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A review of the genus *Beltia* Jacoby (Chrysomelidae: Eumolpinae: Eumolpini), with descriptions of fourteen new species from Costa Rica, Panama, and northwestern South America

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A review of the genus *Beltia* Jacoby (Chrysomelidae: Eumolpinae: Eumolpini), with descriptions of fourteen new species from Costa Rica, Panama, and northwestern South America

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Abstract. Adults of the Neotropical genera *Beltia* Jacoby (type species: *Beltia nicaraguensis* Jacoby) and *Colaspoides* Laporte (type species: *Colaspoides limbata* [Olivier]) (Chrysomelidae: Eumolpinae: Eumolpini) are difficult to separate. In this paper, the genus *Beltia* Jacoby is redefined and diagnosed by features of the pygidium, lateral wings of the prosternum, and metatibiae to distinguish it from *Colaspoides* and other medium-sized, ovate Eumolpini. Fourteen new species from Costa Rica, Panama, Colombia, Ecuador, and Peru are described and illustrated—*Beltia awapita*, *B. confusa*, *B. gorgona*, *B. herreri*, *B. ledesmae*, *B. napoensis*, *B. osa*, *B. rugosa*, *B. sanchezae*, *B. talaga*, *B. tilarana*, *B. tisingalita*, *B. tsachila* and *B. vacilona*. A key and range maps for all species recognized herein are provided. *Colaspoides placidula* Bechyně, *Colaspoides placidula angustomarginata* Bechyně, *Colaspoides chiriquensis* Jacoby, and *Colaspoides weyrauchi* Bechyně are transferred to *Beltia* and redescribed. *Colaspoides turrialbana* Bechyně is synonymized with *B. chiriquensis*, and *Colaspoides chanchamaya* Bechyně is synonomized with *B. weyrauchi*. Morphological similarities with *Beltia* indicate that Old World *Colaspoides* also should be removed from *Colaspoides* s. str.

Key words. *Colaspoides*, Central America, Ecuador, Colombia, Peru, key, taxonomy.

Resumen. El género *Beltia* Jacoby (especie tipo: *Beltia nicaraguensis* Jacoby) y *Colaspoides* Laporte (especie tipo: *Colaspoides limbata* [Olivier]) (Chrysomelidae: Eumolpinae: Eumolpini) son difíciles de separar. En este trabajo, el género *Beltia* Jacoby es redefinido y diagnosticado por characteres del pigídio, las alas laterales del proesterno, y las metatibias para distinguirlo de *Colaspoides* y otros géneros de forma ovalada y tamaño mediano en los Eumolpini. Se describe catorce especies nuevas de Costa Rica, Panamá, Colombia, Ecuador, y Perú—*Beltia awapita*, *B. confusa*, *B. gorgona*, *B. herreri*, *B. ledesmae*, *B. napoensis*, *B. osa*, *B. rugosa*, *B. sanchezae*, *B. talaga*, *B. tilarana*, *B. tisingalita*, *B. tsachila*, y *B. vacilona* son descritas y ilustradas. *Colaspoides placidula* Bechyně, *Colaspoides placidula angustomarginata* Bechyně, *Colaspoides chiriquensis* Jacoby, y *Colaspoides weyrauchi* Bechyně son transferidas a *Beltia* y son redefinidas. Se proponen *Colaspoides turrialbana* Bechyně como sinónimo de *B. chiriquensis*, y *Colaspoides chanchamaya* Bechyně como sinónimo de *B. weyrauchi*. Se proporcionan una clave y mapas de distribución de todas las especies. Los rasgos morfológicos en común con *Beltia* señalan que las *Colaspoides* del Viejo Mundo también deben ser sacadas de *Colaspoides* s. str.

Palabras clave. *Colaspoides*, América Central, Ecuador, Colombia, Perú, clave, taxonomía.

Introduction

During routine identifications of Costa Rica eumolpines, I found that collections of the common dark blue *Colaspoides unicolor* Jacoby often contained a less common and almost identical dark blue beetle that nevertheless differed from *Colaspoides* Laporte in two small but important details. *Colaspoides* adults lack a pygidial elytral locking groove (Flowers 1996), whereas the unknown form has a grooved pygidium. Additionally, the surface of the lateral wings of the prosternum in *Colaspoides* is convex, as well as curved on the anterior edge. In the new form, the surface of these sclerites is flat to concave, although with a similar curved anterior margin. Review of the collections in the National Biodiversity Institute of Costa Rica (INBio; now the Museo Nacional de Costa Rica) as well as the unidentified accumulations of Eumolpinae in several other museums revealed other species that superficially appeared to be *Colaspoides* but possessed pygidial grooves and concave surfaces of the prosternal wings.

After review of the Neotropical eumolpine genera, I determined that these species share the above characters with the monotypic genus *Beltia* Jacoby (1881) (Chrysomelidae: Eumolpinae: Eumolpini), which currently contains *Beltia nicaraguensis* Jacoby. In this contribution, I redefine and revise the genus, describe 14 new species, and expand the distribution to northwestern South America.

Materials and Methods

Museum Study

The study involved examination of 199 adult specimens from 13 collections and fieldwork in Costa Rica and Ecuador. Specimens were deposited in and/or examined from the following institutions:

BYU	Monte L. Bean Life Science Museum, Brigham Young University, Provo, UT, USA
EGRC	Edward Riley Collection, College Station, TX, USA
FSCA	Florida State Collection of Arthropods, Gainesville, FL, USA
IAVH	Instituto de Investigación de Recursos Biológicos Alexander von Humboldt, Bogotá, Colombia
INIAP	Colección de la Estación Experimental Tropical Pichilingue, Instituto Nacional de Investigaciones Agropecuarios, Quevedo, Ecuador
MCZ	Museum of Comparative Zoology, Harvard University, Cambridge, MA, USA
MNCR-A	Museo Nacional de Costa Rica, Colección de Artrópodos, Santo Domingo de Heredia, Costa Rica (formerly INBio)
MZUCR	Museo de Zoología, Universidad de Costa Rica, San Pedro, San José, Costa Rica
NHMB	Naturhistorisches Museum, Basel, Switzerland
NHMUK	The Natural History Museum [formerly British Museum (Natural History)], London, United Kingdom
QCAZ	Museo de Zoología de la Pontificia Universidad Católica del Ecuador, Quito, Ecuador
SEMC	Snow Entomological Museum, University of Kansas, Lawrence, KS, USA
TAMU	Texas A&M University Collection, College Station, TX, USA
USNM	National Museum of Natural History, Smithsonian Institution, Washington, DC, USA

Specimen Study

Specimens were examined under Olympus stereomicroscopes at INBio and Florida A&M University. Genitalia dissections were placed in glycerine in polyethylene micro vials and pinned below their respective specimens. Whole specimens were photographed with Spectroscopy™ software at these two institutions or at the Florida State Collection of Arthropods. Genitalia photographs were taken with a Nikon Coolpix 995 through a stereomicroscope, and photos were converted to line drawings with Photoshop®. Terminology of the genitalia follows Flowers (1995, 1999) and Askevold and Flowers (1994), and Riley and Barney (2015) for the apex of the median lobe.

Data labels for holotypes and allotypes are reproduced in full, with two slashes (//) between information from different labels on a pin. For paratypes and other specimens, the data are arranged alphabetically by country and province. Multiple specimens bearing the same data are grouped together and the data are given in full for the first specimen in the series; data that are the same as the first are so indicated for the other specimens. Specimen codes are available for some specimens, e.g. INBIOCRI001934711. Localities of Costa Rican specimens from the INBio inventory are given in Lambert coordinates. The INBio online database server would convert these coordinates into latitude and longitude; unfortunately, the INBio website has recently been discontinued. Distribution maps were prepared using SimpleMappr (Shorthouse 2010). Natural history data, in the few cases where any are available, are provided in the individual species treatments.

Taxonomy

Eumolpinae

Eumolpini

Beltia Jacoby, 1881

Beltia nicaraguensis Jacoby 1881: 128; Blackwelder 1946: 656; Flowers 1996: 8, 24.

Figures 1–3, 5, 7–81

Type species. *Beltia nicaraguensis* Jacoby (1881: 128), by original description. Holotype deposited in MCZ.

Redescription. Body ovate, dorsally convex (Fig. 1); color dark to bright metallic blue, green, or copper; antennae, legs, and underside testaceous to dark metallic.

Head. Clypeus densely punctate, apex of clypeus emarginate. Frons strongly punctate, vertex finely to coarsely punctate, surface between punctures smooth to finely wrinkled, a median impressed line present or absent, antennal calli smooth, weakly swollen. Eyes oval, shallowly and broadly emarginate at antennal insertion. Antenna: Scape elongate oval, pedicel shorter than scape, distinctly shorter than flagellomere 1; antennomeres of male slender, each slightly wider at apex; antennomeres 3–6 slender, with scattered appressed setae; antennomeres 7–11 widened, densely pubescent, with whorl of long erect setae at apex of antennomeres 3–10; antennomere 11 spindle-shaped. Antennomeres 7–11 of females shorter and more cylindrical. Mouthparts: Apex of labrum emarginate or truncate, with two dorsal setae and paired long lateral setae at outer angles. Mandibles piceous, outer margin with sharp bend, lateral surface smooth and setose, a prominent seta on dorsal surface, apical teeth broad, pointed. Maxillary palp with apical segment spindle-shaped.

Thorax. Prothorax distinctly wider than long, pronotum convex, with posterior margin wider than anterior margin; anterior angles acute, directed anteriorly and downward, posterior angles acute; all angles with seta-bearing puncture; basal marginal bead present; lateral margins narrow, rounded; disc regularly punctate, with punctures separated by distance greater to less than their diameters; surface between punctures shining, with numerous punctulae. Undersurface of thorax smooth to finely wrinkled. Prosternum excavated for reception of gular area of head, subquadrate, sparsely punctate; intercoxal process truncate to markedly concave (Fig. 15). Lateral arms of prosternum with anterior margin convex or sinuate, surface setose in anterior half (Fig. 2). Proepimeron weakly concave, sparsely punctate, with punctures separated by distance greater than puncture diameter. Mesosternum subequal in width to prosternum, flat or convex between coxae. Metasternum punctate or alutaceous, with prostrate short setae; metepisternum broad, gradually narrowed posteriorly. Metendosternite (Fig. 7) with a small triangular base and long, narrow lateral branches. Hind wing (Fig. 8) with medio-cubital patch (Jolivet 1957, 1959) distinct.

Legs. Sparsely covered with short prostrate setae; all surfaces alutaceous. Femur strongly swollen in middle. Tibiae widened apically, protibia curved, mesotibia with broad, shallow subapical notch; tibiae multicarinate, deeply sulcate between apical dorsal carinae, metatibia with dorsal carinae forming a pair of high flanges above tarsal insertion (Fig. 5); with setae increasing in length and density toward apex of tibiae. Tarsi densely and uniformly pilose beneath; basal tarsomere of fore- and middle legs triangular, slightly expanded in male, second tarsomere broadly triangular, with acute apicolateral angles; third tarsomere longer than second, deeply bilobed; terminal tarsomere distinctly surpassing apex of third tarsomere; claws divergent, appendiculate.

Elytra. Evenly punctate, punctures larger than those of pronotum; surface between punctures smooth, with small punctulae; humeri prominent, subquadrate; basal calli weakly developed; postbasal depression shallow to obsolete. Sides of elytra subparallel in basal half, convergent in apical third; apices conjointly

rounded; a low posthumeral callus present behind humeral callus, followed by a small depression. Epipleuron narrow, slanted downward, tapering evenly from base to apex. Each elytron with three internal flanges at base and apex of sutural margin, and laterally at midlength; a field of tiny spicules present just anterior of lateral flange. Scutellum U-shaped, with base subequal to length; surface smooth, with few punctulae.

Abdomen. Segments subequal in length. Sterna with numerous short setae; male with pairs of submedian setae or submedian patches of longer setae on sterna III–V and a central patch on sternum VI; surface of segments smooth or alutaceous. Male sternum VII with lateral margins smooth, one or two weak depressions in center, long setae along posterior margin. Female sternum VII with lateral margins smooth or crenulate. Terga with row of spicules along basal margin of tergites II and III, and in some species laterally along base of tergum IV; upper surface of terga V and VI shagreened. Pygidium (Fig. 3) with longitudinal median groove broad, shallow, extending almost to apical margin, low median carina present on floor of median groove; pygidial surface smooth basally, shagreened lateral to median groove; lateral margins smooth, with long setae apically.

Male genitalia. Median lobe flattened in cross section, strongly sclerotized along sides but weakly sclerotized in center on ventral side; in en-face view completely membranous except for lateral margins and a narrow apical area; in lateral view bent sharply downward anterior to basal spurs, length of median lobe subequal to one-half length of basal hood (Fig. 42–59, a), apex of median lobe with small to pronounced projection that is often asymmetrical; sub-basal fenestra present; basal spurs prominent; basal hood lightly sclerotized, with apodemes indistinct at lateral margins; tegmen triangular. Endophallus with membranous to partially sclerotized basal and endophallic lobes; apical sclerites small to large, sometimes in conjunction with spicule patches on adjacent membranes (Fig. 42–59, b).

Female genitalia. Segments VIII–XI forming a short and broad, to elongate ovipositor. Sternum VIII with basal apodeme short and Y-shaped (Fig. 69a, 70a, 73a) or long and narrow, often widened apically (Fig. 60–68, a; 71a; 72a; 74a); only several inconspicuous setae remain of apicolateral arms; dorsum of segment VIII weakly sclerotized. Segment IX covered with minute setae along all or part of its length; hemisternites with short to long sclerotized basal rods; paraprocts separated into pair of slender dorsal rods, apically forming hood-like projection above genital orifice; baculum distinct, apical, shorter or subequal to gonocoxae. Gonocoxae of variable length, with long setae at apex; coxostyli very small, with several long apical setae. Spermatheca with receptacle relatively small, bulbous to conical, weakly or not differentiated from pump, spermathecal gland located in apical third; spermathecal duct thin, sclerotized, not coiled (Fig. 60–74, b).

Diagnosis. *Beltia* can be distinguished from all other Neotropical Eumolpinae by the following combination of characters: 1) pygidium with wing-locking groove; 2) prosternum broadly excavated at anterior margin; 3) lateral arms of prosternum with convex or sinuate anterior margins and with ventral surface concave with appressed whitish setae (Fig. 2); 4) median lobe strongly bent, forming a flattened tube with thin to membranous upper and lower surfaces; 5) apex of metatibia strongly expanded, with a deep channel on the upper surface. *Beltia* most closely resembles *Sterneurus* Lefèvre, as noted by Jacoby (1881) in his description of *Beltia*, but *Sterneurus* differs in having a low triangular projection on the ventral edge of the profemora, while *Beltia* has the profemora unarmed, or with distinct tooth in the apical third. *Beltia* closely resembles *Colaspoides* in overall form and color (as noted in the Introduction), as well as some large species of *Antitypona* Weise, e.g. *Antitypona gigas* (Jacoby). *Colaspoides* is distinguished from *Beltia* and *Antitypona* by its lack of a wing-locking groove on the pygidium, having the entire surface of the prosternal lateral arms convex and glabrous (Fig. 4), and the metatibia with a relatively weak dorsal channel (Fig. 6). *Beltia* differs from *Antitypona* in having a sinuate anterior edge of the prosternal lateral arms; in *Antitypona* this margin forms a continuous even curve with the anterior central margin of the prosternum.

Beltia will key to couplet 10 in Flowers (1996); the separation based on toothed vs. non-toothed profemora is no longer relevant at the generic level.

Key to the Known Species of *Beltia* Jacoby

1. Profemur armed (Fig. 9, 10) **2**
— Profemur unarmed **4**

2(1). Profemur with a large quadrate tooth (Fig. 9) . . . . . ***B. nicaraguensis* Jacoby**
— Profemur with a small acute tooth (Fig. 10) **3**

3(2). Known from Costa Rica and Panama . . . . . ***B. tisingalita* Flowers, new species**
— Known from South America . . . . . ***B. weyrauchi* (Bechyně)**

4(1). Median lobe of aedeagus with strong lateral flanges, giving the en-face view an "arrowhead" shape (Fig. 13) **5**
— Median lobe of aedeagus with shape different from above **9**

5(4). Pronotum of male strongly transverse (Fig. 11), that of female trapezoidal; entire dorsum deep metallic purple . . . . . ***B. angustomarginata* (Bechyně)**
— Pronotum of both sexes trapezoidal (Fig. 12); purple color, if present, confined to elytra **6**

6(5). Head, body, femora, and tibiae with various combinations of metallic colors; tarsi reddish brown; antennae tan, with only segments 10 and 11 darkened . . . . . ***B. chiriquensis* (Jacoby)**
— Antennae with at least apical three segments darkened, or entire antenna yellow; if tarsi tan or brown, then at least apex of tibiae of similar color **7**

7(6). Known from Peru east of the Andes; apical segment of female abdomen with a pair of small tubercles (Fig. 14) . . . . . ***B. placidula* (Bechyně)**
— Known from west of the Pacific coastal areas of Colombia and Lower Central America; female abdomen lacking tubercles **8**

8(7). Upper surface highly polished and shining, legs dark metallic blue or purple; known from western Colombia . . . . . ***B. gorgona* Flowers, new species**
— Upper surface blue or olive green, not highly polished; pronotum densely punctate, with conspicuous punctulae between main punctures (as in Fig. 31); legs dark reddish brown; known from southeastern Costa Rica and western Panama ***B. osa* Flowers, new species**

9(4). Intercoxal process of prosternum distinctly emarginate, with lateral angles prominent (Fig. 15) **10**
— Intercoxal process of prosternum truncate or at most shallowly emarginate **14**

10(9). Endophallus of aedeagus with a large twisted subapical sclerotized bar and apical fields of spicules (Fig. 48b); known from Ecuador west of the Andes . . ***B. ledesmae* Flowers, new species**
— Endophallus lacking above combination of characters **11**

11(10). Smaller (< 6 mm) **12**
— Larger (≥ 6 mm) **13**

12(11). Antenna entirely testaceous. Aedeagus with basal hood and median lobe subequal in length; apex of median lobe tapering to a point (Fig. 45a); known from Amazonian Peru . . . . . ***B. confusa* Flowers, new species**
— Antenna testaceous, with the two apical segments black. Aedeagus with basal hood almost twice the length of median lobe; apex of median lobe sinuate, with a central projection (Fig. 55a); known from Amazonian Ecuador . . . . . ***B. talaga* Flowers, new species**

13(11). Anterior angles of pronotum directed forward, visible in dorsal view (Fig. 16); known from the Amazon Basin of Ecuador and northeastern Peru . . ***B. napoensis* Flowers, new species**
— Anterior angles of pronotum not directed forward nor visible when viewed from directly above the head; large body size (≥ 9 mm); size of punctures on pronotum subequal to those of elytra; known from the western slope of the Ecuadorian Andes . . . ***B. tsachila* Flowers, new species**

14(9). Elytra strongly and rugosely punctate (Fig. 33) . . . . . ***B. rugosa* Flowers, new species**
— Elytra smooth, or moderately or finely punctate **15**

15(14). Meso- and metathorax entirely yellowish brown beneath; dorsal color metallic green . . . . . ***B. tilarana* Flowers, new species**
— Thorax beneath dark metallic, at least in part; dorsal color various **16**

16(15). Head, body, legs, and apical half of antennae shining dark blue . . . . . ***B. vacilona* Flowers, new species**
— Other colors present; if largely dark blue, at least tarsi and/or the majority of antennomeres brown or tan **17**

17(16). Legs entirely reddish brown; male with transverse patch of dense short setae on abdominal sterna IV and V (Fig. 17) . . . . . ***B. herreri* Flowers, new species**
— Legs dark metallic, at least on femora; males with setae similar on abdominal sterna III–VI **18**

18(17). Endophallus of aedeagus with a twisted subapical sclerotized bar and apical fields of spicules (Fig. 43b); sides of pronotum shallowly curved (Fig. 19); known from western Ecuador . . . . . ***B. awapita* Flowers, new species**
— Endophallus lacking subapical structures; sides of pronotum strongly curved (Fig. 34); known from Costa Rica . . . . . ***B. sanchezae* Flowers, new species**

Beltia angustomarginata (Bechyně), new combination

Figures 11, 13, 18, 42, 60, 80

Colaspoides placidula angustomarginata Bechyně 1953: 123 (original description); Bechyně 1953: 279; Flowers 1996: 31. Holotype deposited in NHMUK, photos of holotype seen. Type locality: Panamá: Gatun, 1–3.II.1925.

Redescription. Male (Fig. 18). Body ovate, dorsally convex; length 6.1 mm. Head, pronotum, elytra, and underside metallic dark blue with strong purple reflexion; antennae testaceous with apical four antennomeres darker, legs dark reddish brown, central parts of femora shining greenish blue.

Head. Clypeus densely punctate, punctures separated by distance subequal to their diameters. Frontoclypeal suture distinct. Frons strongly punctate, surface between punctures smooth, punctures separated by distance greater than their diameters; vertex with a distinct median impressed line; antennal calli weakly differentiated.

Thorax. Prothorax distinctly wider than long, L/W = 0.5 (Fig. 11, 18); disc regularly, finely punctate, punctures separated by distance greater than their diameters; surface between punctures glossy, with numerous punctulae. Prosternum smooth, sparsely punctate, glabrous; posterior margin of intercoxal process slightly concave, width of intercoxal process 1.1× diameter of procoxa. Metasternum smooth in center, finely wrinkled laterally; metepisternum finely alutaceous.

Elytra. Evenly punctate, punctures separated by distance greater than their diameters, surface between punctures with small punctulae; width across humeri 1.1× width across pronotum. Basal calli weakly developed, postbasal depression shallow.

Abdomen. Sterna with numerous short setae, and long setae across middle third at rear margin of segments III–VI, surface of segments alutaceous. Terga with a row of distinct spicules along base of segments II and III and laterally on IV; surface of V and VI shagreened.

Genitalia. Median lobe in lateral view strongly curved, with lateral flanges (Fig. 42a); in en-face view "arrowhead"-shaped (Fig. 42c), lateral flanges strongly sclerotized, apicolateral margins convergent to a small median triangular projection; apex of endophallus with a patch of strong spicules and a small curved apical sclerite (Fig. 42b).

Female. Length 6.1–7.6 mm; color similar to male but purple reflex stronger; antennae testaceous, with apical three antennomeres piceous; color of legs as in male.

Head. Punctation as in male.

Thorax. Pronotum with proportions slightly less transverse than male, punctation as in male. Surface of prosternum with short whitish setae, posterior margin less concave. Metasternum and elytra as in male.

Abdomen. Sterna with scattered whitish setae, apex of sternum VII weakly crenulate, with apical, shallow, V-shaped emargination and a short, subapical transverse costa. Terga heavily sclerotized, surface alutaceous; a row of spicules along base of tergum II, a short basal row on either side of midline on terga III and IV; surface of V and VI shagreened.

Genitalia. Segments VIII–XI forming an elongate (L/W = 5.0) ovipositor (Fig. 60a). Sternum VIII with a long, wire-like basal apodeme, slightly widened at apex; segment IX covered with minute spicules; hemisternites with elongate basal rods; baculum distinct, elongate; gonocoxae distinctly longer than wide. Spermatheca (Fig. 60b) with bulb-like receptacle, distinctly constricted at union with pump.

Specimens examined. (1♂, 4♀) PANAMA: **Colón Prov.** (1♂) Colón, Sierra Llorona Lodge, 17–21-II-2012, Col.: J.B. Heppner (FSCA); **Panamá Prov.** (1♀) Barro Colorado Island 5–9.I.1987 Windopans, forest H. Wolda, Gpo.4B (USNM); (2♀) El Llano, Carti rd. km 8–11, 24 May–3 Jun 1992, 1100′ J.E. Wappes (USNM); (1♀) 2700′, Cerro Campana, May 13, 1978 CW&LB O'Brien & Marshall (FSCA).

Diagnosis. Males of *Beltia angustomarginata* can be recognized by the wide pronotum and "arrowhead"-shaped apex of the median lobe. Females have a less obviously transverse pronotum, but share with the male a strong purple reflex on the upper body.

Remarks. Bechyně (1953) described *B. angustomarginata* as a subspecies of *Colaspoides* (now *Beltia*) *placidula*, which is so far known only from a small area of Peru, based on a narrower pronotal margin and deeper postbasal depression. The structure and punctation of the pronotum in these two forms are different; additionally, in all specimens of *B. placidula* the legs are entirely dark fulvous to brown, whereas all known specimens of *B. angustomarginata* have metallic legs. This, along with the fact that both forms seem to have limited and disjunct distributions, appears to me to justify considering them distinct species. So far, this species (including the type) has been collected only in central Panama (Fig. 80).

Beltia awapita Flowers, new species

Figures 19, 43, 79

Description of male holotype. (Fig. 19). Body ovate, length 5.5 mm. Head, pronotum, elytra, and underside dark metallic green with golden reflexion; antennae testaceous, apical three antennomeres missing; legs dark reddish brown, femora metallic green in apical two-thirds.

Head. Clypeus densely punctate, punctures separated by less than their diameters. Frontoclypeal suture indistinct. Frons strongly aciculate-punctate, surface between punctures weakly alutaceous, punctures separated by distance subequal to their diameters; vertex less densely punctate than frons, with a distinct median impressed line, surface between punctures smooth.

Thorax. Prothorax distinctly wider than long, L/W = 0.55, lateral margins strongly convergent, only slightly convex; disc regularly, finely punctate, punctures separated by distance greater than their diameters; surface between punctures shining, with numerous punctulae. Prosternum sparsely punctate, with short whitish setae, posterior margin of intercoxal process straight, width of intercoxal process equal to diameter of procoxa. Metasternum with shallow transverse wrinkles, metepisternum finely alutaceous.

Elytra. Evenly punctate, punctures separated by distance greater than their diameters, surface between punctures with scattered small punctulae; width across humeri 1.26× width across pronotum. Basal calli moderately developed, postbasal depression shallow.

Abdomen. Sterna with numerous short setae and a transverse band of long white setae along middle third at rear margin of sterna III–VI, surface of segments alutaceous. Spicules on terga II–IV small.

Genitalia. Median lobe in lateral view abruptly bent downward, with a deep crease in its lower margin (Fig. 43a); in en-face view with apicolateral margins rounded, very narrow in middle, with a small

median nodule (Fig. 43c). Apex of endophallus with a long, twisted, rod-like sclerite and two patches of spicules (Fig. 43b).

Female. Unknown.

Specimens examined. ECUADOR: **Esmeraldas Prov.** (1♂) Male holotype labeled: ECUADOR ESMERALDAS, PLAYA DE ORO, R. SANTIAGO, 00°53′N 78°48′W 200m 28JUL–4AGO98 T Enriquez. Deposited in QCAZ.

Etymology. *Awapita*, from Awa Pit, one of the indigenous languages spoken in the Chocó region of northwestern Ecuador–southwestern Colombia (Wikipedia 2016).

Diagnosis. This species appears to be most closely related to *Beltia ledesmae* n. sp., but can be distinguished by its smaller size and less curved lateral margins of the pronotum. It differs from other small metallic green *Beltia* (e.g. *B. confusa, B. herreri, B. sanchezae, B. talaga*) in having the pronotal lateral margins straighter and the apical angles more prominent.

Remarks. Both *B. awapita* and *B. ledesmae* have a large twisted subapical sclerite in the endophallus, unlike any other known species of *Beltia*. Their genitalia differ somewhat in the size of the spicule patches of the endophalli, and in the lack of a distinct crease on the side of the median lobe in *B. ledesmae*. *Beltia awapita* is known from a single specimen in northwestern Ecuador (Fig. 79).

Beltia chiriquensis (Jacoby), new combination

Figures 3, 20, 44, 61, 81

Colaspoides chiriquensis Jacoby 1882: 186 (original description); Blackwelder 1946: 666; Bechyně 1953: 278; Flowers 1996: 30. Holotype deposited in NHMUK, not seen. Type locality: Panama, Volcán de Chiriquí.

Colaspoides turrialbana Bechyně 1950a: 263; Flowers 1996: 31, **new synonymy.** Holotype deposited in NHMB, seen, label data not transcribed. Type locality: Costa Rica, Turialba.

Redescription. Male. Body ovate, dorsally convex; length 5.5–6.7 mm. Head, pronotum, and elytra dark blue or shining bronze, some specimens with head and pronotum bluish green with elytra dark blue; underside glossy dark bluish green; antennomeres yellowish brown, apical antennomere darker. Legs dark bluish green, tarsi yellowish brown; apex or entire meso- and metatibiae yellowish brown in some specimens; base of femur sometimes yellowish brown.

Head. Clypeus densely punctate, punctures separated by distance less than their diameters. Frontoclypeal suture distinct. Frons finely punctate, surface between punctures smooth, vertex with a weak median impressed line, finely punctate. Mouthparts with apex of labrum weakly emarginate.

Thorax. Prothorax distinctly wider than long, L/W = 0.5; pronotal disc finely punctate, punctures separated by distance greater than their diameters; surface between punctures glossy, with numerous punctulae. Proepimeron finely wrinkled, impunctate. Prosternum with width of intercoxal process 0.83× diameter of procoxa. Metasternum alutaceous, with numerous short yellow setae.

Elytra. Width across humeri 1.2× width across pronotum; finely but distinctly punctate, punctures separated by distance greater than their diameters, surface between punctures smooth and glossy; postbasal depression obsolete.

Abdomen. Sterna with numerous short setae and a band of long setae in median third of sterna IV–VI, sternum III with long setae behind coxal insertions, sternum VIII with margins crenulate, surface of segments alutaceous. Dorsum with spicules along base of terga II, III, and laterally on IV; surface at center of tergum IV and all of terga V and VI shagreened.

Genitalia. Median lobe with large lateral flanges (Fig. 44a), sides converging to apex, giving an "arrowhead" appearance; in en-face view with apicolateral margin broadly rounded, apical margin slightly contorted, with a median asymmetric triangular projection (Fig. 44c). Tip of endophallus with a field of coarse spicules and two small twisted apical sclerites (Fig. 44b).

Female. Body oval; length 5.5–7.9 mm; color of head and pronotum greenish gold, elytra dark green, often with a strong copper reflexion in apical third (Fig. 20); or color entirely dark blue or coppery red.

Head. Frontoclypeal suture obsolete, otherwise similar to male.

Thorax. Prothorax as in male; meso- and metathoracic sterna as in male.

Abdomen. Segments with numerous short setae and submedian pairs of long setae on sterna III–VI. Apex of sternum VII with a pair of small submedian tubercles as in Fig. 14.

Genitalia. Segments VIII–XI forming elongate ovipositor (L/W = 4.42; Fig. 61a). Sternum VIII with long, wire-like basal apodeme; dorsum of segment VIII with weakly sclerotized V-shaped bars. Segment IX covered with minute spicules; hemisternites with long, wire-like basal rods, baculum distinct, spindle-shaped gonocoxae slightly longer than wide. Spermatheca with receptacle small, scarcely differentiated from the pump (Fig. 61b).

Specimens examined. (4♂, 25♀) COSTA RICA: **Puntarenas Prov.** (1♂, MNCR-A) Est. Sirena, ACOSA, 1–100 m. 1–24 ABR 1995, B. Gamboa, LN270500507900 #4738//INBIOCRI002187978. (1♀, MNCR-A) Est. Sirena, P.N. Corcovado 1–100 m. May 1993 G. Fonseca, LS270500508300 #2098//INBIOCRI001934711. (1♂, MNCR-A) same locality, 17 jun a 4 sep 1991, Tp. Malaise//INBOCRI000685782. (1♀) Send. Los Patos, P.N. Corcovado, 0m, 8 Abr. 1993. M. Zumbado, LS516956280450 #1993//INBIOCR001696761. (1♂, MNCR-A) Corcovado National Park, Osa Peninsula, D.H. Janzen coll. 13–23 March 1978// INBIOCRI001688127. (1♀) same locality, 10–100 m. 23–27 Mar. 1982, DH Janzen & W. Hallwachs// INBIOCRI001688426. (1♀) Bosque Esquinas, A.C. Osa, 200m, May 1994, M. Segura, LS302450345100, #2920//INBIOCRI001999379. (1♀) Albergue, Cerro de Oro, 200 m. 4–14 MAY 1995, M. Moraga, LN280450517500 #4633//INBIOCRI002169003. (1♀) Est. Agujas, Send. Ajo, 300 m. 3–6 MAY 1998, M. Lobo, LS276750526550 #50682//INBIOCRI002605017. (1♀, MNCR-A) same locality, Send. Zamia, Río Agujas, 300m. 9–28 MAR 1996, A. Azofeita LS276750526550 #7213//INBIOCRI002382047. (1♀, MNCR-A) Sendero La Tarde, Cerro de Oro, 5.3Km NW del Cerro Rincón, 280m. 18 MAY 1996, L. Angulo, LS279600519600 #7552//INBIOCRI002419766. (1♂, MNCR-A) Golfito, Camion a las Torres, 400–500m. 28 Apr. 2001, D. Briceño, Libre, LN289300555700 #76836//INBIO003838080. (1♀, BYU) Grumaco, Río Coto Brus, VII-14-1963, S.L.W. Parque Nacional Mauel Antonio, Quepos, LS370900448800 #1181, 80m. (1♀, MNCR-A) Abr. 1992, C. Cano//INBIOCRI001718729; (2♀, MNCR-A) Abr. 1992, G. Varela// INBIOCRI001394157, INBIOCRI000456513; (1♀, MNCR-A) Abr. 1991, G. Varela//INBIOCRI001312313. PANAMA: **Panamá Prov.** (1♀, USNM) Bayano Dist. 2.5 k W Ipiti 11–22 May 1996, Wappes Huether & Moore; (3♀, USNM) Bayano Dist. 3 km S. Ipiti, 24 May 1992, J.E. Wappes; (1♀, USNM) Bayano, 26km W. Ipiti, 20, 23-IV-1993, J.E. Wappes; (3♀, USNM) Colon Prv. 2km W. Cuango, 2 May 1992, J.E. Wappes; (1♀, FSCA) trap catch, El Cermeno, Pan. 6-6 '39, J. Zetek 4434.

Diagnosis. This species can be distinguished from other Central American *Beltia* by tarsi distinctly paler than the rest of the legs, and in most specimens by the tan antennae with only the apical segment darkened. In a single specimen with tan meso- and metatibiae the protibiae were entirely dark. In other *Beltia* both tibiae and tarsi are the same color, either metallic or reddish brown, or testaceous. Females of both *B. chiriquensis* and *B. placidula* have a small pair of subapical tubercles on the abdomen (as in Fig. 14), but can be distinguished by the color of the legs, which are entirely testaceous in *B. placidula*, as well as by their distribution.

Remarks. Costa Rican specimens of *Beltia chiriquensis* were compared with identified specimens in the Bowditch collection (MCZ). Bechynĕ (1950a), in his description of *C. turrialbana*, noted it was very similar to "*C. chiriquensis*" but lacked a clypeal groove found in the latter species. However, this character varies between males and females, as noted above in the description. Both forms have the diagnostic character of dark legs with lighter tan tarsi. Jacoby (1891) noted the variability in color of *B. chiriquensis*. While several species of *Beltia* have dark metallic colors that grade into bright gold or green reflexes laterally or apically, many *B. chiriquensis* are dark blue with well-defined apical patches of metallic green or copper. In 2003 I observed a number of *B. chiriquensis* feeding on young shoots of grapevines at the Fabio Baudrit agricultural station of the University of Costa Rica (Puntarenas Province). *Beltia chiriquensis* is known from central Costa Rica to eastern Panama (Fig. 81).

Beltia confusa Flowers, new species

Figures 21, 45, 78

Description of male holotype. Body ovate; length 5.0 mm (range 4.8–5.5 mm). Head, pronotum, elytra, and underside bright metallic green; antennae testaceous; legs testaceous with metallic green on procoxae.

Head. Clypeus densely punctate, punctures separated by distance slightly greater than their diameters. Frontoclypeal suture obsolete. Frons strongly aciculate-punctate, surface between punctures forming concentric rugosities, punctures separated by distance subequal to their diameters; vertex lacking median impressed line.

Thorax. Prothorax distinctly wider than long, L/W = 0.53; disc regularly, finely punctate, punctures separated by distance greater than their diameters; surface between punctures glossy, with numerous punctulae. Prosternum smooth, sparsely punctate, with a few short whitish setae, posterior margin of intercoxal process strongly concave, width of intercoxal process 1.12× diameter of procoxa. Mesosternum convex on anterior surface. Metasternum shallowly wrinkled, metepisternum finely alutaceous.

Elytra. Evenly punctate, punctures separated by distance greater than their diameters, surface between punctures with small punctulae; width across humeri 1.16× width across pronotum. Basal calli moderately developed, postbasal depression shallow.

Abdomen. Sterna with numerous short setae and a group of long setae on sternum III on each side of intercoxal process, surface of segments alutaceous. Terga II and III with basal row of short spicules, terga V and VI with surface shagreened.

Genitalia. Median lobe in lateral view curved downward, forming right angle to hood (Fig. 45a); in en-face view apical margin tapering, with a broad triangular median projection (Fig. 45c). Apical sclerite (Fig. 45b) cylindrical, bent at base and expanded at apex.

Female. Unknown.

Specimens examined. PERU: **Región Loreto.** (3♂) Male holotype labeled: PERU: Loreto: 40km NE Iquitos on Amazon River, Explorama Inn 22–24-VIII-1992 J. Castner, P. Skelley misc. at light (FSCA). PARATYPES (2♂) PERU: Loreto Prov.; Explorama Inn, 25mi NE Iquitos 19, 21-VII-1989 G.B. Edwards (1 FSCA, 1 USNM). Holotype deposited at FSCA, paratypes in FSCA and USNM.

Etymology. *confusa*, Latin, confusing.

Diagnosis. This species is very similar to *B. talaga* (see below), but can be distinguished by the entirely testaceous antennae. *Beltia herreri*, another small green *Beltia*, has darker orangish brown legs and antennae. The apical abdominal sternite of *B. herreri* is orangish brown in the center, contrasting with the rest of the metallic green venter, and bears a small tubercle that is lacking in *B. confusa*.

Remarks. One paratype has the metallic green body and elytra color replaced by cobalt blue with a slight green reflexion. All specimens of this species were collected in the forest at the mouth of the Río Napo in Peru (Fig. 78).

Beltia gorgona Flowers, new species

Figures 22, 46, 62, 78

Description of male holotype. Body ovate, length 6.3 mm (Fig. 22). Head, pronotum, and elytra metallic bluish green with purple-coppery reflexion; underside and legs glossy bluish green; antennomeres testaceous.

Head. Clypeus densely punctate, punctures separated by distance less than their diameters. Frons strongly punctate, punctures separated by distance greater than their diameters; vertex with a distinct median impressed line, finely punctate; antennal calli smooth, weakly swollen.

Thorax. Prothorax distinctly wider than long, L/W = 0.57; pronotum with punctures separated by distance greater than their diameters; surface between punctures glossy, with numerous punctulae. Prosternum punctate, with scattered short white setae; posterior margin of intercoxal process concave, width of intercoxal process 1.07× diameter of procoxa. Proepimeron with surface wrinkled and with scattered punctures in basal third. Mesosternum with anterior edge convex, surface smooth and sparsely punctate. Metasternum smooth, metepisternum with surface finely alutaceous.

Elytra. Evenly punctate, punctures separated by distance greater than their diameters; width across humeri 1.22× width across pronotum.

Abdomen. Sterna with numerous short setae and longer setae in submedian areas of sterna III–VI, surface of segments alutaceous. Sternum VII with lateral margins smooth, a weak depression in center. Terga heavily sclerotized, spicules on segments II and III small, segments V and VI shagreened.

Genitalia. Median lobe (Fig. 46a) in lateral view with prominent lateral flange; in en-face view lateral margins robust and converging, apex tapered to a slightly asymmetrical projection (Fig. 46c). Apex of endophallus (Fig. 46b) with a field of small spicules and a small, curved apical sclerite.

Female allotype. Body oval; length 7.4 mm (range 6.8–7.2 mm); head, pronotum, and elytra glossy metallic golden green with purple reflexion on antennal calli and margins of pronotum and elytra. Scutellum, underside, and legs metallic purple.

Head. Frons and clypeus less densely punctate than male, antennae similar to male but with apical antennomere slightly darker.

Thorax. Shape and punctation of pronotum as in male; prosternum and proepimeron similar to male. Mesosternum more strongly wrinkled than in male. Legs similar in form to male, and basal tarsomere of fore- and middle legs not expanded.

Elytra. Punctation as in male.

Abdomen. Sterna with numerous white setae, longer in middle third of sterna III–VI.

Genitalia. Segments VIII–XI forming a moderately elongate (L/W = 4.7) ovipositor (Fig. 62a). Sternum VIII with long, wire-like basal apodeme with apical end widened and less defined. Spermatheca (Fig. 62b) with bulbous receptacle.

Specimens examined. COLOMBIA: **Valle de Cauca Prov.** (1♂, 2♀). Male holotype labeled: COLOMBIA Valle de Cauca, PNN Farallones de Cali Anchicaya 3°26′N 76°48′W 730m Malaise 8/14/01 8/28/01 S. Sarria Leg. M.2861. **Cauca Prov.** Female allotype labeled: COLOMBIA Cauca, PNN Isla Gorgona El Hechelal 2°58′N 78°11′W 30m Malaise 6–22.iii.2001 R. Duque Leg. M.1478. PARATYPE (1♀) COLOMBIA Cauca, PNN Gorgona Mancora 2°58′N 78°11′W 60m Malaise 1/3/01 1/18/01 H. Torres Leg. M.1235. Types deposited in IAVH.

Etymology. This species is named for the Parque Nacional Natural Gorgona in Colombia, where the two female types were collected.

Diagnosis. *Beltia gorgona* can be distinguished from other species in the genus by its larger size and brilliant dark green color with purple reflexions (which are easily seen with the naked eye but very difficult to photograph). It differs from *B. angustomarginata,* another species with a marked purple reflexions, by the less transverse shape of the pronotum.

Remarks. Two male specimens in poor condition, labeled simply "South America, Colombia/feeding on banana leaves" (FSCA), are tentatively assigned to this species but not included in the type series. They differ from the holotype in having a stronger coppery color and a sharper and more asymmetrical tip on the median lobe of the aedeagus. The type series of *B. gorgona* comes from only two localities on the Pacific coast of Colombia (Fig. 78).

***Beltia herreri* Flowers, new species**

Figures 17, 23, 47, 63, 81

Description of male holotype. Body oval, dorsally convex (Fig. 23); length 4.7 mm (range 4.7–5.5 mm). Head, pronotum, elytra, and underside except center of apical sternum of abdomen bright metallic green. Legs, antennae, and center of abdominal sternum VII orangish brown.

Head. Clypeus densely punctate, punctures separated by distance less than their diameters. Frons strongly punctate, punctures aciculate, separated by distance greater than their diameters; surface between punctures wrinkled, forming shallow concentric furrows; vertex with a weak median impressed line.

Thorax. Prothorax distinctly wider than long, L/W = 0.6; widest part of pronotum behind middle; disc of pronotum regularly punctate, punctures aciculate and separated by distance equal to or slightly greater than their diameters; surface between punctures shining, with numerous punctulae. Posterior margin of intercoxal process truncate, width of intercoxal process 0.96× diameter of procoxa. Proepimeron smooth, with scattered fine punctures. Mesosternum flat between coxae, punctate. Metasternum smooth, with sparse short yellow setae; metepisternum finely granulate.

Elytra. Evenly punctate, punctures separated by distance greater than their diameters, punctation less dense than on pronotum, surface between punctures smooth, with small punctulae; width across humeri 1.4× width across pronotum; basal calli weakly developed; postbasal depression shallow.

Abdomen. A pair of shallow median depressions on sterna VI and VII, a bare median area on segment III and basal half of segment IV, long setae at edge of bare areas, segment V and VII with a transverse median patch of long setae and a dense patch of short fine setae at rear margin of segment VI (Fig. 17). Spicules on tergites very small.

Genitalia. Median lobe relatively short and thick in lateral view (Fig. 47a); en-face view with postorifical margin narrow, rounded, bearing a small median nodule (Fig. 47c); apical sclerite (Fig. 47b) short, club-shaped, heavily sclerotized.

Female allotype. Body oval; length 5.5 mm; body shining metallic greenish copper, femora reddish brown, tibiae and tarsi darker brown.

Head. Labrum, frons, clypeus, eyes, and antennae similar to male.

Thorax. Prothorax as in male. Mesosternum flat between coxae, more strongly wrinkled than in male. Legs similar to male.

Elytra. Similar to male but with posthumeral depression deep in lateral third.

Abdomen. Sterna evenly covered with short white setae.

Genitalia. Segments VIII–XI forming moderately elongate (L/W = 4.3) ovipositor (Fig. 63a). Sternum VIII with long, needle-like basal apodeme. Spermatheca (Fig. 63b) with receptacle relatively slender and tapering.

Specimens examined. COSTA RICA: **Guanacaste Prov.** (7♂, 1♀). Male holotype labeled: Rio San Lorenzo, 1050 m, Tierras Morenas, Z. P. Tenorio, Prov. Guanacaste, Costa Rica, A. Marin, 23 mar a 21 abr 1992, L-N 287800427600//INBIOCRI000427383; Female allotype labeled: R. San Lorenzo, 1050m, R.F. Cord. Guanacaste, (Tenorio) Prov. Guan. COSTA RICA C. Alvarado, Jul 1991, LN287800, 427600// INBIOCRI000364996. PARATYPES: COSTA RICA: (2♂), same locality, date, and collector as holotype, //INBIOCRI000414352, INBIOCRI000427382; (2♂) same locality as holotype, M. Seguira 23 mar 21 abr 1992//INBIOCRI000415045, INBIOCRI000452803; (4♂), same data as holotype. PANAMA: **Chiriquí Prov.** (2♂) Chiriqui Fortuna (82°15′W; 8°44′N) May17. 1978, O'Brien & Marshall. Holotype, allotype, and four paratypes deposited in MNCR-A, two paratypes in FSCA, and two paratypes in USNM.

Etymology. This species is named for Álvaro Herrera V., formerly director of inventory of INBio, who has been immensely helpful to many taxonomists, including myself, visiting Costa Rica.

Diagnosis. *Beltia herreri* resembles several smaller South American *Beltia* with a similar color pattern of metallic green body and yellow to brown legs and antennae. In *B. herreri* the legs and antennae are a darker brown than found in either *B. confusa* or *B. talaga*; additionally, *B. talaga* has the last two segments of the antennae black. *Beltia herreri* can also be distinguished by the shape of the apex of the median lobe, and the presence of setal fields and depressions at the apex of the male abdomen.

Remarks. *Beltia herreri* has been collected from one locality in northwestern Costa Rica and one locality in northwestern Panama (Fig. 81).

Beltia ledesmae Flowers, new species

Figures 1, 12, 24–26, 48, 64, 75, 76, 79

Description of male holotype. Body ovate; length 6.3 mm (range 5.5–6.5 mm). Head and pronotum dark metallic green with purple reflexion, elytra dark reddish copper, antennomeres 1–6 reddish brown, 7–11 darker. Underside and legs dark reddish brown with metallic bluish green reflexion (as in Fig. 1).

Head. Clypeus punctate, punctures separated by distance slightly greater than their diameters. Frons sparsely punctate, punctures separated by distance greater than their diameters; surface between punctures smooth, weakly wrinkled next to eyes; vertex finely punctate, surface between punctures smooth, median sulcus obsolete; antennal calli smooth, markedly swollen.

Thorax. Prothorax distinctly wider than long, L/W = 0.63; disc finely, sparsely punctate, punctures separated by distance much greater than their diameters; surface between punctures glossy, with numerous punctulae. Prosternum with posterior margin of intercoxal process broadly emarginate, width of intercoxal process 0.69× diameter of procoxa. Mesosternum smooth, with anterior surface between mesocoxae convex. Metasternum finely wrinkled; metepisternum finely alutaceous.

Elytra. Evenly punctate, punctures separated by distance greater than their diameters; surface between punctures smooth, with small punctulae; humeri prominent, subquadrate, width across humeri 1.3× width across pronotum; basal calli weakly developed; postbasal depression shallow.

Abdomen. Sterna with numerous short setae and a transverse band of long setae in middle third at apical margins; surface of segments alutaceous. Male sternum VII with lateral margins smooth, a weak depression in center, long setae along posterior margin. Terga heavily sclerotized, spicules on terga II and III small and inconspicuous.

Genitalia. Median lobe in lateral view (Fig. 48a) relatively thick and blunt, bent down slightly more strongly than at right angle to the basal hood, a small fold in lower margin just beyond bend; in en-face view sclerotized lateral and postorificial margins very narrow, a weak central nodule present on apical margin (Fig. 48c). Apex of endophallus with two dense patches of spicules and a subapical long, twisted mushroom-like sclerite (Fig. 48b).

Female allotype. Body oval; length 6.2 mm (range 6.2–7.1 mm); body entirely dark metallic green.

Head. Labrum, frons, eyes, and antennae similar to male; clypeus more finely punctate, otherwise mouthparts similar to male.

Thorax. Prothorax distinctly wider than long, L/W = 0.54; shape of pronotum as in male; more densely punctate on disc, although with punctures still separated by distance greater than their diameters. Prosternum similar to male but with setae longer. Meso- and metathoracic sterna as in male.

Elytra. Similar to male but with posthumeral depression deeper.

Abdomen. Sterna evenly covered with long yellowish setae.

Genitalia. Segments VIII–XI forming elongate ovipositor (L/W = 5.07; Fig. 64a). Sternum VIII with long linear basal apodeme, slightly expanded basally; dorsum of segment VIII with weak Y-shaped sclerites; segment IX covered with minute setae; hemisternites with long basal rods; baculum distinct, apical, slightly shorter than gonocoxae. Gonocoxae longer than wide. Spermatheca (Fig. 64b) with receptacle small, scarcely differentiated from pump.

Specimens examined. (5♂, 10♀) Male holotype labeled: ECUADOR Los Ríos, Quevedo, Est. Exp. Tropical Pichilingue, Col. Internacional de Cacao; 24-mayo-2012; R. W. Flowers. Female allotype labeled: ECUADOR, Los Ríos; Quevedo, Est. Exp. Tropical Pichilingue, Sector Los Cauchos; Trampa Malaise, XII-2009/I-2010; R. W. Flowers. PARATYPES: ECUADOR, **Los Ríos Prov.** (1♂, 2♀) same locality, date, and collector as holotype; (1♀) same locality and collector as holotype, 21-IV-2012; (1♂) same locality and collector as holotype, 1-mayo-2014; (1♂, 2♀) same locality and collector as holotype, 22-mar-2014; (1♀) same locality and collector as allotype, 2-IV/9-V-2010; (1♂, 1♀) #471, Lug. Pichilingue, Det. 9-VI-78 R.W. White; (1♀) Rio Palenque, 250m, 79°33′00″W 00°35′00″S, 20 FEB 1986, Santamaria//QCAZ 1834; (1♀) Mocache, 23-Mar. 2014, R.W. Flowers; **Pichincha Prov.** (1♂) Pitzarra, III-1992, Legt. G. Onore; (1♀) Tinalandia, 8–10-VII-1987, H.V. Weems. Holotype, allotype, and nine paratypes deposited in QCAZ, two paratypes in FSCA, two paratypes in INIAP, and two paratypes in USNM.

Etymology. This species is named in honor of Lorena Ledesma R., who has greatly assisted me during the Ecuador part of this study, and has made many other scientific visitors feel welcome in the Pichilingue field station facilities in western Ecuador.

Diagnosis. *Beltia ledesmae* can be distinguished by the combination of the male endophallus with a large and elongate apical sclerite, an emarginate posterior margin of the intercoxal process, and the apical five antennal segments black. *Beltia awapita* has similar modifications of the endophallic apical sclerites but can be readily separated from *B. ledesmae* by its smaller size, truncate intercoxal process, and straighter lateral margins of the pronotum.

Remarks. Colors of *B. ledesmae* are quite variable among individuals (Fig. 24–26). Most are either dark metallic green or glossy lead-blue with dark orangish brown to piceous brown legs. However, individuals may be bright metallic green, bright green with coppery red elytra, or bluish green with golden green elytra. At the Pichilingue locality *B. ledesmae* was regularly collected by beating, and observed on understory vegetation (Fig. 75, 76) in an old teak plantation (Fig. 77) and in a patch of very old secondary-growth forest. Specimens were collected under permit 004 RM-DPM-MA. All known localities of *B. ledesmae* are from remnant forest patches along the foot of the western Andes in Ecuador (Fig. 79).

Beltia napoensis Flowers, new species

Figures 16, 27–29, 50, 65, 79

Description of male holotype. Body ovate, length 6.5 mm (range 4.9–7.2 mm). Head, pronotum, elytra, and underside shining metallic green; legs, antennae, and apical abdominal sternite reddish brown (Fig. 27).

Head. Clypeus densely punctate, punctures separated by distance less than their diameters, apex of clypeus weakly striate, emarginate. Frons strongly punctate, punctures separated by distance less than their diameters; surface between punctures finely wrinkled; a trace of a small bulla between eyes; vertex strongly punctate, punctures aciculate; antennal calli smooth, weakly swollen, with a few small punctures.

Thorax. Prothorax distinctly wider than long, L/W = 0.59; pronotum convex, widest behind middle; front angles acute, directed anteriorly and turned outward at their apices (Fig. 16); disc regularly, finely punctate, punctures separated by distance greater than their diameters; surface between punctures shining, with numerous punctulae. Prosternum wrinkled, sparsely punctate, with short yellowish setae; posterior margin of intercoxal process depressed and bilobed, width of intercoxal process 0.74× diameter of procoxa. Proepimeron with surface smooth, transversely wrinkled. Mesosternum strongly declivous anteriorly, with V-shaped projection between coxae fitting apex of prosternum, surface wrinkled. Metasternum wrinkled, metepisternum finely microreticulate.

Elytra. Evenly punctate, punctures separated by distance greater than their diameters; width across humeri 1.2× width across pronotum; basal calli weakly developed; postbasal depression shallow.

Abdomen. Sterna with a cluster of long setae on sternum III at inner margins of coxae, sterna IV–VI with transverse bands of long setae. Sternum VII punctate in apical half, wrinkled in basal half, with

lateral margins smooth, a weak depression in center, long setae along posterior margin. Terga II and III with a basal row of strong spicules, terga V and VI shagreened.

Genitalia. Median lobe in lateral view strongly bent downward (Fig. 50a), in en-face view (Fig. 50c) asymmetric, with blunt projection. Endophallus with basal lateral digits curved, sclerotized; endophallic lateral digits complex, with erect sclerotized lobes, partially sclerotized lower lobes, and a network of sclerites surrounding shaft of endophallus at base of endophallic lateral digits (Fig. 50d). Apical sclerite small, irregular, larger at one end (Fig. 50b).

Female allotype. Body oval; length 6.7 mm (range 6.5–7.8 mm). Head and pronotum metallic greenish copper, elytra dark blue, pronotal lateral and basal beads bright green.

Head and mouthparts similar to male except interocular bulla more pronounced.

Thorax. Pronotum distinctly wider than long, L/W = 0.68; shape of pronotum as in male; evenly punctate on disc, punctures separated by distance greater than their diameters. Proepisternum and proepimeron as in male; prosternum similar to male but with concave posterior margin. Mesosternum subequal in width to prosternum, swollen between coxae, more strongly wrinkled than in male.

Elytra. Similar to male but with posthumeral depression deep. Epipleuron as in male.

Abdomen. Abdominal segments with numerous short setae and a pair of submedian long setae, margins of sterna VI and VII crenulate, sternum VII with apical notch bearing short, erect setae.

Genitalia. Abdominal segments VIII–XI forming elongate ovipositor (L/W = 5.5; Fig. 65a). Sternum VIII with a long, needle-shaped basal apodeme; segment IX in apical two-thirds covered with minute spicules; hemisternites with elongate basal rods; baculum distinct, elongate; gonocoxae slightly longer than wide; baculum distinct, apical, shorter than gonocoxae. Spermatheca (Fig. 65b) with receptacle narrower than pump, elongate, cone-shaped.

Specimens examined. PERU: **Loreto Region.** (10♂, 14♀). Male holotype labeled: PERU: Loreto Dept., Explorama Campo on R. Sucusari nr. R. Napo. 12–19-III-1968. J.E. Eger, coll.// collected at light (FSCA). Female allotype labeled: same locality, date, and collector as holotype (FSCA). PARATYPES. PERU: **Loreto Region.** (1♂, 5♀ FSCA) same locality, date, and collector as holotype; (2♂) Explorama Inn, 25 mi. NE of Iquitos, 9,22-VI-1989, G.B. Edwards, Amazon rainforest (FSCA); (1♂) 40 km. NE of Iquitos on Amazon River, Explorama Inn, 22–24-VIII-1992, J. Castner, P. Skelley, misc. at light (FSCA); (1♀) same locality, Amazon Rainforest, 16–21-VII-1989, H.V. Weems, Jr. (FSCA); ECUADOR: **Napo Prov.** (1♀) Ecuador, Prov. Napo, vic. Puerto Misahuali, 1600–1900 ft., 6–19-DC-1998, J.E. Eger, coll./1°2′4.2″ S lat, 77°39′49.2″ W lon. (FSCA); (1♂) via Hollin–Loreto km 0, 1100m. 12/06/97. Lg. H. Peñaherra (QCAZ); (1♀) Limon Cocha 0°24′ S 76°36′W. sept.–oct. 1964. H.R. Hermann, Jr./ G.N. Ross colln./MGCL Accession/ #2006-20 (QCAZ); (1♂) Tarapoa, via Cuyabeno, 09-X-1988, Legit P. Coral V. (QCAZ); (1♂) Cuyabeno (?), 230m, fecha Oct. 18/85. Legit E. Carnazo (QCAZ); **Sucumbios Prov.** (1♂) San Rafael Falls, 1100m, 5/6-VIII-98, W. Opitz (QCAZ); (1♂) Cuyabeno 830m, 13–25-Jul 53, T. Santander (QCAZ); (1♀) RFP Cuyabeno, 28/7/91, L. Schel (QCAZ); Cuyabeno, 220m. Lag. Grande, 76°10′W (QCAZ); **Orellana Prov.** (1♀) EC YASUNI, 250m., 76°24′19″W 00°40′32″S, 07OCT1997, E.Baus (QCAZ); EC Yasuni, km 40, 79°28′W 00°39′S, 19AGO1997, E. Bau (QCAZ); (1♀) Oriente, Limococha, 0.4S 76.6W, Peter L. Kazan (QCAZ). COLOMBIA: **Amazonas Prov.** (1♂) PNN Amacayayacu Matamata, 3°41′S 70°15′W, 156m, Malaise, 3–17.ix.2001, D. Chonta Leg. M2241. Holotype and allotype are deposited in FSCA, paratypes in QCAZ, IAVH, FSCA, and USNM.

Etymology. This species is named for the Río Napo; most specimens were collected along this river and its tributaries.

Diagnosis. This species can be distinguished by the prominent forward-projecting apical angles of the pronotum (Fig. 16) and the broad asymmetric projection on the apex of the median lobe (Fig. 50c, e). It is larger than *B. awapita*, which has similar pronotal angles. While the prominence of the apical pronotal angles is less obvious in females, it can still be used to distinguish *B. napoensis* from *B. chiriquensis* or *B. ledesmae*, the species most closely similar in color. The shape of the en-face of the median lobe of *B. napoensis* is also unlike in any other known *Beltia*.

Remarks. *Beltia napoensis* is known from multiple collections made in the mouth and the upper basin of the Río Napo (Fig. 79). This species shows some variability in the aedeagus: males from Ecuador (Fig. 50e) tend to have apical projections longer and less asymmetric than males from the mouth of the Río Napo. I regard them as the same species here because there are no consistent differences among females from the upstream and downstream populations, and because we know nothing of what lives in the middle reaches of the Río Napo. Like *B. chiriquensis* and *B. ledesmae*, females of this species can be quite variable in color (Fig. 28, 29). A bicolored form was selected as the allotype; others in the type series are monochrome metallic blue or dark green. Legs are dark metallic, dark brown, or metallic with dark brown joints and tarsi. Males are more uniform: metallic green on the body with orangish brown legs.

Beltia nicaraguensis Jacoby

Figures 9, 30, 49, 66, 81

Beltia nicaraguensis Jacoby 1881: 128, by original description; Bechyně 1953: 192; Flowers 1996: 24. Holotype male at MCZ, seen, labeled: Chontales, Nicaragua. Janson//1st Jacoby Coll.//Type 9484.

Redescription. Male. Body ovate, length 5.7–7.3 mm. Head, pronotum, underside, and elytra metallic bright or olive green, often with a reddish purple reflexion; antennomeres 1–9 reddish brown, 10–11 often darker. Legs reddish brown (Fig. 30).

Head. Clypeus coarsely punctate, punctures separated by distance less than their diameters. Frons with punctures separated by distance less than their diameters, surface between punctures smooth; vertex coarsely punctate, surface between punctures smooth.

Thorax. Prothorax distinctly wider than long, L/W = 0.69; pronotum widest behind middle; disc regularly, densely punctate, punctures separated by distance equal to or less than their diameters; surface between punctures shining. Front angles acute, directed anteriorly and down, not prominent. Prosternum with long setae, coarsely and rugosely punctate, expanded laterally behind coxae; posterior margin of intercoxal process weakly concave, width of intercoxal process 1.12× diameter of procoxa. Proepimeron coarsely and rugosely punctate. Mesosternum flat between coxae, surface punctate, with sparse setae. Metasternum with aciculate punctures forming a coarse reticulate pattern, with numerous short yellow setae; metepisternum with surface punctate. Profemur armed below with quadrate denticle in apical fourth (Fig. 9).

Elytra. Coarsely punctate, punctures separated by distance subequal to their diameters, forming diagonal rugosities laterally; width across humeri 1.2× width across pronotum.

Abdomen. Sterna with scattered white setae longer in two submedian rows on sterna III–VI; sternum VII with a pair of weak depressions in center. Terga sclerotized, with row of fine spicules along base of terga II and III, and laterally on IV; terga V and VI with surface shagreened.

Genitalia. Median lobe (Fig. 49a) with apex bearing an asymmetrical tubercle (Fig. 49c); apical sclerite (Fig. 49b) short, heavily sclerotized, with central groove.

Female. Body oval; length 7–8.1 mm; body and leg color as in male.

Head. Labrum, frons, clypeus, and eyes similar to male; antennae with apical segments shorter and more cylindrical than in male.

Thorax. Prothorax distinctly wider than long, L/W = 0.70; shape of pronotum as in male; prosternum similar to male, but width of intercoxal process 1.03× diameter of procoxa. Mesosternum, metasternum, and metepisternum as in male.

Elytra and scutellum as in male.

Abdomen with short setae, sternum VII with lateral margins smooth, apical margin with a small median tubercle and a pair of larger submedian tubercles; pygidium as in male.

Genitalia. Segments VIII–XI forming a moderately elongate (L/W = 4.0) ovipositor (Fig. 66a). Sternum VIII with long, strap-like basal apodeme with apical end widened, a small membranous area in the center. Segment IX covered with minute setae; hemisternites with long basal rods, well sclerotized apically; baculum distinct, apical, shorter than gonocoxae; gonocoxae longer than broad. Spermatheca (Fig. 66b) with receptacle short, cone-shaped, slightly narrower at base than pump.

Specimens examined. (9♂, 7♀) NICARAGUA: Holotype male (MCZ) labeled: Chontales, Nicaragua. Janson//1st Jacoby Coll.//Type 9484. COSTA RICA: **Alajuela Prov.** (1♀) Est. San Ramon Oeste, 620m. 3–19 Abr 1994, F. Quesada, L-N-318100381900 # 2817//INBIOCRI001778135; (1♂) Sect. San Ramon de Dos Rios, 1.5 Km NO. Hda. Nueva Zelandia. 620m. 13–30 AGO 1996. F. A. Quesada. LN318100381900 #44743//INBIOCRI002483510; **Guanacaste Prov.** (1♂) Est. Pitilla, 700m, 9 km S Sta. Cecilia, P. N. Guanacaste, P. Rios, Jun 1991, L-N 330200380200//INBIOCRI000309808; (1♂, 1♀) same locality, C. Moraga & P. Rios, Mar 1991//INBIOCRI000342002, INBIOCRI000351317; (1♂) same locality, C. Moraga, 2–9 mar 1992//INBIOCRI000424635; (1♀) same locality, 19 May–3 Jun 1993, C. Moraga// INBIOCRI001315321; (1♀) same locality, Tp Malaise 1991//INBIOCRI000853077; (1♂) Est. Las Pailas, 800 m, P. N. Rincon de la Vieja, 15 jul a 14 sept 1992, J. Sihezar, G. Rodriguez, L-N 306300388600// INBIOCRI000826238; (1♂) Estac. Maritza, 600m, W. side Volcán Orosí, Malaise Tp. 1988 GNP Biod. Sur., 326900, 37300//INBIOCRI0000036879; **Heredia Prov.** (1♂) Send. Terciopelo, Est. Magsasay, P.N. Braulio Carrillo, 220 m. m. 1991, Malaise, L S 264700531000//INBIOCRI001194156; (1♂) Est. Biol. La Selva 50-, 150m. 10°26′N 84°01′W, Jul 1993 INBio-OET//5 de Julio 1993, *Virola koschnyi* FVK/09/07// INBIOCR1002256795; (1♀) same locality, Jul 1993 INBio-OET//3 Julio 1993, FOT/07/33, *Goethalsia meiantha*//INBIOCR1002256715; (1♀, FSCA) Estación El Ceibo, 10km, SE La Virgen, 10°20′N, 84°05′W, elev. 450–550m, 11-IV-2003, S.M. Clark; **Limón Prov.** (1♂) Sector Cerro Cocori, Fca. de E. Rojas, 150m, May 1993, E. Rojas, L-N 286000567500 #2101//INBIOCRI001350265; (1♀) same locality, F. A. Quesada, 26 mar a 24 abr 1992//INBIOCRI000771179. All specimens from MNCR-A unless otherwise noted.

Diagnosis. This species can be distinguished from all other *Beltia* (and most other Neotropical Eumolpinae) by the quadrate apical teeth on the profemora (Fig. 9). It can be further distinguished from the other two *Beltia* species with toothed profemora (*B. tisingalita* and *B. weyrauchi*, see below) by the more coarsely punctate pronotum.

Remarks. The female specimen from La Selva has the characteristic quadrate tooth on the left profemur only. This species is limited to an area including southern Nicaragua (the type locality) and across northern Costa Rica (Fig. 81). The two specimens from La Selva were collected by canopy fogging.

Beltia osa Flowers, new species

Figures 31, 51, 67, 80

Description of male holotype. Body ovate; length 5.9 mm (range 5.9–6.4 mm). Head, pronotum, underside, and elytra shining dark blue; antennomeres 1–8 reddish brown, 9–11 piceous. Femora orangish brown, tibiae and tarsi dark reddish brown (Fig. 31).

Head. Apex of clypeus densely punctate, distance between punctures subequal to their diameters, junction of clypeus and frons weakly depressed between antennal calli. Frons strongly punctate, punctures separated by distance greater than their diameters; surface between punctures wrinkled, vertex with a distinct median impressed line, finely punctate. Antennal calli flat and wrinkled, not strongly contrasting with frons.

Thorax. Prothorax distinctly wider than long, L/W = 0.56; pronotum widest at middle; disc densely punctate, punctures separated by distance slightly less to slightly greater than their diameters; punctulae relatively coarse. Prosternum finely punctate, with short whitish setae; posterior margin of intercoxal process concave, width of process 1.12× diameter of procoxa. Proepimeron weakly concave, sparsely punctate, punctures separated by distance greater than puncture diameter, surface wrinkled. Mesosternum subequal in width to prosternum, convex on anterior slope, surface punctate, with sparse setae. Metasternum smooth; metepisternum broad, gradually narrowed posteriorly, finely alutaceous.

Elytra. Evenly punctate, punctures separated by distance subequal to their diameters; surface between punctures smooth, with small punctulae; width across humeri 1.2× width across pronotum; basal calli and postbasal depression obsolete.

Abdomen. Sterna with numerous short setae, sterna III–VI with a transverse band of long erect setae, interrupted in midline of sterna III–IV, surface of segments smooth. Sternum VII with lateral margins smooth, a weak depression in center, long setae along posterior margin. Terga with basal spicules on segments II and II, and laterally on IV; surface shagreened on segments V and VI and in apical third of segment IV.

Genitalia. Median lobe with strongly notched lateral margins (Fig. 51a) that are convergent to apex, giving it an "arrowhead" shape in en-face view (Fig. 51c). Apical margin of median lobe with a small, slightly asymmetric point. Apex of endophallus with a small sclerite and a field of fine spicules with a number of larger spicules in several aligned rows (Fig. 51b).

Female allotype. Body oval; length 6.7 mm (range 6.3–7.2 mm); head, body, and elytra dark bronze; leg color as in male.

Head. Labrum, frons, clypeus, eyes, and antennae similar to male except frontoclypeal suture not depressed, antennal calli more swollen and contrasting with frons.

Thorax. Prothorax as in male; shape and punctation of pronotum as in male; prosternum similar to male, but with width of intercoxal process 1.03× diameter of procoxa. Mesosternum, metasternum, and metepisternum as in male.

Elytra. Similar to male but with a shallow posthumeral depression.

Abdomen. Sterna with short pale setae and 1–2 erect submedian setae on sterna III–VI, sternum VII with lateral margins crenulate, apical margin with a small emarginate ridge.

Genitalia. Segments VIII–XI forming elongate ovipositor (L/W = 6.33; Fig. 67a). Sternum VIII with long, strap-like basal apodeme, widened apically; only several setae remain of apicolateral arms; dorsum of segment VIII weakly sclerotized laterally. Segment IX covered with minute setae in apical half; baculum subequal to gonocoxae. Spermatheca as in Fig. 67b.

Specimens examined. COSTA RICA: **Puntarenas Prov.** (4♂, 4♀) Male holotype labeled: Rancho Quemado, Pen. de Osa, Punta, COSTA RICA, 200m. 7–27 Ene 1992, A. Gutierrez, L S 292500511000 #1813//INBIOCRI001676555; Female allotype labeled: COSTA RICA: Puntarenas, R.F. Golfo Dulce. 24 Km W. Piedras Blancas. 200m. ene 1993, P. Hanson//INB0003705477; PARATYPES: (1♂) same locality and collector as allotype, dec. 1992//INB0003705478; (1♂, 2♀, MZUCR) same locality and collector, I. 1992; (1♂, MNCR-A) same data as holotype//INBIOCRI001676556; PANAMA: **Chiriquí Prov.** (1♀, FSCA) Panama, Chiriqui, Fortuna (82°15′W, 8°44′N) May 19, 1978, O'Briens & Marshall. Holotype and allotype deposited in MNCR-A, paratypes in MNCR-A, MZUCR, and FSCA.

Etymology. *Osa*, Spanish. Named for the Osa Peninsula of Costa Rica.

Diagnosis. This species is similar in appearance to some *B. chiriquensis* but can be distinguished by a more densely punctate pronotum and by tibiae and tarsi, which can be brown or metallic; the combination of light brown tarsi and metallic tibiae is not found in *B. osa*.

Remarks. This species is also quite variable in body color. Males in the paratype series vary from bronze to dark blue; females are bronze to coppery red. This species appears to be restricted to areas along the Costa Rica–Panama border (Fig. 80).

Beltia placidula Bechynĕ, new combination

Figures 14, 32, 52, 68, 78

Colaspoides placidula Bechynĕ 1950b: 226, original description; Bechynĕ 1953: 279. Holotype male at USNM, seen, labeled: TINGO MARIA, (Río Huallaga) 700m, X. 1947, leg Weyrauch//WKW 3851//Type//HOLOTYPE *Colaspoides placidula* m. det. J. Bechynĕ 1950//HOLOTYPE USNM 66979//USNMENT 00911436.

Redescription. Male. Body ovate, dorsally convex; length 5.0–5.8 mm. Head metallic golden green, pronotum and elytra greenish gold with reddish coppery reflexion, scutellum metallic green; antennae testaceous with apical two or three antennomeres darker, legs testaceous. Underside metallic bluish green.

Head. Clypeus densely punctate, punctures separated by distance slightly greater than their diameters. Frontoclypeal suture distinct. Frons strongly punctate, surface between punctures smooth to weakly alutaceous, punctures separated by distance subequal to their diameters; vertex with a distinct median impressed line, punctures aciculate, surface between punctures smooth.

Thorax. Prothorax distinctly wider than long, L/W = 0.6; disc regularly, finely punctate, with punctures separated by distance greater than their diameters; surface between punctures glossy, with numerous punctulae. Prosternum wrinkled, sparsely punctate, with short whitish setae, posterior margin of intercoxal process slightly concave, width of intercoxal process equal to diameter of procoxa. Metasternum smooth, metepisternum finely alutaceous.

Elytra. Evenly punctate, punctures separated by distance greater than their diameters, surface between punctures with small punctulae; width across humeri 1.02× width across pronotum. Basal calli moderately developed, postbasal depression shallow.

Abdomen. Sterna with numerous short setae and long setae along middle third at rear margin of segments III–VI, surface of segments alutaceous. Tergites II and III with a basal row of spicules, tergite IV with spicules laterally; surface of tergites V and VII shagreened.

Genitalia. Median lobe in lateral view strongly curved and bent downward, a blunt projection at middle of lateral margin (Fig. 52a); in en-face view with "arrowhead" consisting of well-sclerotized converging lateral margins broadly curved to a sharp asymmetrical projection (Fig. 52c). Apex of endophallus (Fig. 52b) with field of small spicules and a small apical sclerite.

Female. Length 5.4–6.2 mm; color of head, pronotum, and elytra golden green with strong coppery reflexion; underside dark blue; antennae testaceous with apical three antennomeres piceous; legs varying from dark testaceous to dark metallic blue.

Head. Punctation as in male.

Thorax. Pronotum with proportions and punctation as in male. Surface of prosternum more rugose than in male, posterior margin less concave. Metasternum and metepisternum as in male.

Elytra. As in male.

Abdomen. With scattered whitish setae, apex of sternum VII weakly crenulate with apical, shallow, V-shaped emargination, a subapical transverse costa with two small median projections present (Fig. 14).

Genitalia. Abdominal segments VIII–X forming elongate ovipositor (L/W = 6.67); sternum VIII elongate, needle-shaped (Fig. 68a); spermatheca with elongate, bulbous receptacle (Fig. 68b).

Specimens examined. (4♂, 4♀) PERU: **Huánuco Region.** (1♂, SEMC) Peru S.A., 6.7. 1939, Felix Woytkowski//Vic. Tingo Maria//Jungle, 670m a. s. l.; (1♂, SEMC) Peru S.A., 6.7. 1939, F. Woytkowski No. 398, Loc, Shapahilla 630 m. a. s. l. 11 km. N. E. Tingo Moria [sic]. **San Martín Region.** (1♂, SEMC) Peru, S.A., Oct. 15 1936, F. Woytkowski, No. 3758; Seritor, 21 Km W. of Rioja; (1♀, SEMC) same locality and collector, Sept. 30, 1936, No. 3757; (1♀, FSCA) Moyabamba, vic., Ecológico "Rumipata", 13–18-X-2012 J.E. Eger; S06°04′32.0″; W076°58′07.5″, 970m elev. **Loreto Region.** (1♀, FSCA) nr. jct. Río Marañon & Ucayali. 73.5°W 4.8°S, 6–20-VIII-1994, P.E. Skelley; (1♂, 1♀, FSCA) same locality, date, and collector, day catch.

Diagnosis. This species can be distinguished from *B. angustomarginata* by the small pair of tubercles on sternite VII in the female. This character is shared with *B. chiriquensis*, but the characteristic light-colored tarsi of *B. chiriquensis* will distinguish that species.

Remarks. The male can be distinguished from other species with "arrowhead"-shaped median lobes by the relatively weak patches of spicules at the tip of the endophallus. *Beltia placidula* is distributed through the Amazonian region of northern Peru (Fig. 78).

Beltia rugosa Flowers, new species

Figures 33, 53, 78

Description of male holotype. Body ovate, length 5.9 mm. Head, pronotum, and elytra glossy bluish green; antennae yellowish tan. Underside reddish brown with bluish green reflexes, legs reddish brown.

Head. Clypeus densely punctate, punctures separated by distance less than their diameters. Frons strongly punctate, punctures separated by distance greater than their diameters; surface between punctures microreticulate; vertex without impressed line; antennal calli microreticulate, weakly swollen.

Thorax. Prothorax distinctly wider than long, L/W = 0.61; pronotum convex, widest ahead of middle; disc strongly punctate, punctures separated by distance greater than their diameters; surface between punctures microreticulate, with numerous punctulae. Prosternum wrinkled, sparsely punctate, with short whitish setae; posterior margin of intercoxal process truncate, width of intercoxal process 0.94× diameter of procoxa. Proepimeron smooth. Mesosternum flat between coxae, punctate and with white setae. Metasternum wrinkled. Profemur moderately swollen.

Elytra. Coarsely punctate, punctures forming transverse rugosities; width across humeri 1.2× width across pronotum; basal calli weakly developed; postbasal depression scarcely evident.

Abdomen. Sterna subequal in length, densely punctate, with numerous short setae and long setae in two longitudinal bands on either side of midline, with surface of segments alutaceous. Sternum VII with lateral margins smooth, a weak depression in center, long setae along posterior margin.

Genitalia. Median lobe in lateral view broadly curved (Fig. 53a). In en-face view (Fig. 53c) orifical space relatively narrow, postorifical length broad, apex of median lobe tapering to a symmetrical median projection. Apical sclerites (Fig. 53b) small, longitudinally folded.

Female. Unknown.

Specimens examined. (1♂) Male holotype labeled: COLOMBIA Chocó PNN Ensenada de Utria Río San Pichí 6°1′N 77°23′W 10m. Malaise 30.vi–4vii 2000 B. Brown Leg. M.3313. Holotype deposited in IAVH.

Etymology. *rugosa*, Latin, wrinkle, crease.

Diagnosis. This species can be distinguished from other *Beltia* by the transverse rugosities on the elytra.

Remarks. This species is known from the northern Pacific coast of Colombia (Fig. 78).

Beltia sanchezae Flowers, new species

Figures 34, 54, 69, 82

Description of male holotype. Length 5.0 mm. Head, pronotum, elytra, and underside and legs metallic green; antennomeres 1–4 reddish brown, 5–11 black (Fig. 34).

Head. Clypeus densely punctate, punctures separated by distance less than their diameters. Frons strongly punctate, surface between punctures smooth, vertex with median impressed line, punctures aciculate; antennal calli with fine punctulae, weakly swollen.

Thorax. Prothorax wider than long, L/W = 0.63; pronotum smooth, shining, sparsely and finely punctate. Prosternum with short white setae, coarsely punctate; posterior margin of intercoxal process truncate, width of intercoxal process 0.87× diameter of procoxa. Proepimeron with surface smooth, evenly, sparsely punctate. Mesosternum with anterior surface flat, surface sparsely punctate and weakly wrinkled. Metasternum smooth, metepisternum with surface finely granulate.

Elytra. Evenly punctate, punctures larger than those on pronotum, separated by distance greater than puncture diameter; width across humeri 1.4× width across pronotum; basal calli weakly developed; postbasal depression shallow.

Abdomen. Sterna with numerous setae; each segment with a submedian pair of long erect setae, surface of segments alutaceous. Terga with apex of segment IV and segments V and VI shagreened.

Genitalia. Median lobe relatively short, thick and bent downward in lateral view (Fig. 54a); in en-face view broad, truncate, apicolateral margin sharply rounded, a nodule at middle of apical margin (Fig. 54c). Apex of endophallus with a small, twisted apical sclerite (Fig. 54b).

Female allotype. Length 6.0 mm (range 6.0–7.1 mm). Head, pronotum, elytra, and underside and legs metallic green; antennomeres 1–4 reddish brown, 5–11 piceous.

Head. As in male.

Thorax. Prothorax wider than long, L/W = 0.59; pronotum with punctures stronger than in male, intercoxal process weakly concave, width of intercoxal process 1.1× diameter of procoxa. Mesosternum with anterior surface weakly convex. Metasternum and metepisternum as in male.

Elytra. Punctation as in male, width across humeri 1.3× width across pronotum; basal calli weakly developed; postbasal depression shallow.

Abdomen. Sterna with numerous short setae, surface of segments alutaceous. Tergum II with a basal row of small spicules.

Genitalia. Segments VIII–IX forming a short, broad ovipositor (L/W = 0.77; Fig. 69a); sternum VIII with Y-shaped basal apodeme; hemisternites relatively broad, with short basal rods, baculum broad, weakly sclerotized, subequal to gonocoxae. Gonocoxae short, robust, wider than long. Spermatheca with receptacle elongate, broadly fused to pump (Fig. 69b).

Specimens examined. COSTA RICA: **Puntarenas Prov.** (1♂, 5♀) Male holotype labeled: Finca Cafrosa, Embalce, 800m NO. de Tigre. Puntarenas, Costa Rica.1280m. 13–21-MAY 1996. E. Navarro. LS317800596200 #7494//INBIOCR1002375002. Female allotype labeled: COSTA RICA, Prov. Puntarenas, Avenida El Pizote, 1.4 KM. NE. de la Tigra. 1300m. 10–29 JUN 1996. E. Navarro. LS318500597100 #7703//INBIOCRI002466576. PARATYPES: (2♀) Fca. Cafrosa, 1300m, Est. Las Mellizas, P. Internac. La Amistad, Prov. Punt. COSTA RICA M. Ramirez, Jun 1991, L- S 316100596100//INBIOCRI000457776, INBIOCRI00045793; (1♀) Fca. Cafrosa, Est. Las Mellizas, P. N. Amistad, 1300m, Prov. Punt. COSTA RICA, M. Ramirez & G. Mora, May 1990. L- S 316100596100//INBIOCRI000239194; (1♀) COSTA RICA, Prov. Puntarenas, Est. Progreso, 800m NE. de la Escuela Progreso. 1280m. 10–29 JUL 1996. E. Navarro. LS317700594800 #8333//INBIOCRI002471958. All specimens deposited at MNCR-A.

Etymology. This species is named in honor of Maria Sanchez, formerly with INBio, who greatly assisted me and many other visiting taxonomists participating in INBio's biodiversity projects.

Diagnosis. *Beltia sanchezae* is similar in appearance to the other small green species, *B. awapita*, *B. confusa*, *B. herreri*, and *B. talaga*. *Beltia sanchezae* can be separated from all these by its dark bluish green legs and black or dark brown apical half of the antenna. There is also a strong superficial resemblance in color and form between *B. sanchezae* and *Colaspoides batesi* Jacoby; the generic characters noted above will distinguish these two species.

Remarks. *Beltia sanchezae* is known from only a small area in the Talamanca mountain range near the Panama border (Fig. 82).

Beltia talaga Flowers, new species

Figures 35, 55, 79

Description of male holotype. Body ovate, length 5.7 mm. Head, pronotum, elytra, and underside brilliant metallic green; antennae testaceous, with apical two antennomeres dark brown; legs yellowish brown (Fig. 35).

Head. Clypeus densely punctate, punctures separated by distance slightly greater than their diameters. Frontoclypeal suture distinct. Frons strongly punctate, surface between punctures smooth to weakly

alutaceous, punctures separated by distance greater than their diameters; vertex without a median impressed line, sparsely punctate, surface between punctures smooth.

Thorax. Prothorax distinctly wider than long, L/W = 0.6; disc regularly, finely punctate, with punctures separated by distance greater than their diameters; punctures more numerous and aciculate along midline; surface between punctures shining, with numerous punctulae. Prosternum sparsely punctate, with numerous whitish setae, posterior margin of intercoxal process strongly concave, width of intercoxal process 1.1× diameter of procoxa. Mesosternum convex on anterior slope. Metasternum transversely wrinkled, metepisternum finely microreticulate.

Elytra. Evenly punctate, punctures separated by distance greater than their diameters, surface between punctures with numerous small punctulae; width across humeri 1.2× width across pronotum. Basal calli weakly developed, postbasal depression obsolete.

Abdomen. Sterna with numerous short setae and a transverse row of long setae along middle third of segments III–VI, surface of segments alutaceous. Tergites with a basal row of spicules on segments II and III, and spicules laterally on segment IV. Surface of segments V and VI shagreened.

Genitalia. Median lobe short and broad, in lateral view strongly curved (Fig. 55a); apex in en-face view subquadrate, postorifical length narrow, with a slightly asymmetrical central projection (Fig. 55c); apical sclerite consisting of several small laminae (Fig. 55b). Apex of spermathecal gland lacking a sclerotized cap.

Female. Unknown.

Specimens examined. (1♂) Male holotype labeled: ECUADOR NAPO TALAGA 600m 77°54′W 01°03′S 12JUN99 I. Oña. Holotype deposited in QCAZ.

Etymology. *talaga*, for the locality of the holotype.

Diagnosis. In size and color, *Beltia talaga* most closely resembles *B. awapita* but can be distinguished by the more rounded sides of the pronotum. The endophallus of *B. talaga* also lacks the long sclerotized bar found in *B. awapita*.

Remarks. This species is known from the eastern slope of the Andes in Ecuador (Fig. 79).

Beltia tilarana Flowers, new species

Figures 36, 56, 70, 82

Description of male holotype. Length 5.4 mm (range 5.4–7.9 mm). Head, pronotum, and elytra bright metallic green; antennomeres 1–6 reddish brown, 7–11 black. Underside reddish brown with metallic green reflexions, legs reddish brown (Fig. 36).

Head. Clypeus with punctures separated by distance equal to puncture diameter. Frons coarsely punctate, punctures separated by distance greater than their diameters; surface between punctures finely wrinkled, vertex with surface between punctures smooth; antennal calli smooth.

Thorax. Prothorax distinctly wider than long, L/W = 0.72; pronotum convex, with lateral margins narrow, disc regularly rounded, finely punctate, punctures separated by distance greater than their diameters, pronotum widest behind middle. Prosternum bare, sparsely punctate; posterior margin of intercoxal process truncate, width of intercoxal process 0.56× diameter of procoxa. Proepimeron with surface smooth. Mesosternum flat between coxae, punctate; metepisternum finely granulate.

Elytra. Punctures separated by distance greater than puncture diameter; width across humeri 1.3× width across pronotum; postbasal depression shallow.

Abdomen. Sterna with scattered pale setae, longer in middle third; surface of segments smooth. Basal row of spicules on tergum III; terga V, VI, and apex of IV shagreened.

Genitalia. Median lobe (Fig. 56a) strongly bent downward; in en-face view (Fig. 56c) postorifical length

very narrow, apical margin truncate, with a medium nodule. Endophallus (Fig. 56d) with a pair of small sclerotized basal lateral digits and a pair of large, divided, mostly membranous endophallic lateral digits; apical sclerite (Fig. 56b) lobed and somewhat contorted.

Female allotype. Body oval; length 6.6 mm (range 6.0–10.1 mm); body and leg color as in male.

Head. Labrum, frons, clypeus, eyes, and antennae similar to male; mouthparts similar to male.

Thorax. Prothorax distinctly wider than long, L/W = 0.67; shape of pronotum as in male; underside of prothorax similar to male. Mesosternum more strongly wrinkled than in male.

Elytra. Similar to male but with posthumeral depression deep in outer third.

Abdomen and pygidium as in male, a row of small spicules along base of tergum II.

Genitalia. Segments VIII–XI forming a short, stout ovipositor (L/W = 1.88; Fig. 70a). Sternum VIII with Y-shaped basal apodeme; dorsum of segment VIII weakly sclerotized laterally. Segment IX covered with minute setae in apical half; hemisternites with short, broad basal rods; baculum indistinct, subequal to gonocoxae. Gonocoxae short, broad, robust. Spermatheca (Fig. 70b) with short, curved receptacle broadly joined to pump.

Specimens examined. (9♂, 11♀) Male holotype labeled: Río San Lorenzo, 1050m, Tierras Morenas Z.P. Tenorio, Prov. Guanacaste, Costa Rica. M. Segura, 28 mar. a 21 abr. 1992, L-N 287800, 427600// INBIOCR1000415041. Female allotype labeled: same locality, date, and collector as holotype// INBIOCR1000415042. PARATYPES: COSTA RICA, **Guanacaste Prov.** (1♂) same locality and date as holotype, A. Marin//INBIOCRI000414358; (1♂, 1♀) Tierras Morenas, Bajo Los Cartagos, R. Sn Lorenzo, 1050m, Zona Prot. Tenorio. A. C. Arenal, C. Alvarado, Abr 1991, L-N 287800427600//INBIOCRI000443562, INBIOCRI000443591; **Puntarenas Prov.** (2♂, 7♀) Est. G. Brenes, 1300m, Res. Biol. Monteverde, E. Bello, Jun 1991, L-N 249750450075//INBIOCRI000567202, INBIOCRI000567216, INBIOCRI000567188, INBIOCRI000567205, INBIOCRI000567206, INBIOCRI000567208, INBIOCRI000567209, INBIOCRI000567210, INBIOCRI000567212; (4♂, 2♀) Monteverde, V-26–/VI-3-84, E. Riley, D. Rider, D. LeDoux (TAMU). Holotype and allotype deposited in MNCR-A, paratypes in MNCR-A, FSCA, USNM, EGRC, and TAMU.

Etymology. This species is named for the Tilarán mountain range in Costa Rica, where the Monteverde locality is located.

Diagnosis. This species is distinguished from other *Beltia* by the combination of a uniform bright metallic green head, prothorax, and elytra, with legs, pterothorax, and abdomen orangish brown. In all other metallic green *Beltia* the thorax and at least the base of the abdomen are the same color as the dorsal side.

Remarks. This species has been collected only from Monteverde and surrounding localities in the Tilarán mountain range of Costa Rica (Fig. 82).

Beltia tisingalita Flowers, new species

Figures 10, 37, 71, 82

Description of female holotype. Body ovate, dorsally convex; length 7.0 mm (range 6.7–8.0 mm). Head, pronotum, underside, and elytra bright metallic green; antennomeres 1–10 yellowish brown, antennomere 11 black. Legs yellowish brown (Fig. 37).

Head. Frons and vertex coarsely punctate, punctures on vertex separated by distance slightly greater than their diameters, on clypeus by distance equal to their diameters; surface between punctures smooth, becoming wrinkled above eyes and on vertex; a smooth callus midway between antennal calli.

Thorax. Prothorax distinctly wider than long, L/W = 0.72; pronotum convex, strongly so in anterior third, widest behind middle; disc with punctures separated by distance greater than their diameters, surface between punctures shining. Prosternum trapezoidal, sparsely setose; posterior margin of intercoxal

process truncate, width of intercoxal process 1.17× diameter of procoxa. Mesosternum flat between coxae, surface punctate with sparse setae. Profemur with an acute ventral tooth in apical fourth (Fig. 10).

Elytra. Evenly punctate, punctures separated by distance greater than their diameters; width across humeri 1.25× width across pronotum.

Abdomen. Sterna with numerous short setae, surface of segments alutaceous. Sternum VII with lateral margins weakly crenulate, emarginate apically with a low tubercle on either side of emargination. Terga with spicules very small on tergites II and III, spicules obsolete in middle of tergites.

Genitalia. Segments VIII–XI forming short ovipositor (L/W = 4.1; Fig. 71a). Sternum VIII with long basal apodeme, slightly curved, and widened apically. Hemisternites with long, slightly curved basal rods; baculum robust, subequal in length to gonocoxae. Gonocoxae short, robust. Spermatheca with short conical receptacle (Fig. 71b).

Male. Unknown.

Specimens examined. (5♀) Female holotype labeled: Est. Hitoy Cerere, 100m, R. Cerere, Res. Biol. Hitoy Cerere, Prov. Limon, Costa Rica, R. Guzman, 19–29 abr 1992, L-N 184200643300//INBIOC-RI000443070 (deposited in MNCR-A). PARATYPES: COSTA RICA. **Limón Prov.** (1♀) COSTA RICA. Prov. Limón R.B. Hitoy Cerere, Send. Espavel 560 m, 20-JUN–9-JUL 2003, LS401200 569800 #74450// INBI0003733898 (MNCR-A). PANAMA. (1♀) Bocas del Toro, 18–20 km NE Fortuna Dam, ±2000′ May 23–26, 1984, E. Giesbert, coll (FSCA); (2♀) Bocas d T, Prv 40 km W Chir Gnd, 10,13 May 1999, Wappes & Morris (USNM). Holotype deposited in MNCR-A, paratypes in MNCR-A, FSCA, USNM.

Etymology. *tisingalita*, Spanish, from Tisingal, the legendary emerald mines believed by the conquistadors to be in the eastern Talamancas of Costa Rica (Fallas 2003); *ita*, Spanish diminutive.

Diagnosis. *Beltia tisingalita* most closely resembles *B. nicaraguensis* but can be distinguished by the pointed tooth on the profemur and the finer punctation on the pronotum.

Remarks. The Panama paratype is somewhat larger (8.0 mm) and has dark blue legs except for dark rufous bases of all femora and the undersides of meso- and metafemora. Antennal segments 10 and 11 are black. All specimens come from a relatively small region on the Atlantic side of the Talamanca mountain range on the Costa Rica–Panama border (Fig. 82).

Beltia tsachila Flowers, new species

Figures 38, 57, 72, 79

Description of female holotype. Body ovate, dorsally convex; length 9.1 mm. Head, pronotum, and elytra dull metallic golden green, scutellum green with coppery margin; antennae with scape dark green, antennomeres 2–5 dark reddish brown, remaining antennomeres bluish black. Legs and underside glossy dark green, tarsi bluish black (Fig. 38).

Head. Clypeus and frons densely aciculate-punctate, punctures separated by distance slightly less than their diameters; surface between punctures alutaceous, punctures separated by distance subequal to their diameters; frontoclypeal suture distinct, vertex with a distinct median impressed line, antennal calli small and poorly defined.

Thorax. Prothorax distinctly wider than long, L/W = 0.64, widest close to base; disc regularly, strongly punctate, punctures separated by distance subequal to their diameters; surface between punctures with numerous punctulae. Prosternum densely punctate, with dense whitish setae, posterior margin of intercoxal process distinctly concave, width of intercoxal process 1.5× diameter of procoxa. Mesosternum convex on anterior face. Metasternum smooth, metepisternum finely alutaceous.

Elytra. Evenly punctate, punctures separated by distance slightly greater than their diameters, surface between punctures with small punctulae; width across humeri 1.23× width across pronotum. Basal calli moderately developed, postbasal depression deep.

Abdomen. Sterna glossy, with numerous long setae, surface of segments V–VII alutaceous. Terga sclerotized, bluish green, alutaceous; a few small spicules laterally on tergum III.

Genitalia. Ovipositor (Fig. 72a) elongate, narrow (L/W = 5.47); sternum VIII with long, strap-like basal apodeme, slightly expanded and less strongly sclerotized in apical fourth; segment IX covered with microspicules, hemisternites with elongate basal rods; baculum distinct, elongate; gonocoxae about as long as wide. Spermatheca (Fig. 72b) with receptacle elongate, a sclerotized raised opening for the spermathecal gland.

Male allotype. Length 9.2 mm, color of head, pronotum, elytra, underside, and legs as in female; antennae entirely bluish black.

Head. Punctation as in female.

Thorax. Pronotum with proportions and punctation as in female. Prosternum narrower than in female (subequal to diameter of procoxa). Metasternum as in female.

Elytra. As in female.

Abdomen. Sterna with numerous white setae except for a glabrous area along midline of sterna III–VII.

Genitalia. Median lobe robust, curved at a right angle, a sinuate lamina on lateral margin along inside curvature (Fig. 57a); apex of median lobe tapered to a slightly off-center sharp projection (Fig. 57c). Apical sclerite small, twisted, and somewhat paddle-shaped (Fig. 57b).

Specimens examined. (1♂, 1♀) Female holotype labeled: ECUADOR: **Pichincha Prov.** Tinalandia, 12 km E. Santo Domingo de los Colorados 11–17-V-1986, G.B. Edwards forest, field, 2200–2500′ (FSCA). Male allotype labeled: same data as holotype. Holotype and allotype deposited in FSCA.

Etymology. *Tsachila*, named for the indigenous Tsachila people of Ecuador, who still inhabit the region where this species was found.

Diagnosis. This species can be recognized by its large size and relatively coarse punctation on both the pronotum and elytra. The laminae along the curve of the median lobe are unique among the *Beltia* so far known.

Remarks. The female was selected to be the holotype because it is in a much better condition than the male. The male abdomen and genitalia were badly broken during the pinning process; the drawing of the aedeagus is a composite of the various fragments found after dissection. This species is known from one locality in the foothills of the western Andes in Ecuador (Fig. 79).

Beltia vacilona Flowers, new species

Figures 39, 58, 73, 80

Description of male holotype. Body ovate; length 5.3 mm (range 5.0–6.0 mm). Head, pronotum, elytra, underside, and legs except tarsi glossy dark blue; antennomeres 1–3 reddish brown, 4–11 piceous; tarsi dark brown.

Head. Clypeus densely punctate, punctures separated by distance equal to their diameters. Frons strongly punctate, punctures separated by distance greater than their diameters, surface between punctures finely wrinkled; vertex with a distinct median impressed line; antennal calli smooth, swollen.

Thorax. Prothorax distinctly wider than long, L/W = 0.58; pronotum convex, widest behind middle; disc regularly punctate, with punctures separated by distance greater than their diameters; surface between punctures shining, with numerous punctulae. Prosternum wrinkled, sparsely punctate, with short whitish setae; posterior margin of intercoxal process weakly concave, width of intercoxal process 1.25× diameter of procoxa. Mesosternum flat on anterior face, surface wrinkled. Metasternum smooth, with weak transverse wrinkles anteriorly, metepisternum finely alutaceous.

Elytra. Evenly punctate, punctures separated by distance greater than their diameters; width across humeri 1.3× width across pronotum; basal calli weakly developed; postbasal depression shallow.

Abdomen. Sterna with surface of segments smooth, with scattered short setae and a submedian pair of long white setae on sterna III–VI. Sternum VII with lateral margins smooth, a weak depression in center, long setae along posterior margin. Tergites lacking spicules, V and VI shagreened.

Genitalia. Median lobe in lateral view (Fig. 58a) strongly bent at almost right angle; in en-face view (Fig. 58c) with distal margin quadrate, a small nodule in center; endophallus with two unequal apical sclerites (Fig. 58b).

Female allotype. Body oval; length 6.4 mm (range 5.7–7.5 mm); color as in male, but with tarsi also dark blue.

Head. Frons, clypeus, eyes, and antennae similar to male; vertex with impressed line less defined.

Thorax. Prothorax distinctly wider than long, L/W = 0.52; shape of pronotum as in male; evenly punctate on disc, punctures separated by distance equal to or less than their diameters. Prosternum similar to male. Mesosternum more strongly wrinkled than in male. Metasternum and metepisternum as in male.

Elytra. Similar to male, but with posthumeral depression more distinct.

Abdomen. Terga with short white setae in median third of sterna III–VI, margins of sternum VII smooth.

Genitalia. Abdominal segments VIII–XI forming short, broad ovipositor (L/W = 2.27; Fig. 73a). Sternum VIII with short, teardrop-shaped basal apodeme; hemisternites relatively broad, with short basal rods, baculum distinct, apical, subequal to gonocoxae. Gonocoxae short, robust, wider than long. Spermatheca (Fig. 73b) with receptacle short, cone-shaped, broadly fused to pump.

Specimens examined. COSTA RICA: (17♂, 29♀) Male holotype labeled: Est. Pitilla 700m 9km S Sta. Cecilia P.N. Guanacaste, **Prov. Guanacaste**, Costa Rica. K. Taylor, 31 mar–29 abr. 1993 L-N 3302000, 380200//INBIOCR1000375935. Female allotype labeled: same locality as holotype, 27 mar a 7 abr 1993 P. Ríos//INBIOCR1001386842. PARATYPES: **Guanacaste Prov.** (4♂, 6♀), same locality as holotype; (1♂) Mar 1990, P. Rios, C. Moraga & R. Blanco//INBIOCRI000195818; (1♂) 14 May 1991 R.W. Flowers//INBIOCRI000520884; (1♂) Jul 1991 P. Ríos//INBIOCRI000336776, K. Taylor, 31 mar–29 abr 1992//INBIOCRI000376722; (1♀) 19 May–3 Jun 1993, P. Rios//INBIOCRI001355434; (1♂, 1♀) same locality as holotype, Abr. 1994 C. Moraga #2841//INBIOCRI001789913, INBIOCRI001789912; (2♀) same locality as holotype, MAR 1995. P. Rios, C. Moraga, Malaise, #4211//INBIOCR1002341729 and #6211//INBIOCRI002341727; (1♀) same locality as holotype, Mar 1990, P. Rios, C. Moraga & R. Blanco//INBIOCRI000176667; (1♀, USNM) same locality and collector, Abr. 1995 #4827//INBIOCRI002145550; (1♀, USNM) Est. Cacao, 18 Feb. C. Cano L-N-323100 375800 #4397//INBIOCR1002138070; (1♂) A.C.G Liberia P.N. Guanacaste. Estación Primario. 1000m. 14 MAR 1988 Espinoza. Manual (red libre) LN322740375198 #52596//INB0003359045INBIOCRI COSTA RICA. (1♀) La Cruz. A.C.G. Pque. Nat. Gte. Est. Mengo Ladera SW Volcán Cacao 1100m. 3 JUL 1987 Janzen. Manual. LN330200375700 #52581//INB000335939 INBIOCRI COSTA RICA. (3♀) Z.P. Tenorio, Río San Lorenzo 1050m, Tierras Morenas, L-N- 287800, 427600, 28 mar a 21 abr 1992, M. Segura//INBIOCR1000422459, INBIOCR1000422531, INBIOCR1000752710. (2♀) same locality and date, A. Marin//INBIOCR1000422531, INBIOCR1000416117. (1♂) same locality, Abr. 1991, C. Alvarado//INBIOCR1001398417. (1♂) same locality, L S 283950424500 #2118//INBIOCR1001744421. **Alajuela Prov.** Sector San Ramon de Dos Ríos, 620m. L N 318100381900; (1♀) 25 Mar–12 Abr 1995, C. Cano, #5275//INBIOCR1002204928. (2♂) same locality, 13–28 Mar. 1994, K. Taylor//INBIOCR1001711724, INBIOCR1001711724. (1♀) Est. San Ramón Oeste, 620m, 3–19 Abr. 1994, C. Cano, L N 318100381900 #2818//INBIOCR1001769928. **Heredia Prov.** Los Arbolitos [altitude illegible] 20–27 Mar. 1993, F. Araya, L N 536100291400 #1952//INBIOCR1001676834. **Limón Prov.** Sector Cerro Cocorí, Fca. de E. Rojas, L-N 286000, 667600; (2♀) 26 mar a 24 abr 1992, F.A. Quesada//INBIOCR1000771034, INBIOCR1000771045. (1♀) same locality, Mar. 1991, E. Rojas//INBIOCR1000624750. (1♀) same locality and collector, May 1992//INBIOCR1000373226. **Puntarenas Prov.** (1♂) Fca. Cafrosa, Est. Las Mellizas, P.N. Amistad, 1300m. L-S-316100, 596100, R. Delgado, 19 Jun–26 Jul 1990//INBIOCR1000667864. (1♀) Buenos Aires P.I.L.A. Sector Altamira, A.C. Amistad, 1150–1400m., Jun 1994, R. Delgado, LS331500571700 #3015//INBIOCR1001920258. (1♀) same locality, Send. Gigantes del

Bosque 1200–1400m, 1–22 MAY 2006 R. Gonzalez, Libre, LS331300571500 #86325//INBIO0004013273 INBIOCRI COSTA RICA. (1♂) Fila Cruces, Laguna Gamboa, 1400m., 30 Abr. 1996, I.A. Chacón, LS304200574850 #8233//INBIOCR1002447842. (1♀) Jardin Botanico Wilson, 1100m, 3 Mar. 1996, I.A. Chacón, LS305300577850 #8258//INBIOCR1002455278. Holotype and allotype deposited in MNCR-A, paratypes in FSCA, MNCR-A, MZUCR, and USNM.

Etymology. *vacilona*, Spanish, from *vacilón*, a common Costa Rican expression for something unusual, funny, or strange.

Diagnosis. This species can be distinguished from all other *Beltia* by the uniform dark cobalt color of the entire body and legs. The uncanny similarity of appearance between *B. vacilona* and *Colaspoides unicolor* was the inspiration for this revision.

Remarks. This species occurs in both the northern and southern termini of the central mountain ranges of Costa Rica, as well as in the northern Atlantic coastal lowlands (Fig. 80).

Beltia weyrauchi Bechynĕ, new combination

Figures 40, 41, 59, 74, 78

Colaspoides weyrauchi Bechynĕ 1950b: 225 (original description); Bechynĕ 1953: 280. Holotype male at USNM, seen, labeled: Valle Chanchamayo (Peru) 800m, 1939, leg. Weyrauch//WKW 5832//Type//HOLOTYPE USNM 66980//TYPE *Colaspoides weyrauchi* m. det. J. Bechyne 1950//USNMENT00911465.

Colaspoides chanchamayensis Bechynĕ 1950b: 227 (original description); Bechynĕ 1953: 378. Holotype male at USNM, seen, labeled: La Merced, Valle Chanchamayo (Peru) 800m, 1939, leg. Weyrauch//WKW 6253// Type//HOLOTYPE USNM 66978//TYPE Colaspoides chanchamayensis m, det. J Bechyne 1950//USNMENT 00911386, **new synonymy.**

Bechynĕ (1950b) described both species from Peru as typical *Colaspoides* without mentioning the toothed profemora. However, specimens of both species in the Frey Collection, as well as in the collection of the Fundación Miguel Lillo in Argentina, show this character. The descriptions below are based on three specimens from Peru, all collected in the vicinity of the type localities listed by Bechynĕ.

Redescription. Male. Body ovate, length 5.8 mm. Body cobalt blue, legs and antennae yellowish tan (Fig. 40).

Head. Clypeus densely punctate, punctures separated by distance subequal to their diameters; frontoclypeal suture indistinct. Frons strongly punctate, punctures aciculate laterally; frons and vertex with impressed median line; antennal calli indistinct.

Thorax. Pronotum wider than long (L/W = 0.6). Prosternum sparsely punctate, with short whitish setae; posterior margin of intercoxal process weakly concave, width of intercoxal process subequal to diameter of procoxa. Metasternum transversely wrinkled, metepisternum finely alutaceous. Profemur with a hooked ventral tooth in apical third.

Elytra. Evenly punctate, punctures separated by distance several times their diameters; elytra at humeri 1.3× width of pronotum; postbasal depression weak.

Abdomen. Sterna with seta-bearing punctures in longitudinal bands on either side of midline; surface of segments smooth.

Genitalia. Median lobe in lateral view curved downward, apex bent upward (Fig. 59a). In en-face view apex narrowed to a somewhat asymmetrical projection; postorifical area relatively broad (Fig. 59c). Tip of endophallus with a small apical sclerite and a patch of spicules (Fig. 59b).

Female. Body ovate, length 7.2 mm. Head and pronotum glossy green with coppery reflexion, elytra shining reddish purple with green reflexion laterally, thoracic sterna glossy dark blue, legs and abdomen dark piceous with a blue reflexion; antennomeres piceous (Fig. 41).

Head. Punctation as in male.

Thorax. Prothorax wider than long, L/W = 0.52; shape and punctation of pronotum and elytra as in male. Prosternum as in male. Width across humeri 1.2× width across pronotum; basal calli developed; postbasal depression shallow.

Abdomen. Surface of sterna and setae as in male, sternum VII with a small, transverse, subapical tubercle.

Genitalia. Abdominal segments VIII–X forming an elongate (L/W = 5.18) ovipositor (Fig. 74a). Sternum VIII with a long, needle-shaped basal apodeme, divided at midline in central third; segment IX covered with minute spicules; hemisternites with elongate basal rods; baculum distinct, elongate; gonocoxae slightly longer than wide. Spermatheca (Fig. 74b) with receptacle bulbous, slightly narrower than pump.

Specimens examined. (1♂, 2♀). (1♂) PERU: Junin, Sani Beni valley, Saitipo 840m, 14 Dec. 1935, Felix Woytkowski; (1♀) same locality and collector, 9-10-1935; (1♀) same department and collector, 8 km E Saitipo, 10 Oct. 1935 (all deposited in SEMC).

Diagnosis. *Beltia weyrauchi* is most similar to *B. tisingalita* in that both species have acute teeth on the profemora. In *B. tisingalita* the pronotum is more strongly convergent anteriorly and the body is more elongate than in *B. weyrauchi*.

Remarks. Bechynĕ described both forms in a key to Peruvian *Colaspoides*, giving leg color as a distinguishing character: *C. weyrauchi* was described as having testaceous legs, whereas the legs are metallic in *C. chanchamayensis*. In the three specimens studied here, the legs are yellowish brown in the male, dark reddish brown with metallic bluish green femora in one female, and dark metallic bluish green in a second female. As already seen in several species, leg color by itself is not a useful character for delineating species in *Beltia*. Since *C. weyrauchi* has page priority in Bechynĕ's (1950b) publication, I chose that name for the new combination. Bechynĕ's description of the locality of *C. chanchamayensis* includes a note: "type, Mus. Javier Prado á Lima", which appears to be contradicted by the labeled holotype in the USNM. This species is known only from a small area in the eastern Peruvian Andes (Fig. 78).

Discussion

Among the species described herein for *Beltia*, there is substantial variability among both male and female genitalia. In particular, in most species the ovipositor is elongate and telescopic, whereas in several Costa Rican species the ovipositor is short and broad (Fig. 69, 70, 73). In the median lobe of males, the variability of the apical margins is a useful identification characteristic, but there is also a tendency to asymmetry that can range from pronounced (as in *B. nicaraguensis*; Fig. 49) to barely discernible (as in several South American species; Fig. 50, 55, 59). How much phylogenetic significance to attach to this variability cannot be determined until more comparative data from other genera are available. However, similar levels of genitalic variation occur in at least one other genus, *Prionodera* Chevrolat (Flowers 2004).

Apical structures in the endophalli of *Beltia* exhibit a higher degree of variability than has heretofore been reported in the Eumolpinae. Generally, the apex of the endophallus contains a small sclerite or group of sclerites that nevertheless can be quite variable in form and size in the Eumolpini (Flowers 1999). These apical sclerites are also found in *Beltia*, but additional structures are also present and diagnose smaller species groupings: fields of spicules in *B. angustomarginata*, *B. awapita*, *B. chiriquensis*, *B. ledesmae*, *B. osa*, and *B. placidula*; a subapical sclerotized rod in *B. awapita* and *B. ledesmae*.

Traditionally, color has been used to define species in *Colaspoides*, including in some species treated here. However, in the cases where larger series of specimens were available for study this character breaks down in an interesting way. In species from South America to southern Costa Rica color combinations are variable within species, especially in the females. By contrast, the species occurring along the central mountain range of Costa Rica display almost no color variability.

Colaspoides is also listed as occurring in Asia, with numerous species therein (recently reviewed by Medvedev 2003). As with the Neotropical species here removed from *Colaspoides*, these Asian species must also be eventually placed in a different genus (or genera), since they have pygidial wing-locking

grooves, and the lateral arms of the prosternum are not swollen as in true *Colaspoides*. I have only seen one male genitalia preparation from this group, but it shows some significant differences with both *Colaspoides* s. str. and *Beltia*.

It is far too early to speculate about the phylogenetic position of *Beltia*, or for that matter most of the other Neotropical eumolpine genera, until more complete studies have been done on at least the most abundant genera. Moreover, since nothing in South America (or in any other country) has approached the former Costa Rican National Biodiversity Inventory in detail and thoroughness, and since the large quantities of unsorted Neotropical Eumolpinae in many other museums undoubtedly include both *Colaspoides* and *Beltia*, this review is at best a preliminary view of a potentially more widespread South American genus.

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Literature Cited

Askevold, I. S., and R. W. Flowers. 1994. *Glyptosceloides dentatus*, a genus and species of Eumolpinae new to Chile (Coleoptera: Chrysomelidae). Revista Chilena de Entomología 21: 69–76.

Bechyně, J. 1950a. Notes sur les eumolpides américains. Mitteilungen der Münchner Entomologischen Gesellschaft 40: 245–263.

Bechyně, J. 1950b. Eumolpides américains nouveaux ou peu connus. Entomologische Arbeiten aus dem Museum G. Frey 1: 205–236.

Bechyně, J. 1953. Katalog der neotropischen eumolpiden (Col. Phytoph. Chrysomeloidea). Entomologische Arbeiten aus dem Museum G. Frey 4: 26–303.

Blackwelder, R. E. 1946. Checklist of the coleopterous insects of Mexico, Central America, the West Indies, and South America. Bulletin of the United States National Museum 185, part 4: 551–763.

Fallas, C. 2003. Mamita Yunai. Editorial Costa Rica; San José. 213 p.

Flowers, R. W. 1995. *Hermesia* Lefèvre, a resurrected genus of Neotropical Eumolpinae (Coleoptera: Chrysomelidae). Proceedings of the Entomological Society of Washington 97: 35–45.

Flowers, R. W. 1996. La subfamilia Eumolpinae (Coleoptera: Chrysomelidae) en América Central. Revista de Biología Tropical, Publicación Especial 2: 1–60.

Flowers, R. W. 1999. Internal structure and phylogenetic importance of male genitalia in the Eumolpinae. p. 71–93. *In*: M. L. Cox (ed.). Advances in Chrysomelidae biology 1. Backhuys Publishers; Leiden, Netherlands. 691 p.

Flowers, R. W. 2004. A review of the Neotropical genus *Prionodera* Chevrolat (Coleoptera, Chrysomelidae, Eumolpinae) with description of a new genus. Zootaxa 631: 1–54.

Jacoby, M. 1881. Insecta, Coleoptera, Phytophaga, Cryptocephalidae, Chlamydidae, Lamprosomidae, Eumolpidae. p. 73–144. *In*: Biologia Centrali-Americana, Vol. 6, Pt. 1; Bernard Quaritch Limited; London. 625 p.

Jacoby, M. 1882. Insecta, Coleoptera, Phytophaga, Eumolpidae. p. 145–224. *In*: Biologia Centrali-Americana, Vol. 6, Pt. 1. Bernard Quaritch Limited; London. 625 p.

Jacoby, M. 1891. Insecta, Coleoptera, Supplement to Phytophaga. p. 233–312. *In*: Biologia Centrali-Americana, Vol. 6, Pt. 1. Bernard Quaritch Limited; London. 625 p.

Jolivet, P. 1957. Recherches sur l'aile des Chrysomeloidea. Première partie. Mémoires de l'Institut Royal des Sciences Naturelles de Belgique (2° série) 51: 1–180.

Jolivet, P. 1959. Recherches sur l'aile des Chrysomeloidea. Deuxième partie. Mémoires de l'Institut Royal des Sciences Naturelles de Belgique (2° série) 58: 1–152.

Medvedev, L. N. 2003. Revision of the genus *Colaspoides* Laporte, 1833 (Chrysomelidae: Eumolpinae) from continental Asia. Russian Entomological Journal 12: 257–297.

Riley, E. G., and R. J. Barney. 2015. Definition and revision of the *viduatus* species-group of North American *Pachybrachis* Chevrolat (Coleoptera: Chrysomelidae: Cryptocephalinae). Coleopterists Bulletin 69: 25–59.

Shorthouse, D. P. 2010. SimpleMappr, an online tool to produce publication-quality point maps. Available at http://www.simplemappr.net. (Last accessed July 27, 2018.)

Wikipedia. 2016. Awa Pit language. Available at http://en.wikipedia.org/wiki/Awa_Pit_language. (Last accessed August 6, 2016.)

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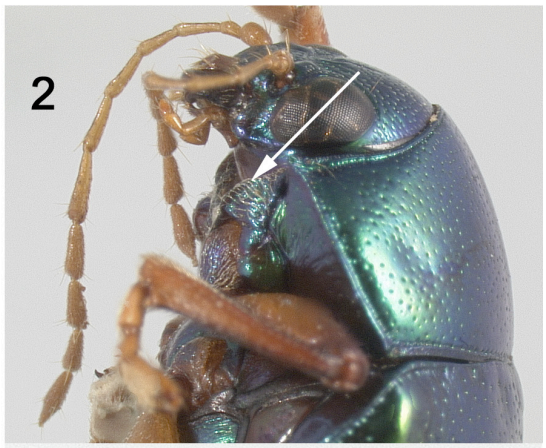
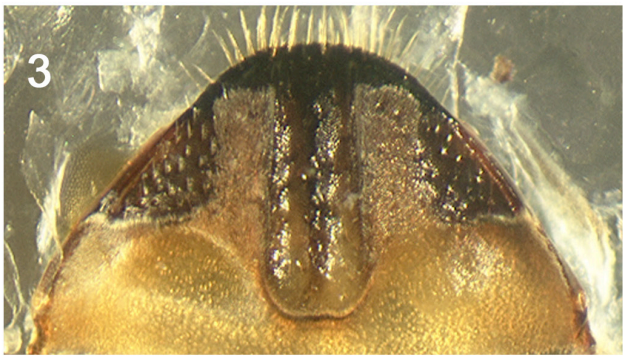
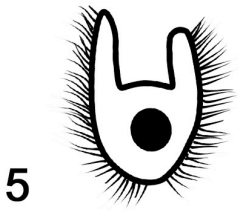
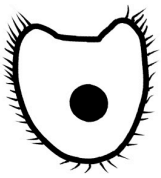
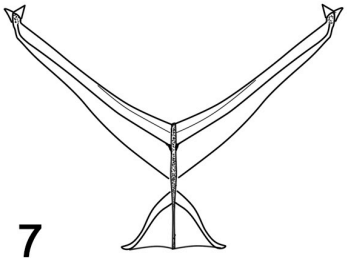
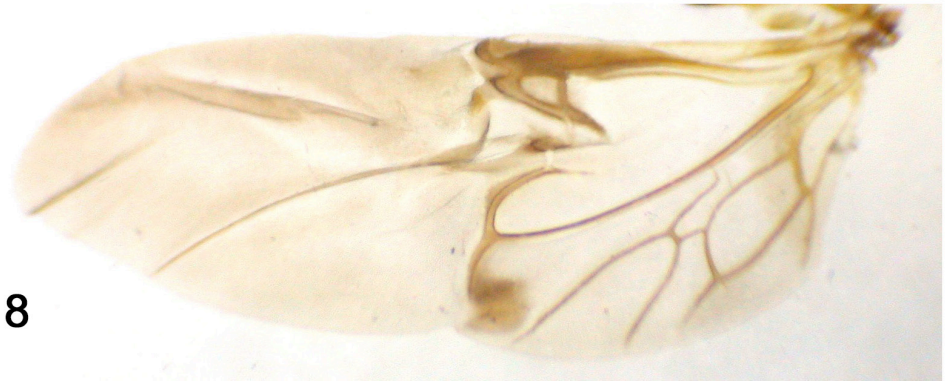




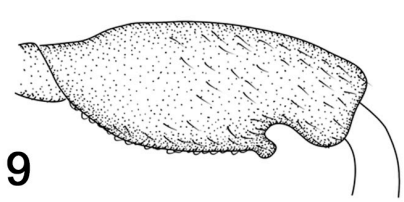








Figures 1–8. Structures of *Beltia* and *Colaspoides*. **1)** *Beltia ledesmae*, living male. Photo: Bernardo Navarrete. **2)** Prothorax, lateral view showing lateral wings of prosternum (arrow), *B. napoensis*. **3)** Pygidium, *B. chiriquensis*. **4)** Lateral view of prothorax showing lateral wings of prosternum (arrow), *C. bicolor* (Olivier). **5)** Posterior view of metatibia, *B. tilarana*. **6)** Posterior view of metatibia, *C. bicolor*. **7)** Furcasternum, *B. vacilona*. **8)** Hind wing, *B. vacilona*.



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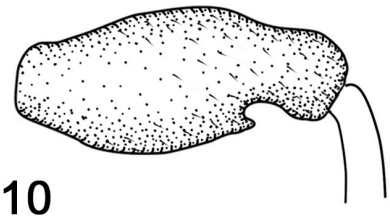

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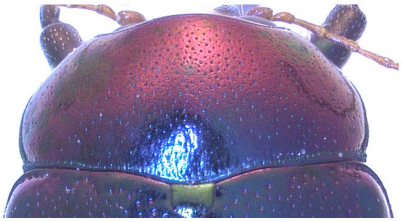

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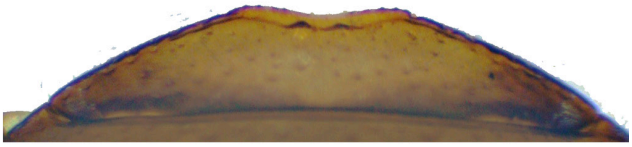

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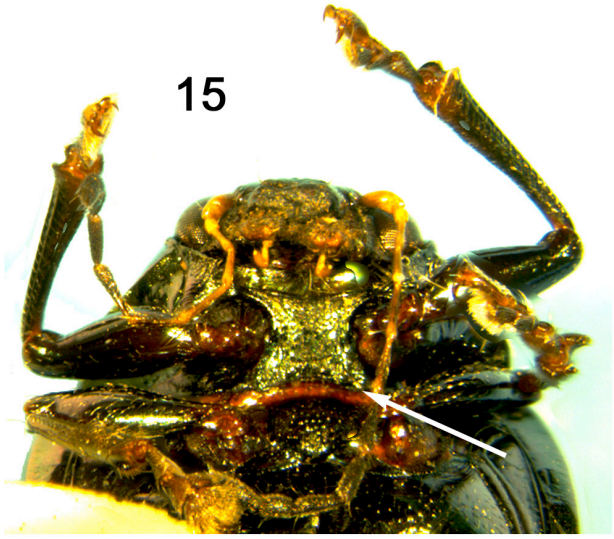

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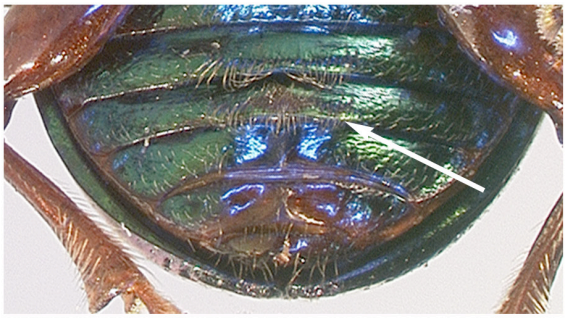

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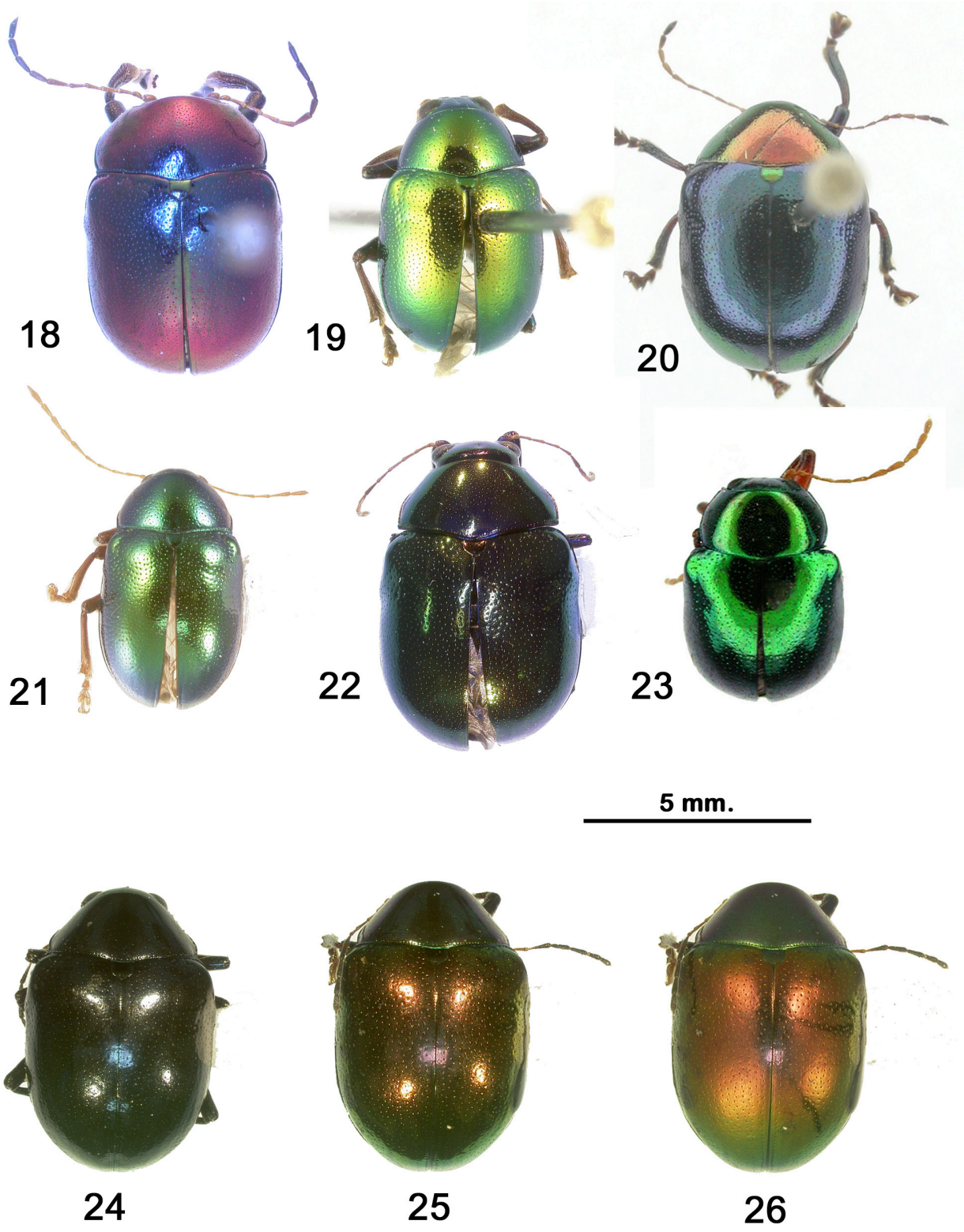
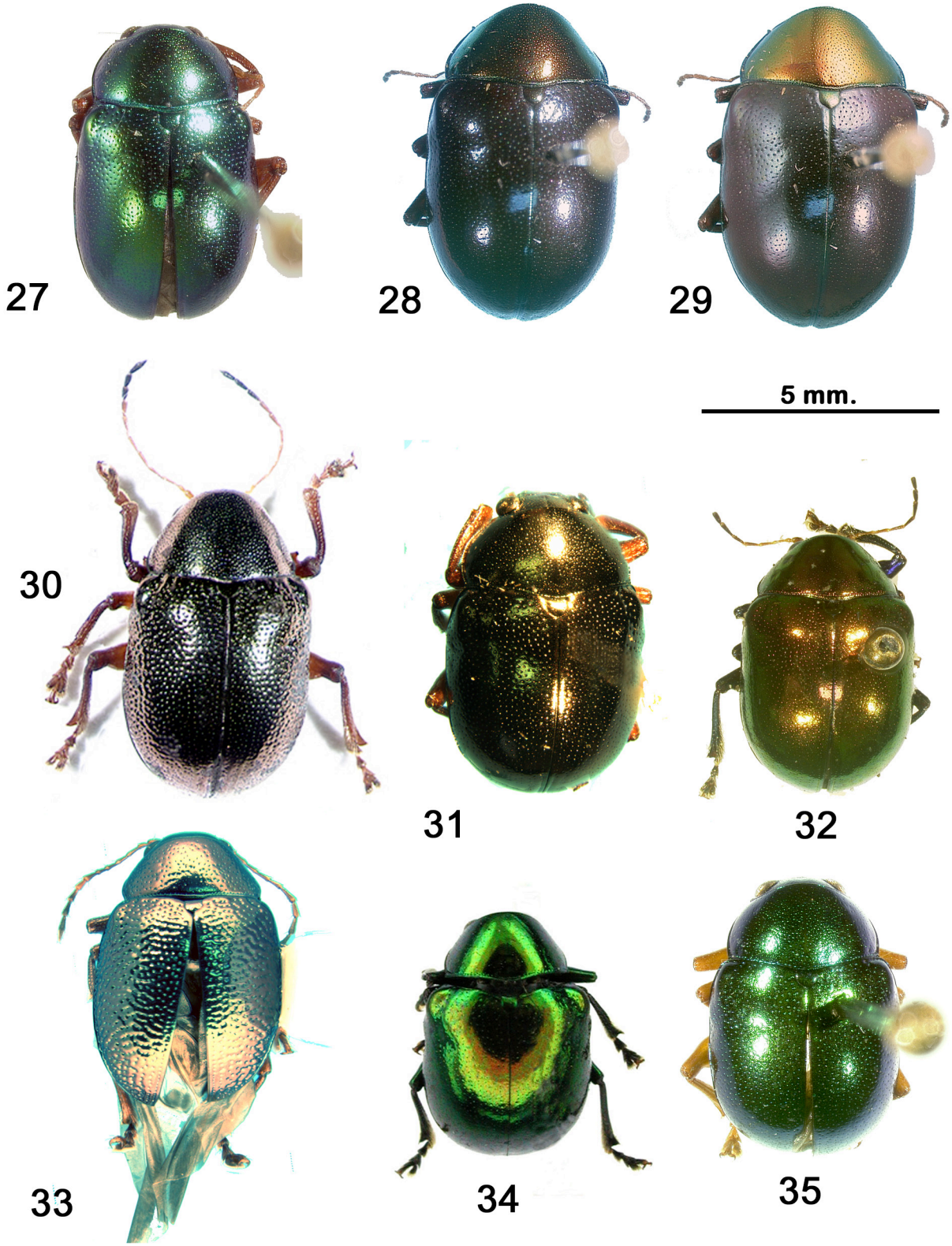
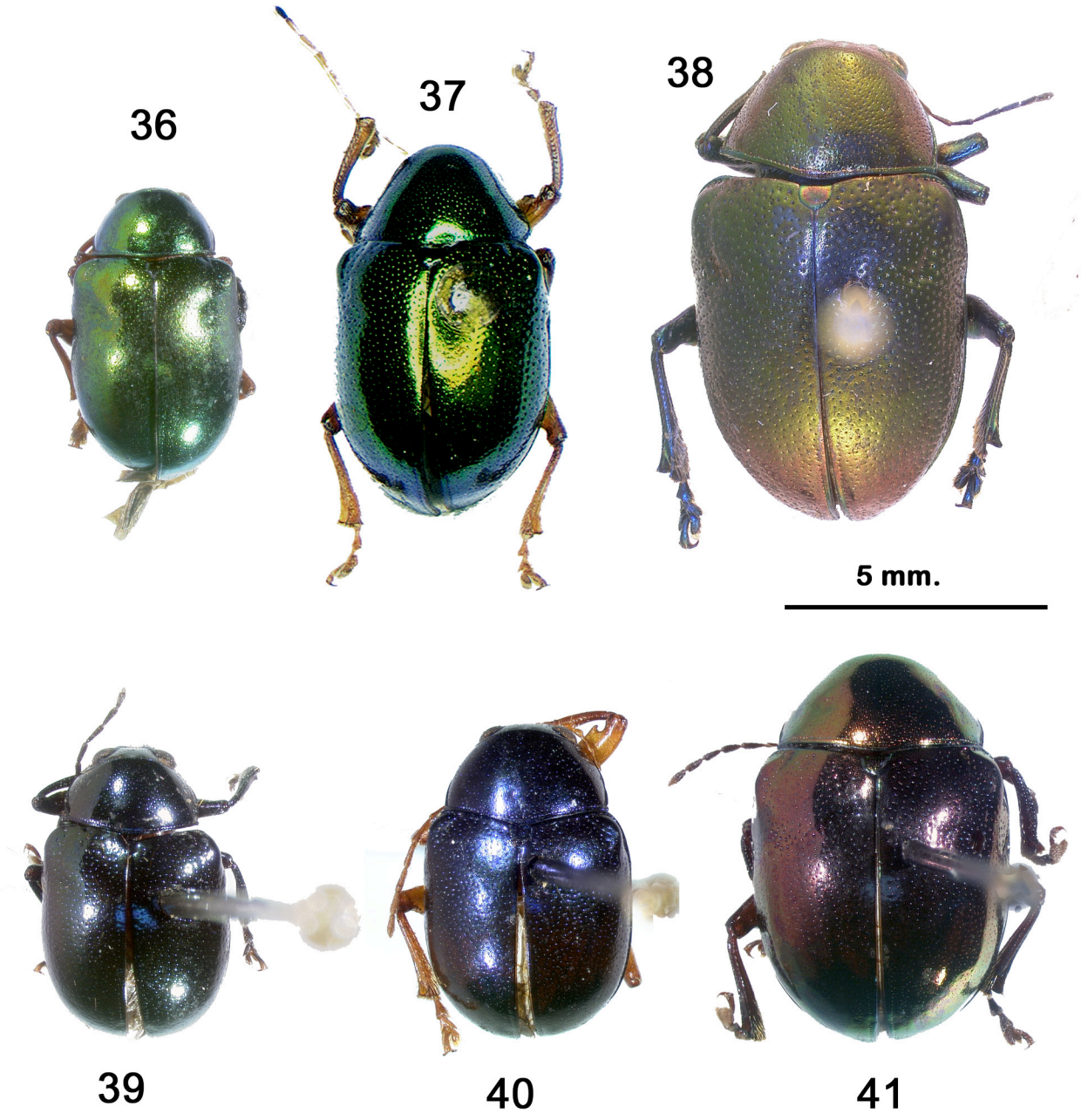
Figures 9–17. Structures of *Beltia*. **9)** Profemur, *B. nicaraguensis*. **10)** Profemur, *B. tisingalita*. **11)** Pronotum, *B. angustomarginata*. **12)** Pronotum, *B. ledesmae*. **13)** En-face view of median lobe, *B. angustomarginata*. **14)** Apex of abdomen, *B. placidula*. **15)** Concave prosternum (arrow), *B. ledesmae*. **16)** Head and pronotum, *B. napoensis*. **17)** Male abdomen with seta patches (arrow), *B. herreri*.



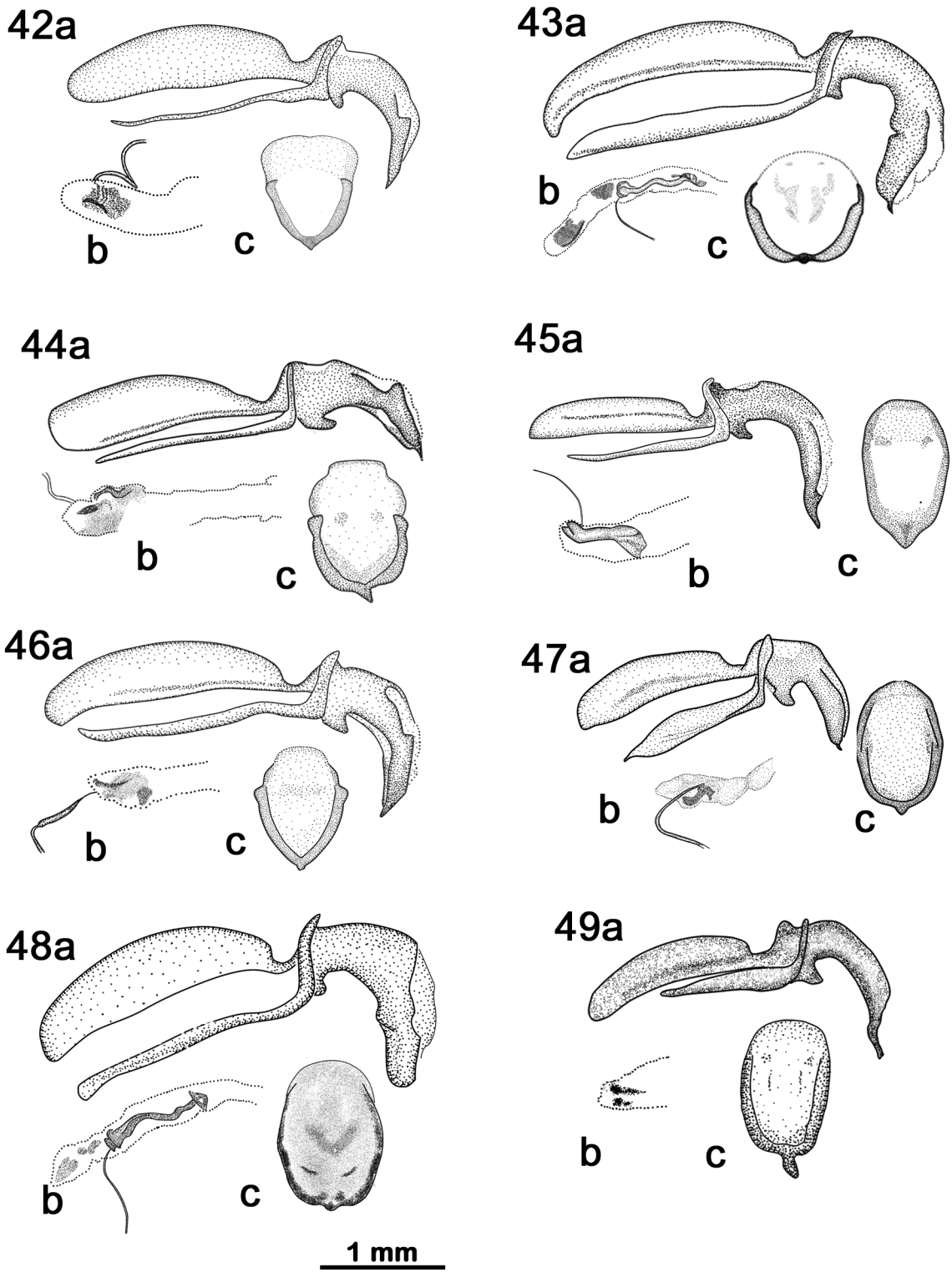
Figures 18–26. *Beltia*, dorsal habitus. **18)** *Beltia angustomarginata,* male. **19)** *Beltia awapita*, male. **20)** *Beltia chiriquensis*, female. **21)** *Beltia confusa*, male. **22)** *Beltia gorgona*, female. **23)** *Beltia herreri*, male. **24–26)** *Beltia ledesmae*, females. **24)** Monochrome specimen. **25)** Bicolored specimen. **26)** Same female as (25) photographed with diffuser.



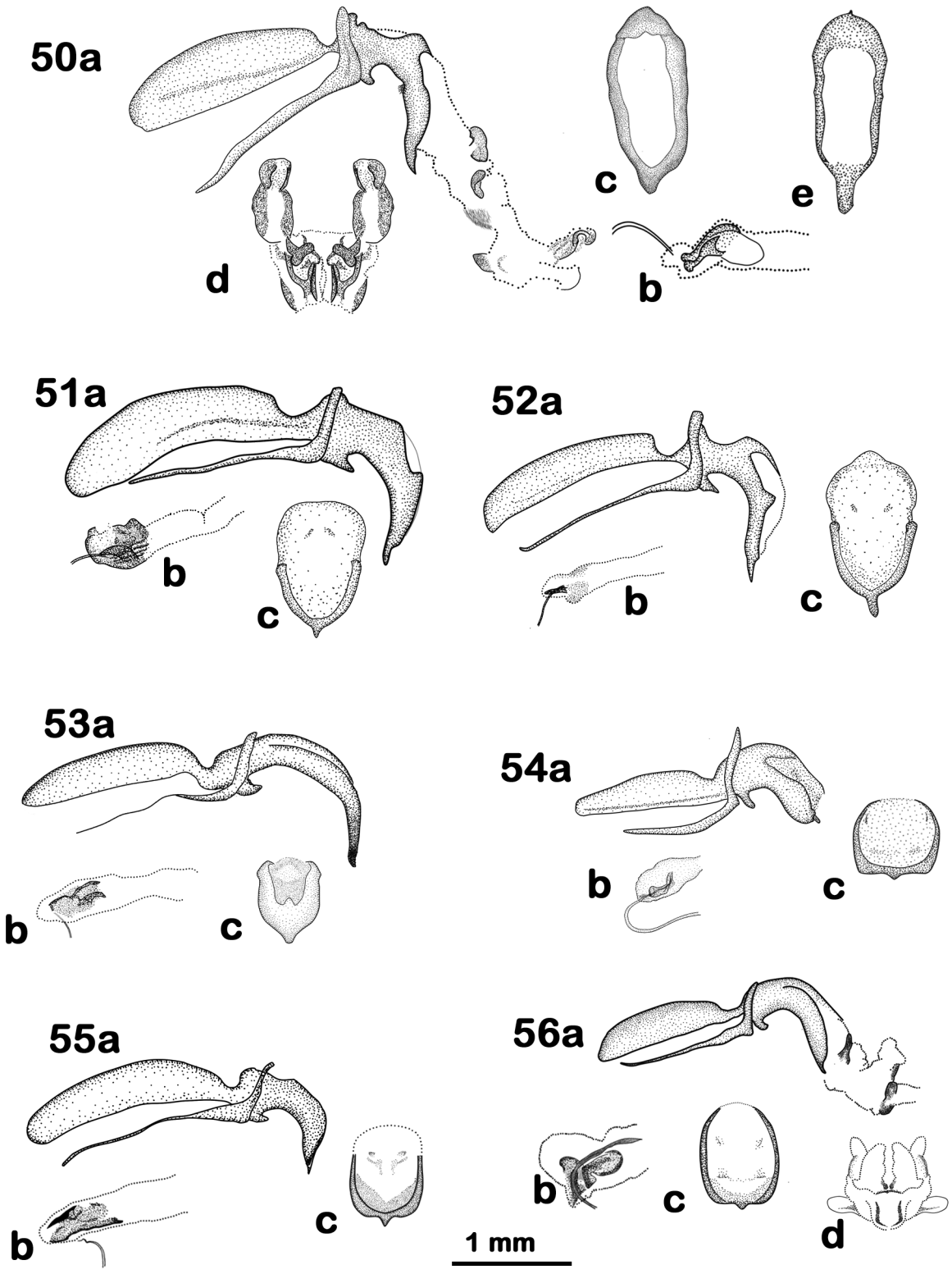
Figures 27–35. *Beltia*, dorsal habitus. **27)** *Beltia napoensis*, male. **28)** *Beltia napoensis*, female. **29)** Same female as (28) photographed with diffuser. **30)** *Beltia nicaraguensis*, female. **31)** *Beltia osa*, male. **32)** *Beltia placidula*, female. **33)** *Beltia rugosa*, male. **34)** *Beltia sanchezae*, female. **35)** *Beltia talaga*, male.



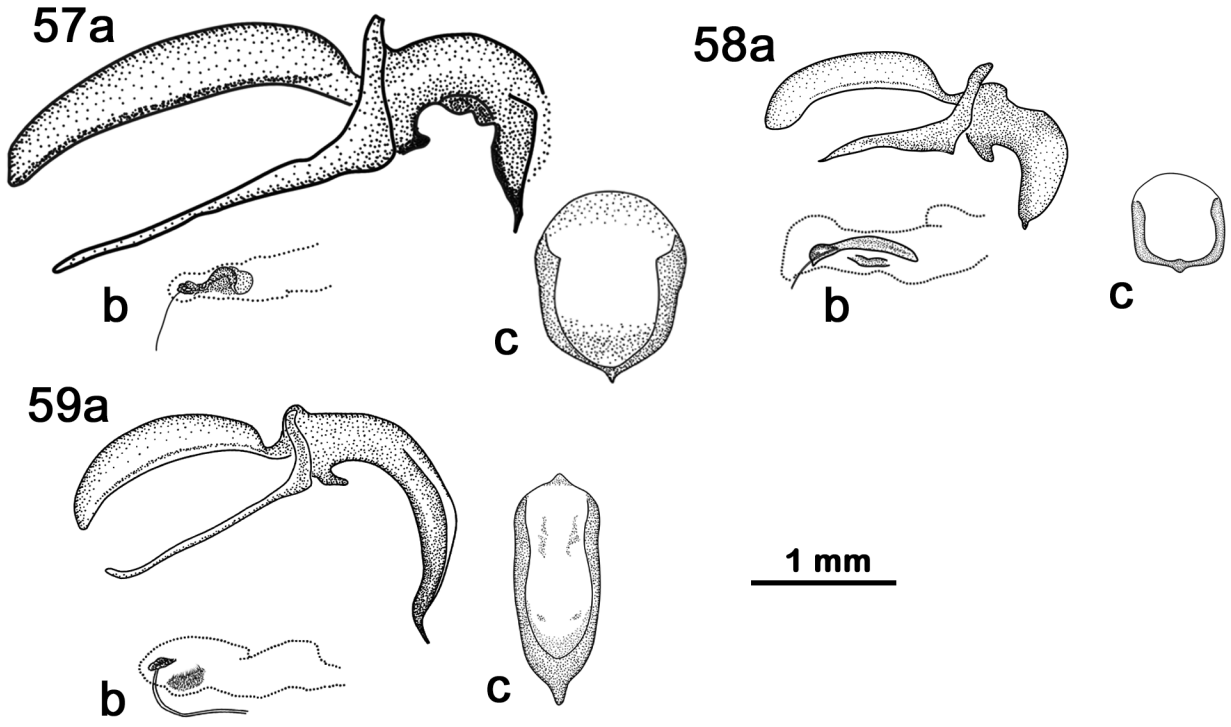
Figures 36–41. *Beltia*, dorsal habitus. **36)** *Beltia tilarana*, male. **37)** *Beltia tisingalita*, female. **38)** *Beltia tsachila*, female. **39)** *Beltia vacilona*, female. **40)** *Beltia weyrauchi*, male. **41)** *Beltia weyrauchi*, female.



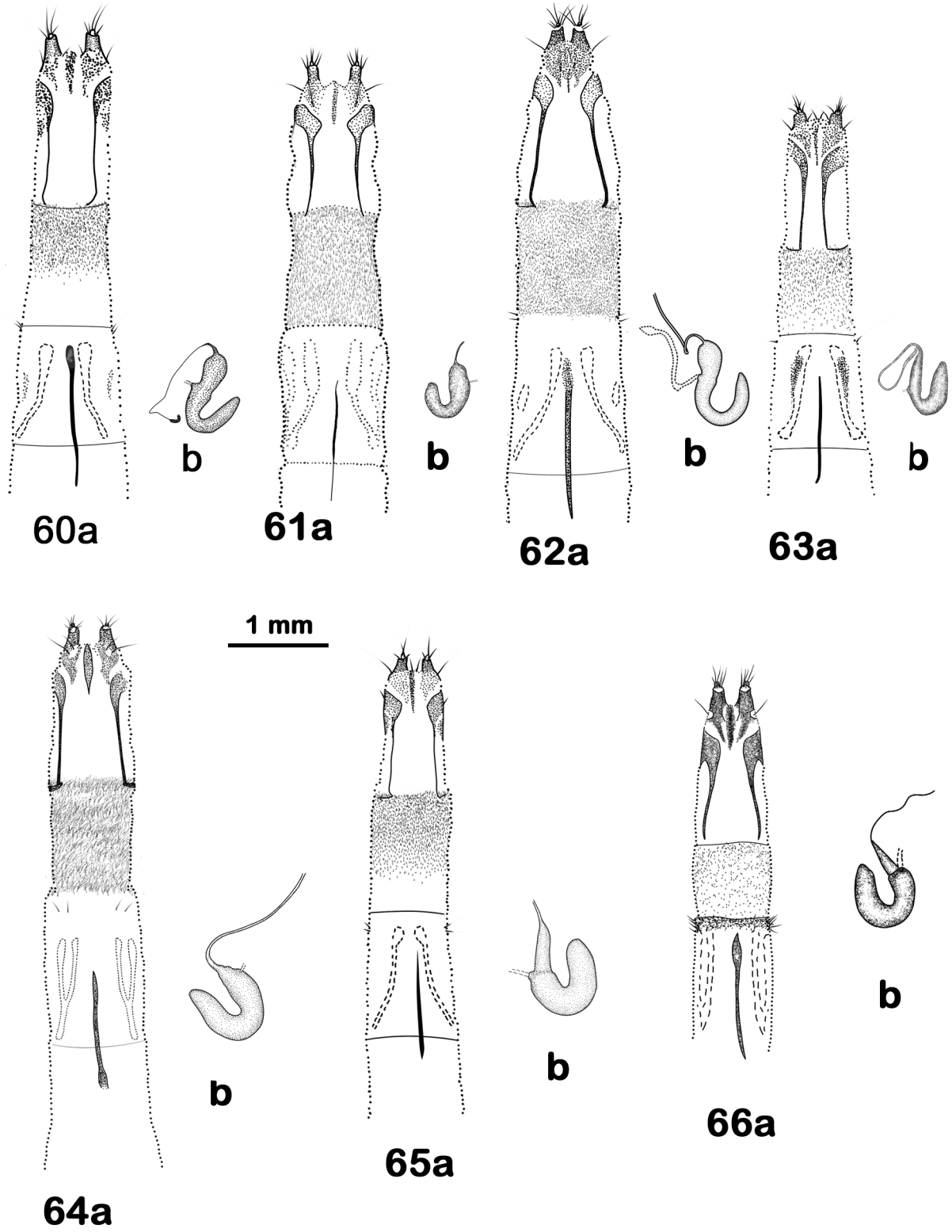
Figures 42–49. *Beltia*, male genitalia: **a)** lateral view of median lobe; **b)** endophallic apical sclerites; **c)** en-face view of median lobe. **42)** *Beltia angustomarginata*. **43)** *Beltia awapita*. **44)** *Beltia chiriquensis*. **45)** *Beltia confusa*. **46)** *Beltia gorgona*. **47)** *Beltia herreri*. **48)** *Beltia ledesmae*. **49)** *Beltia nicaraguensis*.



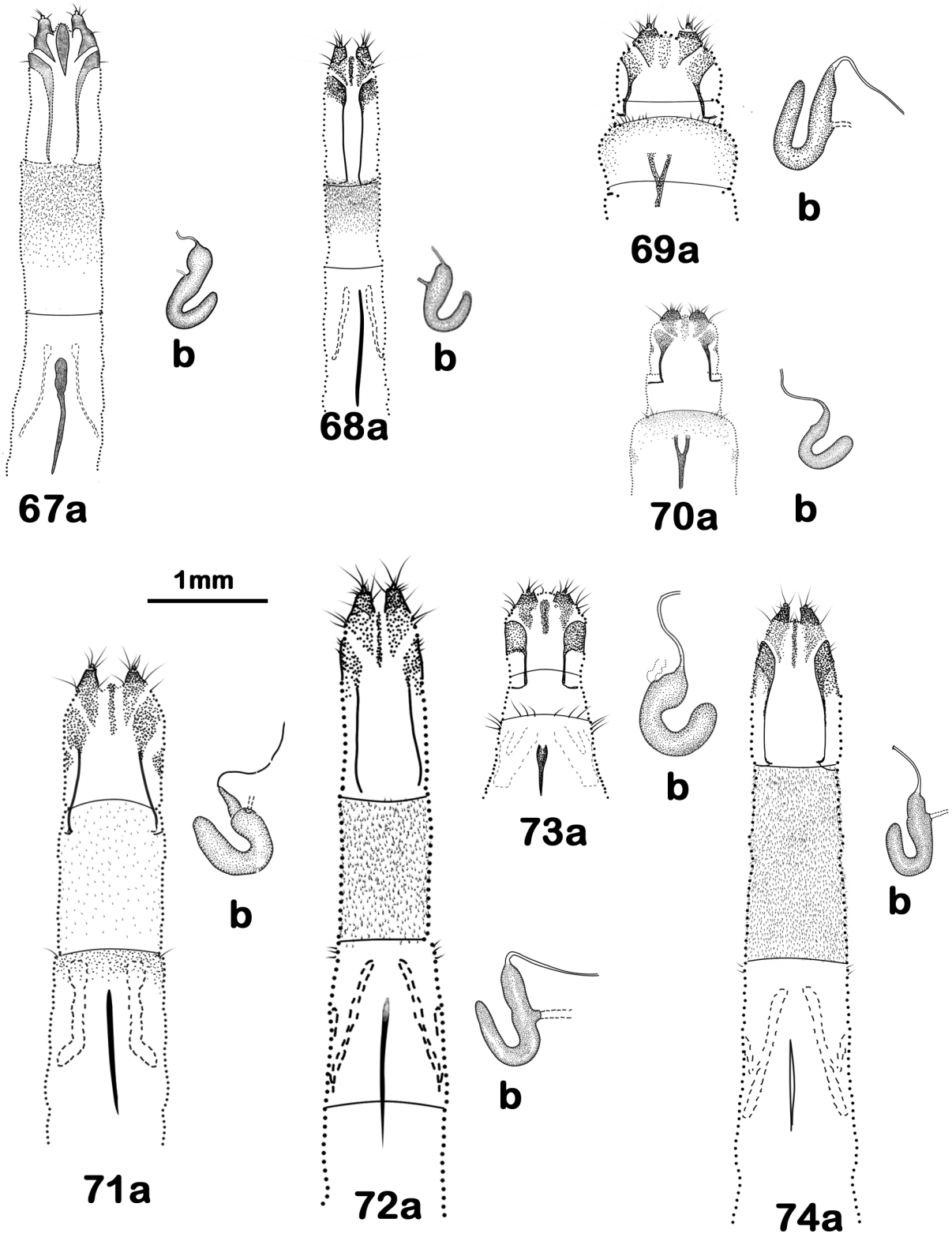
Figures 50–56. *Beltia*, male genitalia: **a)** lateral view of median lobe; **b)** endophallic apical sclerites; **c)** en-face view of median lobe; **d)** en-face view of endophallic lateral digits. **50)** *Beltia napoensis*, with endophallus partly everted: **c)** specimen from Peru; **e)** specimen from Ecuador. **51)** *Beltia osa*. **52)** *Beltia placidula*. **53)** *Beltia rugosa*. **54)** *Beltia sanchezae*. **55)** *Beltia talaga*. **56)** *Beltia tilarana*, with endophallus partly everted.



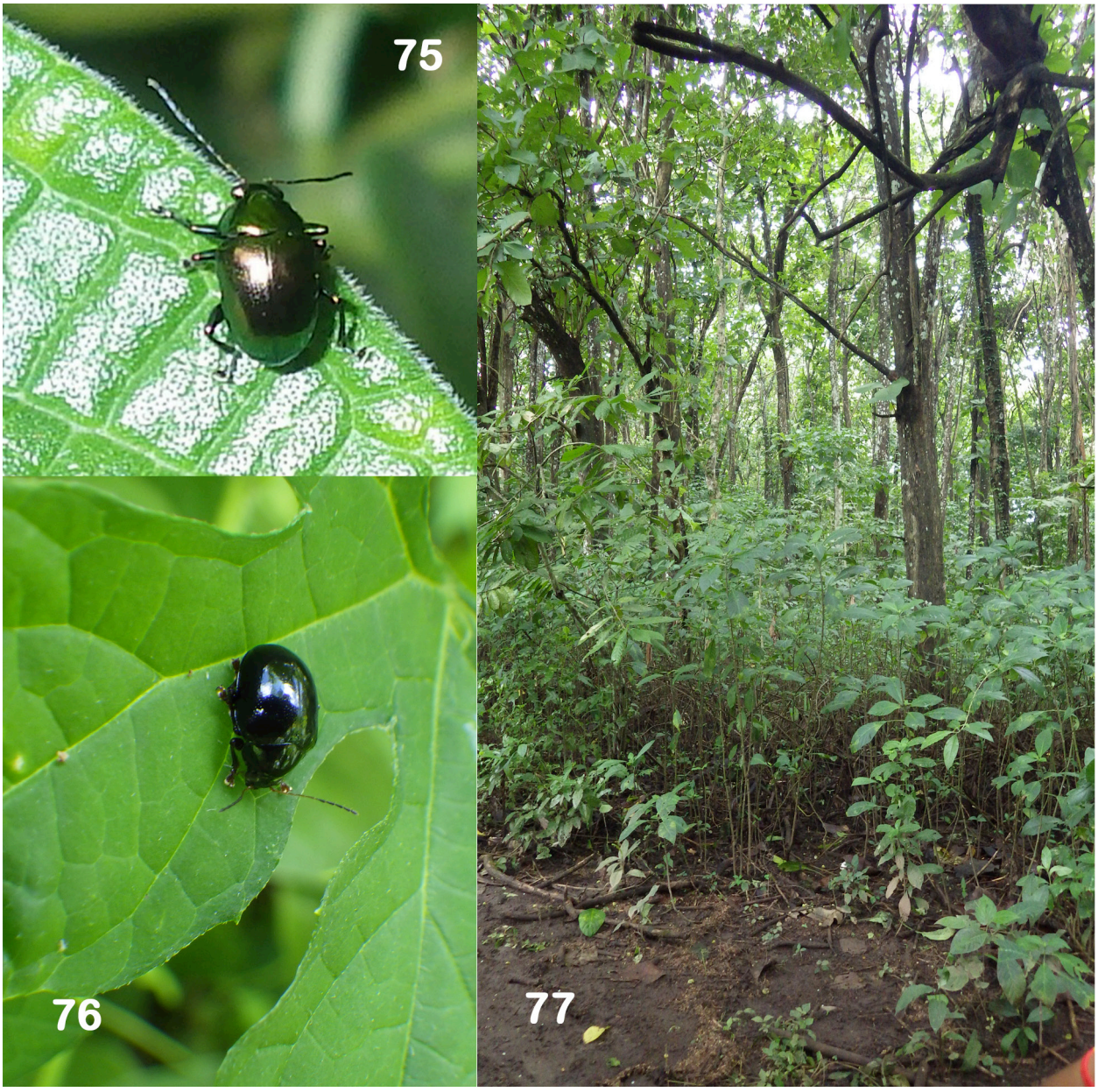
Figures 57–59. *Beltia*, male genitalia: **a)** lateral view of median lobe; **b)** endophallic apical sclerites; **c)** en-face view of median lobe. **57)** *Beltia tsachila*. **58)** *Beltia vacilona*. **59)** *Beltia weyrauchi*.



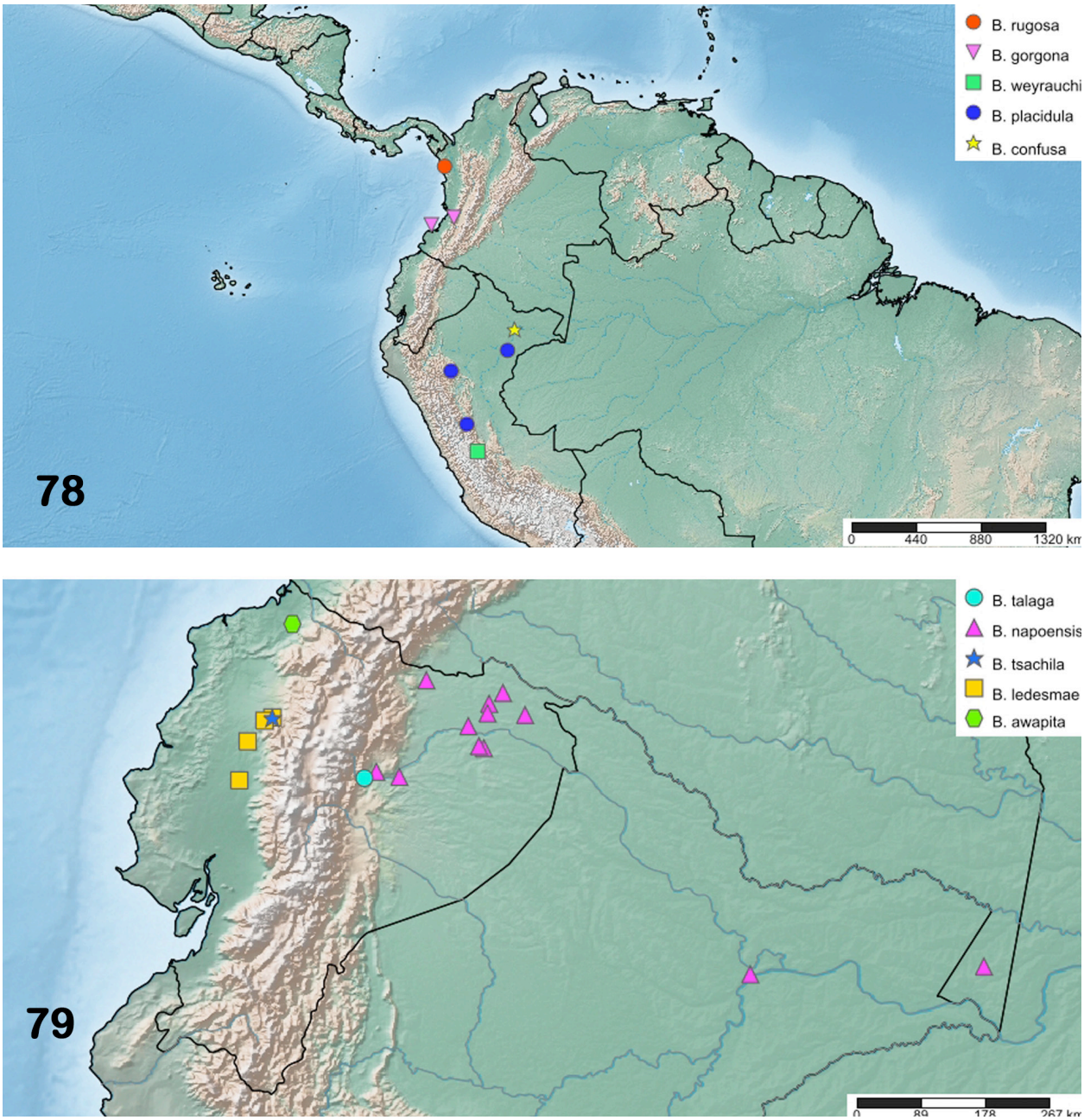
Figures 60–66. *Beltia*, female genitalia: **a)** ovipositor, ventral view; **b)** spermatheca. **60)** *Beltia angustomarginata*. **61)** *Beltia chiriquensis*. **62)** *Beltia gorgona*. **63)** *Beltia herreri*. **64)** *Beltia ledesmae*. **65)** *Beltia napoensis*. **66)** *Beltia nicaraguensis*.



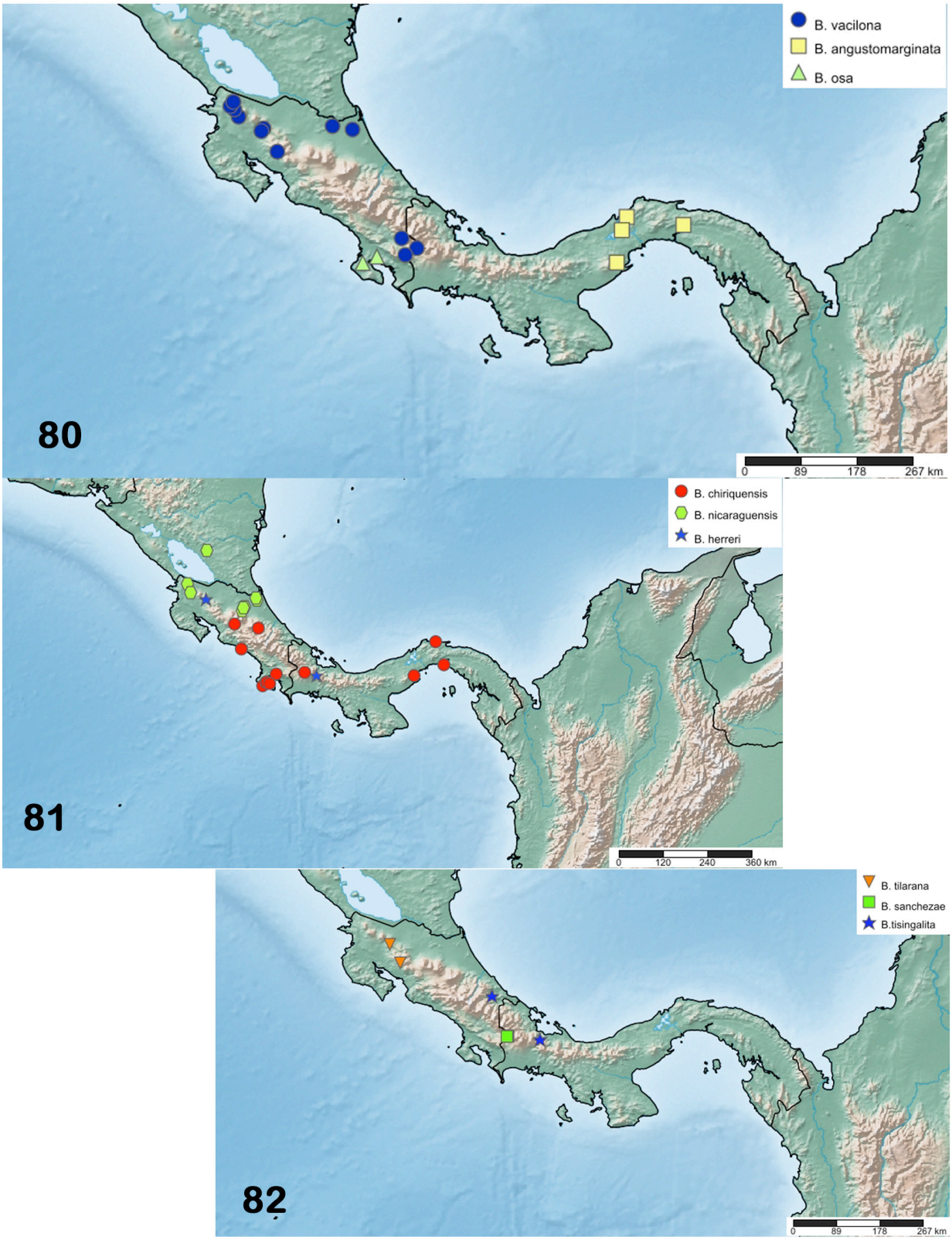
Figures 67–74. *Beltia*, female genitalia: **a)** ovipositor, ventral view; **b)** spermatheca. **67)** *Beltia osa*. **68)** *Beltia placidula*. **69)** *Beltia sanchezae*. **70)** *Beltia tilarana*. **71)** *Beltia tisingalita*. **72)** *Beltia tsachila*. **73)** *Beltia vacilona*. **74)** *Beltia weyrauchi*.



Figures 75–77. Habitat photos. **75–76)** *Beltia ledesmae* resting on low vegetation. **77)** Teak trees with heavy undergrowth at the Estación Experimental Tropical Pichilingue, western Ecuador.



Figures 78–79. Distribution maps for *Beltia* spp. **78)** Northwestern South America: *B. confusa* (star), *B. gorgona* (inverted triangles), *B. placidula* (blue circles), *B. rugosa* (red circle), *B. weyrauchi* (square). **79)** Ecuador: *B. awapita* (hexagon), *B. ledesmae* (squares), *B. napoensis* (triangles), *B. talaga* (circle), *B. tsachila* (star).



Figures 80–82. Distribution maps for *Beltia* spp.: Nicaragua, Costa Rica, and Panama. **80)** *Beltia angustomarginata* (squares), *B. osa* (triangles), *B. vacilona* (circles). **81)** *Beltia chiriquensis* (circles), *B. herreri* (stars), *B. nicaraguensis* (hexagons). **82)** *Beltia sanchezae* (square), *B. tilarana* (inverted triangles), *B. tisingalita* (stars).