurr.** CUBA.
15. *Dellia roseomaculata* Perez-Gelabert & Otte, 1999. HISPANIOLA (Dominican Republic).
16. *Dellia siboney* **n. sp.** CUBA.
17. *Dellia viridissima* Perez-Gelabert & Otte, 2012. DOMINICAN REPUBLIC.
18. *Dellia zephyra* **n. sp.** CUBA.

The present paper increases the number of *Dellia* species described from the Greater Antilles to 18: Cuba (9), Hispaniola (6) and Jamaica (3), all of them being island endemics. All additions refer to Cuba, which had only a single recognized species and achieves now the highest diversity number. Nevertheless, the real Cuban diversity is actually higher, as the present author is currently working on additional material for a forthcoming contribution.

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