



RESEARCH ARTICLE

New species of *Diabrotica* Chevrolat (Coleoptera: Chrysomelidae: Galerucinae) and a key to *Diabrotica* and related genera: results of a synopsis of North and Central American *Diabrotica* species

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Abstract: The following 18 new species of *Diabrotica* are described and illustrated as a result of the synopsis of North and Central American species: *D. barclayi* **sp. nov.**, Guatemala; *D. caveyi* **sp. nov.**, Costa Rica; *D. costaricensis* **sp. nov.**, Costa Rica; *D. dmitryogloblini* **sp. nov.**, Mexico; *D. duckworthorum* **sp. nov.**, Honduras; *D. hartjei* **sp. nov.**, Panama; *D. josephbalyi* **sp. nov.**, Costa Rica; *D. lawrencei* **sp. nov.**, Mexico; *D. mantillerii* **sp. nov.**, Panama; *D. martinjacobyi* **sp. nov.**, Honduras; *D. mitteri* **sp. nov.**, Panama; *D. perkinsi* **sp. nov.**, Guatemala; *D. redfordae* **sp. nov.**, Costa Rica; *D. reysmithi* **sp. nov.**, Costa Rica; *D. salvadorensis* **sp. nov.**, El Salvador; *D. sel* **sp. nov.**, Panama; *D. spangleri* **sp. nov.**, Costa Rica; *D. waltersi* **sp. nov.**, Panama. In addition, a key to separate *Diabrotica* from related genera is presented.

Key words: New species, *Diabrotica*, leaf beetles, Neotropics, key.

Introduction

The New World genus *Diabrotica* Chevrolat, 1836 is one of the largest among leaf beetle genera, with about 354 described species. North and Central American *Diabrotica* have been an object of a recent extensive review (Derunkov & Konstantinov 2013), which resulted in an online identification guide of 112 taxa (Derunkov *et al.* 2013b). These include *D. virgifera* LeConte, which costs approximately one billion dollars to the US economy annually (Burchett 2001).

The center of the study was an effort to document all available type specimens of species and subspecies known from North and Central America (Smith & Lawrence 1967). As a result, we found several new synonyms, new combinations, a need to restore an original combination, a need to revise species status, discrepancies in the type specimen gender attribution, and identifications (Derunkov & Konstantinov 2013). We also found 19 new species; *D. lopatini* Derunkov, Konstantinov & Tishechkin (2013a) is already described, and the remaining 18 species are described in this paper.

In addition to species descriptions, we provide a key that distinguishes *Diabrotica* from related genera. It is based on a key of Smith and Lawrence (1967) and supplemented by a number of new characters that increase chances of accurate identification.

Despite their bright colors and distinct patterns, *Diabrotica* species are notoriously difficult to identify. Many species that we describe here as new were misidentified by leaf beetle experts and species authors themselves (see label data). For example, the type series of *D. godmani* Jacoby contains seven different taxa: one is *D. godmani* itself, one is *D. championi* Jacoby, one is *D. quadricollis* Jacoby, one is not a *Diabrotica*, and the rest belong to three different unidentified *Diabrotica* species, two of which are described here (*D. hartjei* and *D. mitteri*). The type series of *D. viridicollis* Jacoby contained four different taxa, *D. viridicollis* Jacoby itself and three different unidentified *Diabrotica* species, two of them being described here as well (*D. costaricensis* and *D. dmitryogloblini*).

Altogether, considering new synonyms (Derunkov & Konstantinov 2013) and new species described here, we recognize 107 valid *Diabrotica* species in North and Central America.

Material and methods

Specimen observations and preparation mostly follow Konstantinov (1998). Color kinds and names follow Ridgway (1912). For details see Derunkov *et al.* (2013b). Specimens were examined from the following collections:

- BMNH – Natural History Museum, London, United Kingdom (M. V. L. Barclay)
- MCZ – Museum of Comparative Zoology, Harvard University, Cambridge, MA, USA (P. D. Perkins)
- MNHN – Muséum National d’Histoire Naturelle, Paris, France (A. Mantilleri)
- UNSM – University of Nebraska State Museum, Lincoln, NE, USA (L. Meinke, M. Paulsen)
- USNM – National Museum of Natural History, Smithsonian Institution, Washington, DC, USA (A. Konstantinov)
- AVD – private collection of Alexander Derunkov

This study is based on investigation of all available type specimens of 127 *Diabrotica* species and subspecies known from North and Central America (Wilcox 1965, Smith &

Lawrence 1967, Wilcox 1972, Wilcox 1975) prior to our study. The type specimens were documented and illustrated, their aedeagi were extracted, and internal sacs of the aedeagi were examined, except for a few instances where the only available type specimens were females. Label data are cited verbatim, each label is numbered, and the format of citation follows Smith & Lawrence (1967). Many of the type series in *Diabrotica* were established by the authors of the species names, who did not designate holotypes and did not specify the number of studied specimens (e.g. Jacoby 1887). Smith & Lawrence (1967) interpreted the original descriptions, compared them to available syntypic series, and designated lectotypes and paralectotypes. We checked all the original descriptions and lectotype designations to make sure they were done properly.

Results

A key for identification of *Diabrotica* and related genera follows

1. Antennomeres 3, 4, and 5 not significantly elongate as compared with antennomere 6. Male with mesotibia simple, not modified to form a clasping organ 2
 - Antennomeres 3, 4, and 5 subequal, elongate; distinctly longer than antennomere 6 (1.5 or more times longer). Mesotibia in many males with emargination in ventral margin, and mesofemur sometimes with expanded apex *Aristobrotica* Bechyné
- 2(1). Genal space (from eye margin to base of mandible) large, width equal to $\frac{1}{2}$ (or more) of eye maximum diameter. Eye small, eye maximum diameter not more than $\frac{3}{4}$ interocular distance, usually $\frac{2}{3}$ or less 3
 - Genal space small, width less than $\frac{1}{2}$ eye maximum diameter. Eyes small to large 7
- 3(2). Antenna inserted at or below midline of eyes. Face flat, not excavated. Proximal three protarsomeres in males uniformly covered with adhesive patch 4
 - Antenna inserted above midline of eyes (sometimes at midline in female) and widely separated from eyes (space between antennal socket and eye $\frac{1}{2}$ antennal socket diameter). Proximal three protarsomeres in male not uniformly covered by adhesive patch. Males usually with face excavated *Gynandrobrotica* Bechyné
- 4(3). Distal male antennomeres distinctly enlarged 5
 - Distal male antennomeres not distinctly enlarged *Isotes* Weise (part)
- 5(4). Antennomere 3 distinctly longer than antennomere 4. Mesotibiae in male with a broad shallow subapical emargination *Cornubrotica* Bechyné & Bechyné
 - Antennomere 3 subequal to or shorter than antennomere 4. Mesotibiae in male not emarginate, although bent at apical third in some specimens 6
- 6(5). Antennomeres 7 and especially 9 in male much wider than other antennomeres and somewhat pointed laterally *Buckibrotica* Bechyné & Bechyné
 - Antennomeres 8–11 enlarged; antennomere 10 largest, although antennomere 9 nearly as large *Ensiforma* Jacoby
- 7(2). Lateral margin of prothorax with six or more fine, evenly spaced, setae (sometimes missing in improperly handled specimens and often hard to see at low magnification) 18

- Lateral margin of prothorax with large setae only on anterior and posterior angles or with one or two small setae placed near large setae 8
- 8(7). Genal space small, its width less than one-fourth eye maximum diameter 9
 - Genal space medium sized, its width one-fourth to one-half the maximum eye diameter 14
- 9(8). Antennomere 3 twice to 3.5 times as long as antennomere 2 10
 - Antennomere 3 subequal to antennomere 2 (not more than 1.5 times as long) 11
- 10(9). Mesotibia without emargination before apex. Antennomere 3 distinctly shorter than antennomere 4 *Paranapiacaba* Bechyné (part)
 - Mesotibia emarginate before apex. Antennomere 3 slightly longer than antennomere 4 *Palmaria* Bechyné
- 11(9). Antennomere 3 equal to or slightly longer than antennomere 2, together equaling more than half of antennomere 4 length 12
 - Antennomere 3 slightly shorter than antennomere 2, together usually considerably shorter of antennomere 4 length *Diabrotica* Chevrolat (*signifera* group)
- 12(11). Elytral surface even, not sulcate, although sometimes with one or two short plicae in posthumeral area 13
 - Each elytron with two or more distinct sinuate sulci, strongest behind humeral callus and extending beyond middle. Pronotum deeply bifoveate *Diabrotica* Chevrolat (*virgifera* group)
- 13(12). Metepisternum in males with patch of long, silky, golden or silvery, overlapping setae. Front tibiae in males thickened, expanded distally and strongly carinate on outer side. Elytra with epipleuron nearly vertical at humerus, visible laterally in posterior half *Cochabamba* Bechyné (part)
 - Males without golden or silvery setae on metepisternum *Diabrotica* Chevrolat
- 14(8). Antennomere 3 1.5 or more times as long as antennomere 2 15
 - Antennomere 2 and 3 subequal. Head and pronotum with pattern of spots. Pronotum strongly foveate *Anisobrotica* Bechyné & Bechyné
- 15(14). Metatarsomere 1 long, in male longer than two following tarsomeres combined, but not as long as all following tarsomeres together 16
 - Metatarsomere 1 short, in male subequal to two following tarsomeres *Isotes* Weise (part)
- 16(15). Elytra in male with raised areas, excavations, or depressions in posterior half 17
 - Elytra in male often dilated posteriorly, but without raised areas, excavations, or depressions *Paranapiacaba* Bechyné (part)
- 17(16). Males with apices of elytra not excavated, or, if excavated, excavations not extending to elytral apex *Paratriarius* Schaeffer
 - Males with elytra narrowed sharply in apical fourth to form a point, each with apex excavated *Pseudodiabrotica* Jacoby

18(7). Elytral disk glabrous, irregularly punctate, sometimes with scattered setae on elytral margins or in apical third of elytron	19
– Elytral disk with erect or suberect setae, often arranged in rows	21
19. Elytra without vittae	20
– Elytra vittate. Maximum eye height equal to 2/3 to 3/4 of interocular distance	<i>Amphelasma</i> Barber
20(19). Elytra faintly striate	<i>Paranapiacaba</i> Bechyné (part)
– Elytra without striae	<i>Isotes</i> Weise (part)
21(18). Elytra with erect or suberect setae arranged in rows	<i>Acalymma</i> Barber
– Elytra with erect or suberect hairs scattered on disk, not arranged in rows	<i>Zischkaita</i> Bechyné

***Diabrotica* Chevrolat, 1836**

Diabrotica Chevrolat, 1836: 380 (type species *Crioceris fucata* Fabricius 1787, by subsequent designation, Barber 1947: 151).

Diabrotica is well defined morphologically; so, it is possible to distinguish it with confidence from other genera of Diabroticites. While many diabroticites have been originally described in *Diabrotica* and some species were moved subsequently into other genera, most of them still currently remain in *Diabrotica*.

The species in *Diabrotica* have an elongate, oval body, with the prothorax being narrower than the elytra. The basic color of the beetles may be green or yellow, usually with spots, vittae or bands. The color patterns in most Central American species are bright and variegated, and frequently iridescent. The head has short genae that are not longer than ¼ the diameter of the eye. The antennae are long, filiform, rarely slightly serrate, and in males frequently modified, with the middle antennomeres being thickened or bearing a longitudinal costa on the inner side; antennomeres 2 and 3 are subequal in length, or antennomere 3 is slightly longer, but usually no longer than 1.5 times antennomere 2. The pronotum is quadrate or subquadrate, usually with the ratio of width to length being 1.23–1.37; only rarely is the pronotum slightly transverse with the ratio of width to length exceeding 1.38. The pronotum is either with or without two discal depressions; when present, the discal depressions may be shallow, wide or deep, and they are sometimes represented by a small, round fovea. The pronotum surface is smooth, shining or shagreened. Shagreening may be represented by narrow mesh, minute wrinkles or minute tubercles. The elytra lack notches, although there are sometimes one or two depressions on each elytron; they may be sulcate with 2–5 distinct sinuate sulci, and they are usually distinctly shagreened. The elytral punctures are irregularly arranged. The legs are not modified. Males have apical spurs on the middle and posterior tibiae, but none on the anterior. Females have spurs on all tibiae. The front coxal cavities are open. Claws are bifid. The last ventral abdominal segment in males is slightly truncate, without an apical lobe. The aedeagus is symmetrical, or rarely asymmetrical with a cavity on the right side, and it is without basal spurs; the orifice is covered by a sclerotized plate; and the internal sac has a complex armament consisting of robust, chitinized hooks or plates, with 2–6 sclerites.

***Diabrotica barclayi* Derunkov, Prado, Tishechkin, Konstantinov sp. nov.** (Figs 1–7)

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Type material: Holotype male: 1) Cerro Zunil, 4–5000 ft. Champion; 2) Godman-Salvin Coll., Biol. Centr.-Amer. (BMNH). **Paratype male:** 1) Cerro Zunil, 4–5000 ft. Champion; 2) Type. Sp. figured.; 3) *D. selecta* Jac. var; 4) Godman-Salvin Coll., Biol. Centr.-Amer. (BMNH). The specimens are provided with one additional printed red label: Holotype (or Paratype, respectively) *Diabrotica barclayi* sp. nov. des. A. Derunkov et al 2013.

Distribution: Guatemala.

Host plants: Unknown.

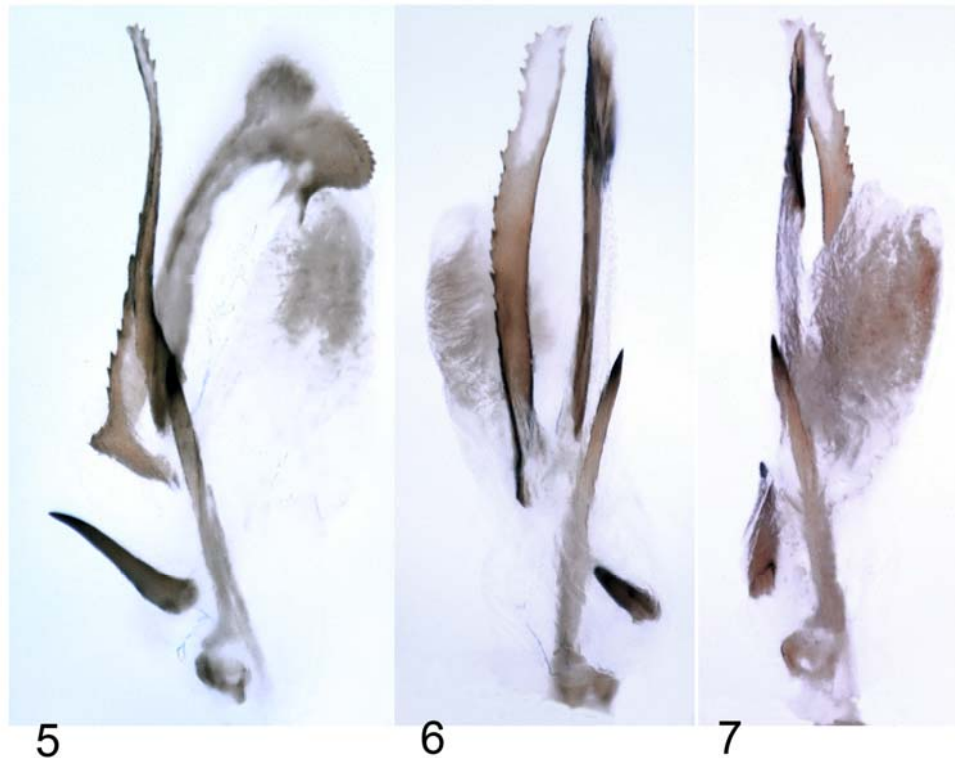
Description: Body length 7.4–7.8 mm. Body width 3.7–3.8 mm. Head basic color yellow; frons sulphur yellow; vertex and antennal calli light cadmium; clypeus and labrum yellow ocher. Vertex shiny, with thin microsculpture. Maxillary palpi yellow; penultimate maxillary palpomere not incrassate. Mandibles yellow; apex infuscated. Antennae filiform, bi- or tricolored; antennomere 1 pale olivine; antennomeres 2–3 yellow, with upper side darkened; antennomeres 4–8 gradually infuscated; antennomeres 9–10 yellow, partly infuscated; antennomere 11 dark apically; antennomere 3 1.5 or more times as long as antennomere 2; length of antennae exceeding two thirds length of elytron. Pronotum green or deep malachite green, subquadrate (ratio of pronotal width to length 1.29), slightly convex, widest before middle, bifoveate, with small round foveae, shagreened with minute wrinkles, with scattered thin punctation on margins. One short thin seta present near large seta on each anterior and posterior angle of pronotum. Prosternum and procoxa deep malachite green. Scutellum yellow or yellow ocher. Mesothorax and mesocoxa deep malachite green. Metasternum and metepisternum mars yellow; metepimeron yellow or yellow ocher. Basic color of elytra green; two fuzzy edged sulphur yellow round maculae present on each elytron, one near humeral callus, another beyond middle of elytron; humeral calli same color as elytron; elytral epipleura completely green. Elytra not sulcate, but with one short plica in posthumeral area, shiny, with traces of thin shagreen; punctation dense, fine; humeral plicae absent; sutural angle of elytra obtusely angled. Abdomen pale olivine. Tarsi and tibia yellow or mars yellow; male tibiae all similar in shape; male metatibial spur short; femora deep malachite green; trochanters pale olivine. Aedeagus symmetrical; internal sac with four sclerites, sclerite 4A being elongate thin hook, sclerite 4B being long pointed hook, sclerite 4C being elongate, flat, sawlike plate, toothed laterally, sclerite 4D being a wide flat arcuate plate, toothed apically.

Remarks: Two males from Cerro Zunil in the BMNH represent Jacoby's variety of *D. selecta*. After study of the genitalia in one male, we found that the internal sac armament is quite different from that in *D. selecta*. The body shape and arrangement of maculae on the elytra in *D. barclayi* also differ from *D. selecta*. Therefore, we treat it as a separate new species. *Diabrotica barclayi* is very similar to *D. selecta*. They can be separated by the following features: there are only two maculae on each elytron in *D. barclayi*, but three maculae in *D. selecta*. The shape and arrangement of the maculae are quite different between the two species. The armament of the internal sac is also different (sclerite 4C is a simple pointed hook in *D. selecta*, while it is an elongate, flat and saw-like plate, toothed laterally, in *D. barclayi*).

Etymology: This species is dedicated to Max Barclay, curator of the beetle collection at the BMNH, as well as a systematist, colleague, and friend.



Figures 1–4. *Diabrotica barclayi* sp. nov. **1**, dorsal view, holotype; **2**, lateral view, holotype; **3**, dorsal view, paratype; **4**, lateral view, paratype.



Figures 5–7. *Diabrotica barclayi* sp. nov. **5**, internal sac of the aedeagus, ventral view; **6**, lateral view, right; **7**, lateral view, left.

***Diabrotica caveyi* Derunkov, Prado, Tishechkin, Konstantinov sp. nov.** (Figs 8–12)

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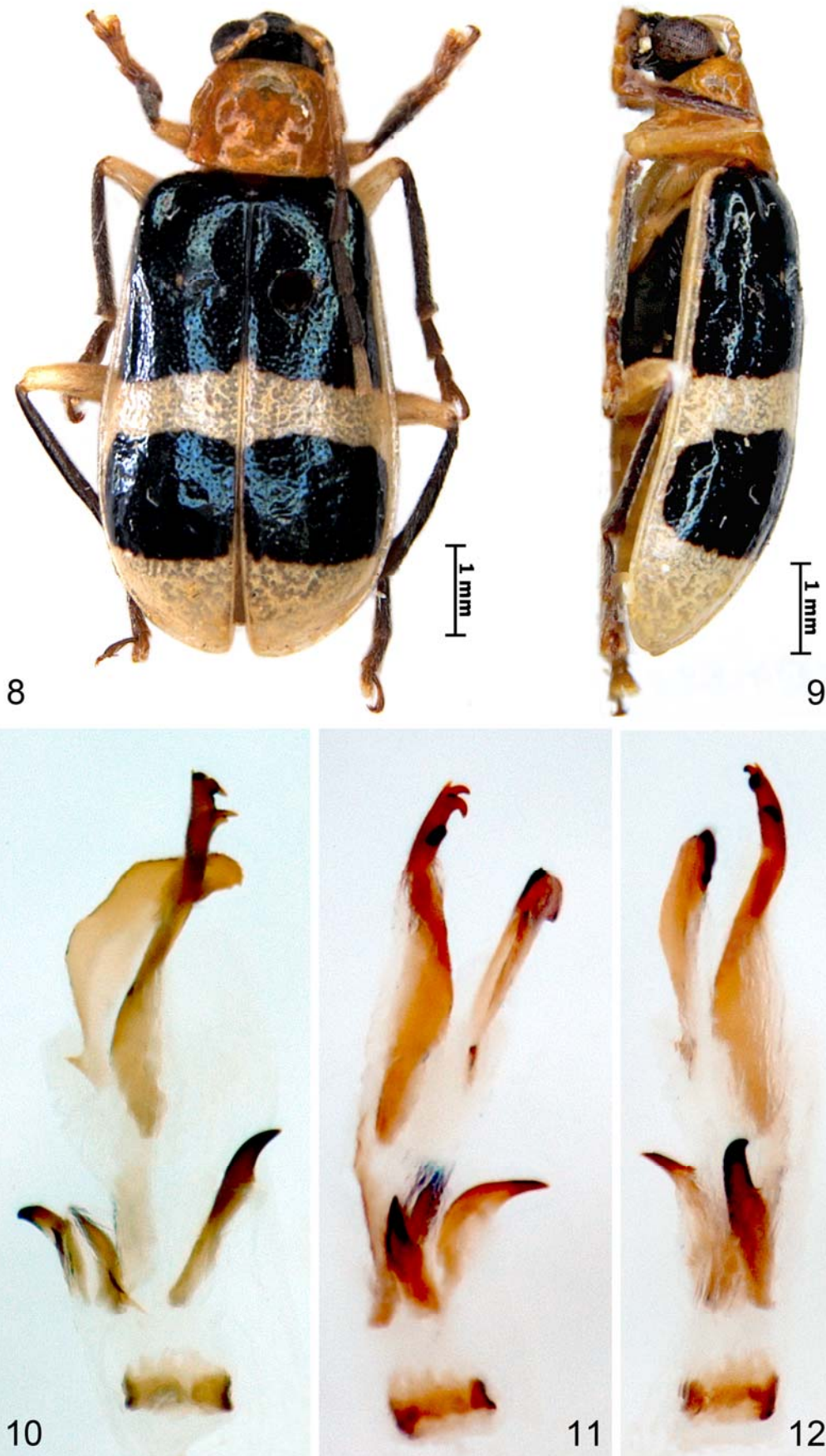
Type material: Holotype male: 1) COSTA RICA, Cartago, XI-1965 NLHKrauss. (USNM)

Paratype male: 1) COSTA RICA: Puntarenas Prov., Monte Verde, 1300 m. 8 July 1989. MV lite., leg. David G. Furth. (USNM) The specimens are provided with one additional printed red label: Holotype (or Paratype, respectively) *Diabrotica caveyi* sp. nov. des. A. Derunkov et al. 2013.

Distribution: Costa Rica.

Host plants: Unknown.

Description: Body length 6.3–6.8 mm. Body width 3.3–3.4 mm. Head black; vertex shiny, without microsculpture; clypeus and labrum chestnut; maxillary palpi black or chestnut, penultimate maxillary palpomere not incrassate; mandibles amber brown. Antennae filiform, bi- or tricolored; antennomeres 1–3 yellow; antennomeres 4–8 gradually infuscated; antennomeres 9–10 uniformly yellow ocher; antennomere 11 dark apically; antennomere 3 less than 1.5 times longer than antennomere 2; length of antennae slightly exceeding half length of elytron. Pronotum yellow or ochraceous-orange, subquadrate (ratio of pronotal width to length 1.24), slightly convex, widest before middle, bifoveate, with small round foveae, not shagreened; three short, thin setae present near large seta on each anterior angle; two short, thin setae near each posterior angle. Prosternum and procoxa yellow. Scutellum black or amber brown. Mesothorax and mesocoxa yellow. Metasternum and metepisternum



Figures 8–12. *Diabrotica caveyi* sp. nov. **8**, dorsal view, holotype; **9**, lateral view, holotype; **10**, internal sac of the aedeagus, ventral view; **11**, lateral view, right; **12**, lateral view, left.

black; metepimeron yellow. Basic color of elytra yellow or rufous, with two black or metallic blue, sharp-edged, wide bands; humeral calli black; elytral epipleura completely yellow; elytra surface not sulcate, shiny, not shagreened; punctures scattered, coarse; humeral plicae absent; sutural angle of elytra round. Abdomen yellow. Tarsi amber brown or yellow; all male tibiae of the same shape; male metatibial spur short; protibia bicolored, yellow, with outer edge having piceous or testaceous line, or extensively darkened; meso- and metatibia black; femora yellow; trochanters yellow. Aedeagus symmetrical; internal sac with five sclerites, with sclerite 5A being wide, flat plate, toothed apically, bearing short, thick hook basally, with sclerite 5B being elongate, handle-like hook, bearing four large teeth apically, with sclerite 5C being short, pointed hook, with sclerite 5D being short pointed hook, with sclerite 5E being short hook widened basally.

Remarks: *Diabrotica caveyi* is very similar to *D. fasciata* Kirsch. They can be separated by the following features: scutellum brown or black in *D. caveyi*, but yellow in *D. fasciata*; pronotum wider, slightly transverse in *D. caveyi*, but very narrow, quadrate in *D. fasciata*; yellow stripe between bands wide in *D. caveyi*, but very narrow in *D. fasciata*; antennae in *D. caveyi* thicker and slightly shorter than in *D. fasciata*; hook in the base of sclerite 5A longer in *D. caveyi* than in *D. fasciata*; sclerite 5B more slender and of a different shape apically in *D. caveyi* compared to that of *D. fasciata*.

Etymology: We dedicate this species to Joseph Cavey (USDA, APHIS). Without his support and encouragement, this project would not have been possible.

***Diabrotica costaricensis* Derunkov, Prado, Tishechkin, Konstantinov sp. nov.** (Figs 13–16)

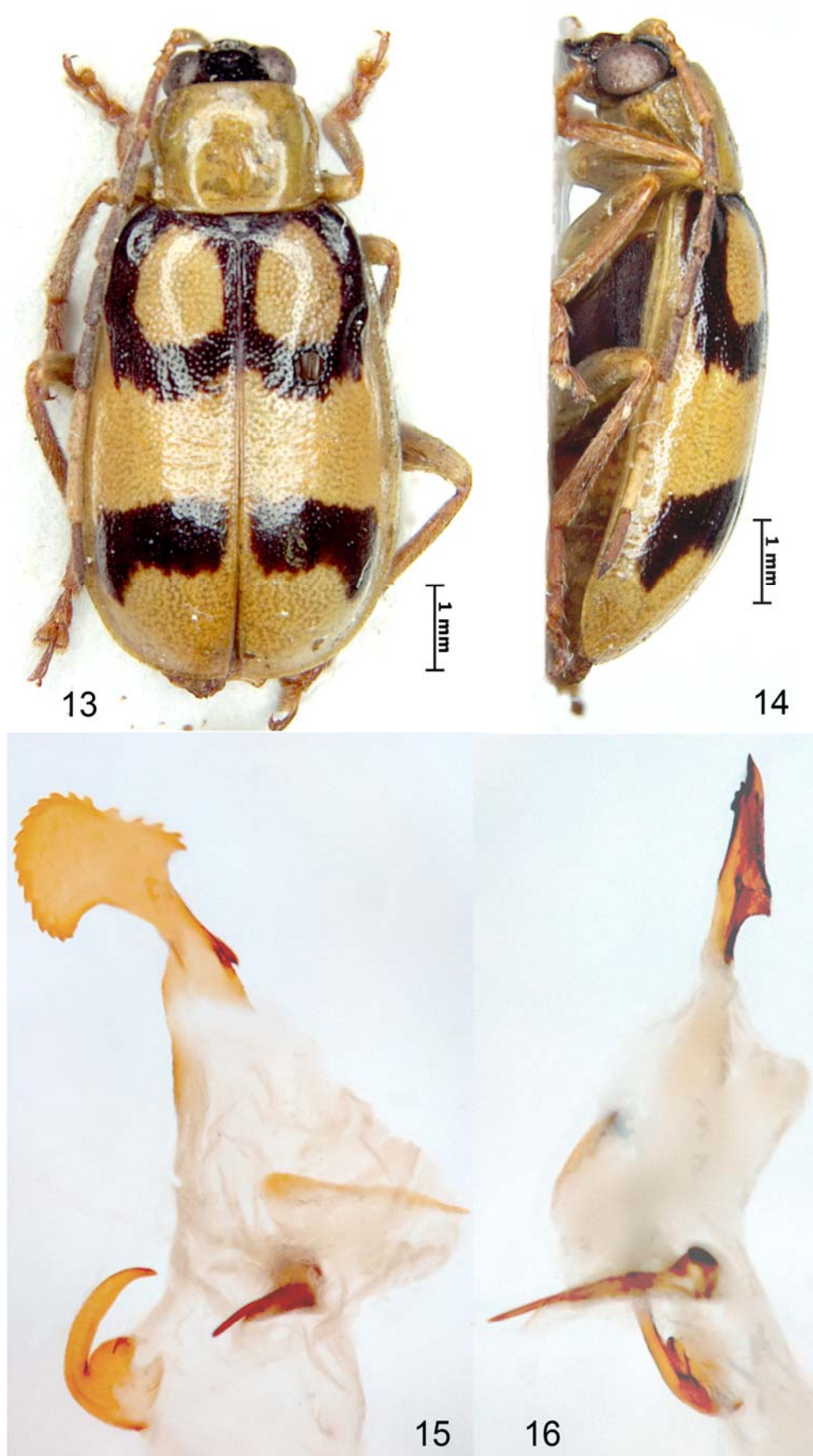
urn:lsid:zoobank.org:act:25AFCF15-E956-4214-A1EC-B7835E15AE97

Type material: Holotype male: 1) San Carlos, Costa Rica; 2) Coll Schild&Burgdorf. (USNM) **Paratypes: Male:** 1) COSTA RICA: Heredia Prov., La Selva Biol. Sta., CCC, CCL, SOR trails. 24 July 1989, leg. David G. Furth. (USNM) **Male:** 1) PARALECTOTYPE; 2) Chontales Nicaragua. T. Belt.; 3) Godman-Salvin Coll., Biol. Centr.-Amer.; 4) LECTOPARATYPE *Diabrotica viridicollis* Jac. RFS. (BMNH). The specimens are provided with one additional printed red label: Holotype (or Paratype, respectively) *Diabrotica costaricensis* sp. nov. des. A. Derunkov et al. 2013.

Distribution: Costa Rica, Nicaragua.

Host plants: Unknown.

Description: Body length 8.3–8.4 mm. Body width 4.4–4.5 mm. Head basic color black; frons cress green, infuscated; vertex black; antennal calli yellow ocher; clypeus black; vertex shiny, shagreened with thin mesh. Maxillary palpi yellow; penultimate maxillary palpomere not incrassate; labrum black; mandibles yellow ocher. Male antennae serrate (sometimes only slightly so), bi- or tricolored; antennomere 1 pale olivine; antennomeres 2–3 yellow, with upper side darkened; antennomeres 4–8 gradually infuscated; antennomeres 9–10 uniformly light cadmium; antennomere 11 completely dark (cinnamon brown); antennomere 3 less than 1.5 times as long as antennomere 2; length of antennae slightly exceeding half length of elytron. Female antennae filiform, with length and coloration same as male antennae; antennomere 3 less than 1.5 times as long as antennomere 2. Pronotum paris green or green, subquadrate (ratio of pronotal width to length 1.34), convex, widest before middle, weakly



Figures 13–16. *Diabrotica costaricensis* sp. nov. **13**, dorsal view, holotype; **14**, lateral view, holotype; **15**, internal sac of the aedeagus, ventral view; **16**, lateral view, left.

bifoveate, with wide shallow impressions; small, round, superficial fovea present in middle of each large impression; pronotal surface shiny, not shagreened; 2–3 short, thin setae present near large seta on each anterior angle; one short, thin seta present near each posterior angle. Prosternum and procoxa paris green. Scutellum black or amber brown. Mesothorax and mesocoxa paris green. Metasternum and metepisternum black or chestnut; metepimeron yellow. Basic color of elytra green, but elytra tricolored, with yellow disk and green margins, with three sharp-edged black or chestnut transverse bands connected together and forming round maculae in basal area of elytron; humeral calli black; elytral epipleura completely green; elytra not sulcate, shiny, with traces of thin microsculpture; punctures scattered, fine; humeral plicae absent; sutural angle of elytra obtusely angled. Abdomen yellow. Tarsi yellow or yellow ochre; tibiae bicolored, yellow, outer edge with piceous or testaceous line, or extensively darkened; all male tibiae of the same shape; male metatibial spur elongate reaching approximately 1/3 length of tarsomere 1; femora paris green; trochanters pale olivine. Aedeagus symmetrical; internal sac with four sclerites; sclerite 4A forming appendiculate hook with broad inner lobe; sclerite 4B forming wide flat plate, toothed apically and laterally; sclerite 4C forming wide thin plate, bearing teeth of different sizes; sclerite 4D forming long spine.

Remarks: *Diabrotica costaricensis* is very similar to *D. viridicollis* Jacoby, and *D. dmitryogloblini*. They can be separated by the following features: male metatibial spur elongate in *D. costaricensis*, but short in both other species; head black in *D. costaricensis*, green with brownish olive vertex in *D. dmitryogloblini* and yellow with chestnut vertex in *D. viridicollis*; pronotum foveate in *D. costaricensis*, but nonfoveate in *D. viridicollis*; body more convex and wide in *D. costaricensis* than in other two species; *D. costaricensis* larger than other two species.

Etymology: This species is named after the country of Costa Rica, where the holotype was collected.

***Diabrotica dmitryogloblini* Derunkov, Prado, Tishechkin, Konstantinov sp. nov.** (Figs 17–21)

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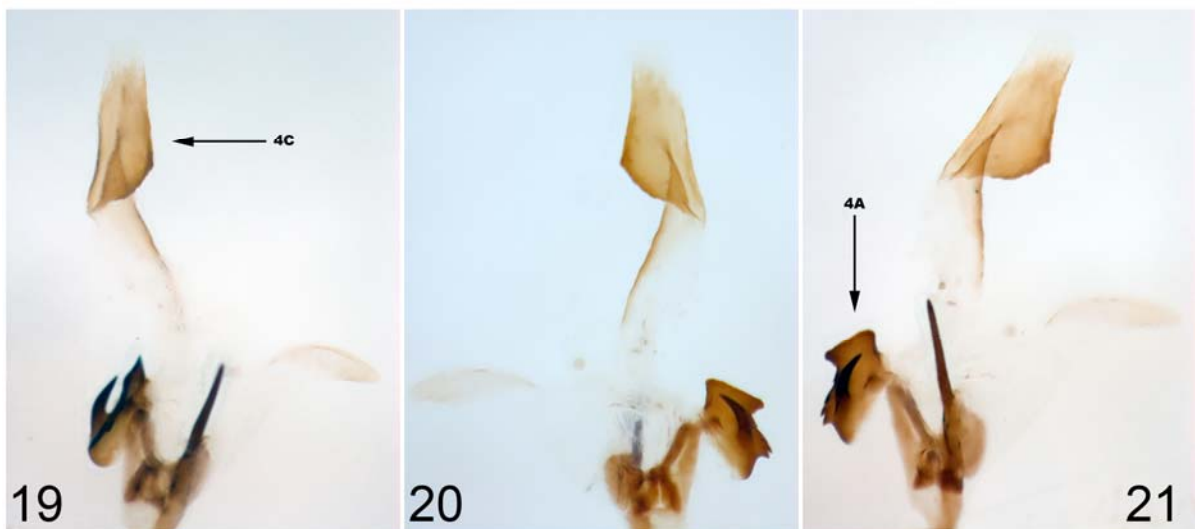
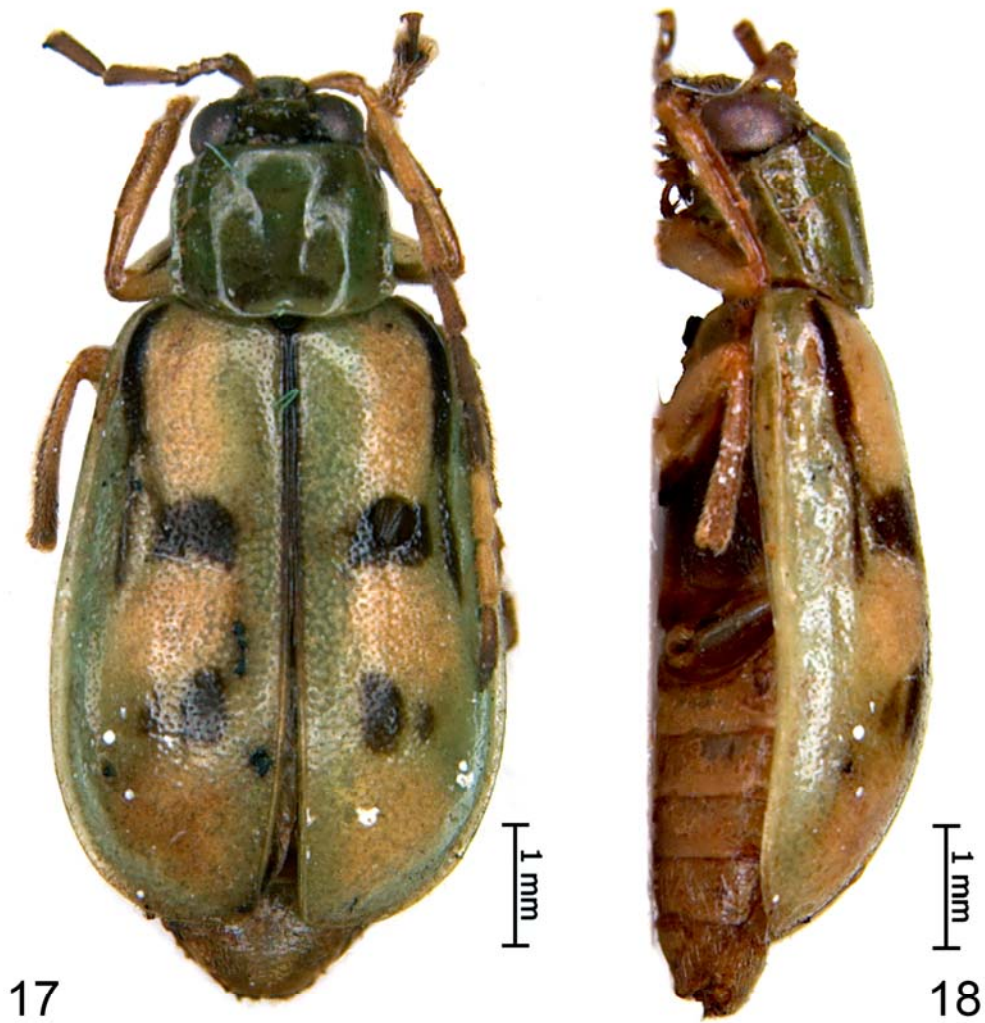
Type material: Holotype male: 1) PARALECTOTYPE; 2) Mexico. Salle Coll.; 3) Oaxaca.; 4) Godman-Salvin Coll., Biol. Centr.-Amer.; 5) 1159; 6) LECTOPARATYPE *Diabrotica viridicollis* Jac, RFS. (BMNH). **Paratypes: Male:** 1) Tapachula, Chiapas. Höge.; 2) 1st Jacoby Coll.; 3) LECTOPARATYPE *Diabrotica viridicollis* Jac. (USNM) **Male:** 1) Tapachula, Chiapas. Höge.; 2) Jacoby 2nd Coll.; 3) LECTOPARATYPE *Diabrotica viridicollis* Jac.; 4) *viridicollis* Bowditch coll. (MCZ) **Male:** 1) Tapachula, Chiapas. Höge.; 2) 1st Jacoby Coll.; 3) LECTOPARATYPE *Diabrotica viridicollis* Jac. 4) Museum of Comparative Zoology [“170” on underside]. (MCZ). The specimens are provided with one additional printed red label: Holotype (or Paratype, respectively) *Diabrotica dmitryogloblini* sp. nov. des. A. Derunkov et al. 2013.

Distribution: Mexico.

Host plants: Unknown.

Description: Body length 6.8–7.0 mm. Body width 3.4–3.8 mm. Head basic color green; vertex shiny, with thin microsculpture; frons olive yellow; vertex brownish olive; antennal

calli paris green; clypeus black. Maxillary palpi yellow or yellow ocher; penultimate maxillary palpomere not incrassate; labrum black; mandibles yellow ocher. Antennae serrate,



Figures 17–21. *Diabrotica dmitryogloblini* sp. nov. **17**, dorsal view, holotype; **18**, lateral view, holotype; **19**, internal sac of the aedeagus, ventral view; **20**, lateral view, right; **21**, lateral view, left.

with thickened antennomeres 4–8, bi- or tricolored; antennomeres 1–3 pale olivine; antennomeres 4–8 gradually infuscated; antennomeres 9–10 uniformly light cadmium; antennomere 11 completely dark (cinnamon brown); antennomere 3 less than 1.5 times as long as antennomere 2; length of antennae exceeding two thirds length of elytron. Pronotum paris green or green, subquadrate (ratio of pronotal width to length 1.26), weakly bifoveate, with wide shallow foveae, not shagreened; 2–3 short, thin setae near large seta on each anterior angle; one short, thin seta near each posterior angle. Prosternum paris green; procoxa pale olivine. Scutellum black or amber brown. Mesothorax and mesocoxa pale olivine. Metasternum and metepisternum black or amber brown; metepimeron yellow or yellow ocher. Basic color of elytra green, but elytra tricolored, with yellow disk and green margins, with one humeral chestnut macula and two diffuse chestnut maculae on elytral disk; humeral calli chestnut; elytral epipleura completely green. Elytra not sulcate, shiny, not shagreened; punctures scattered, fine; humeral plicae absent; sutural angle of elytra round. Abdomen pale olivine or green. Tarsi yellow or yellow ocher; all male tibiae of the same shape; male metatibial spur short; protibia bicolored, yellow, outer edge with piceous or testaceous line, or extensively darkened; meso- and metatibia bicolored, yellow, outer edge with piceous or testaceous line; femora pale olivine; trochanters pale olivine. Aedeagus symmetric; internal sac with four sclerites; sclerite 4A forming wide plate, toothed laterally, bearing short pointed hook; sclerite 4B forming wide flat plate, toothed apically and laterally; sclerite 4C forming elongate narrow plate; sclerite 4D forming long spine.

Remarks: *Diabrotica dmitryogloblini* is very similar to *D. viridicollis* Jacoby and *D. costaricensis*. They can be separated by the following features: head green with brownish olive vertex in *D. dmitryogloblini*, yellow with chestnut vertex in *D. viridicollis* and black in *D. costaricensis*; pronotum nonfoveate in *D. viridicollis*, but foveate in *D. dmitryogloblini*; black bands reduced substantially in *D. dmitryogloblini*, but strongly marked in *D. viridicollis*; body more convex and wider in *D. viridicollis* than in *D. dmitryogloblini*; *D. dmitryogloblini* smaller than *D. costaricensis*; shape of internal sac sclerites 4A and 4C different in all three species.

Etymology: This species is dedicated to the memory of Dmitry Ogloblin, a brilliant Russian systematist and an expert in leaf-beetles, especially Galerucinae, who died from starvation in besieged Leningrad in 1942.

***Diabrotica duckworthorum* Derunkov, Prado, Tishechkin, Konstantinov sp. nov.** (Figs 22–34)

[urn:lsid:zoobank.org:act:547BD3C6-3145-4B78-B8FB-B0222E4088E6](https://zoobank.org/act:547BD3C6-3145-4B78-B8FB-B0222E4088E6)

Type material: Holotype male: 1) Honduras: Octopeque El Portillo. Quisarote Bio Preserve 21-22-V-1995 R. Morris. (USNM) **Paratypes: Female:** 1) in Banana trash GUAT. 7.23.'36 N.O. # 20,072 36-23815 M.S. Mirimianian. (USNM) **Male:** 1) Cayuga Guat. IV-'15; 2) WmSchaus coll. (USNM) **27 males with the label:** 1) PANAMA: Barro Colorado Isl. 10-17.V.64. WD&SS Duckworth. (5 – BMNH, 5 – AVD, 3 – MCZ, 14 – USNM) **Male:** CANAL ZONE: 100 m 5.0 mi. NW Gamboa 09° 10' 00'' N 079° 45' 00'' W; 2) sample 4-6 26 July 1976 Montgomery & Lubin coll.; 3) canopy fogging experiment in Luehea seemanni Pyrethrin fog. (USNM) **Male:** CANAL ZONE: 100 m 5.0 mi. NW Gamboa 09° 10' 00'' N 079° 45' 00'' W; 2) sample 1-3 12 July 1976 Montgomery & Lubin coll.; 3) canopy fogging experiment in Luehea seemanni Pyrethrin fog. (USNM) **Male:** CANAL ZONE: 100 m 5.0 mi. NW Gamboa 09° 10' 00'' N 079° 45' 00'' W; 2) sample 1-8 12 July 1976 Montgomery & Lubin coll.; 3) canopy fogging experiment in Luehea seemanni Pyrethrin fog. (USNM)

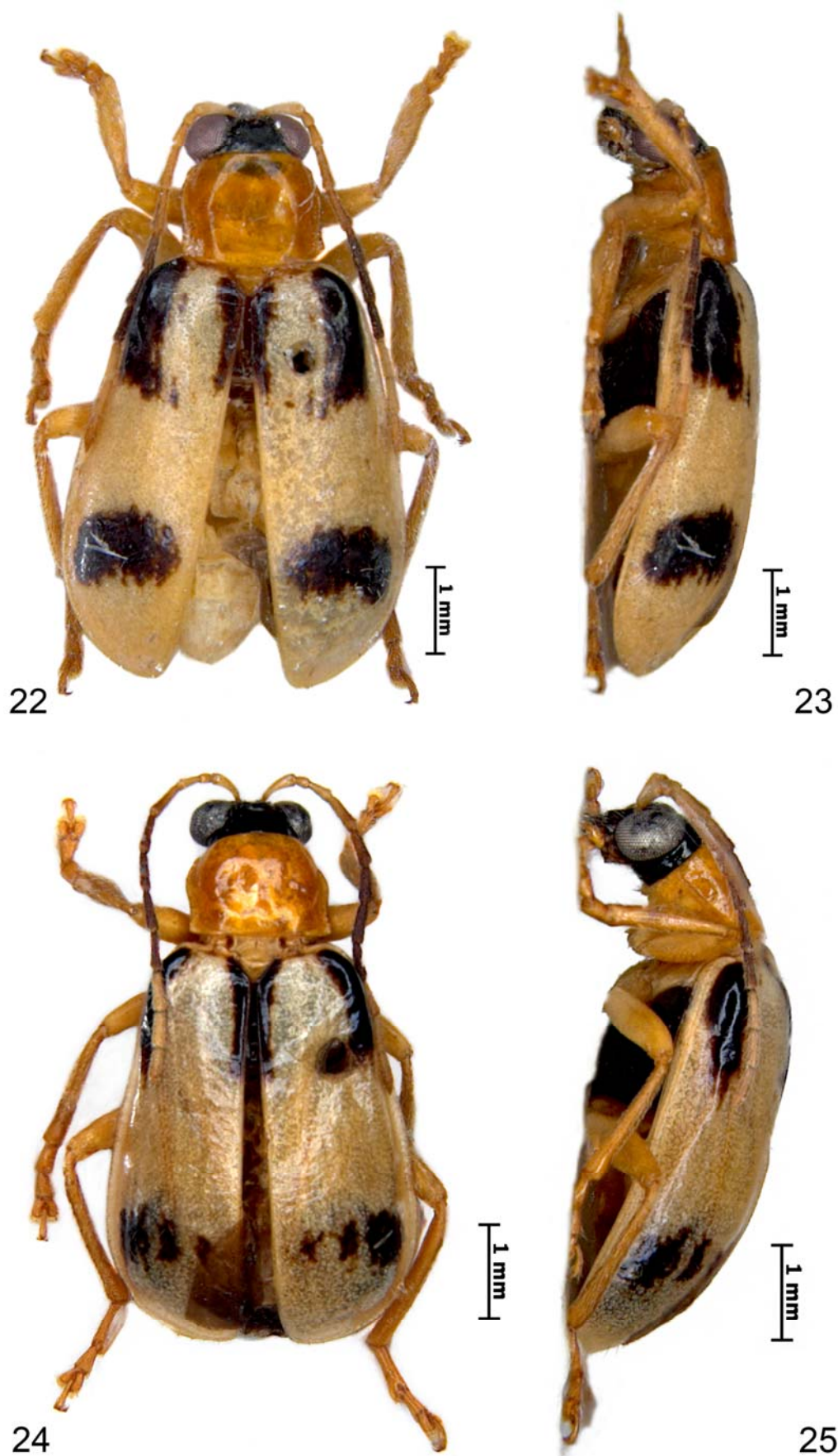
Female: CANAL ZONE: 100 m 5.0 mi. NW Gamboa 09° 10' 00" N 079° 45' 00" W 23-24 Oct 1975; 2) sample 6Y, 24 X 1975; 3) canopy fogging experiment in *Luehea seemanni* Pyrethrin fog. (USNM) **Male:** 1) PANAMA: Barro Colorado Isl. 18-28.IV.64. WD&SS Duckworth. (USNM) **2 males with the same label:** 1) PANAMA: Barro Colorado Isl. 1-9.V.64. WD&SS Duckworth. (USNM) **Male:** 1) March 10 1929 Barro. Colo. C.Z. S.W. Frost. (USNM) **Male:** 1) Honduras: Atlantida PN Bico Bonito Rio Zacate V/16/02 J.&M. Huether. (USNM) **Male:** 1) Trinidad Riv Pan May 9.11. August Busck. (USNM) **Female:** 1) Canal Zone Panama; 2) Indio-Hydrographic Sta.; 3) NLHKrauss Col' nOct'46. (USNM) **2 males:** 1) PANAMA: C. Z. Skunk Hollow, 6 mi. NW Gatun Locks V-21-1982 B.C. Ratcliffe & C.& K. Messenger; 2) *Diabrotica* a1n sp. nov.? DET. L.J. Meinke 2013. (UNSM). The specimens are provided with one additional printed red label: Holotype (or Paratype, respectively) *Diabrotica duckworthorum* sp. nov. des. A. Derunkov et al. 2013.

Distribution: Guatemala, Honduras, Panama.

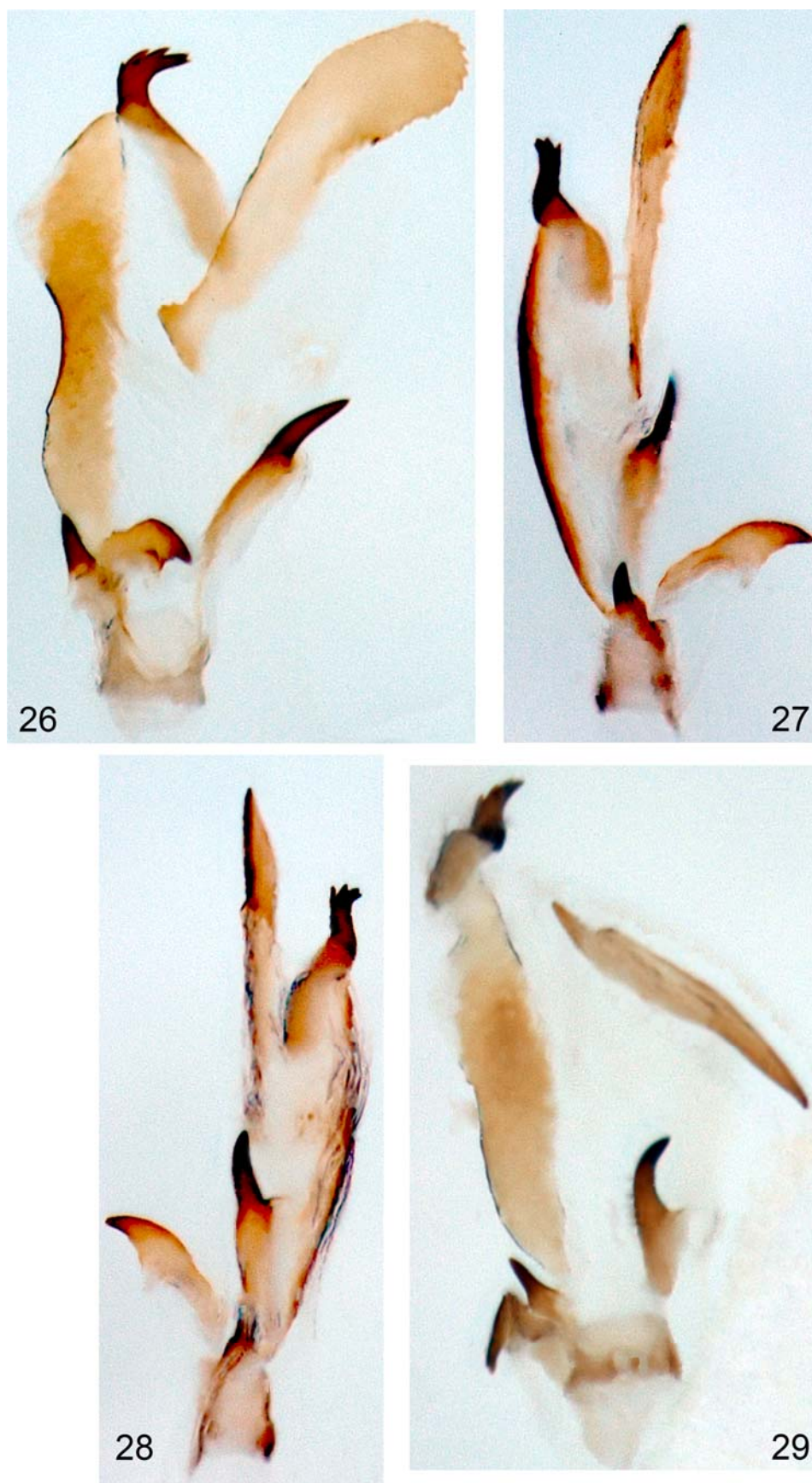
Host plants: Fogged from *Luehea seemanni*.

Description: Body length 5.4–6.3 mm. Body width 2.8–3.3 mm. Head basic color black; frons, antennal calli, clypeus and labrum black or chestnut, sometimes discolored to yellow ocher; vertex shiny, shagreened with thin round mesh. Maxillary palpi yellow; penultimate maxillary palpomere not incrassate; mandibles piceous, slightly lightened in the middle and on apex. Male and female antennae filiform, bicolored, with antennomeres 1–3 and 9–11 yellow, sometimes with antennomere 11 dark apically; antennomeres 4–8 gradually infuscated; antennomere 3 1.5 times or more times as long as antennomere 2; length of male antennae slightly exceeding half length of elytron; female antennae equal to that of male antennae. Pronotum yellow or ochraceous-orange, subquadrate (ratio of pronotal width to length 1.28), slightly convex, widest before middle, weakly bifoveate, with wide shallow foveae, shiny, sometimes slightly shagreened and punctate on base; two short, thin setae present near large seta on each anterior and posterior angle of pronotum. Prosternum and procoxa yellow. Scutellum yellow or yellow ocher; mesothorax yellow. Metasternum and metepisternum black; metepimeron yellow. Basic color of elytra yellow or rufous, with 2–3 black or chestnut bands, these sometimes connected, creating two ring-shaped yellow maculae on each elytron, or basal band sometimes reduced to three branches (two humeral and one sutural), posterior band sometimes being reduced to a few spots; humeral calli black; elytral epipleura completely yellow. Elytra not sulcate, shiny, shagreened with thin round mesh; punctures scattered, fine; humeral plicae absent; sutural angle of elytra round. Abdomen yellow. Legs yellow; male protibiae thickened; male metatibial spur short. Aedeagus symmetrical; internal sac with five sclerites; sclerite 5A forming wide flat plate, toothed apically and bearing a short thick hook basally; sclerite 5B forming elongate handle-like hook, bearing five large teeth apically; sclerite 5C forming short pointed hook; sclerite 5D forming elongate pointed hook; sclerite 5E forming long handle-like hook, toothed apically. Tignum slender, weakly sclerotized; receptacle of spermatheca subcylindrical, not separated from pump; pump with small appendage at apex.

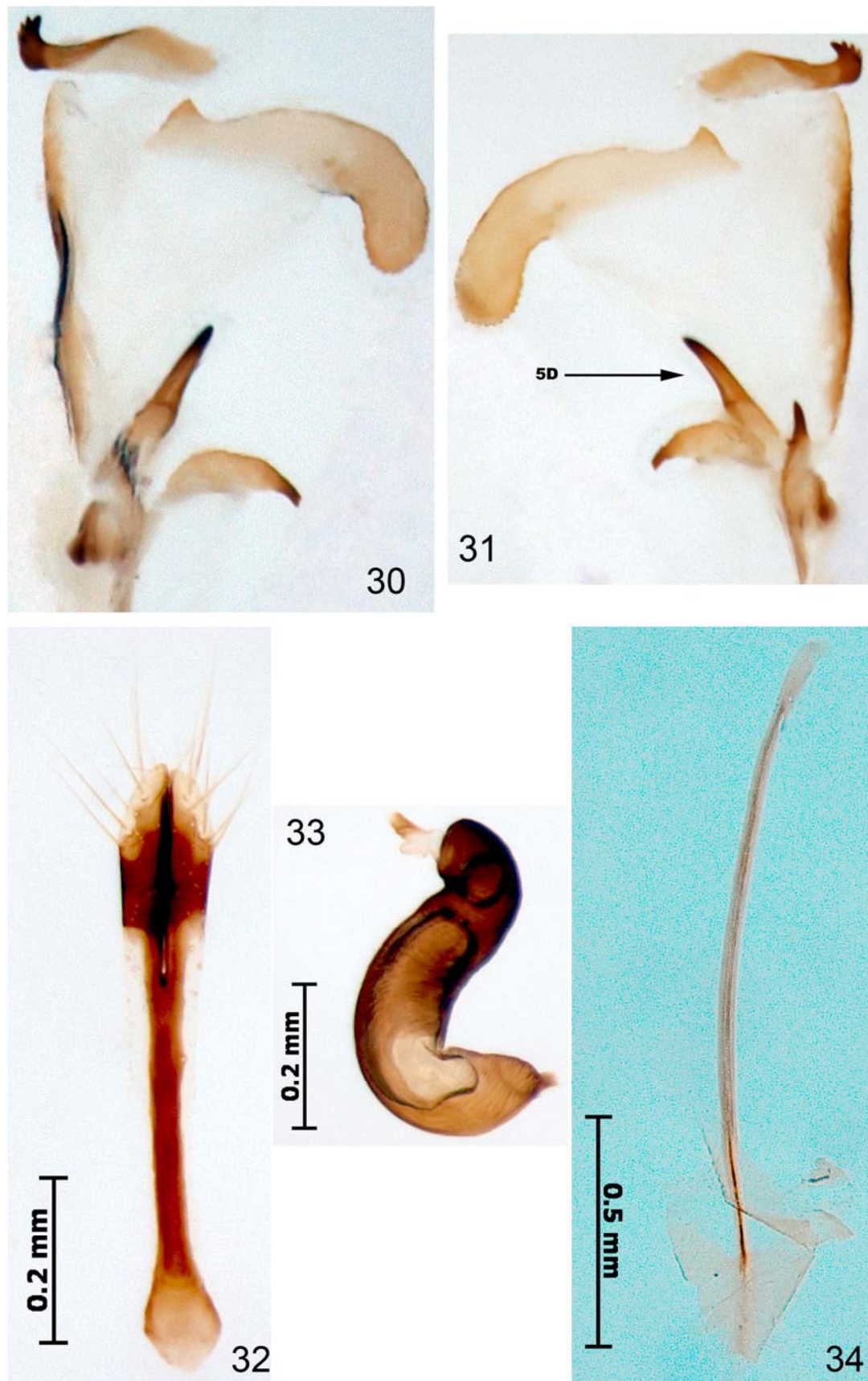
Remarks: *Diabrotica duckworthorum* is very similar to *D. trifurcata* Jacoby. They can be separated by the following features: the legs and scutellum are yellow in *D. duckworthorum*, while the scutellum and tibia are brown or black in *D. trifurcata*; the antennae are shorter and the pronotum is narrower in *D. duckworthorum* than in *D. trifurcata*. *Diabrotica duckworthorum* is also very similar to most of the "oculate" species, e.g. *D. gratiosa* Baly, *D. adelpha* Harold, *D. biannularis* Harold, *D. bioculata* Bowditch and *D. pulchella* (Jacquelin-



Figures 22–25. *Diabrotica duckworthorum* sp. nov. 22, dorsal view, holotype; 23, lateral view, holotype; 24, dorsal view, paratype; 25, lateral view, paratype.



Figures 26–29. *Diabrotica duckworthorum* sp. nov. **26**, holotype, internal sac of the aedeagus, ventral view; **27**, holotype, lateral view, left; **28**, holotype, lateral view, right; **29**, paratype, internal sac of the aedeagus, ventral view.



Figures 30–34. *Diabrotica duckworthorum* sp. nov. **30**, paratype, internal sac of the aedeagus, lateral view, left; **31**, paratype, lateral view, right; **32**, vaginal palpi, paratype; **33**, spermatheca, paratype; **34**, tignum, paratype.

du-Val). They can be separated by the following features: the tibiae of *D. gratiosa* and *D. bioculata* are black or dark brown, while yellow in *D. duckworthorum*; the pronotum of *D. adelpha* lacks foveae (bifoveate in *D. duckworthorum*), and the elytra of *D. adelpha* are more convex and larger than those of *D. duckworthorum*; *D. pulchella* is larger too; the scutellum of *D. biannularis* is black, while yellow in *D. duckworthorum*.

Etymology: This species is dedicated to W. D. and S. S. Duckworth, collectors of the long series of specimens of the newly described species.

***Diabrotica hartjei* Derunkov, Prado, Tishechkin, Konstantinov sp. nov.** (Figs 35–39)

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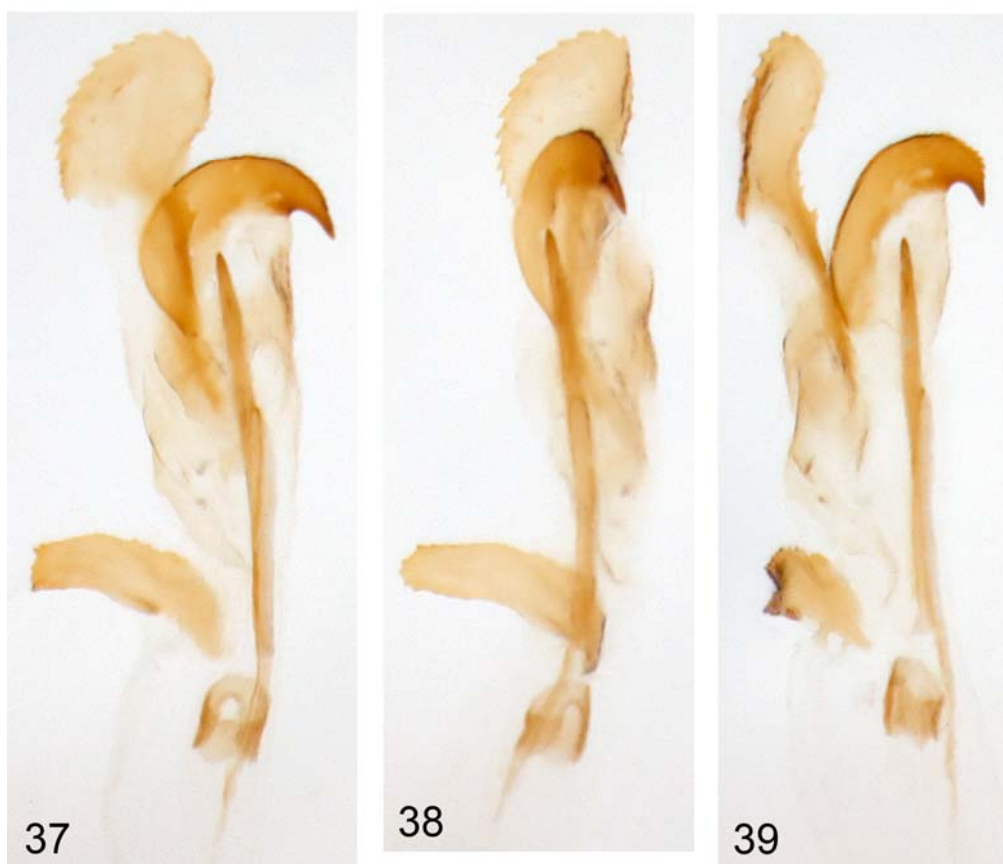
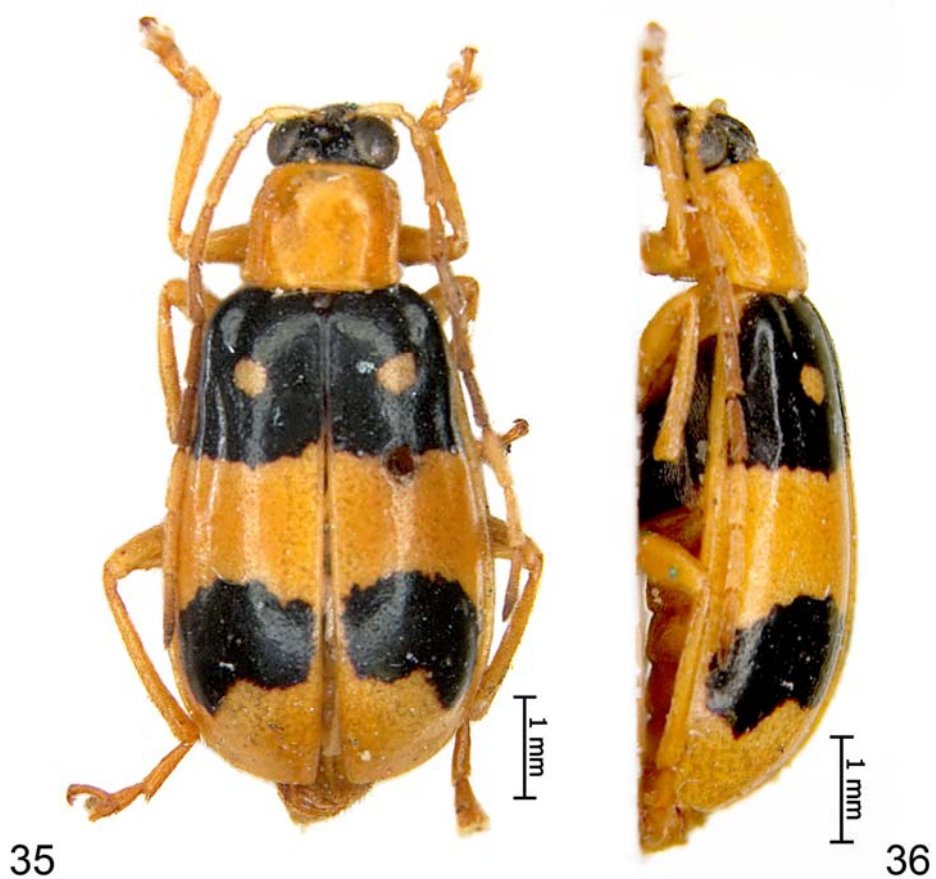
Type material: Holotype male: 1) Bugaba Champion; 2) Jacoby 2nd Coll.; 3) LectoPARATYPE *Diabrotica godmani* Jac.; 4) Holotype *Diabrotica hartjei* sp. nov. des. A. Derunkov et al. 2013. (MCZ)

Distribution: Panama.

Host plants: Unknown.

Description: Body length 6.2 mm. Body width 3.1 mm. Head basic color black; frons and antennal calli chestnut; vertex black; clypeus and labrum black or chestnut; vertex dull, densely shagreened with elongated mesh. Maxillary palpi yellow or yellow ocher; penultimate maxillary palpomere not incrassate; mandibles amber brown or black. Antennae filiform, bi- or tricolored; antennomere 1–3 yellow; antennomeres 4–8 gradually infuscated; antennomeres 9–10 uniformly yellow ocher; antennomere 11 dark apically; antennomere 3 less than 1.5 times as long as antennomere 2; length of antennae exceeding two thirds length of elytron. Pronotum yellow or yellow ocher, quadrate (ratio of pronotal width to length 1.16), slightly convex, widest before middle, weakly bifoveate, with wide shallow foveae, densely shagreened with narrow, long mesh. Prosternum and procoxa yellow or yellow ocher. One short, thin seta present near large seta on each anterior and posterior angle of pronotum. Scutellum black or amber brown. Mesothorax and mesocoxa yellow or yellow ocher. Metasternum and metepisternum black; metepimeron yellow or yellow ocher. Basic color of elytra yellow or rufous, with two black sharp-edged wide bands; small yellow spot present in middle of basal band on each elytron; humeral calli black; elytral epipleura completely yellow. Elytra not sulcate, matt, densely shagreened with narrow long mesh (length of cells in mesh at least three times more than width); punctures scattered, fine. Humeral plicae absent. Sutural angle of elytra obtusely angled. Abdomen yellow or yellow ocher. Legs yellow or yellow ocher; all male tibiae of same shape; male metatibial spur short; trochanters yellow or yellow ocher. Aedeagus symmetrical; internal sac with four sclerites; sclerite 4A elongate, gently arcuate, with apically directed spine; sclerite 4B forming flat arcuate plate, toothed apically; sclerite 4C forming wide, thick, big plate, bearing big teeth apically and laterally; sclerite 4D forming wide, flat, arcuate plate, toothed apically.

Remarks: *Diabrotica hartjei* is very similar to *D. godmani* Jacoby and *D. mitteri*. They can be separated by the following features: the color of elytral bands of *D. hartjei* is black, but metallic black-green in *D. godmani* and metallic black-blue in *D. mitteri*; the basal band on the elytra of *D. hartjei* has two small yellow spots, but is without maculae and spots in *D. mitteri*; the armament of the internal sac is quite different in all three species.



Figures 35–39. *Diabrotica hartjei* sp. nov. **35**, dorsal view, holotype; **36**, lateral view, holotype; **37**, internal sac of the aedeagus, ventral view; **38**, lateral view, left; **39**, lateral view, right.

Etymology: This species is dedicated to Luke Hartje (USDA, Center for Plant Health Science and Technology), our collaborator on the online “*Diabrotica* ID tool.”.

***Diabrotica josephbalyi* Derunkov, Prado, Tishechkin, Konstantinov sp. nov.** (Figs 40–44)

urn:lsid:zoobank.org:act:F37701C6-FBC9-40A1-8C81-51F3170245E2

Type material: Holotype male: 1) VARA BLANCA 1700 m 7.VII.1928; 2) Costa Rica, F. Nevermann; 3) am Licht. (USNM) **Paratype, male:** 1) PANAMA: Chiriqui Prov., Finca Suiza nr Hornito 7-VII- 1997, Morris & Wappes. (USNM). The specimens are provided with one additional printed red label: Holotype (or Paratype, respectively) *Diabrotica josephbalyi* sp. nov. des. A. Derunkov et al. 2013.

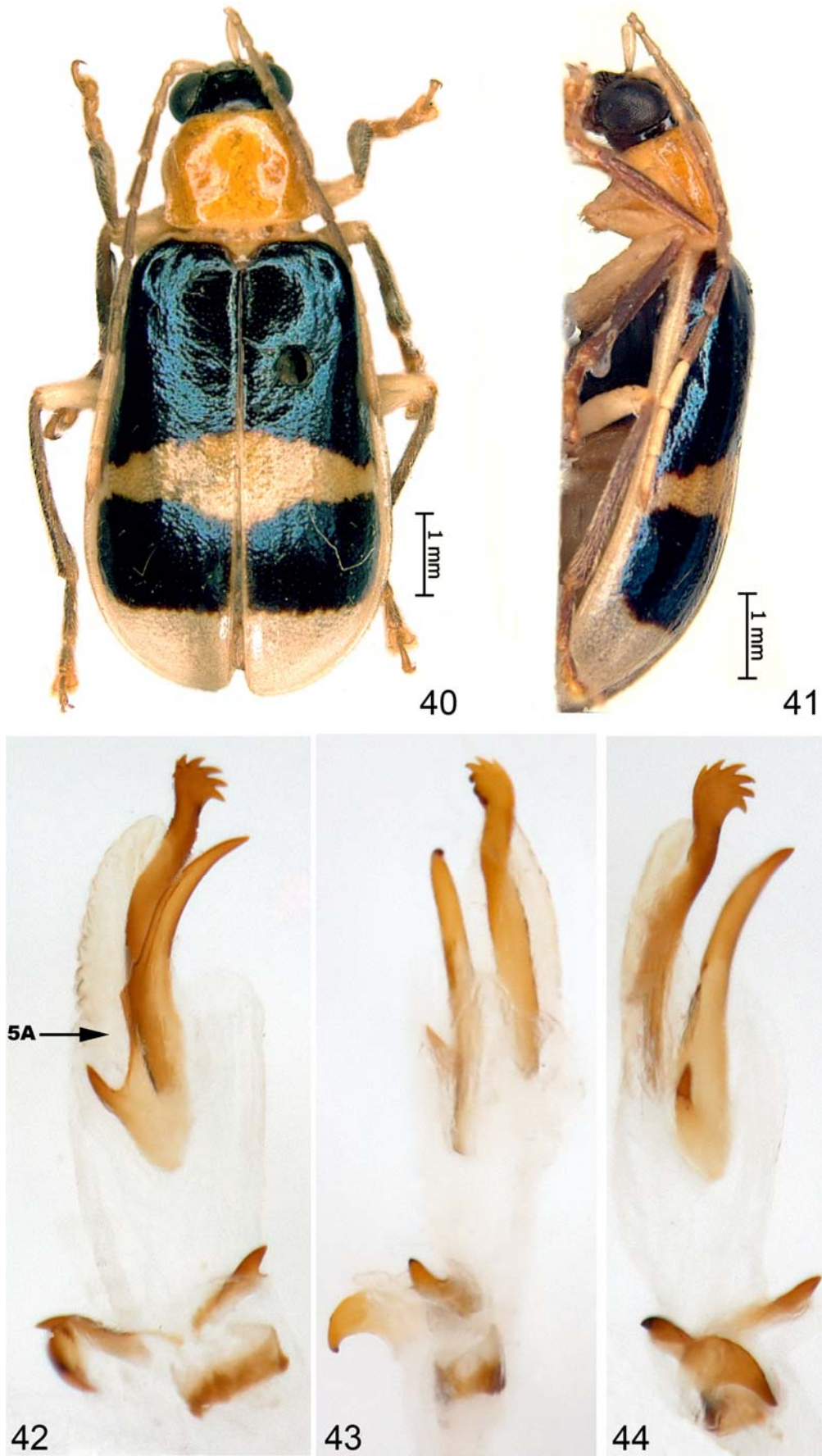
Distribution: Costa Rica, Panama.

Host plants: Unknown.

Description: Body length 7.2–7.3 mm. Body width 3.7–3.8 mm. Head black, with clypeus and labrum piceous; vertex somewhat dull, shagreened with long, narrow mesh. Maxillary palpi yellow or yellow ochre; penultimate maxillary palpomere slightly incrassate. Mandibles piceous, with apex slightly lightened, or entirely black. Antennae filiform, bi- or tricolored; antennomeres 1 and 9–10 sulphur yellow; antennomeres 2–3 yellow; antennomeres 4–8 gradually infuscated; antennomere 11 dark apically; antennomere 3 less than 1.5 times as long as antennomere 2; length of antennae exceeding two thirds length of elytron. Pronotum yellow or light cadmium, subquadrate (ratio of pronotal width to length 1.34– 1.45), slightly convex, widest before middle, deeply bifoveate, not shagreened; 2–3 short, thin setae present near large seta on each anterior angle; two short, thin setae present near each posterior angle of pronotum. Prosternum and procoxa yellow. Scutellum yellow; mesothorax and mesocoxa yellow. Metathorax black. Basic color of elytra yellow or rufous, with 2 black, metallic blue, sharp-edged, wide bands; humeral calli black; elytral epipleura completely yellow. Elytra not sulcate, shiny, not shagreened; punctures dense, fine; humeral plicae absent; sutural angle of elytra round. Abdomen yellow. Tarsi yellow or yellow ochre; all male tibiae of same shape; male metatibial spur short; tibiae bicolored, yellow, with piceous or testaceous line on outer edge, or extensively darkened; femora yellow; trochanters yellow. Aedeagus symmetrical; internal sac with five sclerites; sclerite 5A forming pointed hook, widened basally, bearing short pointed hook on base; sclerite 5B forming elongate handle-like hook, bearing 5–10 large teeth apically; sclerite 5C forming short pointed hook; sclerite 5D forming elongate pointed hook; sclerite 5E forming short hook, widened basally.

Remarks: *Diabrotica josephbalyi* is very similar to *D. militaris* Jacoby, *D. reysmithi* and *D. fasciata* Kirsch. They can be separated by the following features: the tibiae are black in *D. josephbalyi*, but the legs are usually yellow in *D. militaris*; the elytra are without a round, yellow spot in the basal band in *D. josephbalyi*, but with spots in *D. militaris* and *D. reysmithi*; the size and the shape of the band edges are different in all four species. The internal sac sclerite 5A is a pointed hook widened basally and bearing a short pointed hook on the base in *D. josephbalyi*, but it is a wide, flat plate toothed apically and bearing a short, thick hook basally in *D. militaris* and *D. reysmithi*; the number of the internal sac sclerites is 5 in *D. josephbalyi*, but 4 in *D. reysmithi*.

Etymology: This name is a patronym dedicated to Joseph Baly, a great entomologist and systematist who contributed greatly to our knowledge of leaf beetles.



Figures 40–44. *Diabrotica josephbalyi* sp. nov. **40**, dorsal view, holotype; **41**, lateral view, holotype; **42**, internal sac of the aedeagus, ventral view; **43**, lateral view, left; **44**, lateral view, right.

***Diabrotica lawrencei* Derunkov, Prado, Tishechkin, Konstantinov sp. nov.** (Figs 45–53)

urn:lsid:zoobank.org:act:56895862-5FA1-49E5-90C0-46DA878E5565

Type material: Holotype male: 1) Coyame, Lake Catemaco, Veracruz, MEXICO, 10-18.VII.63 – Black lts. D.R. Whitehead. (USNM) **Paratypes: Male:** 1) MEX., Oax. Juquila Mixes IV.1970, W.S. Miller; 2) *Diabrotica duvivieri* Baly (c/w Bowd.), Det. J. Krysan 1995. (USNM) **Male:** 1) Colonia. 16; 2) Sierra de Durango (MCZ) **Male:** 1) Mex. (MCZ). The specimens are provided with one additional printed red label: Holotype (or Paratype, respectively) *Diabrotica lawrencei* sp. nov. des. A. Derunkov et al. 2013.

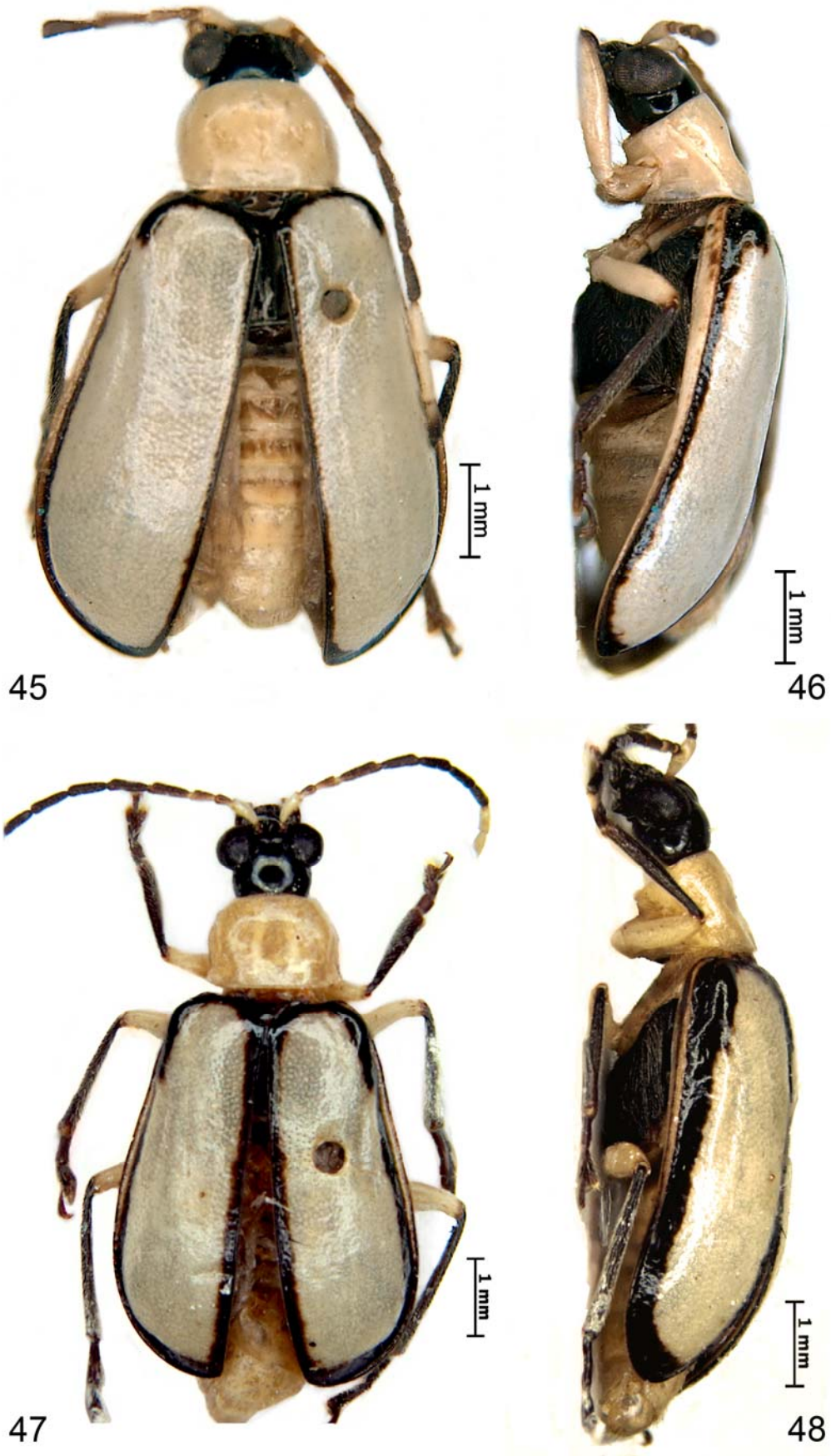
Distribution: Mexico.

Host plants: Unknown.

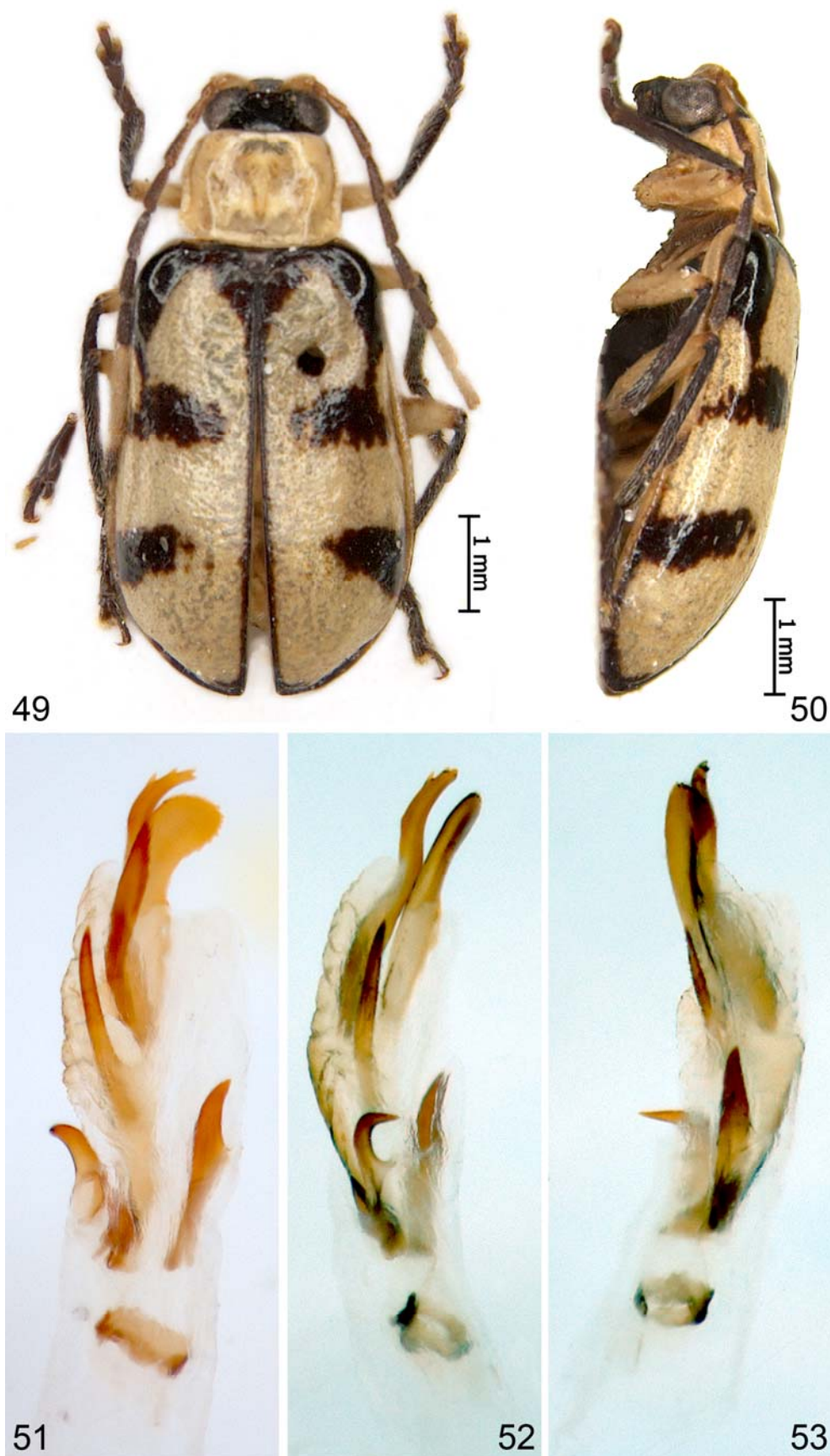
Description: Body length 6.3–6.6. Body width 3.0–3.4. Head basic color black; antennal calli chestnut; vertex matt, densely shagreened. Maxillary palpi black; penultimate maxillary palpomere slightly incrassate; labrum black; mandibles black. Antennae filiform, bi- or tricolored; antennomeres 1 and 9–10 sulphur yellow; antennomeres 2–3 yellow, with upper side darkened; antennomeres 4–8 cinnamon brown; antennomere 11 dark apically; antennomere 3 1.5 or more times as long as antennomere 2; antennal length slightly exceeding half length of elytron. Pronotum yellow or sulphur yellow, subquadrate (ratio of pronotal width to length ratio 1.29–1.41), slightly convex, widest before middle, weakly bifoveate, with wide shallow foveae, shagreened with minute wrinkles; three short, thin setae present near large seta on each anterior angle; two short, thin setae present near each posterior angle of pronotum. Prosternum yellow; procoxa black or brussels brown, sometimes infuscated or yellow. Scutellum black or amber brown. Mesothorax and mesocoxa black or brussels brown, in a few specimens yellow or infuscated. Metathorax black. Elytra yellow, rufous or testaceous, narrowly margined with black, sometimes with two black bands, one at middle and another beyond middle of elytron; humeral calli sulphur yellow, sometimes with a black spot; elytral epipleura either completely black, completely yellow, or black with narrow interior edge pale. Elytra shiny, not shagreened; punctures scattered, fine; humeral plicae absent; sutural angle of elytra round. Abdomen yellow. Tarsi and tibiae black; femora yellow or sulphur yellow; all male tibiae of same shape; male metatibial spur short; trochanters yellow. Aedeagus symmetrical; internal sac with six sclerites; sclerite 6A forming arcuate pointed hook; sclerite 6B forming pointed hook; sclerite 6C forming elongate, pointed hook; sclerite 6D forming wide, flat plate, toothed apically and laterally; sclerite 6E forming large sac, bearing bent handle-like hook, with 3 big teeth on top; sclerite 6F forming short pointed hook.

Remarks: *Diabrotica lawrencei* is very similar to *D. hoguei* Jacoby and *D. olivieri* Jacoby. They can be separated by the following features: the elytra are more convex in *D. lawrencei* than in *D. hoguei*; *D. lawrencei* is larger on average than *D. hoguei*; there are six sclerites in the internal sac in *D. lawrencei*, but five in both the other species; the shapes of sclerites 6A–6C and 5A–5B in the internal sac are quite different in all three species.

Etymology: We dedicate this species to John F. Lawrence, an author of the indispensable “Clarification of the status of the type specimens of Diabroticites” (Smith & Lawrence 1967).



Figures 45–48. *Diabrotica lawrencei* sp. nov. 45, dorsal view, holotype; 46, lateral view, holotype; 47, dorsal view, paratype, USNM; 48, lateral view, paratype, USNM.



Figures 49–53. *Diabrotica lawrencei* sp. nov. **49**, dorsal view, paratype, MCZ; **50**, lateral view, paratype, MCZ; **51**, internal sac of the aedeagus, ventral view; **52**, lateral view, left; **53**, lateral view, right.

***Diabrotica mantillerii* Derunkov, Prado, Tishechkin, Konstantinov sp. nov.** (Figs 54–61)

urn:lsid:zoobank.org:act:1FA8144D-10D4-4360-A025-DD2149E313F4

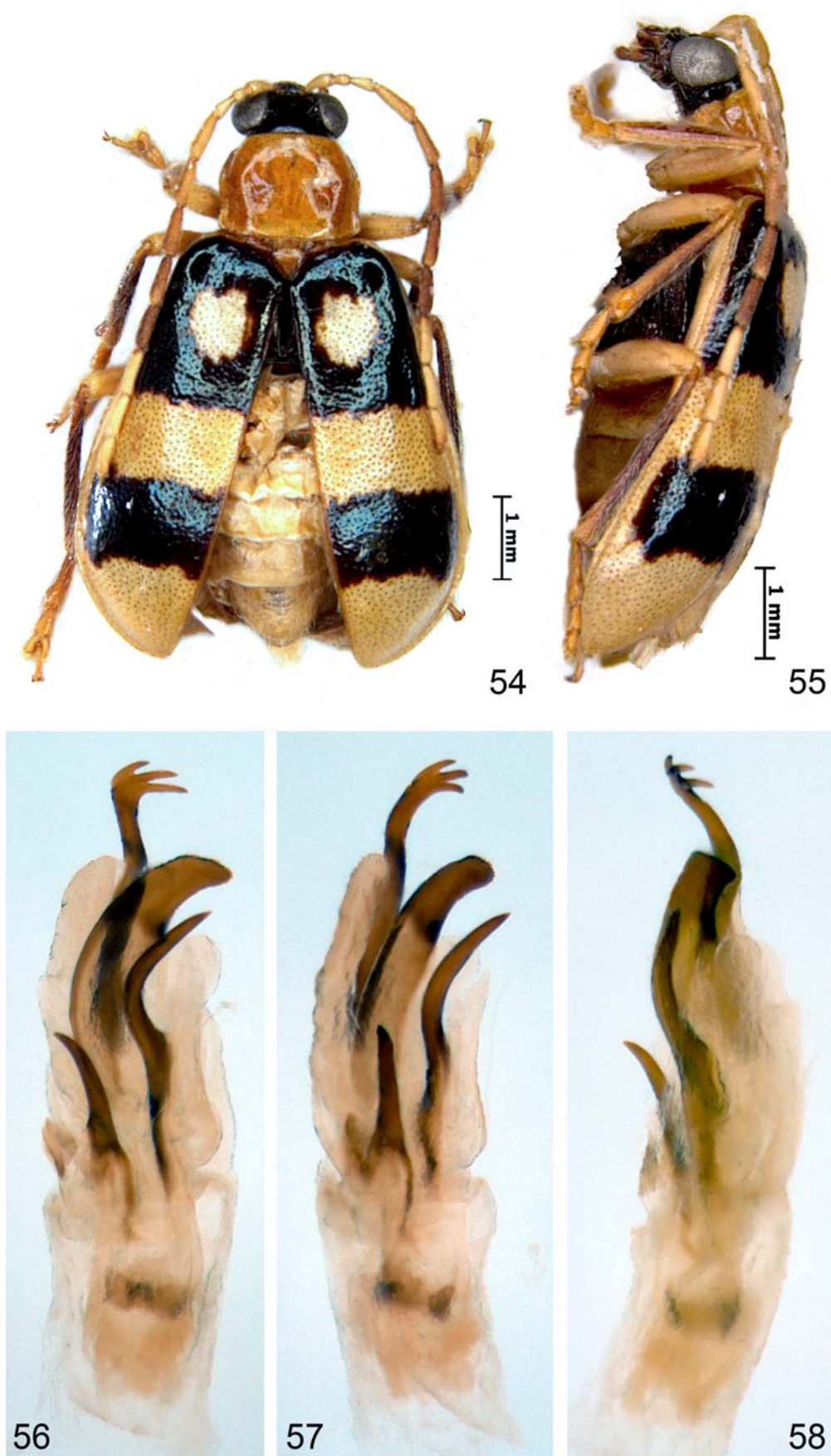
Type material: Holotype male: 1) PANAMA: Chiriqui Prov., Finca Palo Santo nr. Nueva California III:9:1959. 4200 ft.; 2) leg. H.S. Dybas. (USNM) **Paratypes: Male:** 1) PANAMA: Chiriqui Prov., Hartmann's Finca, 4-7-VII-1997 Morris&Wappes. (USNM) **Male:** 1) COSTA RICA: Puntarenas Prov., Monte Verde, 1300 m. 8 July 1989. MV lite. leg. David G. Furth. (AVD) **Male:** 1) COSTA RICA: Turrialba 22-28.II.65 SS&WDDuckworth. (BMNH) **Male:** 1) COSTA RICA: Turrialba 7-10.III.65 SS&WDDuckworth. (USNM) **2 males and 1 female with the label:** 1) COSTA RICA: Las Cruces, Nr. San Vito 19-20.III.65 SS&WDDuckworth. (1 male – MNHN, 1 male and 1 female – USNM) **Female:** 1) Costa Rica. Puntarenas Prov Finca Las Cruces (OTS), 2km. s. San Vito. 4000 ft. elev. 13 to 15-III-1973 D.C. Rentz. (USNM). The specimens are provided with one additional printed red label: Holotype (or Paratype, respectively) *Diabrotica mantillerii* sp. nov. des. A. Derunkov et al. 2013.

Distribution: Costa Rica, Panama.

Host plants: Unknown.

Description: Body length 7.3–7.4 mm. Body width 3.5–3.7 mm. Head basic color black; vertex black; frons and antennal calli black or chestnut; clypeus black; chestnut or amber brown; vertex slightly matt, shagreened with long, narrow mesh. Maxillary palpi black, mars yellow or chestnut; penultimate maxillary palpomere slightly incrassate; labrum black, chestnut or amber brown; mandibles yellow, widely infuscated, or completely brown or amber brown. Male and female antennae filiform, bi- or tricolored; antennomeres 1–3 yellow; antennomeres 4–8 gradually infuscated; antennomeres 9–10 sulphur yellow; antennomere 11 completely light (light cadmium) or dark apically; antennomere 3 1.5 or more times as long as antennomere 2; antennal length exceeding two thirds elytral length. Pronotum yellow or ochraceous-orange, subquadrate (ratio of pronotal width to length 1.29), weakly bifoveate, with wide shallow foveae, not shagreened; three short, thin setae present near large seta on each anterior angle; two short, thin setae present near each posterior angle of pronotum. Prosternum and procoxa yellow. Scutellum yellow. Mesothorax and mesocoxa yellow. Metasternum and metepisternum black; metepimeron yellow. Basic color of elytra yellow or rufous, with two sharp-edged, metallic black-blue bands in basal area of elytra and beyond middle; round macula present on each elytron in middle of basal band; humeral calli black; elytral epipleura completely yellow. Elytra shiny, not shagreened; punctures scattered, coarse; humeral plicae absent; sutural angle of elytra round or obtusely angled. Abdomen yellow. Tarsi yellow or yellow ocher; protibia bicolored, yellow, outer edge with piceous or testaceous line, or extensively darkened; meso- and metatibia bicolored, yellow, outer edge with piceous or testaceous line; all male tibiae of same shape; male metatibial spur short; femora yellow or yellow ocher; trochanters yellow. Aedeagus symmetrical; internal sac with four sclerites; sclerite 4A forming elongate, thin hook; sclerite 4B forming long pointed hook; sclerite 4C elongate, forming handle-like hook, bearing large teeth apically; sclerite 4D forming wide, flat, arcuate plate, toothed apically. Tignum slender, weakly sclerotized; receptacle of spermatheca subcylindrical, not separated from pump; pump with small appendage at apex.

Remarks: *Diabrotica mantillerii* is similar to *D. rogersi* Jacoby. They can be separated by the following features: the scutellum is yellow in *D. mantillerii*, but brown or black in *D.*



Figures 54–58. *Diabrotica mantillerii* sp. nov. 54, dorsal view, holotype; 55, lateral view, holotype; 56, internal sac of the aedeagus, ventral view; 57, lateral view, right; 58, lateral view, left.

rogersi; there are two round yellow maculae on the base of the elytron in *D. mantillerii*, but no maculae present in the center of basal band in *D. rogersi*; the two yellow spots in the middle of elytron are transverse and look like a yellow band in *D. mantillerii*, while they are small and more or less round in *D. rogersi*.

Etymology: We dedicate this species to Antoine Mantilleri, curator of beetles at the Muséum National d'Historie Naturelle in Paris. Without his help and understanding, this project would not have been possible.



Figures 59–61. *Diabrotica mantillerii* sp. nov. 59, vaginal palpi, paratype; 60, spermatheca, paratype; 61, tignum, paratype.

***Diabrotica martinjacobyi* Derunkov, Prado, Tishechkin, Konstantinov sp. nov.** (Figs 62–69)

urn:lsid:zoobank.org:act:5076A6DE-FCD8-4F85-B7E4-F656A257454F

Type material: Holotype male: 1) La Lima Hond 3-2-66; 2) UFC No 195-64-9; 3) Black Light. (USNM) **Paratypes: Female:** 1) S. Geronimo, Guatemala. Champion; 2) 1st Jacoby Coll. (MCZ) **5 males with the label:** 1) UFC # 195-64B (4 – USNM, 1 – AVD) **Female:** 1) UFC No. 14C; 2) La Lima Hond. 9/26/1962; 3) Caid R.D. (USNM) **Male:** 1) S. Geronimo, Guatemala. Champion; 2) 1st Jacoby Coll.; 3) Type 17698; 4) *Diabrotica curvilineata* Jac. (MCZ) **Male:** 1) PARALECTOTYPE; 2) S. Geronimo, Guatemala. Champion; 3) Baly Coll.;

4) *curvilineata*; 5) *Diabrotica curvilineata* Jac. Guatemala (underside: Biol.C.Amer Col: Vol. VI, LLI 1-524 Tab f15. June 1887 (Type); 6) LectoPARATYPE *Diabrotica curvilineata* Jac. RFS. (BMNH) **Male:** 1) Finca' Gibraltar Sept, 1910, Mex. (MCZ). **Male:** 1) MEXICO: Hidalgo Chapulhuacan, VII-26-27-1981 B.C. Ratcliffe & C.L. Messenger; 2) *Diabrotica c1n* sp. nov. DET. L.J. Meinke 2013. (UNSM) The specimens are provided with one additional printed red label: Holotype (or Paratype, respectively) *Diabrotica martinjacobyi* sp. nov. des. A. Derunkov et al. 2013.

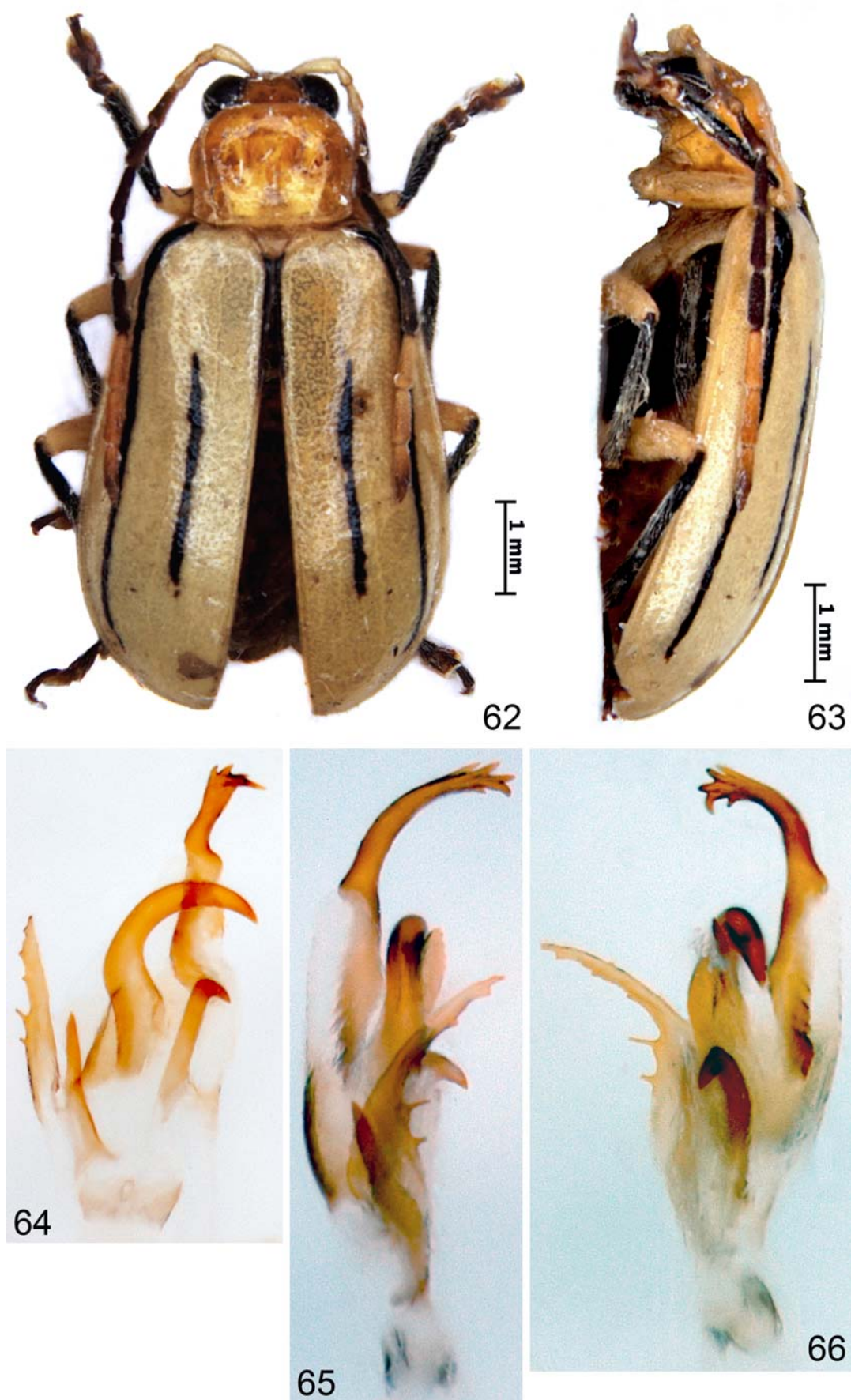
Distribution: Guatemala, Honduras, Mexico.

Host plants: Unknown.

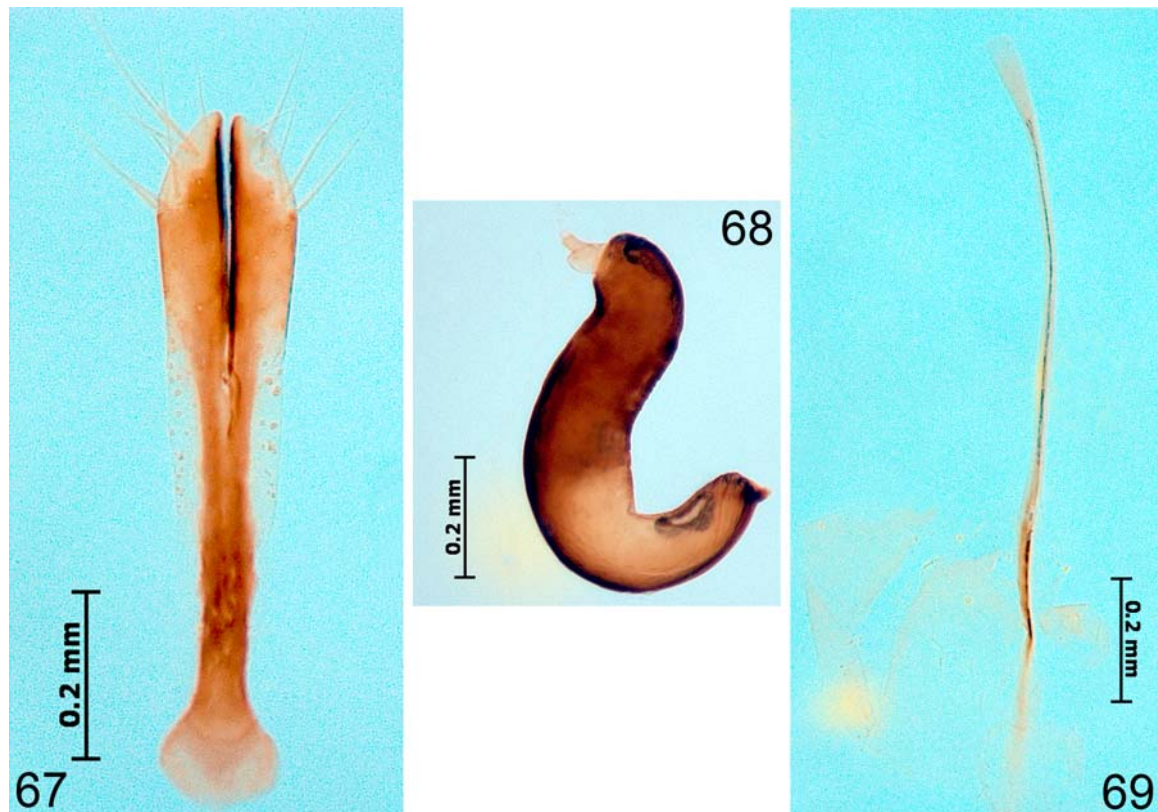
Description: Body length 6.2–7.9 mm. Body width 3.2–4.1 mm. Head basic color yellow; clypeus and labrum black or chestnut; vertex shiny with traces of thin shagreen. Maxillary palpi black or chestnut; penultimate maxillary palpomere slightly incrassate; mandibles completely black or piceous, sometimes apex slightly lightened. Antennae filiform, bicolored, with antennomeres 1–3 and 9–11 yellow or yellow ocher, sometimes with antennomere 11 dark apically, with antennomeres 4–8 gradually infuscated; male antennomere 3 1.5 as times as long as antennomere 2, or slightly exceed it; female antennomere 3 less than 1.5 times as long as antennomere 2; antennae exceeding two thirds length of elytron, with those of female shorter than those of male. Pronotum yellow or light cadmium, almost quadrate (ratio of pronotal width to length 1.19), slightly convex, widest before middle, deeply bifoveate, shiny, not shagreened; 2–4 short, thin setae placed near large seta on each anterior angle and 1–2 near each posterior angle of pronotum. Prosternum and procoxa yellow. Scutellum yellow; mesothorax yellow. Metasternum and metepisternum black; metepimeron yellow. Basic color of elytra yellow or rufous, maculate, with two short black lines on each elytron, the first before, the second behind middle, associated with humeral and sutural black vittae; humeral calli black; elytral epipleura completely yellow. Elytral surface not sulcate, shiny with traces of thin shagreen, transversely depressed in middle of elytron; humeral plicae absent; sutural angle of elytra round; punctures scattered, fine. Abdomen yellow. Tarsi and tibiae black or chestnut; femora yellow. Aedeagus symmetrical; internal sac with six sclerites; sclerite 6A forming straight, pointed hook; sclerite 6B forming massive, plate strongly toothed laterally; sclerite 6C forming handle-like hook, toothed apically; sclerite 6D forming wide, flat plate, toothed apically and laterally; sclerite 6E forming strong handle-like hook, toothed apically; sclerite 6F forming elongate pointed hook. Tignum slender, weakly sclerotized; receptacle of spermatheca subcylindrical, not separated from pump; pump with small appendage at apex.

Remarks: *Diabrotica martinjacobyi* is very similar to *D. curvilineata* Jacoby. They can be separated by the following features: the elytra in *D. curvilineata* are maculate with two small black spots on each, while in *D. martinjacobyi* the elytra are maculate with two short black lines. The shape of the internal sac sclerite 6E is the most reliable feature that allows distinguishing the two species. In *D. curvilineata*, sclerite 6E is a hook flattened on the apex and bearing short, thick, strong teeth; in *D. martinjacobyi*, sclerite 6E is elongated and bears a long (at least 1.5 times as long as in *D. curvilineata*), strong tooth on the apex.

Etymology: This name is a patronym dedicated to Martin Jacoby, a great British entomologist and systematist, and the author of many *Diabrotica* and other leaf beetle species.



Figures 62–66. *Diabrotica martinjacobyi* sp. nov. 62, dorsal view, holotype; 63, lateral view, holotype; 64, internal sac of the aedeagus, ventral view; 65, lateral view, right; 66, lateral view, left.



Figures 67–69. *Diabrotica martinjacobyi* sp. nov. **67**, vaginal palpi, paratype; **68**, spermatheca, paratype; **69**, tignum, paratype.

***Diabrotica mitteri* Derunkov, Prado, Tishechkin, Konstantinov sp. nov.** (Figs 70–77)

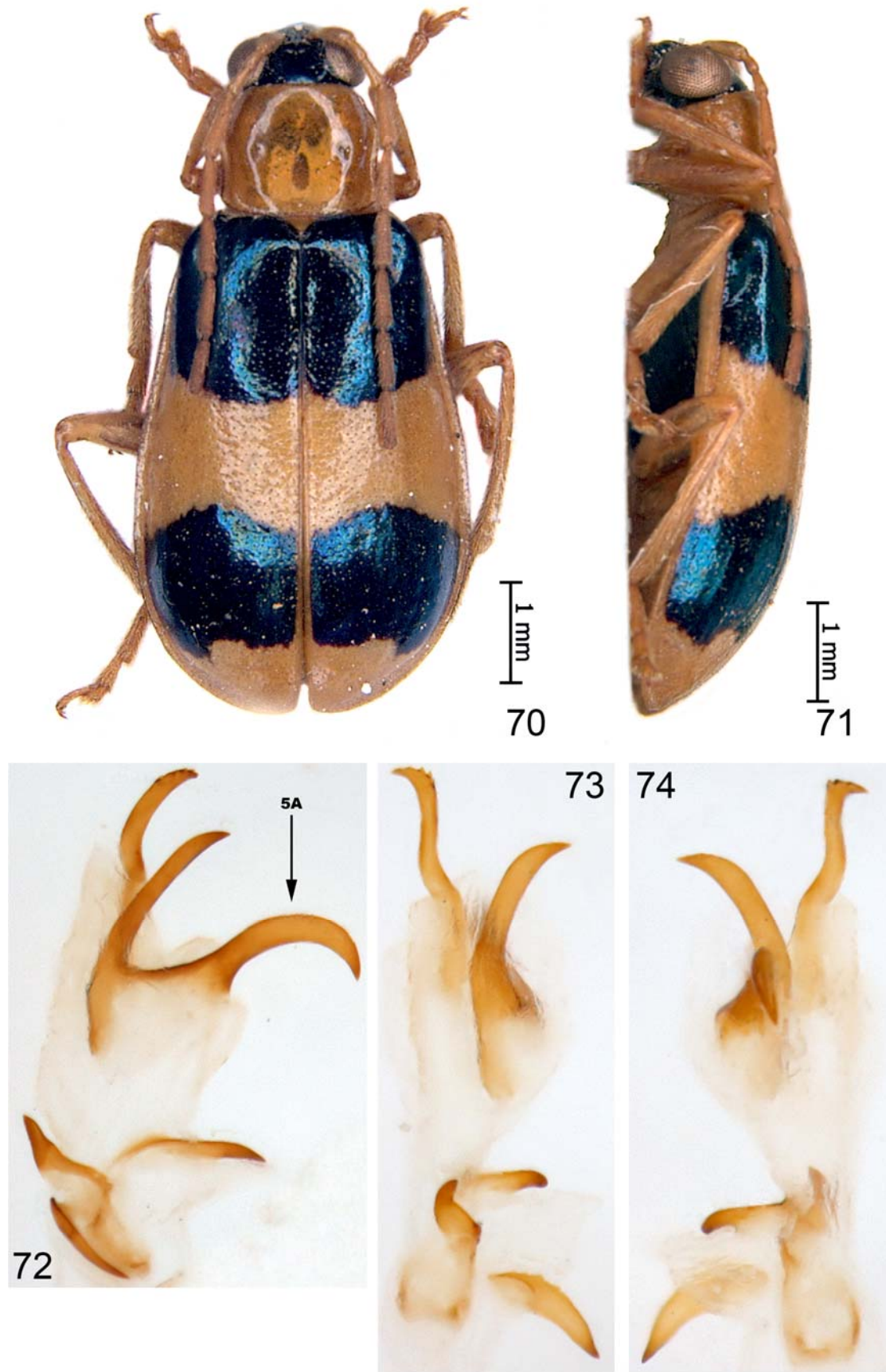
urn:lsid:zoobank.org:act:4B605480-E5DD-45A4-89D5-829D8B599B03

Type material: Holotype male: 1) Bugaba, Panama, Champion; 2) U.S.N.M. Paratype; 3) *Diabrotica godmani* Jac. Designated p.l. type by Smith&Law. 1967-72. (USNM) **Paratypes: Female:** 1) Bugaba, Panama, Champion; 2) U.S.N.M. Paratype; 3) *Diabrotica godmani* Jac. Designated p.l. type by Smith&Law. 1967-72. (USNM). **Male:** 1) Paralectotype; 2) Bugaba, 800 – 1,500 ft. Champion; 3) Baly Coll.; 4) LectoPARATYPE *Diabrotica godmani* Jac. RFS; 5) *Diabrotica godmani* Jac. Panama (underside: Biol.C.Amer Coleopt. Vol. VI, LLI 1-510. June 1887, ex. col. Jacoby). (BMNH) **Male and female:** 1) Paralectotype; 2) V. de Chiriqui, 3-4000 ft. Champion.; 3) Godman-Salvin Coll., Biol. Centr.-Amer.; 4) LectoPARATYPE *Diabrotica godmani* Jac. RFS. (BMNH) **Male:** 1) CabimaPan May 24.11, AugustBusck. (AVD) **Male:** 1) Summit, Panama C.Z. VIII -1946; 2) N.L.H. Krauss. (USNM) **Female:** 1) Bugaba, 800 – 1500 ft. Champion; 2) 1st Jacoby Coll.; 3) LECTOPARATYPE *Diabrotica godmani* Jac. (MCZ). The specimens are provided with one additional printed red label: Holotype (or Paratype, respectively) *Diabrotica mitteri* sp. nov. des. A. Derunkov et al. 2013.

Distribution: Panama.

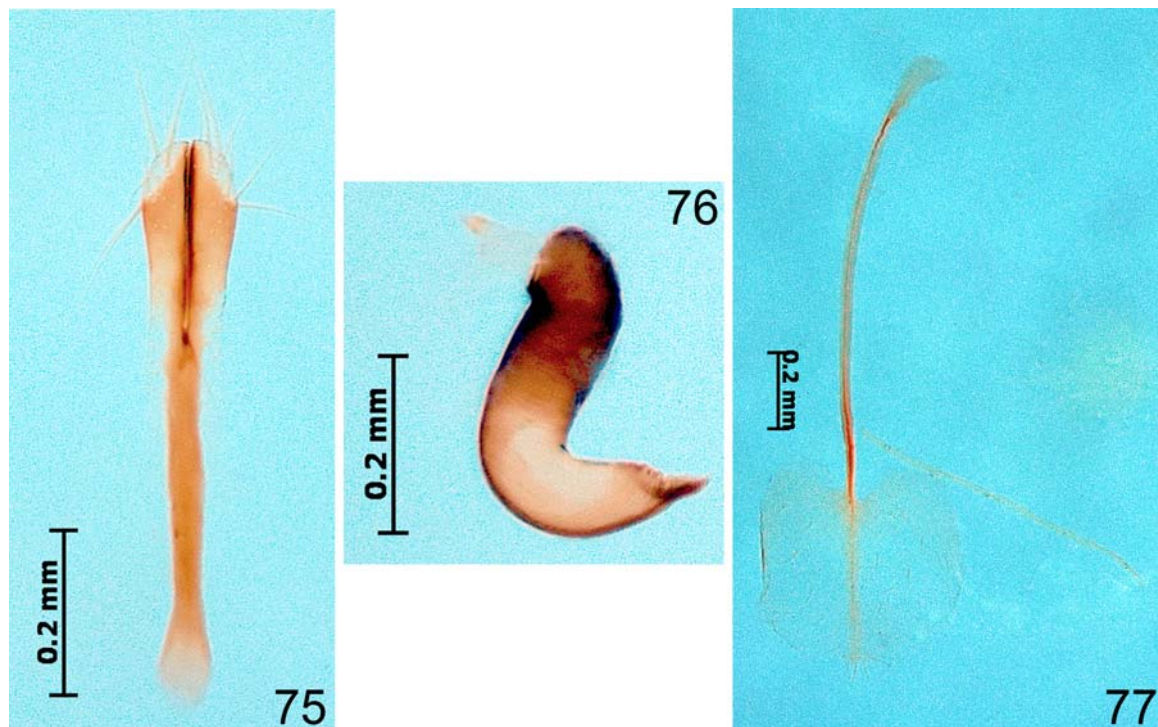
Host plants: Unknown.

Description: Body length 5.8–6.5 mm. Body width 2.8–3.4 mm. Head basic color black; frons black; vertex black; antennal calli black or piceous; clypeus and labrum black; vertex



Figures 70–74. *Diabrotica mitteri* sp. nov. 70, dorsal view, holotype; 71, lateral view, holotype; 72, internal sac of the aedeagus, ventral view; 73, lateral view, right; 74, lateral view, left.

shiny, not shagreened. Maxillary palpi black or chestnut; penultimate maxillary palpomere slightly incrassate; mandibles piceous or black, with apex slightly lightened. Male and female antennae filiform, uniformly yellow ocher or bi- or tricolored; antennomere 1–3 yellow; antennomeres 4–8 uniformly cinnamon brown or gradually infuscated; antennomeres 9–10 uniformly yellow ocher; antennomere 11 completely light (yellow ocher); antennomere 3 less than 1.5 times as long as antennomere 2; length of antennae exceeding two thirds of elytral length. Pronotum yellow or yellow ocher, subquadrate (ratio of pronotal width to length 1.22–1.24), slightly convex, widest before the middle, bifoveate, with small round foveae, not shagreened; three short, thin setae near large seta on each anterior angle, and one near each posterior angle of pronotum. Prosternum and procoxa yellow or yellow ocher. Scutellum yellow. Mesothorax and mesocoxa yellow or yellow ocher. Metasternum and metepisternum black; metepimeron black or darkened with brown (color varying from yellow ocher to amber brown). Basic color of elytra yellow or rufous, with two sharp-edged, metallic black-blue bands, one in basal area of elytra, another beyond middle; humeral calli black; elytral epipleura completely yellow. Humeral plicae absent; sutural angle of elytra round; punctures scattered, fine. Abdomen yellow or yellow ocher. Tarsi yellow or yellow ocher. Protibia uniformly yellow or yellow ocher, or sometimes bicolored: yellow, having outer edge with piceous or testaceous line, or extensively darkened. Meso- and metatibiae uniformly yellow or yellow ocher, or sometimes bicolored: yellow, having outer edge with piceous or testaceous line. All male tibiae of same shape; male metatibial spur short. Femora yellow or yellow ocher. Trochanters yellow or yellow ocher. Aedeagus symmetrical; internal sac with five sclerites; sclerite 5A forming double, long, pointed hook; sclerite 5B forming elongate hook, bearing 5–6 large teeth laterally; sclerite 5C forming short pointed hook; sclerite 5D forming elongate pointed hook; sclerite 5E forming elongate pointed hook. Tignum slender, weakly sclerotized; receptacle of spermatheca subcylindrical, not separated from pump; pump with small appendage at apex.



Figures 75–77. *Diabrotica mitteri* sp. nov. **75**, vaginal palpi, paratype; **76**, spermatheca, paratype; **77**, tignum, paratype.

Remarks: *Diabrotica mitteri* is very similar to *D. godmani* Jacoby and *D. hartjei*. They can be separated by the following features: generally, the color of the bands on the elytra of *D. mitteri* is metallic black-blue, but metallic black-green in *D. godmani*; the basal band on the elytra of *D. mitteri* lacks maculae and spots, but there are two small yellow spots in *D. hartjei*; the armament of the internal sac is quite different in all three species.

Etymology: We dedicate this species to Charles Mitter (Department of Entomology, University of Maryland). Without his help and support, this project would not have been possible.

***Diabrotica perkinsi* Derunkov, Prado, Tishechkin, Konstantinov sp. nov.** (Figs 78–85)

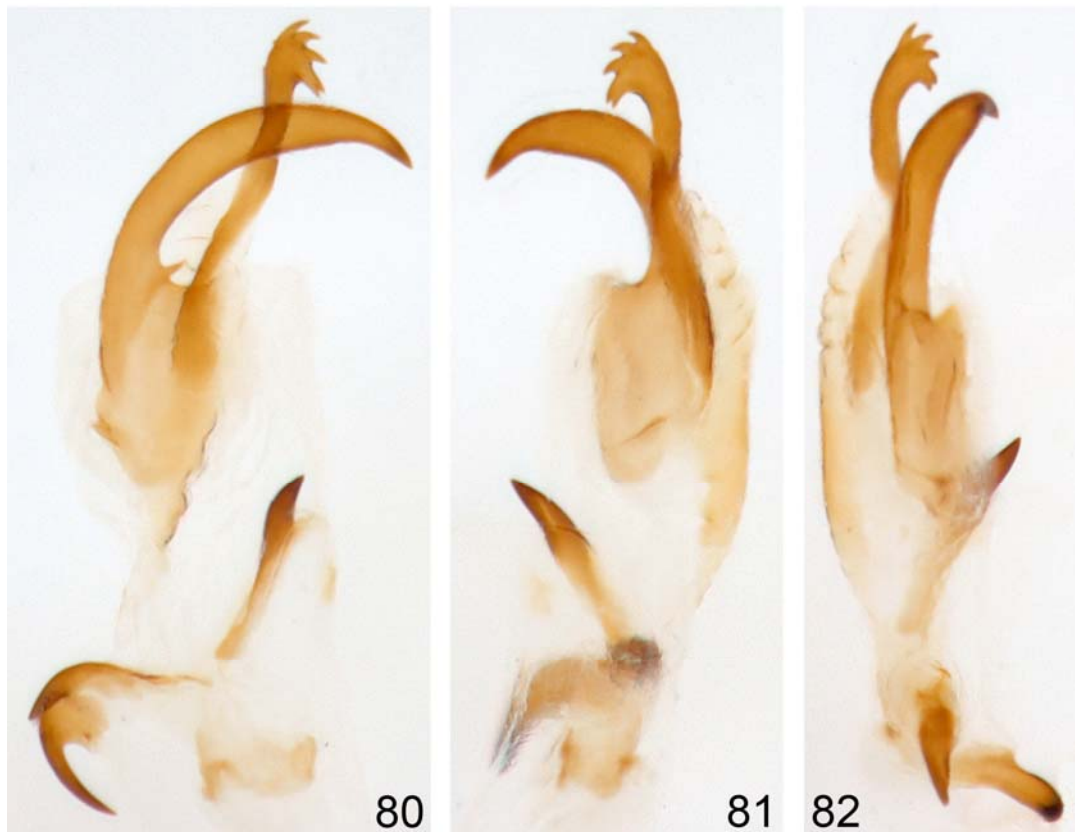
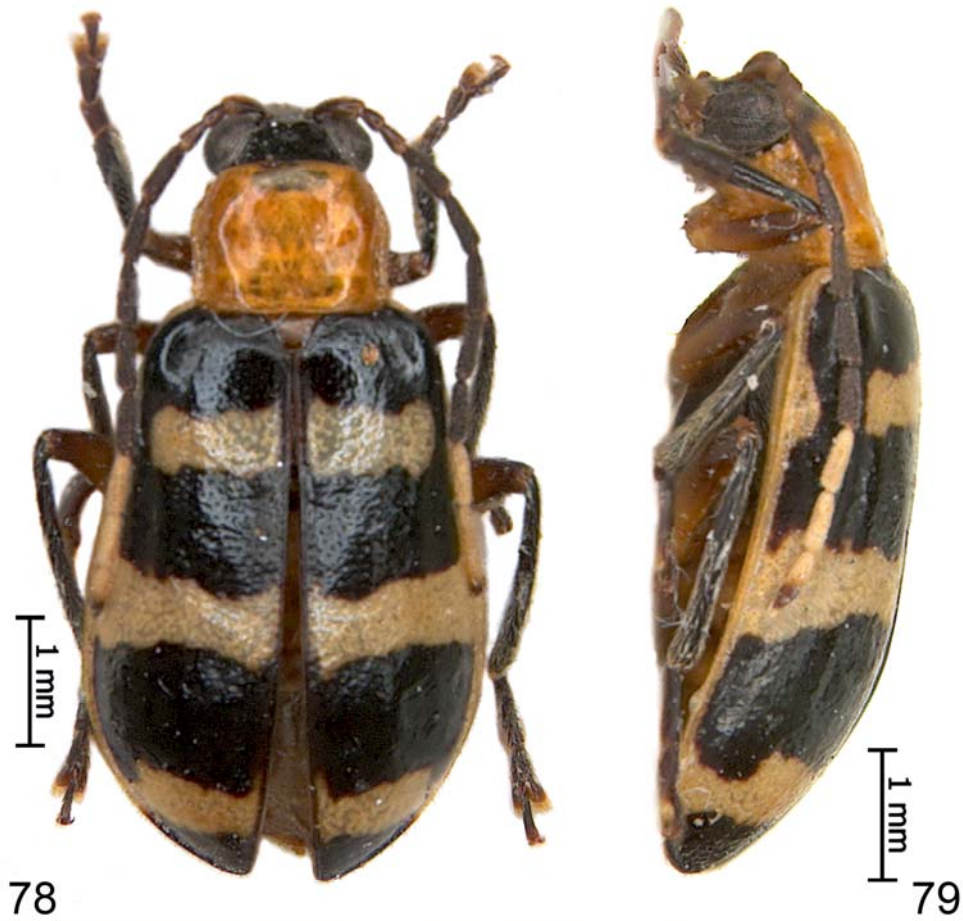
urn.lsid:zoobank.org:act:1EA23FC3-8546-4DDF-9934-F86DC426EEBD

Type material: Holotype male: 1) Coban, Vera Paz. Champion; 2) Jacoby 2nd Coll. (MCZ) **Paratypes: Male:** 1) R. Sarstoon. B. Honduras. Blancaneau; 2) Godman-Salvin Coll., Biol. Centr.-Amer. (BMNH) **Male:** 1) El Peten, Guat. 1922, H.F. Loomis; 2) Oaxactun Mar. 28. (USNM) **Female:** 1) Alta V. Paz, Guatemala; 2) 23.4 Cacao TreceAguas; 3) Schwarz & BarberColl.; 4) *Diabrotica albosignata* Baly. (USNM) **Female:** 1) BELIZE. Cayo Dist. San Ignacio, 29 April 1984, Herbert L. Dozier; 2) *Diabrotica pulchra* tray, Det. J. Krysan 198 [crossed out]. (USNM) The specimens are provided with one additional printed red label: Holotype (or Paratype, respectively) *Diabrotica perkinsi* sp. nov. des. A. Derunkov et al. 2013.

Distribution: Belize, Guatemala.

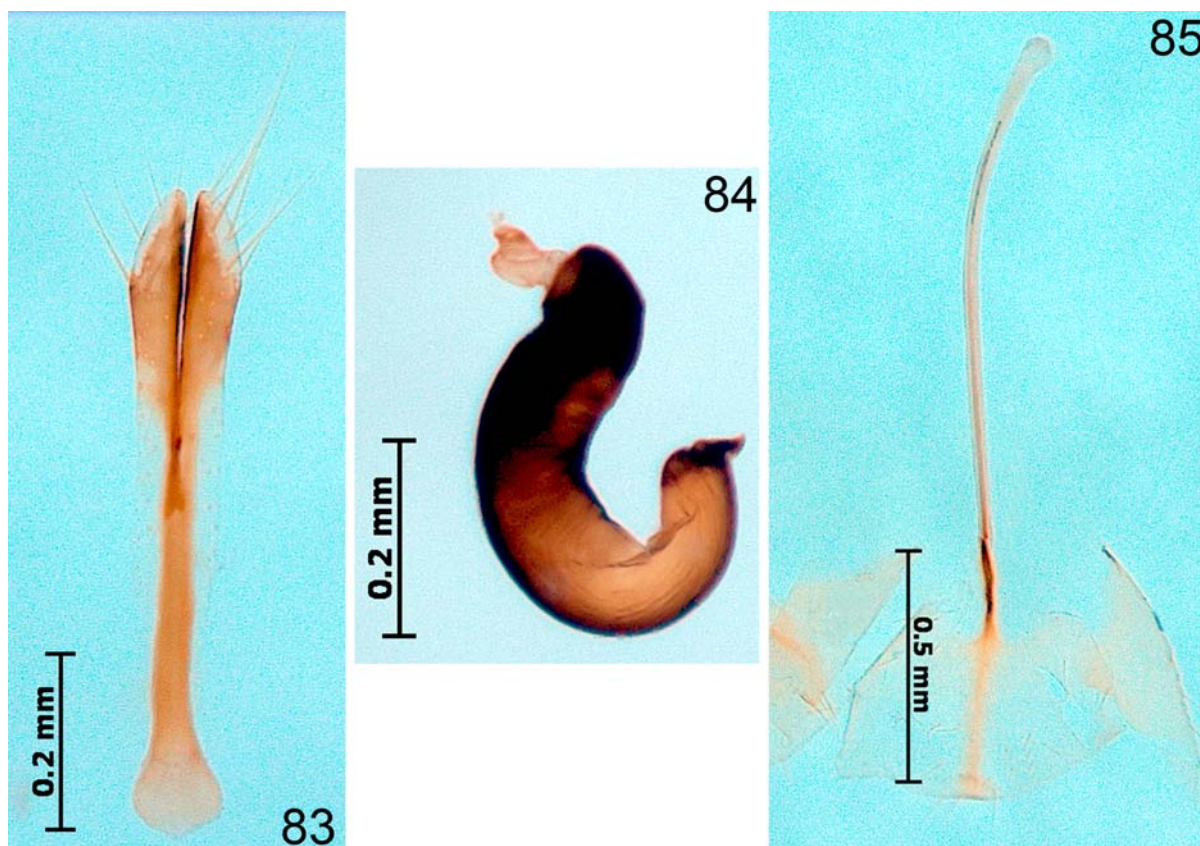
Host plants: Unknown.

Description: Body length 6.0–6.1 mm. Body width 2.9–3.1 mm. Head black, with vertex shiny, not shagreened. Maxillary palpi black or chestnut; labrum and mandibles black; penultimate maxillary palpomere slightly incrassate. Male and female antennae filiform, bi- or tricolored; antennomere 1 yellow, with upper side darkened; antennomeres 1–3 either yellow, with upper side darkened, or uniformly brussels brown; antennomeres 4–8 uniformly brussels brown; antennomeres 9–10 uniformly sulphur yellow; antennomere 11 yellow, dark apically; in male, antennomere 3 less than 1.5 times longer than antennomere 2, with antennomeres 4–1 thick and robust, with thin longitudinal costa on inner margin of each antennomere, with length of antennae not greater than half elytral length; in female, length of antennomere 3 subequal to length of antennomere 2, with antennomeres 2 and 3 together equal to more than half length of antennomere 4; length of female antennae equal to that of male antennae; female antennae thinner than in male. Pronotum yellow or mustard yellow, subquadrate (ratio of pronotal width to length 1.32), slightly convex, widest before middle, weakly bifoveate, with wide shallow foveae, shiny, not shagreened; three short, thin setae present near large seta on each anterior angle, and one short, thin seta near each posterior angle of pronotum. Prosternum yellow or yellow ochre; procoxa yellow or infuscated. Scutellum yellow or orange rufous. Mesothorax and mesocoxa yellow or infuscated. Metasternum and metepisternum black; metepimeron black or darkened (from yellow ochre to amber brown). Basic color of elytra yellow or rufous, with four black sharp-edged bands; humeral calli black; elytral epipleura completely yellow. Elytra not sulcate, shiny, with thin shagreen, with scattered, fine, shallow punctures; humeral plicae absent; sutural angle of elytra round. Abdomen yellow. Tarsi and tibiae black; male metatibial spur short; femora



Figures 78–82. *Diabrotica perkinsi* sp. nov. **78**, dorsal view, holotype; **79**, lateral view, holotype; **80**, internal sac of the aedeagus, ventral view; **81**, lateral view, right; **82**, lateral view, left.

yellow or bicolored with 1/2 to 2/3 of proximal end darkened, black or brown; trochanters yellow. Aedeagus symmetrical; internal sac with five sclerites; sclerite 5A forming pointed hook, widened basally, bearing short, pointed hook on base; sclerite 5B forming elongate, handle-like hook, bearing four large teeth apically; sclerites 5C and 5D each forming short, pointed hook; sclerite 5E forming elongate pointed hook. Tignum slender, weakly sclerotized; receptacle of spermatheca subcylindrical, not separated from pump; pump with small appendage at apex.



Figures 83–85. *Diabrotica perkinsi* sp. nov. 83, vaginal palpi, paratype; 84, spermatheca, paratype; 85, tignum, paratype.

Remarks: *Diabrotica perkinsi* is very similar to *D. pulchra* (Sahlberg) and *D. salvadorensis*. They can be separated by the following features: there are five internal sac sclerites in *D. perkinsi*, but four sclerites in *D. salvadorensis*; *D. perkinsi* usually has bicolored femora, but *D. salvadorensis* usually has black legs, and *D. pulchra* has yellow femora; sclerite 5A in *D. perkinsi* is an elongate, pointed hook, widened basally and bearing a short pointed hook on the base, but this sclerite forms a wide, flat plate, toothed apically and bearing long pointed hook basally, in *D. pulchra*.

Etymology: We dedicate this species to Phil Perkins, curator of beetles at the Museum of Comparative Zoology. Without his support and understanding, this project would not have been possible.

***Diabrotica redfordae* Derunkov, Prado, Tishechkin, Konstantinov sp. nov.** (Figs 86–94)

urn:lsid:zoobank.org:act:CF11AC04-D110-4421-B48F-5AB5B384468E

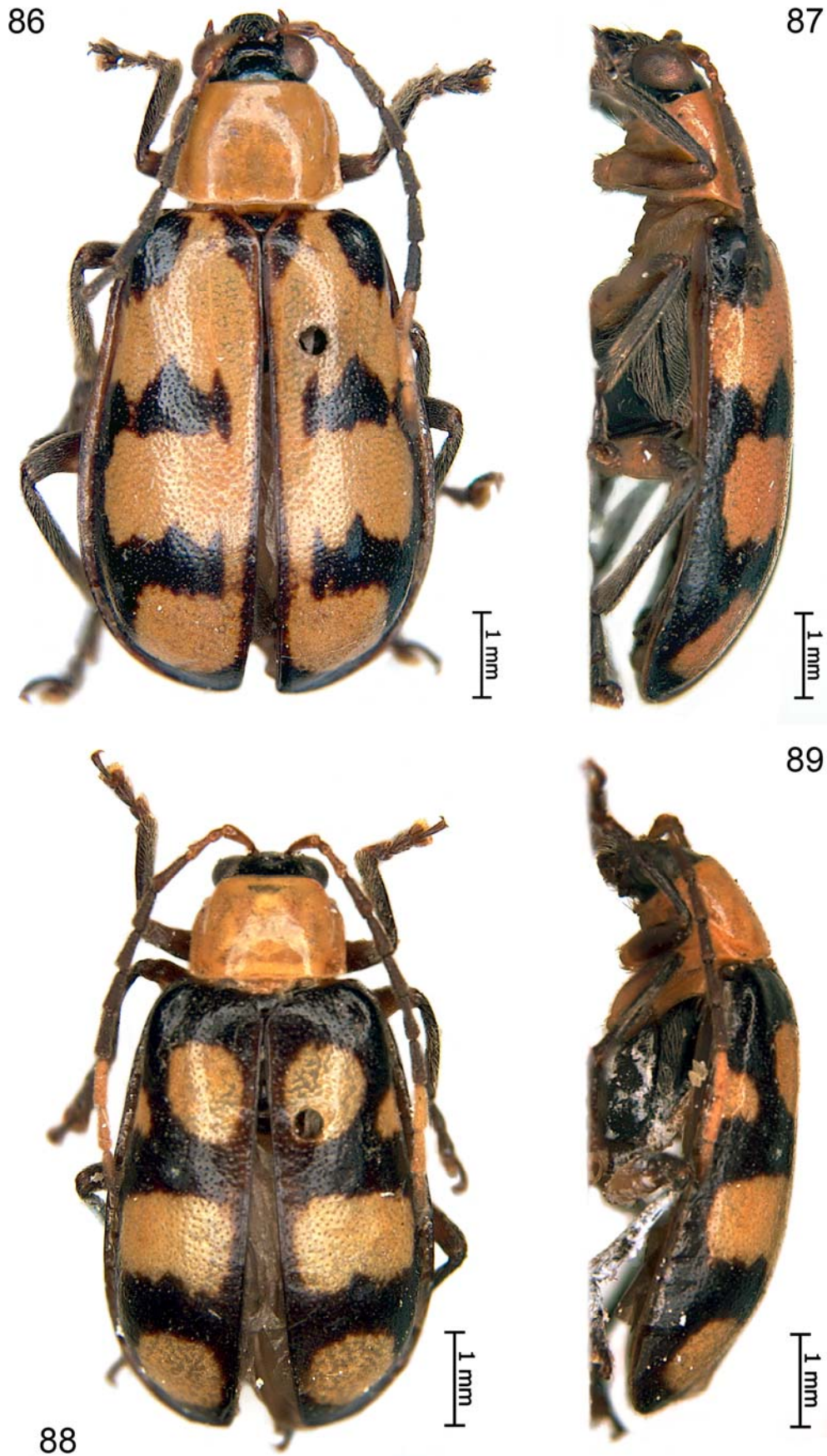
Type material: Holotype male: 1) San Carlos, Costa Rica; 2) CollSchild & Burgdorf. (USNM) **Paratypes: Female:** 1) U.S. Col.; 2) Collection FKnab; 3) lacordairi Kirsch 1883 (?) Typ loc. Bogota. – orig. descrip. does not mention yellow elytral margin nor black pygidium. – HSB.33; 4) RFS notes on types: = consentanea Baly, J.Krysan 1995. (USNM) **4 males with the label:** 1) San Carlos, Costa Rica; 2) CollSchild & Burgdorf. (2 – USNM, 1 – BMNH, 1 – AVD) **2 males with the label:** 1) Collection Schild-Burgdorf, Costa Rica, San Carlos; 2) Jacoby 2nd Coll. (MCZ) **Male:** 1) San Carlos, Costa Rica; 2) CollSchild & Burgdorf; 3) *Diabrotica morosa* Jac., Sz. Det. as lac.; 4) *Diabrot. n. sp.?* not *fraterna* Baly HSB.33. (USNM) **Male:** 1) San Carlos, Costa Rica; 2) CollSchild & Burgdorf; 3) *Diabrotica fenestralis* Jacoby; 4) not *fenestralis* Jac. 79. HSB.33. (USNM) The specimens are provided with one additional printed red label: Holotype (or Paratype, respectively) *Diabrotica redfordae* sp. nov. des. A. Derunkov et al. 2013.

Distribution: Costa Rica.

Host plants: Unknown.

Description: Body length 6.6–7.3 mm. Body width 3.5–3.9 mm. Head basic coloration black; antennal calli chestnut; vertex shiny with traces of thin shagreen. Maxillary palpi black or chestnut; labrum black; penultimate maxillary palpomere not incrassate; mandibles piceous or black, with apex slightly lightened. Antennae filiform, bi- or tricolored; antennomeres 1–3 yellow; antennomeres 4–8 brussels brown; antennomeres 9–10 uniformly light cadmium; antennomere 11 dark apically; antennomere 3 less than 1.5 times as long as antennomere 2; antennae no longer than a half of elytron. Pronotum yellow or mustard yellow, transverse (ratio of pronotal width to length 1.37–1.45), nonfoveate, shagreened with minute tubercles; two short, thin setae near large seta on each anterior angle; two short, thin setae near each posterior angle of pronotum. Prosternum and procoxa yellow. Scutellum black. Mesothorax and mesocoxa yellow. Metathorax black. Basic color of elytra yellow or rufous, with three sharp-edged, black, transverse bands, reduced to variable degree or connected together and forming four round maculae on each elytron; humeral calli black; elytral epipleura completely black, or with narrow interior edge pale, or basally darkened for 1/3 to 1/2 of elytral length. Elytra not sulcate, slightly shiny, shagreened with isodiametric mesh; punctures dense, fine; humeral plicae absent; sutural angle of elytra round. Abdomen yellow. Tarsi and tibia black; all male tibiae of same shape; male metatibial spur short; profemora bicolored, 1/2 to 2/3 darkened, black or brown; meso- and metafemora bicolored, with apex (approximately 1/3) darkened, black or brown; trochanters yellow. Aedeagus symmetrical; internal sac with four sclerites; sclerite 4A forming wide, thick plate, bearing short, thick hook; sclerite 4B forming long pointed hook; sclerite 4C forming wide, thick, big plate, bearing large teeth apically and laterally; sclerite 4D forming wide, flat, arcuate plate, toothed apically. Tignum slender, weakly sclerotized; receptacle of spermatheca subcylindrical, not separated from pump; pump with small appendage at apex.

Remarks: *Diabrotica redfordae* is very similar to *D. fenestralis* Jacoby and *D. morosa* Jacoby. They can be separated by the following features: the elytral epipleura in *D. redfordae* are completely black, or the narrow interior edge is pale, or the basal third to half is darkened; the epipleura are completely yellow in *D. fenestralis*; the femora of *D. redfordae* are



Figures 86–89. *Diabrotica redfordae* sp. nov. **86**, dorsal view, holotype; **87**, lateral view, holotype; **88**, dorsal view, paratype; **89**, lateral view, paratype.



Figures 90–94. *Diabrotica redfordae* sp. nov. 90, internal sac of the aedeagus, lateral view; 91, ventral view; 92, vaginal palpi, paratype; 93, spermatheca, paratype; 94, tignum, paratype.

bicolored, but the legs are entirely black in *D. morosa*. On average, *D. redfordae* is larger than both other species.

Etymology: This species is dedicated to Amanda Redford (USDA, Center for Plant Health Science and Technology), our collaborator on the online “*Diabrotica* ID tool.”

***Diabrotica reysmithi* Derunkov, Prado, Tishechkin, Konstantinov sp. nov.** (Figs 95–102)

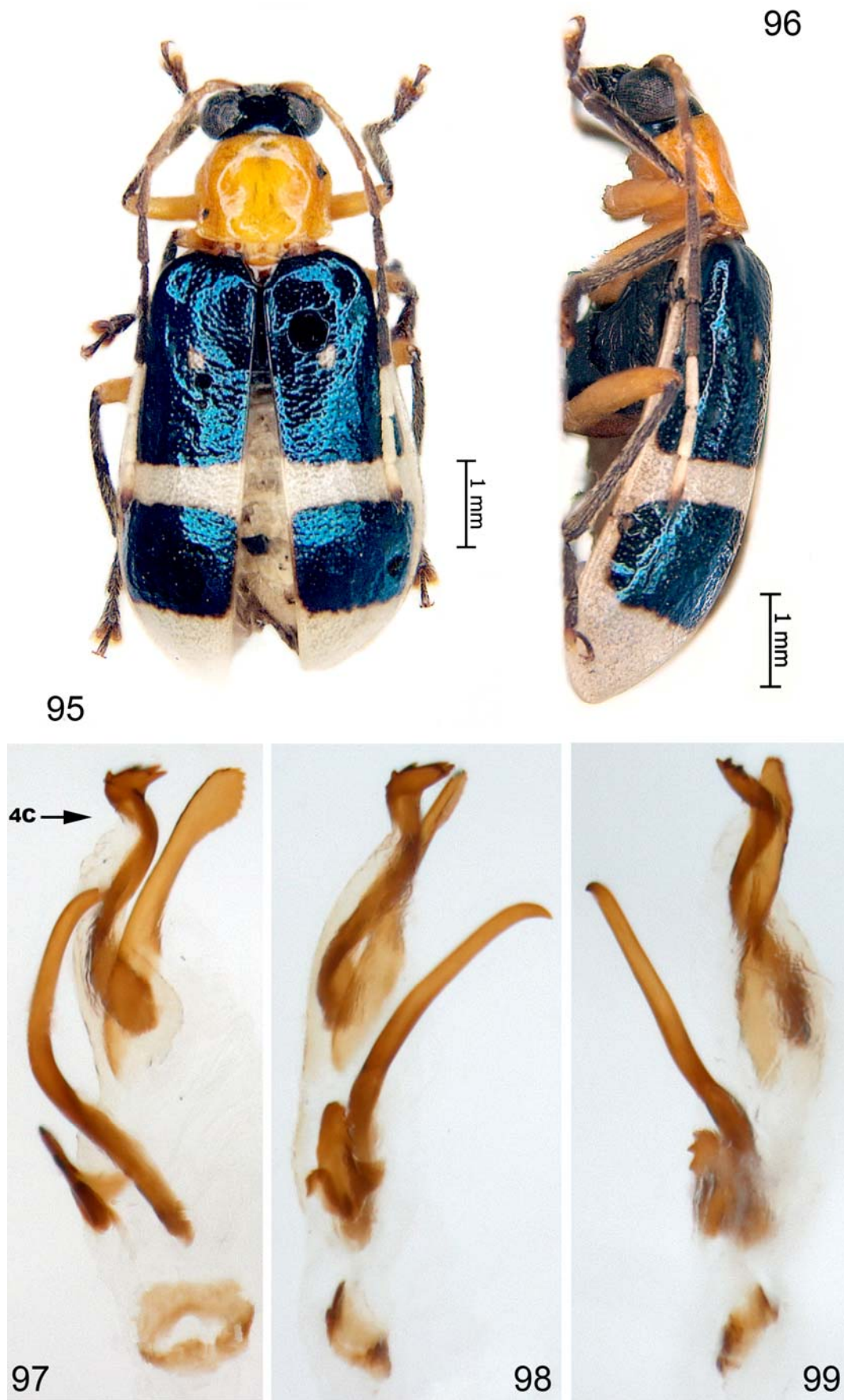
[urn:lsid:zoobank.org:act:7AA4DE0E-0176-4083-8497-6E053702633E](https://doi.org/10.3896/BI.2013.7AA4DE0E-0176-4083-8497-6E053702633E)

Type material: Holotype male: 1) COSTA RICA: Prov. Alajuela; Arenal Volcano (Observatory Lodge), 10°26'39''N, 84°42'62''W, 7-17 Apr. 1991, M. Spencer. (USNM) **Paratypes: Male:** 1) COSTA RICA: Prov. Alajuela; Arenal Volcano (Observatory Lodge), 10°26'39''N, 84°42'62''W, 7-17 Apr. 1991, M. Spencer. (AVD) **Male:** 1) COSTA RICA Cartago Prov. Navarro 16-31-VII-1962. (BMNH) **Male:** 1) ECUADOR: Pichincha Sto. Domingo de los Colorados Sept. 22, 1970 R.E. Dietz IV, leg. (USNM) **Male:** 1) COSTA RICA: Turrialba 22-28.II.65 SS&WDDuckworth. (USNM) **Male:** 1) COSTA RICA: Las Cruces, Nr. San Vito 19-20.III.65 SS&WDDuckworth. (USNM) **Male:** 1) PANAMA: El Valle, CocleProv. 22.IV.65 SS&WDDuckworth. (USNM) **Female:** 1) PANAMA: El Valle, CocleProv. 22.IV.65 SS&WDDuckworth. (USNM) **Male:** 1) PANAMA: Bocas d. Toro, 2 mi. N of Divide on hwy to Chiriqui Grande VI-1-1986 B.C. Ratcliffe & party; 2) *Diabrotica mIn* sp. nov. DET. L.J. Meinke 2013. (UNSM) The specimens are provided with one additional printed red label: Holotype (or Paratype, respectively) *Diabrotica reysmithi* sp. nov. des. A. Derunkov et al. 2013.

Distribution: Costa Rica, Ecuador, Panama.

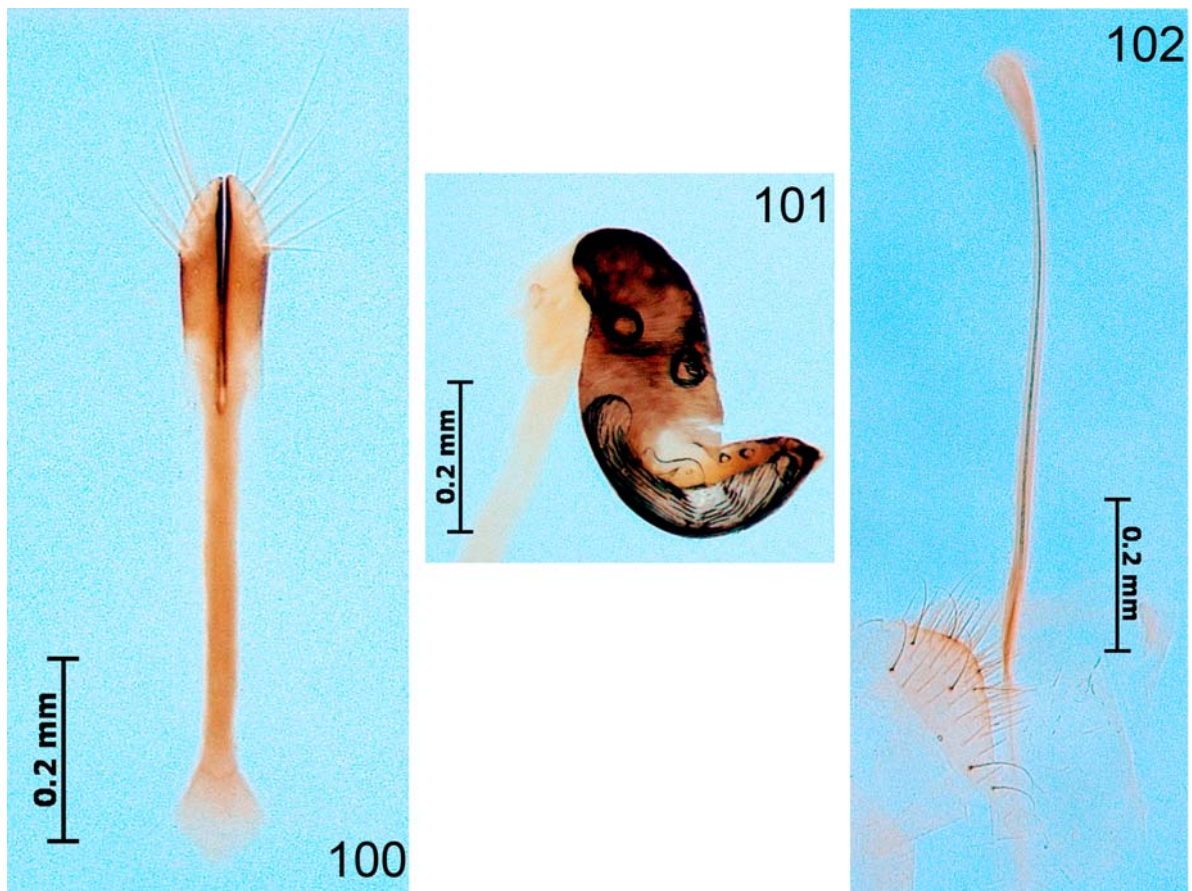
Host plants: Unknown.

Description: Body length 5.8–6.5 mm. Body width 2.9–3.2 mm. Head black; vertex shiny, with traces of thin shagreen. Maxillary palpi black or piceous; penultimate maxillary palpomere slightly incrassate; labrum black; mandibles black. Male and female antennae filiform, bi- or tricolored; antennomeres 1–3 yellow, with upper side darkened; antennomeres 4–8 gradually infuscated; antennomeres 9–10 uniformly sulphur yellow; antennomere 11 dark apically; antennomere 3 1.5 times or more as long as antennomere 2; length of antennae exceeding two thirds elytral length. Pronotum yellow or light cadmium, subquadrate (ratio of pronotal width to length 1.25), slightly convex, widest before middle, weakly bifoveate, with wide shallow foveae, not shagreened; two short, thin setae near large seta on each anterior angle; one short, thin seta near each posterior angle of pronotum. Prosternum and procoxa yellow. Scutellum yellow. Mesothorax and mesocoxa yellow. Metathorax black. Basic color of elytra yellow or rufous, with two black-metallic blue, sharp-edged, wide bands; one small spot present in middle of basal band on each elytron, this sometimes absent or sometimes enlarged and giving elytra oculate appearance; humeral calli black; elytral epipleura completely yellow. Elytra not sulcate, shiny, shagreened with thin, isodiametric mesh; punctures scattered, coarse; humeral plicae absent; sutural angle of elytra round. Abdomen yellow. Tarsi and tibiae black or piceous; all male tibiae of same shape; male metatibial spur short; femora yellow; trochanters yellow. Aedeagus symmetrical; internal sac with four sclerites; sclerite 4A forming elongate thin hook; sclerite 4B small, fan shaped, toothed apically; sclerite 4C elongate, forming handle-like hook, bearing large teeth apically; sclerite 4D forming wide, flat, arcuate plate, toothed apically. Tignum slender, weakly sclerotized;



Figures 95–99. *Diabrotica reysmithi* sp. nov. 95, dorsal view, holotype; 96, lateral view, holotype; 97, internal sac of the aedeagus, ventral view; 98, lateral view, right; 99, lateral view, left.

receptacle of spermatheca subcylindrical, not separated from pump; pump with small appendage at apex.



Figures 100–102. *Diabrotica reysmithi* sp. nov. **100**, vaginal palpi, paratype; **101**, spermatheca, paratype; **102**, tignum, paratype.

Remarks: *Diabrotica reysmithi* is very similar to *D. militaris* Jacoby, *D. josephbalyi* and *D. fasciata* Kirsch. They can be separated by the following features: the size and the shape of the band edges are different in all four species. The number of internal sac sclerites is four in *D. reysmithi*, but five in all other species. The shape of the internal sac sclerites distinguishes *D. reysmithi* from all other species too.

Etymology: We dedicate this species to Ray F. Smith, an author of an indispensable “Clarification of the status of the type specimens of Diabroticites” (Smith & Lawrence 1967).

***Diabrotica salvadorensis* Derunkov, Prado, Tishechkin, Konstantinov sp. nov.** (Figs 103–110)

urn:lsid:zoobank.org:act:878D3B98-9556-46B8-A10E-B53D5AA6699A

Type material: Holotype male: 1) No 714.210, Date. 3.14.57, Loc. SAN SALVADOR, Col. PAB; 2) det. R.F. Smith 1963, *Diabrotica* n.sp. near *D. pulchra* (Sahlberg). (USNM)

Paratypes: Male: 1) Granada; 2) Nicaragua Salle Coll.; 3)1135; 4) Sp. figured; 5) *D. albosignata* Baly = *pulchra* Sahlb; 6) Godman-Salvin Coll., Biol. Centr.-Amer. (BMNH)

Female: 1) San Joaquin, Vera Paz. Champion; 2) Godman-Salvin Coll., Biol. Centr.-Amer.

(BMNH) **Male:** 1) El Salvador: Santa Anna 6.0 km W. Hwy CA1 above Lago de Coatepeque 853 mts. 01 June 1973; 2) Erwin&Hevel Central American Expedition, 1973. (AVD) **Female:** 1) No 444-766A, Date. 14-V-54, Loc. La Union, Col. C.A.B. (AVD) **2 females with the same label:** 1) No 444-506B, Date. 17-III-55, Loc. Rosario Cuscatlan, Col. M.S.V. (USNM) **3 females with the same label:** 1) No 444-218A, Date. 20-XI-53, Loc. Rosario Cuscatlan, Col. M.S. (USNM) **Female:** 1) El Salvador: 4 miN Santiago de Maria, 29 August 1972, G.F.& S. Hevel. (USNM) **Female:** 1) BELIZE, STANN CREEK Sittee Point 22 – 30 April 1987, Spangler&Faitoute; 2) malaise trap at Possum Point Biological Station. (USNM). The specimens are provided with one additional printed red label: Holotype (or Paratype, respectively) *Diabrotica salvadorensis* sp. nov. des. A. Derunkov et al. 2013.

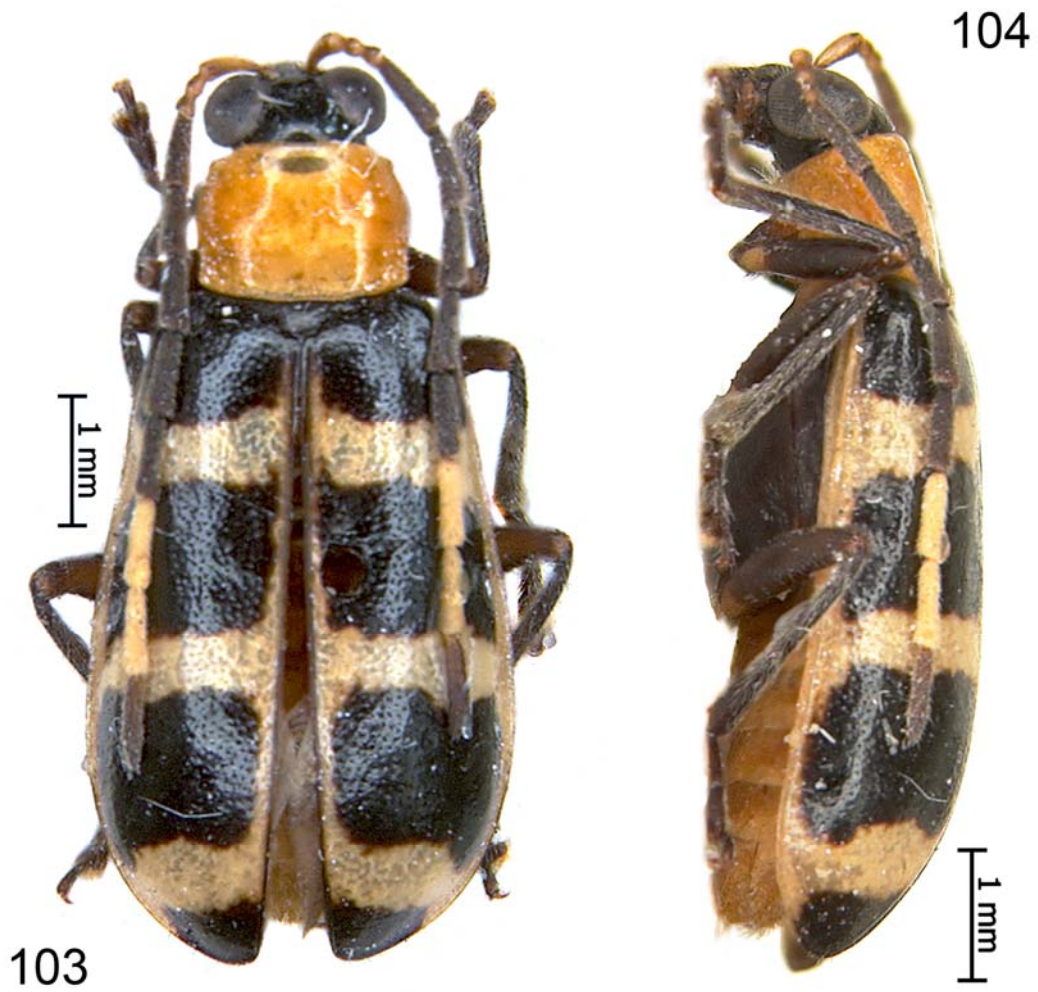
Distribution: Belize, El Salvador, Guatemala, Nicaragua.

Host plants: Unknown.

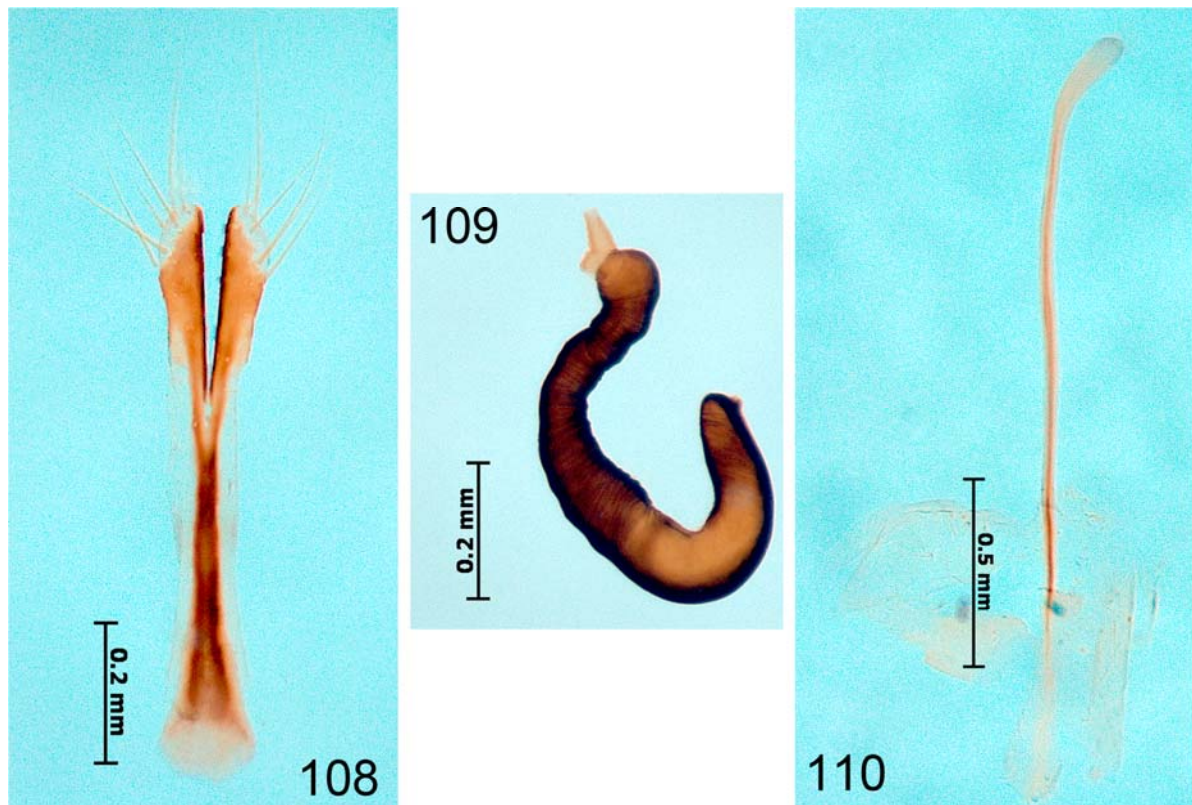
Description: Body length 6.2–6.5 mm. Body width 2.8–2.9 mm. Head black; vertex shiny. Mouthparts amber brown; penultimate maxillary palpomere slightly incrassate; labrum black. Male and female antennae filiform, bi- or tricolored; antennomeres 1–3 yellow, with darkened upper side; antennomeres 4–8 brussels brown; antennomeres 9–10 sulphur yellow; antennomere 11 completely dark (brussels brown); in male, length of antennomere 3 subequal to length of antennomere 2; male antennomeres 2 and 3 together equal to half or to less than half length of antennomere 4; male antennal length exceeding two thirds elytral length; male antennomeres 4–11 thick and robust; in female, antennomere 3 1.5 or more times as long as antennomere 2; female antennomeres 4–11 thin, thinner than in male; female antennae shorter than male antennae. Pronotum yellow or light cadmium, slightly transverse (ratio of pronotal width to length 1.32–1.36), widest before middle, nonfoveate, shiny, shagreened with minute wrinkles visible under high magnification; three short thin setae placed near large setae on each anterior angle; one short thin seta present near each posterior angle of pronotum. Scutellum black. Prosternum yellow; procoxa and mesocoxa dark (black or brussels brown) or entirely black. Mesothorax yellow, quite often infuscated. Metathorax black or chestnut. Basic color of elytra yellow or rufous, with 4 black, sharp-edged bands; humeral calli black; elytral epipleura completely yellow or darkened basally from 1/3 to 1/2 of length. Elytra surface not sulcate, slightly shiny, shagreened with strong isodiametric shagreening; punctures scattered, fine; humeral plicae absent; sutural angle of elytra round. Abdomen yellow. Legs black, sometimes with femora bicolored, with yellow inner side; male metatibial spur short; trochanters yellow. Aedeagus symmetrical; internal sac with four sclerites; sclerite 4A forming thick, short hook; sclerite 4B forming long, pointed hook; sclerite 4C forming wide, thick, large plate, bearing large teeth apically and laterally; sclerite 4D forming wide, flat, arcuate, apically toothed plate. Tignum slender, weakly sclerotized; receptacle of spermatheca subcylindrical, elongate, of gooseneck shape, not separated from pump; pump with small appendage at apex.

Remarks: *Diabrotica salvadorensis* is very similar to *D. pulchra* (Sahlberg) and *D. perkinsi*. They can be separated by the following features: there are four internal sac sclerites in *D. salvadorensis*, but five sclerites in *D. pulchra* and *D. perkinsi*; legs are usually black in *D. salvadorensis*, but yellow or with bicolored femora in *D. pulchra* and *D. perkinsi*; the scutellum is black in *D. salvadorensis*, but yellow in *D. perkinsi*.

Etymology: This species is named after the country of El Salvador, where the holotype was collected.



Figures 103–107. *Diabrotica salvadorensis* sp. nov. **103**, dorsal view, holotype; **104**, lateral view, holotype; **105**, internal sac of the aedeagus, ventral view; **106**, lateral view, left; **107**, lateral view, right.



Figures 108–110. *Diabrotica salvadorensis* sp. nov. **108**, vaginal palpi, paratype; **109**, spermatheca, paratype; **110**, tignum, paratype.

***Diabrotica* sel Derunkov, Prado, Tishechkin, Konstantinov sp. nov.** (Figs 111–120)

urn:lsid:zoobank.org:act:80E5F683-12CD-46A7-87C9-DA18CDB6F299

Type material: Holotype male: 1) PANAMA: Barro Colorado Isl. 10-17.V.64. WD & SS Duckworth. (USNM) **Paratypes: 33 males with the label:** 1) PANAMA: Barro Colorado Isl. 10-17.V.64. WD & SS Duckworth. (23 males – USNM; 5 males – MCZ; 5 males – AVD) **2 males with the label:** 1) PANAMA: Barro Colorado Isl. 10-20 IV 1965. WD & SS Duckworth. (USNM) **4 males with the label:** 1) PANAMA: Barro Colorado Isl. 28-30.IV.64. WD & SS Duckworth. (1 male – USNM; 3 males – BMNH) **2 males with the label:** 1) PANAMA: Barro Colorado Isl. 18-28.IV.64. WD & SS Duckworth. (USNM) **2 males with the label:** 1) PANAMA: Barro Colorado Isl. 1-9.V.64. WD & SS Duckworth. (BMNH) **5 males and 4 females:** 1) PANAMA: Bocas d. Toro, Miramar, 9 N, 82 15' W VII-1979 H. Wolda; **Male:** 1) PANAMA: C. Z. Skunk Hollow, 6 mi. NW Gatun Locks V-21-1982 B.C. Ratcliffe & C. & K. Messenger. (USNM) **Male:** 1) Tabernilla Canal Zone Panama; 2) May (??); 3) Aug. Busck Collector. (USNM) **3 males:** 1) Barro Colorado CZ V.23-4'40; 2) JasZetek No 4656. (USNM) **Male:** 1) Barro Colorado CZ Apr. '41; 2) Collected at light; 3) JasZetek No 4781; 4) Lot No 41-8655. (USNM) **Male:** CANAL ZONE: 100 m 5.0 mi. NW Gamboa 09° 10' 00'' N 079° 45' 00'' W 23-24 Oct 1975; 2) Canopy fogging experiment in Luehea seemannii Pyrethrin fog; 3) sample 6B 24 X 1975. (USNM) **Male:** 1) Trinidad Rio Pan 21.3.12; 2) A Busck coll. (USNM) **Male:** 1) Trinidad Rio Pan May 7.11 August Busck. (USNM) **Male:** 1) Trinidad Rio Pan May 2.11 August Busck. (USNM) **Male:** 1) Trinidad Rio Pan May 9.11 August Busck. (USNM) **3 males:** 1) Barro Colorado Is CZ Apr. '40; 2) JasZetek No 4647. (USNM) **Female:** CANAL ZONE: 100 m 5.0 mi. NW Gamboa 09° 10' 00'' N

079° 45' 00'' W 23-24 Oct 1975; 2) Canopy fogging experiment in *Luehea seemannii* Pyrethrin fog; 3) sample 2.1, 23 X 1975; 4) Chrysom Gal # 28. (USNM) **Female:** CANAL ZONE: 100 m 5.0 mi. NW Gamboa 09° 10' 00'' N 079° 45' 00'' W; 2) Canopy fogging experiment in *Luehea seemanni* Pyrethrin fog; 3) sample 1-2, 12 July 1976, Montgomery & Lubin coll. (USNM) **Female:** 1) Turrialba Costa Rica; 2) CollSchild & Burgdorf. (USNM) **1 male and 1 female:** 1) COSTA RICA Jul 22-31, 1969 DHJ 80 m elev; 2) Finca La Selva nr Puerto Viejo Sarapiquí Dist. Heredia Prov.; 3) Collected by D.H. Janzen. (USNM) **Male:** 1) COSTA RICA: Turrialba 13-17.III.65 SS & WD Duckworth. (USNM) **Male:** 1) COSTA RICA Hederia La Selva Biol. Stn. 11 January 1995 CL&SL Staines. (USNM) **Male:** 1) GUATEMALA at Miami 23-IX-1968; 2) RPHiggins w. Plantains fruit 68-24052; 3) *Diabrotica trifurcata* Jacoby d. R.E.White. (USNM) **Male:** 1) Colombia, Valle near Anchicaya m. Rio Tigrur 24 August, 1969 D.H. Messersmith; 2) 15B. (USNM). The specimens are provided with one additional printed red label: Holotype (or Paratype, respectively) *Diabrotica sel* sp. nov. des. A. Derunkov et al. 2013.

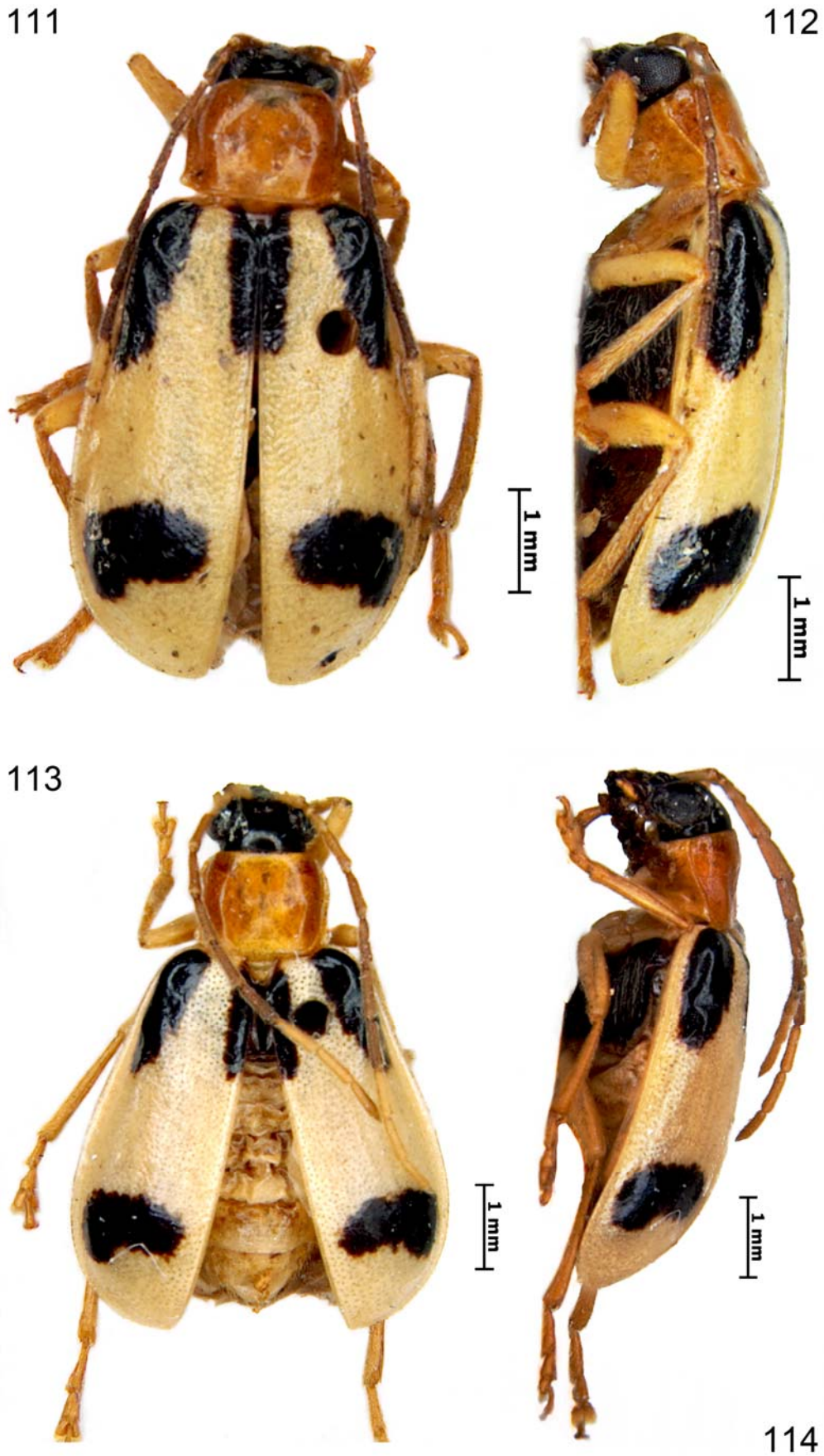
Distribution: Colombia, Costa Rica, Guatemala, Panama.

Host plants: Fogged from *Luehea seemanni*.

Description: Body length 6.0–6.9 mm. Body width 3.2–3.9 mm. Head black; vertex dull, shagreened with long, narrow mesh. Maxillary palpi yellow; penultimate maxillary palpomere slightly incrassate; labrum black; mandibles piceous, with apex slightly lightened. Male and female antennae filiform, bi- or tricolored; antennomeres 1–3 yellow or yellow with darkened upper side; antennomeres 4–8 gradually infuscated; antennomeres 9–10 uniformly light cadmium; antennomere 11 completely light cadmium or dark apically; antennomere 3 1.5–2 times as long as antennomere 2; antennae exceeding two thirds elytral length; inner margin of antennomeres 4–11 in male with thin longitudinal costa. Pronotum yellow, yellow ocher or ochraceous orange, subquadrate (ratio of pronotal width to length 1.26–1.35), weakly bifoveate, with wide shallow foveae, shagreened with narrow, long mesh. Prosternum and procoxa yellow. Scutellum yellow or amber yellow. Mesothorax and mesocoxa yellow. Metasternum and metepisternum black; metepimeron yellow. Basic color of elytra yellow or rufous, with two black-metallic blue, sharp-edged bands, one in basal area of elytra and another beyond middle; generally, basal band reduced to variable degree, appearing as trident with short humeral and sutural vittae; posterior band usually disjunct in sutural area; humeral calli black; elytral epipleura completely yellow. Humeral plicae absent; sutural angle of elytra round or obtusely angled; elytra matt, shagreened with dense, narrow mesh; punctuation scattered, fine. Abdomen yellow. Legs yellow; all male tibiae of same shape; male metatibial spur short; trochanters yellow. Aedeagus symmetrical; internal sac with five sclerites; sclerite 5A forming wide, flat plate, toothed apically and bearing short, thick hook basally; sclerite 5B forming elongate, handle-like hook, bearing 5–10 big teeth apically; sclerite 5C forming short, pointed hook; sclerite 5D forming short pointed hook; sclerite 5E forming flat, arcuate plate, toothed apically and laterally. Tignum slender, weakly sclerotized; receptacle of spermatheca subcylindrical, not separated from pump; pump with small appendage at apex.

Remarks: *Diabrotica sel* is similar to *D. trifurcata* Jacoby. They can be separated by the following features: the pronotum is strongly shagreened in *D. sel*, but not shagreened in *D. trifurcata*; the tarsi and tibiae are yellow in *D. sel*, but black or bicolored in *D. trifurcata*.

Etymology: We name this species after the Systematic Entomology Laboratory (SEL), where this study on North and Central American *Diabrotica* took place.



Figures 111–114. *Diabrotica sel* sp. nov. 111, dorsal view, holotype; 112, lateral view, holotype; 113, dorsal view, paratype; 114, lateral view, paratype.



Figures 115–120. *Diabrotica sel* sp. nov. **115**, internal sac of the aedeagus, ventral view; **116**, lateral view, right; **117**, lateral view, left; **118**, vaginal palpi, paratype; **119**, spermatheca, paratype; **120**, tignum, paratype.

***Diabrotica spangleri* Derunkov, Prado, Tishechkin, Konstantinov sp. nov.** (Figs 121–128)

urn:lsid:zoobank.org:act:B96FDB4A-B1A1-4186-B954-C9781A379F71

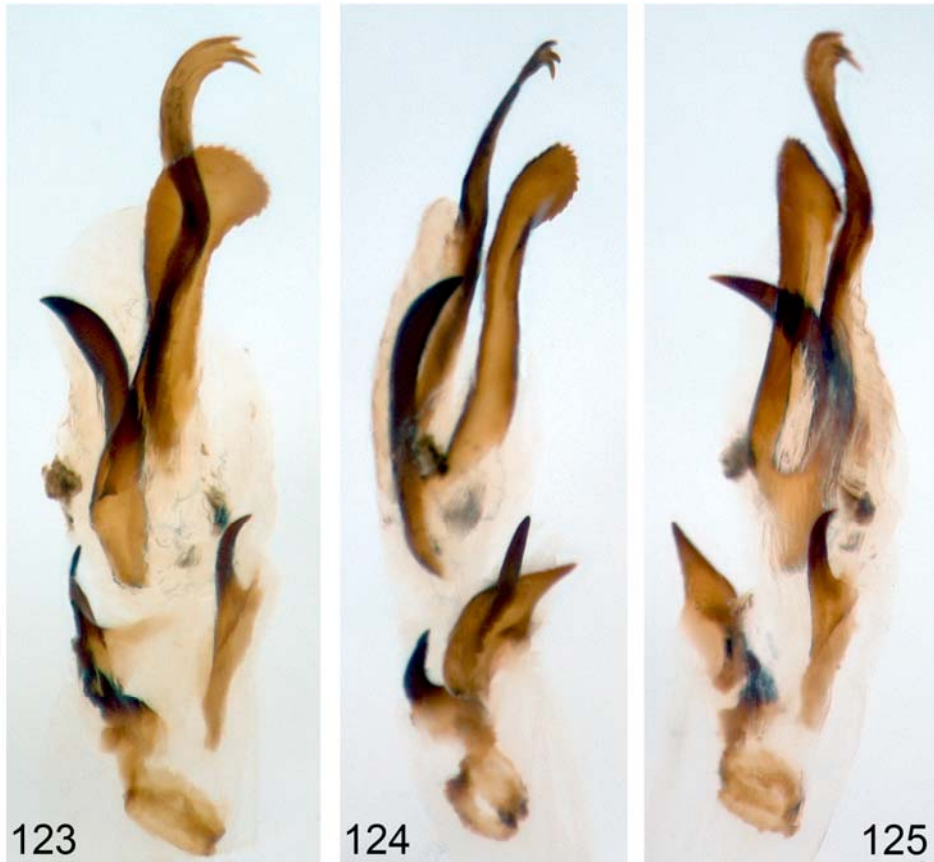
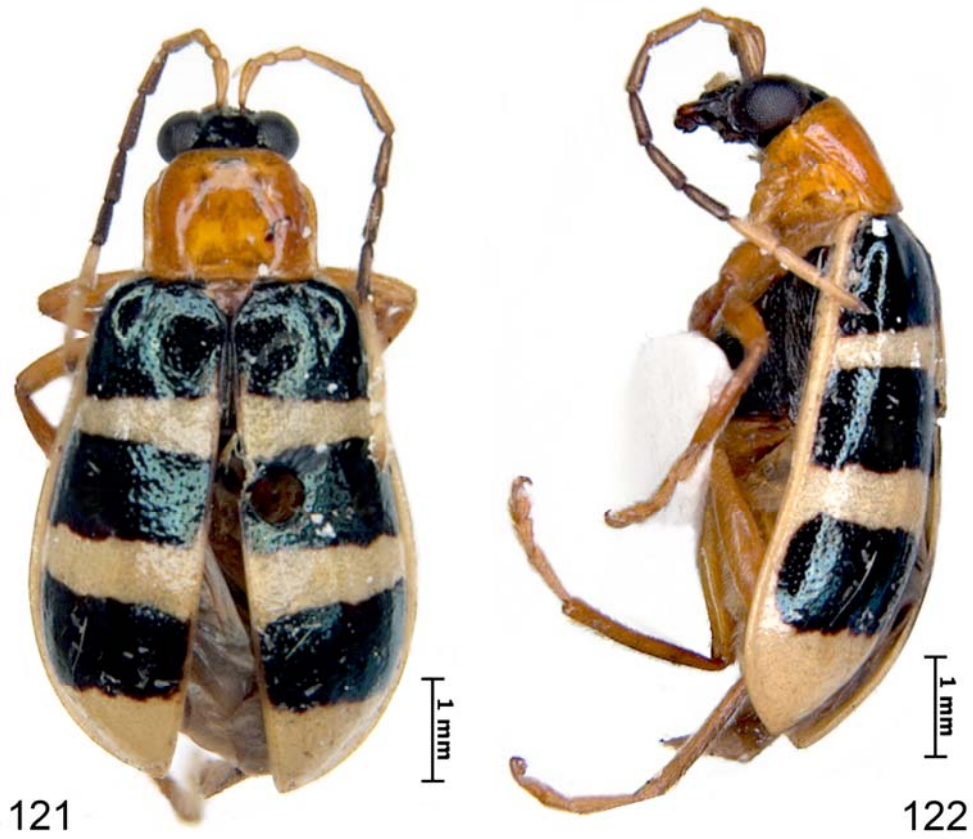
Type material: Holotype male: 1) COSTA RICA Turrialba VII-15-19-65 P.J. Spangler. (USNM) **Paratypes: Female:** 1) COSTA RICA: Turrialba 22-28.II.65 SS&WDDuckworth; 2) *Diabrotica* n. spp. nr. couplet 68 Det. J. Krysan 198 [crossed out]. (USNM) **Male:** 1) COSTA RICA: Turrialba 22-28.II.65 SS&WDDuckworth. (USNM) **Female:** 1) COSTA RICA: Turrialba 22-28.II.65 SS&WDDuckworth. (AVD) **Female:** 1) Turrialba Costa Rica 12 June 1951 OLCartwright. (USNM) **Female:** 1) Turrialba Costa Rica Sept. 9, 1966; 2) Robin Andrews Collector 71. (USNM) The specimens are provided with one additional printed red label: Holotype (or Paratype, respectively) *Diabrotica spangleri* sp. nov. des. A. Derunkov et al. 2013.

Distribution: Costa Rica.

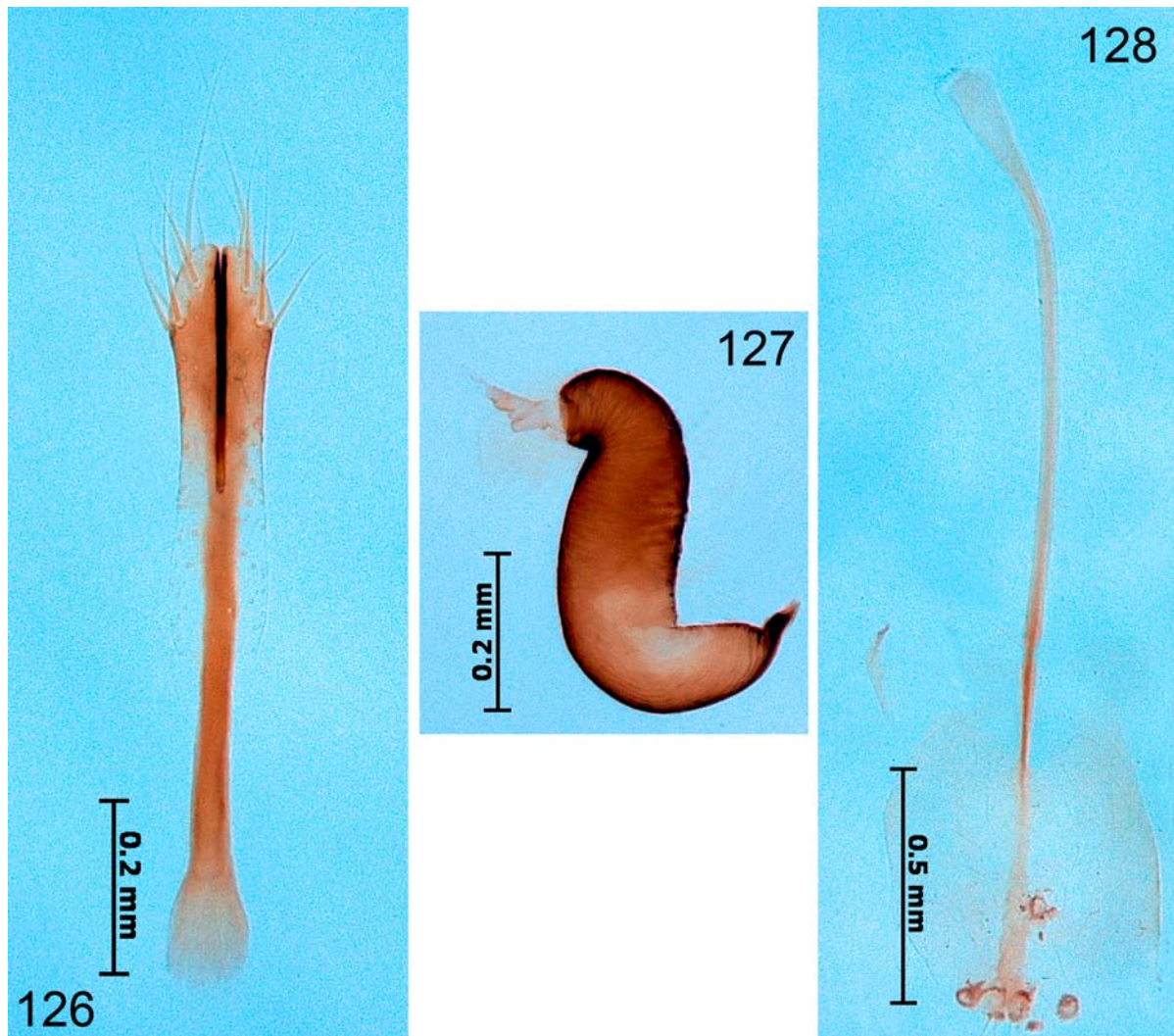
Host plants: Unknown.

Description: Body length 6.7–7.5 mm. Body width 3.2–4.2 mm. Head black; vertex shiny, shagreened with minute wrinkles. Maxillary palpi chestnut; penultimate maxillary palpomere slightly incrassate; labrum black; mandibles piceous, with apex slightly lightened. Male and female antennae filiform, bi- or tricolored; antennomeres 1–3 yellow; antennomeres 4–8 gradually infuscated; antennomeres 9–10 uniformly light cadmium; antennomere 11 dark apically; antennomere 3 less than 1.5 times as long as antennomere 2; in male, inner margin of antennomeres 4–11 with thin longitudinal costa; male antennal length exceeding two thirds elytral length; antennal length in females equal to male antennae length. Pronotum ochraceous orange, subquadrate (ratio of pronotal width to length 1.29), slightly convex, widest before middle, nonfoveate, shiny, not shagreened; 3–4 short, thin setae present near large seta on each anterior angle; 1–2 short, thin setae near each posterior angle of pronotum. Prosternum and procoxa yellow. Scutellum yellow or ochraceous orange. Mesothorax yellow. Metathorax black; metepimeron amber brown. Basic color of elytra yellow or rufous, with three black-metallic blue, sharp-edged bands; humeral calli black; elytral epipleura completely yellow. Elytra not sulcate, shiny, with thin shagreen, with scattered, coarse punctures; humeral plicae absent; sutural angle of elytra dentiform, not strongly pronounced. Abdomen yellow. Tarsi yellow or yellow ochre; tibiae bicolored, yellow, with piceous or testaceous line at outer edge, or extensively darkened; male protibiae thickened; male metatibial spur short; femora yellow or yellow ochre; trochanters yellow. Aedeagus symmetrical; internal sac with five sclerites; sclerite 5A forming wide, flat plate, toothed apically and bearing long, pointed hook basally; sclerite 5B forming elongate, handle-like hook, bearing four large teeth apically; sclerite 5C forming short pointed hook; sclerite 5D forming short pointed hook; sclerite 5E forming flat pointed plate. Tignum slender, weakly sclerotized; receptacle of spermatheca subcylindrical, not separated from pump; pump with small appendage at apex.

Remarks: *Diabrotica spangleri* sp. nov. is very similar to *D. viridifasciata* Jacoby, *D. pulchra* (Sahlberg), *D. salvadorensis* and *D. perkinsi*. They can be separated by the following features: antennae are bicolored in *D. spangleri*, but yellow in *D. viridifasciata*; sclerite 5A is a wide, flat plate toothed apically and bearing a long pointed hook basally in *D. spangleri*, but it is a wide, flat plate toothed apically and laterally in *D. viridifasciata*; sclerite 5B in *D. spangleri* is thinner than in *D. viridifasciata* and not widened apically as in *D. viridifasciata*;



Figures 121–125. *Diabrotica spangleri* sp. nov. **121**, dorsal view, holotype; **122**, lateral view, holotype; **123**, internal sac of the aedeagus, ventral view; **124**, lateral view, right; **125**, lateral view, left.



Figures 126–128. *Diabrotica spangleri* sp. nov. 126, vaginal palpi, paratype; 127, spermatheca, paratype; 128, tignum, paratype.

there are five internal sac sclerites in *D. spangleri*, but four sclerites in *D. salvadorensis*; in *D. spangleri*, the hook at the base of sclerite 5A is thick and strong, folded on one side and associated with the flat plate; in *D. pulchra*, the hook and plate in sclerite 5A lie in the same plane; in *D. perkinsi*, sclerite 5A is a pointed hook, widened basally and bearing a short pointed hook on the base; legs are yellow with bicolored tibiae in *D. spangleri*, but femora are bicolored in *D. perkinsi*, and legs are black in *D. salvadorensis*; there are three bands on the elytra in *D. spangleri*, but four bands in *D. pulchra*, *D. salvadorensis* and *D. perkinsi*.

Etymology: We name this species after Paul Spangler, beetle curator at the National Museum of Natural History, Washington, DC, who collected the holotype.

***Diabrotica waltersi* Derunkov, Prado, Tishechkin, Konstantinov sp. nov.** (Figs 129–136)

urn:lsid:zoobank.org:act:D8706351-8991-49E8-B60C-ACE39BC699DC

Type material: Holotype male: 1) Bugaba, Panama. Champion; 2) Godman-Salvin Coll., Biol. Centr.-Amer. (BMNH) **Paratypes: Female:** 1) V. de Chiriqui, 25-4000 ft. Champion.; 2) *D. elegantula* Baly. (USNM) **Male:** 1) Bugaba, Panama. Champion; 2) *Diabrotica elegantula* Baly; 3) Baly Coll. (BMNH) **Male:** 1) V. de Chiriqui, 4000-6000 ft. Champion.; 2) Godman-Salvin Coll., Biol. Centr.-Amer. (BMNH). The specimens are provided with one additional printed red label: Holotype (or Paratype, respectively) *Diabrotica waltersi* sp. nov. des. A. Derunkov et al. 2013.

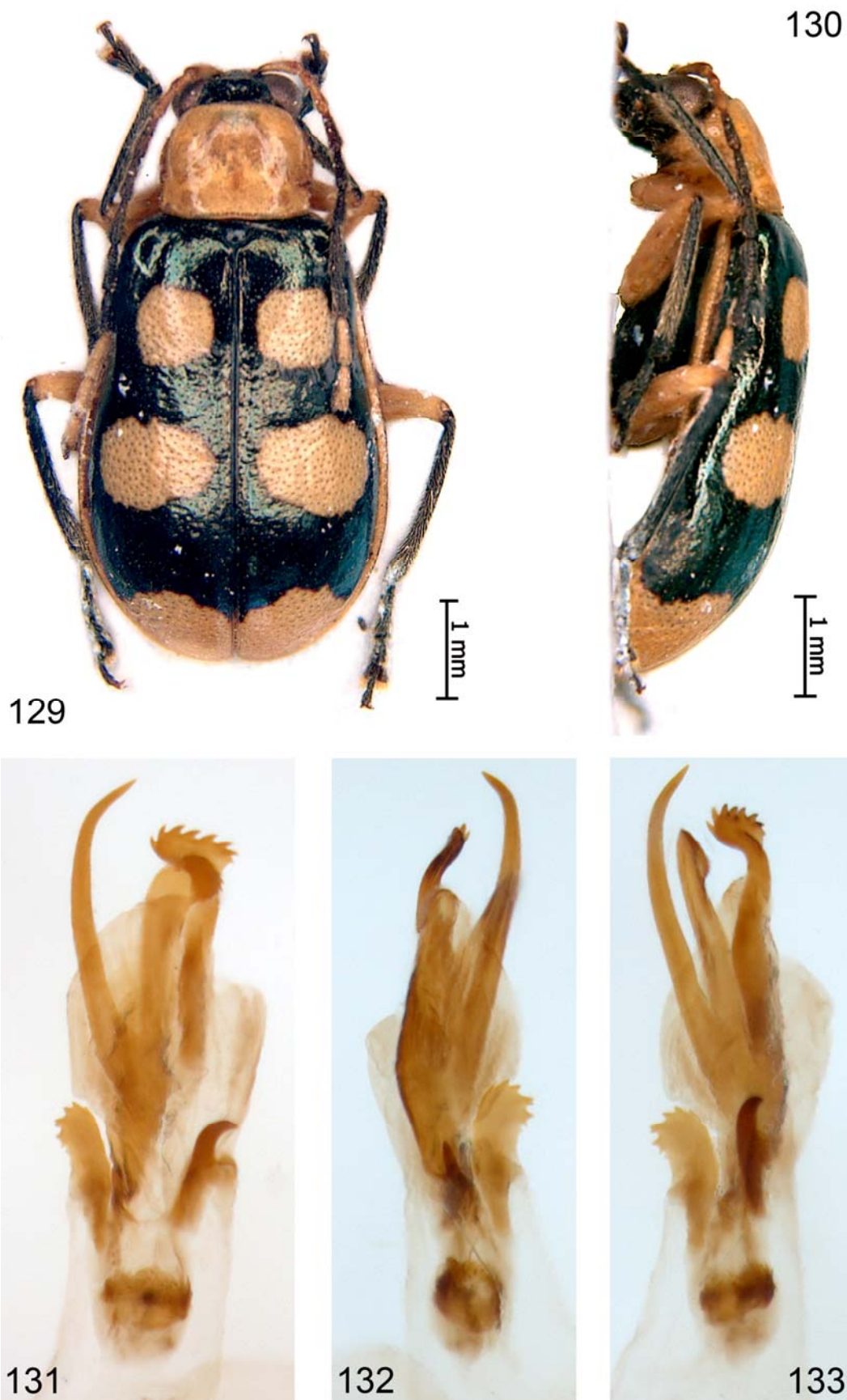
Distribution: Panama.

Host plants: Unknown.

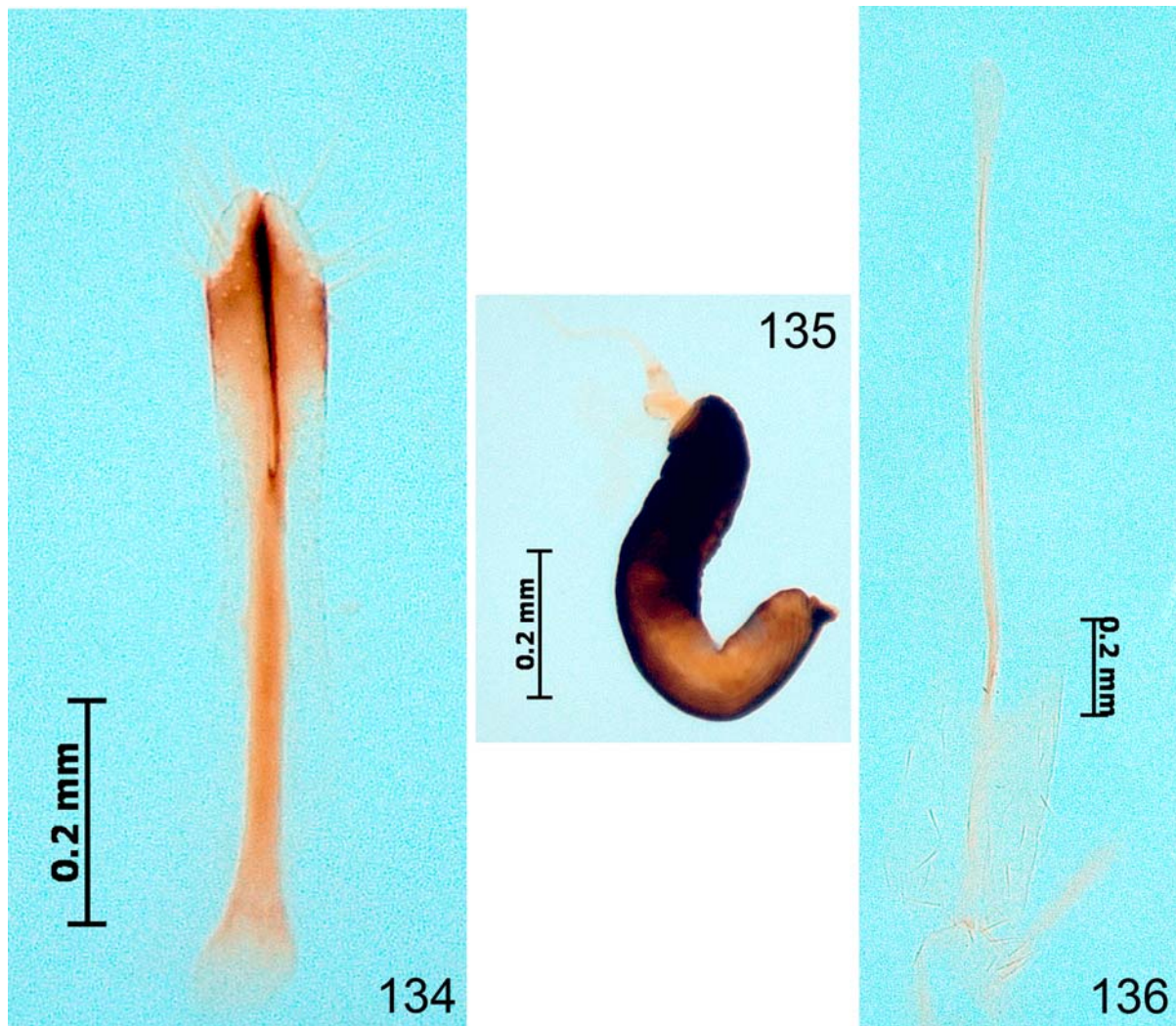
Description: Body length 5.6–6.3 mm. Body width 3.0–3.3 mm. Head black, shiny, not shagreened. Maxillary palpi black or chestnut; penultimate palpomere slightly incrassate; labrum and mandibles black. Antennae filiform, bi- or tricolored; antennomeres 1–3 and 9–11 yellow or sulphur yellow; antennomeres 2–3 darkened on upper sides; antennomeres 4–8 uniformly cinnamon brown; antennomere 11 dark apically; antennomere 3 less than 1.5 times as long as antennomere 2; antennae slightly exceeding half elytral length; female antennal length equal to that of male. Pronotum yellow or mustard yellow, subquadrate (ratio of pronotal width to length 1.32), weakly bifoveate, with wide shallow foveae, shiny, not shagreened; two short, thin setae present near large seta on each anterior and posterior angle of pronotum. Prosternum and procoxa yellow. Scutellum black or amber brown; mesothorax yellow; metathorax black. Basic color of elytra yellow or rufous, with three sharp-edged metallic black, blue or green bands connected together and forming two round maculae, one in basal area of elytra and another in middle; humeral calli black; elytral epipleura completely yellow. Elytra surface not sulcate, shiny, with thin isodiametric shagreen; humeral plicae absent; sutural angle obtusely angled; punctures scattered, coarse. Abdomen yellow. Tarsi and tibiae black or piceous; femora uniformly yellow; male metatibial spur short. Aedeagus symmetrical; internal sac with five sclerites; sclerite 5A forming wide, flat plate, toothed apically and bearing long pointed hook basally; sclerite 5B forming elongate, handle-like hook, bearing 5–10 large teeth apically; sclerite 5C forming short thick hook with "collar"; sclerite 5D forming short, pointed hook; sclerite 5E forming flat arcuate, plate toothed apically and laterally. Tignum slender, weakly sclerotized; receptacle of spermatheca subcylindrical, not separated from pump; pump with small appendage at apex.

Remarks: *Diabrotica waltersi* is very similar to *D. elegantula* Baly and to *D. trifurcata* Jacoby (*linensis* variety). They can be separated by the following features: the body of *D. waltersi* is more convex and shorter than in both other species; the medium maculae are almost round in *D. waltersi*, while transverse in *D. elegantula*; the color of the bands is usually black-metallic blue in *D. waltersi*, but black-metallic green in *D. elegantula*; the pronotum of *D. waltersi* is not shagreened, while in *D. elegantula* it is shagreened with microsculpture in the form of a narrow, long mesh; internal sac sclerite 5B in *D. waltersi* is an elongate, handle-like hook, bearing 5–10 large teeth apically, but there are only four large teeth in *D. trifurcata*.

Etymology: We dedicate this species to Terrence Walters (USDA, Center for Plant Health Science and Technology). Without his help, support and encouragement, this project would not have been possible.



Figures 129–133. *Diabrotica waltersi* sp. nov. **129**, dorsal view, holotype; **130**, lateral view, holotype; **131**, internal sac of the aedeagus, ventral view; **132**, lateral view, left; **133**, lateral view, right.



Figures 134–136. *Diabrotica waltersi* sp. nov. 134, vaginal palpi, paratype; 135, spermatheca, paratype; 136, tignum, paratype.

Acknowledgements

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