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Revision of the New Caledonian endemic genus *Bohumiljania* Monrós (Coleoptera: Chrysomelidae: Spilopyrinae)

C. A. M. REID & M. BEATSON
Department of Entomology, Australian Museum, 6 College Street, Sydney, NSW 2010, Australia.
Email: chris.reid@austmus.gov.au; max.beatson@austmus.gov.au

Table of contents

Abstract

The chrysomelid genus *Bohumiljania* Monrós, 1958, is revised, with nine species, seven new: *B. aoupinie* **sp. nov.**, *B. caledonica* (Jolivet, 1957), *B. lafoa* **sp. nov**., *B. humboldti* Jolivet, Verma & Mille, 2005, *B. mandjelia* **sp nov**., *B. tango* **sp. nov**., *B. xanthogramma* **sp. nov**., *B. xaracuu* **sp. nov**., *B. yuaga* **sp. nov**. All species are described. The type species, *B. caledonica*, is shown to have been misidentified in recent literature. The original description of the other described species, *B. humboldti*, is shown to include at least three species. A key is provided for identification of *Bohumiljania* species, all of which are endemic to the main island of New Caledonia. Six of the species are known from just 14 specimens, suggesting that further species remain to be discovered. The morphology and biology of *Bohumiljania* is reviewed, including description of the larva.

Key words: fiery leaf beetle, morphology, taxonomy, Pacific Region

Introduction

The current classification of Chrysomelidae recognises at least 11 subfamilies, one of which, Spilopyrinae Chapuis, 1874, was recently elevated from tribal status within the Eumolpinae (Reid 2000). The status of the Spilopyrinae as an independent subfamily has been disputed (Jolivet & Verma 2010, and references therein), but is corroborated by molecular studies as sister to a taxon larger than Eumolpinae only (Gomez-Zurita *et al*. 2007), as was originally proposed (Reid 2000). The subfamily Spilopyrinae is small, including only 7 genera and approximately 35 species, confined to fragments of the ancient supercontinent Gondwana (Reid 2000; Reid & Beatson 2010a, 2010b). One of these genera is *Bohumiljania* Monrós, 1958, which is endemic to New Caledonia.

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The taxonomic treatment of *Bohumiljania* Monrós has been problematic from its inception. The identity of the type species name was discussed by Jolivet, Verma & Mille (2003), but needs further clarification. *Bohumiljania* was raised by Monrós (1958) for a new species of chrysomelid related to the South American genus *Stenomela* Erichson, 1847, then in Eumolpinae (Crowson 1955). The species was based on a single specimen in the Fauvel collection, Royal Belgian Institute of Natural Sciences, which appears to have been forwarded to Monrós in Argentina by Jan Bechyné, based in Germany and at that time working through European collections of the South American Eumolpinae (Bechyné 1953). However Monrós omitted to mention that the specimen was carrying a Fauvel MS label: 'Stenomela caledonica'. Monrós also seems to have been unaware that a wing from this specimen had been removed and mounted on a slide for a doctoral thesis on the wing venation of Chrysomelidae. This wing was illustrated and described under the name *Stenomela caledonica* Fauvel MS (Jolivet 1957: 59). As the description of the wing was provided by Jolivet not Fauvel, the correct name for this species was *Stenomela caledonica* Jolivet, 1957. The genus *Bohumiljania* is regarded as valid (Reid 2000), therefore the correct current name of the species is *Bohumiljania caledonica* (Jolivet). The original body of the type specimen is missing (Jolivet, Verma & Mille 2003) but Monrós' description of the external morphology distinguishes this species from all others on New Caledonia. The recent redescription of *B. caledonica* based on new material of *Bohumiljania* collected at La Foa, central west New Caledonia (Jolivet, Verma & Mille 2003), is incorrect as it was based on the assumption that the genus was monotypic. The species from La Foa is described as new (see under *B. lafoa* **sp. nov**.).

In a study of the Spilopyrinae, two species of *Bohumiljania* were noted from New Caledonia, based on available material (Reid 2000). In 2005 a second species, *Bohumiljania humboldti* Jolivet, Verma & Mille, 2005, was described. The description again assumed that diversity of the genus is low on New Caledonia; the species showed "high variability" in body size, body colour, and surface sculpture of the pronotum. These variations were described as "graded or continuous". The designated type material of *B. humboldti* was from two distant sites on the island and from two different hosts. Localities were not provided for the genitalic sketches of *B. humboldti*. Examination of the photographs accompanying the original description of *B. humboldti* (Jolivet *et al*. 2005) shows that this was an amalgamation of at least three species from two widely separated localities. As we have only been able to borrow a single topotypic paratype of *B. humboldti*, we are unable to determine how many species have been confused under this name. Jolivet and Verma (2009) hint at this problem, suggesting *B. humboldti* "seems to be really a species complex; spread from north to south along the central chain" (p.215). This issue is further complicated by two different localities being given by these authors for the same photograph of *B. humboldti*: Mount Humboldt (Jolivet *et al*. 2005, Fig 3) and Mandjelia (Jolivet & Verma 2009, plate 41), localities at the two ends of the mountain chain referred to. For further discussion see below, under *B. humboldti*.

We acknowledge that our colleague Pierre Jolivet believes that we are mistaken and that only two species exist on the island (*pers. com*. to A. Mantilleri, MHNP, June 2010). But there is nothing unusual in our approach to speciation in this genus. The species described below are separated by discrete differences in typical chrysomelid characters, such as colour, antennal shape, head, pronotal and elytral sculpture, prothoracic shape, abdominal ventrite sculpture, male and female genitalia. These characters are useful for discrimination of species in other spilopyrine genera (Reid & Beatson 2010a, b).

The material available to us includes what appear to be 8 species, all differing from the type species. This relatively large number should not be considered unusual given New Caledonia's status as one of 25 formally identified biodiversity hotspots (Myers *et al*. 2000; Lamoreux *et al*. 2006). Nevertheless, the total of 9 species is a significant proportion (25%) of the world fauna of Spilopyrinae (Reid 2000; Reid & Beatson 2010a, 2010b).

The species of *Bohumiljania* are described below.

Material and methods

Preparation of specimens and morphological terminology are discussed in a previous paper on Spilopyrinae (Reid & Beatson 2010a). For *Bohumiljania*, measured width of pronotum excluded projections at angles, and metatarsomeres were measured from basal constriction to apex. Puncturation is described as fine (diameters <eye facet diameters) or coarse or strong (diameters > facet diameters). Eye facets seem of relatively constant diameter in *Bohumiljania*. The sides of the buccal cavity project anteriorly as a genal lobe (common to all the Australasian Spilopyrinae), its magnitude described as a ratio (genal lobe ratio) of greatest length to minimal distance from eye

to buccal cavity. The male sternite VIII is a membranous transverse plate, lacking a spiculum in three of the four species examined. The female has a median ventral sclerite between gonocoxites.

Abbreviations. Collections: AMS (Australian Museum, Sydney), ANIC (Australian National Insect Collection, Canberra), FCAG (Florida State Collection of Arthropods, Gainsville), LELF (Laboratoire d'Entomologie, La Foa), LRL (Landcare Research, Lincoln), MHNP (Museum National d'Histoire Naturelle, Paris), QMB (Queensland Museum, Brisbane). Other: c. = circa; CAMR = C. A. M. Reid; GPS = global positioning system; MS = manuscript; Mt = Mont or Mount; mv = mercury vapour [ultraviolet] lamp.

Bohumiljania Monrós, 1958

Bohumiljania Monrós, 1958: 149; Seeno & Wilcox 1982: 50; Jerez 1996: 256; Reid 2000: 856; Verma & Jolivet 2002: 99; Jolivet, Verma & Mille 2003: 3; Verma & Jolivet 2004: 395; Jolivet, Verma & Mille 2005: 63; Verma & Jolivet 2006: 297; Jolivet & Verma 2008a: 14; Jolivet & Verma 2008b: 313; Jolivet & Verma 2010: 56; Reid & Beatson 2010a: 8.

Type species: *Bohumiljania antiqua* Monrós, by original designation and monotypy

Diagnosis

This diagnosis of *Bohumiljania* replaces that provided earlier (Reid 2000), which was based on examination of only one species, plus the type species description (Monrós 1958). However, our treatment of *Bohumiljania* in a recent key to genera of Spilopyrinae was based on examination of most of the material available below and is valid (Reid & Beatson 2010a).

Length 8–23mm; shape elongate, almost parallel-sided but base of pronotum distinctly narrower than width of elytra at humeri; antennae gracile, all antennomeres elongate, 7th comparatively swollen; upper surface without tubercles; pronotum laterally margined or at least partly so; prosternal process elongate and elevated between coxae, almost parallel-sided, with deeply bilobed apex; elytra without transverse grooves; epipleural upper margin abruptly raised at humerus; mesosternal process elevated, with convex base and deeply bilobed apex; tibial spurs 1+2+2; claws simple, with at most slight angulation at base of ventral margin; ventrites 1 and 2 fused; female median sclerite present in ovipositor; rectal kotpresse present.

Description [based on males of 4 species and females of 8]

Length 8–23mm, females distinctly larger than males, lengths not overlapping within species; body (Figs 5–12) elongate-ovate, length 2.5–3.3x width, with elytra approximately parallel-sided from humeri to apical third, at humeri much broader than pronotum at base; profile mostly flat to weakly convex, length 2.6–4x height. Dorsum usually non-metallic green, yellow or brown, rarely with bronze reflection (B. yuaga **sp. nov**.), glabrous to densely setose, trichobothria adjacent to eyes and on each corner of pronotum.

Head (Figs 13–36): clypeus delimited by sutures, smooth, triangular, usually depressed at base of sutures, anterior margin shallowly concave, not elevated; frons and vertex smooth, depressed on midline, rarely with irregular pitting between midline and eye; eyes ovate, height 1.3–1.5x width, inner margin shallowly concave; eye laterally projecting, posterior curvature contiguous with short temples (<1/5 length eye), which are constricted to parallel-sided rear of head capsule, or temples narrowly swollen and posteriorly truncated (*B. yuaga*); shortest length gena 0.1–0.4x greatest eye length; genal lobe ratio 1.2–2; antennae situated at anterior of head, 4–5x socket diameters apart, sockets laterally directed; gular region quadrate, glabrous, impunctate and transversely grooved posterior to deflected lip of buccal cavity; antennae 0.5–0.75x body length (longest in males, shortest in females); relative sizes of antennomeres variable, but 1 always enlarged cylindrical or widest at apex, 2 shortest (0.5–0.67x first), antennomeres 8–11 almost parallel-sided, 11 longest, 7 slightly broader than 2–11; antennomeres 1–6 shining and sparsely punctured, 7–11 dull and densely microsculptured; labrum not densely setose, with 1–3 pairs of dorsal setae; each mandible with two broad apical teeth and outer concavity bounded by a low ridge; apical maxillary palpomere elongate, fusiform to cylindrical, males with broader apex; preapical palpomere triangular, length equal to or shorter than apical, of similar width; mentum either transversely rectangular, width c. 2x median length, without prominent anterior angles, or more strongly transverse, width 3x median length, with prominent anterior angles.

Thorax (Figs 5–12, 37–85): pronotum transverse, width 1.15–1.3x length, broadest at or posterior to middle, not or weakly contracted to posterior angles; disc with pair of laterobasal elongate grooves or depressions, which

may be feebly indicated; anterior edge truncate to concave, middle of posterior with broad convex lobe; anterior not margined at middle, posterior (at least at sides) distinctly margined, lateral margination present, complete except one rugose species (*B. xaracuu* **sp. nov**.); anterior angles laterally prominent; posterior angles in same vertical plane as posterior margin of hypomeron; posterior edge of pronotum locking into hollowed base of elytra; prosternum elongate and punctate between coxae and head; prosternal process elongate, elevated and flat or medially grooved, with strongly bilobed apex; procoxal cavities closed by insertion of hypomeral lobes into prosternal process; scutellum quadrate to semi-oval, sides superimposed on sutural base; elytra approximately parallel-sided for basal 2/3, with distinct humeri, without distinct lateral or median depressions except small area between humerus and epipleuron in some species; elytral punctures confused, non-striate; elytral epipleuron abruptly raised at base to humerus, otherwise narrow, width <0.2x elytral width, entirely visible laterally and not or feebly sinuate, with apex obscured by loss of dorsal margin; mesoventrite covered medially in repose by apex of prosternal process, sides densely punctured and pubescent, process almost glabrous, elevated and parallel-sided, with bilobed apex; mesanepisternum and mesepimeron densely punctured and pubescent; wings fully developed, medial field with two enclosed cells and 4 apical veins reaching wing margin, patch of dense microspicules (medial fleck) between apex of vein MP_3 and medial spur, which may be coloured; metaventrite transverse, width 1.3x length, smooth and shining at middle, transversely wrinkled and densely setose at sides, without femoral plates; metepisternum densely and finely punctured and pubescent; all femora fusiform, with base and apex narrowed, without longitudinal keels or ridges; all tibiae round in section, without keels, thin, with slightly expanded apices; one short apical spur on protibia, two on remaining tibiae; all first tarsomeres with ventral oval patch of modified setae in males, with dense simple setae diverging from midline in females; apical margin second tarsomere concave; third tarsomere deeply bilobed, lobes at least 0.65x length; apex fifth tarsomere with thin blade-like ventral lobe; claws simple, without basal tooth.

Abdomen (Figs 86–148): pygidium (tergite 7) not strongly sclerotised except at apex, basal half membranous, apical half pubescent and punctured, without median groove; ventrite I with triangular intercoxal process and without femoral plates; ventrites I and II completely fused; ventrite V smooth, not medially depressed, apex concave, truncate, or convex; male sternite VIII transverse-rectangular, weakly sclerotised, without basal spiculum or with short asymmetric spiculum (*B. mandjelia* **sp. nov**.); sternite IX of male Y-shaped; male tegmen present, almost enclosing penis, U-shaped, thinly sclerotised and with distinct internal median basal keel; penis simple, flattened tubular, apex sparsely microspiculate, basal foramen 0.4–0.6x length of penis; endophallus with strongly sclerotised flagellum, not exerted in repose; vas deferens with long thickened sperm pump and valve; female tergite VIII well-developed, sternite VIII with transverse to elongate basal apodeme; ovipositor with thin bacillus wrapped around bases of paraprocts, which are well-developed, partly enclosing basal half of palpi, pair of well-defined elongate proctigers dorsal to these; vaginal palpi 2-segmented, gonocoxite massive, not divided, stylus ovoid to flattened and freely articulated or almost fused to gonocoxite; membranous pad between gonocoxites with elongate median sclerite; spermatheca variable in shape, surface microreticulate, with short and thick unspiralled spermathecal duct, which may be secondarily thickened near junction of spermathecal gland; kotpresse present, venter of rectum with dense elongate patch of spinules, dorsum with narrow strips or band of spinules.

Immature stages

Eggs have not been described, but are illustrated by Jolivet & Verma (2009, plate 39).

There are brief descriptions of the larvae of two species, with photographs of live specimens (Jolivet *et al*. 2003, 2005). The first-instar only has meso- and metathoracic eggbursters (Jolivet *et al*. 2003), like *Macrolema* (Reid & Beatson 2010a). The following description is based on a late instar larva of *B. lafoa* **sp. nov**. (Figs 149–152), kindly supplied by our colleagues Pierre Jolivet and John Lawrence.

Head capsule circular, shallowly strigose except smooth anterior and sides; setae simply pointed, short and inconspicuous, mostly minute; posterior margin of head capsule evenly rounded; coronal suture short and endocarina entire length of elongate dorsal segment of frons; frons transversely divided by suture into upper and lower halves, upper half elongate-triangular, lower transverse; frontoclypeal suture absent, clypeus not distinguishable; 6 stemmata, arranged 4+2, latter ventral, at edge of buccal cavity; antenna apparently 2-segmented, 3rd segment present but minute; labrum small, apex biconvex with small median tooth, separated from clypeus by suture but not freely articulated; mandibles lacking mola and penicillus, with 4 teeth, first minute, on inner face, second and third large and acute, fourth large and truncate; maxillary palp 3-segmented, on basal palpifer; labial palp 2-segmented,

surrounded by narrow U-shaped prementum and U-shaped mentum, with trace of basal submentum. Body segments demarcated and dorsally subdivided by deep folds, laterally swollen in epipleural region, generally without evident sclerites, except: sclerite on prothorax darkened and microspiculate at edges; weakly defined square sclerite in prosternal area; dark microspiculate dorso-lateral area on mesothorax and metathorax; dark microreticulate lateral swelling on abdominal segments 1–7; two dark sclerites at base of each leg. Dorsum of segment 8 (and possibly part of 7) thickened as a circular plate with long fringing setae and longitudinal median split, overlapping short dorsal sclerotised plate of segment 9; venter of abdominal segments 9 and 10 surrounding T-shaped anus. Spiracles free, annular, above lateral swellings, decreasing in size from mesothorax to abdominal segment 7, but large and ventral on segment 8. Dorsum of abdominal segments without everted soft integument. Venter of abdominal segments 2–5 with transverse soft swellings (possibly ambulatory ampullae). Leg segments at least partly darkened: trochanter and femur broadly fused at ventral junction; tibiotarsus strongly elongate, venter soft, transparent and apically swollen (paronychial appendix); claw short, third length of tibiotarsus, longer than deep and without lobe at base.

The pupa is unknown.

Notes

There is little obvious sexual dimorphism, except in size and tarsal setation. Males are remarkably 10–20% shorter than females with no overlap in size range (however, both sexes were only available for three species). Males also have proportionally larger eyes and longer antennae, but only slightly so in two of three species. The apex of the male last ventrite is at least blunter than the female, but not always of a different shape.

Colour seems to be diagnostic for most species considered here, although we only have small samples. It has been claimed that the green colour of *Bohumiljania* changes to brown in dried specimens (Jolivet *et al.* 2003), like the ephemeral green of the spilopyrine *Stenomela pallida* Erichson, 1847 (Jerez 1996), but unlike the metallic greens of *Macrolema* and *Spilopyra* species (Reid & Beatson 2010a, b). The green specimens examined here were collected up to 32 years ago, and none shows evidence of losing its characteristic green hues, although one specimen may have darkened. We suspect that Jolivet and co-authors, convinced that the green species at La Foa and the uniformly reddish-brown (Monrós 1958) or black (Jolivet *et al*. 2003) species described by Monrós are one and the same thing, have explained the colour difference by assuming that older specimens fade to brown.

Character variation within species was hard to assess, as multiples of both sexes were only available for two species, *B. lafoa* and *B. xanthogramma* **sp. nov**. These species are closely related, best distinguished on genitalic characters. The specimens of *B. lafoa* were particularly important as they came from a single population. Individuals showed significant variation in dorsal surface-sculpture (Figs 37–38) and in the lateral keeling of the ventrites, the latter used as a diagnostic character in other spilopyrine genera (Reid & Beatson 2010a, b). Relatively constant characters within these species include colour, length/breadth ratio, pubescence, puncture distribution, antennal structure, prothoracic angles, elytral epipleura and apices, male seventh abdominal sternite (Figs 89–91, 93–95), penis (Figs 102–104, 106–108) and spermatheca (Figs 138–140, 143–144). This information provided the basis for recognition of species among the remaining specimens. However there were problems in determining two individuals (see under *B. lafoa* and *B. xanthogramma*) and we acknowledge that this study is not the last word on the taxonomy of this fascinating genus. Furthermore, three species are based on single specimens. Clearly much more collecting is required.

The larval morphology is unique in the Spilopyrinae and requires redefinition of the subfamily and revision of the published key to subfamilies of Chrysomelidae (Reid 2000). In the key to larvae of chrysomelid subfamilies, couplet 14 should be altered to ‘usually 5 pairs of stemmata, rarely 6’ (Reid 2000: 852). The thick circular apical abdominal plate with a setal fringe of *Bohumiljania* is found in *Stenomela* Erichson, 1847 (Jerez 1996) and *Macrolema* Baly, 1861 (Reid & Beatson 2010a), but in these two genera the plate is the result of fusion of the tergal parts of segments 8 and 9, is not medially divided and encloses dorsal spiracles.

Distribution & biology

Bohumiljania is endemic to the main island of New Caledonia. The species are mostly associated with rainforested elevated areas scattered along the island, including high elevation cloud forest, but one species occurs at a lowland site in the western plains (Figs 153–155).

Most specimens have been collected at mercury vapour light, suggesting adults disperse at night. Peak activity seems to be in high rainfall months (December to February). The hostplants are all Myrtaceae: *Metrosideros laurifolia*, *Myrtastrum rufopunctatum* (Jolivet *et al*. 2005) and *Syzigium cumini* (Jolivet *et al*. 2003), belonging to three different tribes of the family (Wilson *et al.* 2005; Govaerts *et al*. 2008). Myrtaceae are a large and diverse family on New Caledonia (*loc. cit*.; Snow 2009). *Syzigium cumini* is an exotic species there, but more than 90 native species of *Syzygium* exist on the island, most of which belong to the same subgenus as *S. cumini* (Craven & Biffin 2010).

A little information is available on the life history of two species (Jolivet *et al.* 2003, 2005). Eggs are laid in small clusters of 3–4 on leaf lamina and covered with a thick layer of faecal and glandular material. The first-instar may burrow into host tissue but later instars are free-living. Pupation is thought to be in soil.

Key to species of *Bohumiljania*

1. Sides of anterior half of pronotum swollen (Figs. 1–2); pronotum and elytra chestnut brown; elytra glabrous and impunctate (pronotum with two elongate grooves on either side of basal half and hind angles not projecting; length [probably female] 14mm) . . . . . *B. caledonica* (Jolivet)
- Sides of pronotum parallel or convex, but without anterolateral swelling (Figs 5–12); without combination of brown upper surface and impunctate glabrous elytra 2
2(1) At least apical 1/6 of elytra conspicuously setose (Figs 5, 12, 71) (elytral disc brown to olive-brown; pronotum densely setose, with two elongate grooves at sides of disc). 3
- Elytra glabrous, or at most scattered minute setae present in apical 1/6 (elytral disc green to olive-green) 4
3(2) Elytra entirely olive-brown and setose (Fig. 12); pronotal punctures in clusters; temples abruptly truncated posteriorly; femora dark brown with bronze reflection (length female 17mm) . . . . . *B. yuaga* sp. nov.
- Elytra yellow laterally and at base, only setose in apical 1/6 (Figs. 5, 71); pronotal punctures evenly spread; temples evenly contracted, not abruptly truncated; basal and apical quarters of femora yellowish (length male 9–10mm). . . . . *B. aoupinie* sp. nov.
4(2) Head and pronotum green (Figs 7, 10); pronotum glabrous or at most sparsely setose (Fig. 69) (pronotal anterior angles strongly laterally projecting in contrast to at most feebly projecting posterior angles; length males probably 12–17mm, females 17–23mm) 5
- Head and pronotum brown, yellowish-brown or orange (Figs 6, 8, 9, 11, 12); pronotum densely pubescent at least at sides of disc (Fig. 70) (length males probably 8–10mm, females 11–15mm) 6
5(4) Smaller, length males 14–15.5mm, females 17–20mm; dorsal surface of elytra not yellow at suture (Fig. 7); prosternal process usually with concave sides (Figs 49, 57–60); male sternite VII with feebly concave apex (figs 89–91); penis thinner, apex rounded in dorsal view (Figs 102–104); spermatheca falcate with large basal swelling (Figs 138–140) . . . . . *B. lafoa* sp. nov.
- Larger, length males 16.5–17mm, females 21–23mm; elytra with narrow dorsal yellow stripe at suture (Fig. 10); prosternal process with almost straight sides (Figs 64–66); male sternite VII with distinctly concave apex (Figs 93–95); penis thicker, apex concave in dorsal view (Figs 106–108); spermatheca irregularly shaped with small median swelling (Figs 143–144) . . . . . *B. xanthogramma* sp. nov.
6(4) Prosternal process densely setose (Figs 48, 51); pronotal hind angles 90° or less (Figs 40, 43) (legs pale, elytra green with sides vaguely orange or yellow). 7
- Prosternal process almost glabrous, setose at side margins (Figs 50, 53); pronotal hind angles more than 90° (Figs 42, 45) 8
7(6) Middle of pronotal disc punctate and pubescent (Fig. 9); elytra strongly and closely punctured, apical 1/6 wrinkled; ventrites I–II with lateral keels; tarsi less elongate, length first metatarsomere 2x width (Fig. 81) (length female 12mm) . . . . . *B. tango* sp. nov.
- Middle of pronotal disc impunctate and glabrous (Fig. 6); elytra finely and sparsely punctured, not apically wrinkled; only ventrite I laterally keeled; tarsi more elongate, length first metatarsomere 2.8x width (Fig. 76) (length female 14mm). . . . . *B. humboldti* Jolivet, Verma and Mille
8(6) Elytra strongly and closely punctured (Fig. 8); femora and tibiae yellowish-brown, darkened at joint; lateral pronotal margins well-defined, without adjacent grooves or pits, weakly sinuate at hind angle (Fig. 42); ventrites I–III laterally keeled (Fig. 87); elytra green with sides vaguely orange or yellow (length male 8mm, female 11.5–12mm) . . . . . *B. mandjelia* sp. nov.
- Elytra smooth with sparse minute punctures (Fig. 12); femora and tibiae dark reddish-brown; lateral pronotal margins partly obliterated by adjacent grooves and pits and strongly sinuate at hind angle (Figs 45, 70); only ventrites I–II laterally keeled; elytra green with narrow reddish–brown sutural edge and lateral yellow stripe (length female 15.5mm) . . *B. xaracuu* sp. nov.

***Bohumiljania aoupinie* sp. nov.**
(Figs 5, 13, 21, 39, 47, 55, 71, 75 88, 97, 101, 153)

Material examined

Holotype: male/ Aoupinie 21:09S 165:19E 420–530m, road to sawmill 7.ii.2004 M. Wanat (MHNP); Paratypes (2): male, same data as holotype (AMS); male/ Mt Humboldt summit, GPS 21°52.942S 166°24.776E, 1343m, beating nr refuge, xi.2009, G. Kergoat (MHNP).

Description [male only]

Length: male 9.5–10mm; body elongate parallel-sided, length c. 3.2x width, length c. 5x height, elevated towards elytral base in profile, with anteriorly elevated pronotum. Colour: head, prothorax, tibiae and tarsi reddish-brown, antennae paler especially anterior edges antennomeres 1–3; elytra olive green with orange yellow streak along basal ¾ of epipleuron and most of basal margin yellow; trochanters yellow, femora with yellow basal half, dark brown band and reddish-brown apical third (or apical half brown in Mt Humboldt specimen); apex of prosternal process, metepisternum, posterior and anterior edge metaventrite, and middle of ventrites I or I–II yellowish; remainder of thoracic venter and abdomen brown; apices of mandibles and posterior edge buccal cavity dark brown. Head and pronotal punctures each armed with recumbent short white setae, long and dense on genae. Head, pronotum and elytra shining, without microreticulation.

Head: distinctly pubescent, short recumbent setae dense at sides; puncturation dense (intervals equal diameters) and fine throughout, except larger and sparser on clypeus anterior to eyes and absent from postantennal tubercles; midline of frons shallowly to deeply depressed; eyes large and laterally prominent, with small internal canthus, separated by c. 4.2x eye width (male); temples short, c. 0.2x length eye, abruptly curved from eye to posterior of head; genal minimum length c. 0.2 eye length (male), genal lobe ratio 2; antennae situated at anterior of head, in laterally directed sockets, c. 4.2x socket diameter apart, c. 0.67x body length (male); all antennomeres elongate: 2 shortest (c. 0.6x first), <3=6, <1=4, <5, <8=9=10, <7, <11 (male); antennomere 7 (male) distinctly expanded (length 3x width) in contrast to antennomeres 8–9 (length 3.5x width); mentum strongly transverse, width 3x median length, with prominent anterior angles; labrum setose, with c. 8 pairs of prominent setae in anterior half; apical maxillary palpomere elongate-cylindrical (male), preapical slightly shorter (male); gula with faint transverse ridges.

Thorax: pronotum and hypomeron distinctly pubescent, with dense recumbent setae except glabrous elongate patch at base of midline; pronotum almost parallel-sided, with feebly convex sides, anterior truncate, base broadly convex; pronotal width c. 1.15x length; anterior angles laterally produced, c. 75°, posterior angles not produced, 90°; anterior not margined except near angles, sides and base margined; sides of disc longitudinally deeply grooved in basal half, with a slight swelling between groove and lateral margin; pronotal punctures variable in size and density: generally finely and closely punctured (as head), larger and sparser towards sides and anterior, and absent from a median strip on posterior of disc; punctures minute but present throughout hypomeron; prosternum punctured and densely pubescent at sides, process smooth, almost impunctate and glabrous; prosternal process elongate, medially grooved in apical half, with straight sides, slightly expanded to strongly bilobed apex, angle between lobes V-shaped, c. 80°; scutellum impunctate, semi-ovate to almost quadrate with rounded apex, flat; elytron glabrous except apical 0.15 and area between humerus and lower epiepleural margin with short semi-erect setae; without groove between humerus and epipleuron, sculpture coarsening towards apex, basal quarter finely and sparsely punctured with smooth interspaces, middle half more strongly and densely punctured (partly seriate) with shallow grooves between punctures, apical quarter with larger partly coalescent punctures; upper margin epipleuron reaching angle of humerus at base but obliterated by rugose sculpture in apical tenth; mesoventrite median process abruptly elevated to moderately bilobed apex, angle between lobes V-shaped, c. 110°; wing fully developed, with distinct brown medial fleck; metaventrite shining and glabrous medially, densely pubescent and finely punctured at sides, apical lobe not margined, flat; metepisternum densely finely punctured and pubescent; 1 short spur on protibia, 2 on remainder; tarsi broad, length first metatarsomere 1.5x width; length second metatarsomere = width.

Abdomen: ventrites I and II entirely fused; ventrites shining, shallowly microreticulate, smooth at middle with scattered large punctures, densely finely punctured with recumbent setae at sides; punctures and setae becoming larger but sparser from ventrite I to V; ventrite I almost entirely laterally keeled, II keeled for basal 2/3–3/4, III–V without lateral keels; apex ventrite V truncate in male.

Genitalia: spiculum relictum transversely rectangular, with shallowly concave apical margin; tegmen U-shaped, with symmetrical ventral keel in basal half; penis long and narrow, apex 90° with blunt tip in dorsal view, acute and straight in lateral view; membrane in ostium of penis with pair of darker struts at edge; endophallic sclerite well-developed, flagellar, but not exerted in repose, half length penis.

Notes

Etymology: named from the type locality, Aoupinie, as a noun in apposition.

The specimen from the summit of Mount Humboldt is a male and was collected at the same locality as the only specimen of *B. humboldti* made available to us, which is female. It might seem therefore that our recognition of this species is faulty, based on failure to recognise sexual dimorphism in *B. humboldti*. We reject conspecificity of the two Mt Humboldt specimens for the following reasons: (i) they differ by far more than the usual narrow sexual dimorphism in Spilopyrinae (Reid & Beatson 2010a, b), in their pronotal sculpture, pronotal shape, prosternal process shape and sculpture, elytral puncturation and apical sculpture, elytral colour, tibial colour, tarsal width and ventrite sculpture; (ii) the male holotype of *B. humboldti* is described as 12mm long, 5mm wide (Jolivet *et al*. 2005), in contrast to the males of *B. aoupinie* which are 9.5–10mm long and 3mm wide; (iii) the Mandjelia area harbours three distinct species of *Bohumiljania*, suggesting that the presence of two species at Mt Humboldt is not unlikely.

Bohumiljania aoupinie occurs at two sites in central and southern New Caledonia, at middle and high elevation. This species may therefore be moderately widespread in rainforests of this region of New Caledonia.

***Bohumiljania caledonica* (Jolivet 1957)**

(Figs 1–4)

Stenomela caledonica Jolivet 1957: 59
Bohumiljania antiqua Monrós 1958: 150
Bohumiljania caledonica: Jolivet, Verma & Mille 2003: 4 (synonymy)

Description

There are no extant specimens of *B. caledonica*, except possibly a wing (not seen). The species was independently described twice, therefore we provide translations of the two descriptions.

Translation of description of *Stenomela caledonica* Jolivet, 1957 (page 59) [see Figure 4].

"We must note here that a curious undescribed genus of Chrysomeloidea has been discovered by us in the Fauvel collection (material from New Caledonia). This insect was labelled, in the handwriting of the French author, "Stenomela caledonica" MS name. Certainly it has much external similarity with the neotropical genus *Stenomela* and it will be described in a study of the New Caledonian fauna. We give below the description of the wing of "Stenomela" *caledonica*, not without analogy to the preceding (Fig 11B) [refers to description of wing of *Stenomela pallida* Erichson on pp. 58–9]

Wing large (15x5mm), more chitinous than the preceeding. Costal, radial, *rt* identical. *M1a* identical but more chitinous with *rm* apparent [*rm* described as invisible in *S. pallida*]. Distal and median [veins] identical but more chitinous. Cubito-anal system almost identical, of purely eumolpine form, well chitinised. [cell] *an1* lenticular, sinuous, elongated; *an2* subquadrangular; *3A* clear, sinuous, elongated.

It is equally noted that this aberrant eumolpine, like the preceding genus [*Stenomela*], does not have the medio-cubital fleck [*tache*]. In its place is only a fleck [*tache*, same word as preceeding!] more chitinous, diffuse, rather large, reaching the posterior border of the wing, of a totally different structure from the medio-cubital fleck of eumolpines. It is simply a coloured zone of the wing without special structure."

Translation of the description of *Bohumiljania antiqua* Monrós, 1958 (pages 149–150) [see Figures 1–3].

"Length 14mm. Humeral width 5mm. Body elongate-oval, moderately convex in transverse section and a little convex in longitudinal section. Colouration chestnut-brown, unicolourous. Antennae, mandibles and distal half of femora, tibiae and tarsi black [whether the distal half of all these is black, or just the femora, is not clear in the original Spanish].

Head with fine and dense punctures between the eyes, sparser on the clypeus. Face dorsally glabrous. Venter of face with decumbent fine and slightly dense setae, absent from medial area. Head with slight longitudinal depression between eyes. Antennal tubercles almost absent. Internal edge of eyes feebly sinuate. Six basal antennomeres shining and glabrous; antennomeres decreasing in length from 3–6 and increasing in length from 6–8 (from 8 the antenna is broken). Apex of right mandible trifid, with median tooth longest.

Pronotum slightly transverse, anterior edge subtruncate and posterior edge with moderately developed scutellar lobe. Sides with short expansion in the middle of the anterior. Pronotum with larger punctures than head, but sparser, punctures completely absent from posterior region of disc. Anterior discal region with a small oval depression (an accident to the specimen?). Pronotal base, on both sides of median lobe, with an elongated depression, short but deep. Prosternal intercoxal process as wide as length of first trochanter, with sides parallel and continuing in line with side of bilobed apex. Elytra impunctate, glabrous, smooth and shining. Mesosternum protruding slightly between mid coxae. Metasternal intercoxal lobe with short and broad tip. Tibiae with stronger and denser setae [than face]. Venter of tarsi densely and compactly setose."

Additional descriptive information from illustrations provided by Monrós, 1958.

In his taxonomic work, Monrós provided drawings, slightly stylised but generally accurate, showing surface sculpture as well as shape.

The illustrations accompanying the description of *Bohumiljania antiqua* (Monrós 1958: figs 2, 3, 6; reproduced here as Figures 1–3) provide the following additional information: postantennal tubercles impunctate; genal lobe short, about equal to minimum length of gena; gula defined by anterior transverse groove; 9 antennomeres present (! – perhaps the drawing antedated the description), 2 shortest, 6 slightly longer than 2 and clearly shorter than all others, 7 longest, 7–9 each longer than each of 1–6; last maxillary palpomere fusiform; pronotum elevated towards apex in lateral view; pronotal sides entirely margined, sinuate in lateral view; anterior angles laterally projecting; posterior angles not projecting, approximately 90°; pronotal anterior not margined except near angles, base without margination at middle; large circular area of pronotal disc impunctate, about half pronotal width and 2/3 length; hypomeron setose; sides of prosternal anterior densely punctured and setose; prosternal process impunctate and glabrous, without median groove, almost parallel-sided, angle at apex U-shaped, c. 45°; elytral epipleuron thin throughout, not elevated at humerus; mesoventrite lobe abruptly raised; sides of mesoventrite and mesanepisternum and mesepimeron densely punctured; middle of metaventrite impunctate and glabrous with almost complete discrimen, sides sparsely punctured, with short setae; anterior intercoxal lobe slightly elevated in lateral view; tarsomeres not greatly elongated (but drawn in oblique view, so difficult to assess); tarsal claws simple; ventrites glabrous and impunctate at middle, moderately closely setose at sides; first ventrite with possible femoral plica (indicated in ventral view but not in lateral); last ventrite almost semi-circular, longer than pre-apical.

Notes

The description given by Monrós should be sufficient to distinguish this species, especially the combination of pronotal grooves and lateral swellings, lack of punctures on basal half of pronotal disc, small oval depression rather than elevation on anterior of disc, reddish-brown colour, glabrous impunctate elytra and glabrous impunctate prosternal process. The apex of the abdomen illustrated by Monrós (1958) is rounded, suggesting a female; if so, the male is likely to be significantly shorter, as in other species of the genus, perhaps 12mm or less. However, Monrós' illustrations may not be totally reliable as they show the epipleuron narrow at the humerus and a possible femoral plica, neither of which occur in any other species of the genus.

Jolivet's wing description includes presence of a coloured medial fleck, but the colour is not indicated. However, the illustrated wing has only slight indication of this fleck (Figure 4), therefore it seems reasonable to assume it is not dark and distinct. We have examined wings of the eight *Bohumiljania* species available to us and they differ slightly in degree of darkening of the radial veins and the membrane surface including the medial fleck. In species with pale wings the variation may be intraspecific. The fleck is uncoloured in *B. lafoa* (Fig. 73), *B. mandjelia*, *B. tango* and *B. xanthogramma*, slightly yellowish in *B. humboldti*, *B. mandjelia* and *B. xaracuu* and brown in *B. aoupinie* and *B. yuaga* (Fig. 74). Jolivet's description does not provide colour, therefore it is undiagnostic.

In a recent paper, Jolivet *et al*. (2003) describe the holotype as black, which conflicts with Monros' original description.

Bohumiljania caledonica was described from a specimen labelled 'Nouvelle Caledonie'. The claim that this

species was rediscovered in 2002 (Jolivet *et al.* 2003) was based on the assumption that only one species of *Bohumiljania* existed on the 300km long main island of New Caledonia. As noted above, the authors also ignored numerous gross differences between the original description and their material, such as colour, sculpture and shape. We have therefore described Jolivet *et al.*'s species as new (see under *B. lafoa*).

Bohumiljania caledonia remains undiscovered since its collection in about 1900.

***Bohumiljania humboldti* Jolivet, Verma & Mille 2005**

(Figs 6, 14, 40, 48, 56, 72, 76, 110, 120, 130, 137, 155)

Material examined

Type: Paratype: female/ Mt Humboldt 12.ii.2005, P. Jolivet leg./ allotype/ *Bohumiljania humboldti* n. sp. det P. H. Jolivet 2005/ Museum Paris don. nr 1329/ MHNP EC1781/ paratype/ (MHNP).

Description (based on the single female examined)

Length: female 15mm; body elongate parallel-sided, length c. 3x width, length c. 3.8x height, profile flat at elytral base with flat pronotum. Head dark brown with appendages orange (labrum, palpi, antennomeres 1–3), pronotum and scutellum reddish-brown, elytra olive-green with broadly orange lateral margins, venter dark orange except mesanepisternum and metepimeron brown, legs orange with base of tibiae and apices of tarsomeres 3 and 5 brown; apices of mandibles and edge of buccal cavity at antennal sockets black. Head and pronotal punctures each armed with recumbent short white setae. Head microreticulate, pronotum and elytra shining, without microreticulation.

Head: distinctly pubescent, short recumbent setae dense throughout; puncturation dense (intervals < diameters) and fine throughout; midline of head shallowly depressed and frontoclypeal suture with pair of shallow depressions; eyes large and laterally prominent, with small internal canthus, separated by c. 4.2x eye width (female); temples short, c. 0.1x length eye, not posteriorly truncate; gena short, c. 0.25x eye length (female), genal lobe ratio 1.2; antennae situated at anterior of head, in laterally directed sockets, c. 5x socket diameter apart; antennomeres 4–11 missing, first and third approximately equally long, second c. 0.65x first; labrum not densely setose, with 1 pair of prominent setae on disc and 2 pairs at sides; mentum transversely rectangular, width c. 2x median length, without prominent anterior angles; apical maxillary palpomere elongate, with narrow tip, preapical as long as apical (female); gula with shallow transverse ridges.

Thorax: pronotum distinctly pubescent, with dense recumbent silvery setae, sparser and shorter at middle and absent from circular impunctate area anterior to middle, hypomeron finely and densely pubescent throughout; pronotum slightly convex at sides, slightly narrowed anteriorly, anterior truncate, base broadly convex; pronotal width c. 1.2x length; anterior angles slightly laterally produced, c. 75°, posterior angles strongly produced, c. 45°; anterior not margined except near angles, sides and base margined; sides of disc broadly shallowly depressed in basal half, with feeble swelling between depression and lateral margin; pronotal punctures fine and dense (intervals about equal to diameters), sparser on disc and absent from a circular area on anterior of disc, fine and dense on hypomeron; prosternum punctured and pubescent throughout, including process; prosternal process elongate, entirely medially grooved, concave sides broadly expanded to strongly bilobed apex, angle between lobes V-shaped, c. 90°; scutellum punctured and pubescent at base, almost quadrate with rounded apex; elytron glabrous except short erect setae at apical margin, elongate groove between humerus and epipleuron, finely and sparsely punctured throughout, with shallow grooves between punctures, except apical tenth strigose-rugose with punctures more or less obliterated; upper margin epipleuron reaching angle of humerus at base but obliterated by rugose sculpture in apical tenth; mesoventrite median process gradually elevated to bilobed apex, angle between lobes V-shaped, c. 100°; wing fully developed, with faint yellowish medial fleck; metaventrite shining and glabrous medially, sides densely pubescent and finely punctured, apical lobe elevated, laterally margined and medially depressed; metepisternum densely finely punctured and pubescent; 1 short spur on protibia, 2 on remainder; tarsi narrow, length first metatarsomere 2.8x width; length second metatarsomere 1.4x width.

Abdomen: ventrites I and II entirely fused; ventrites shallowly microreticulate, densely and finely punctured throughout, V with longer more erect setae; basal half ventrite 1 laterally keeled, II–V without lateral keels; apex female ventrite V medially truncate.

Genitalia: apex female sternite VIII sinuate with median concavity, basal apodeme large and quadrate, apex not expanded; gonostylus elongate-oval, not fused to gonocoxite; spermatheca falcate, swollen in basal half, duct

twisted at junction with spermatheca, short and thick; rectal kotpresse similar to *B. xaracuu* (Fig. 148), with dense elongate ventral spinule patch and strips of dense spinules dorsally.

Notes

There is considerable confusion in the literature concerning the identity of *B. humboldti*, which we attempt to disentangle below. One problem with our discussion is that at time of preparation of this manuscript only a single specimen, a female paratype, had been lodged in MNHN, Paris, despite the claim that the holotype was lodged there (Jolivet *et al*. 2005). This paratype lacks antennomeres 4–11.

From the evidence of the accompanying photographs, the description of *B. humboldti* provided by Jolivet *et al*. (2005) is based on several species, including at least *B. humboldti*, and *B. mandjelia*, probably also *B. aoupinie* and *B. xanthogramma*. Our description is based on the topotypic paratype loaned to us, which we have cleaned and remounted on a point (Fig 6). A similar specimen has been illustrated twice (Jolivet *et al*. 2005, Fig. 3; Jolivet & Verma 2009, Plate 41), associated with two widely separated localities, Mount Humboldt and Mandjelia respectively. The same specimen cannot have been captured at both Mount Humboldt and Mandjelia. Given the similarity of the specimen loaned to us, from Mount Humboldt, to that illustrated twice by Jolivet and co-authors, we consider the caption to Jolivet & Verma 2009, plate 41, to be incorrect. Perhaps the caption was intended for a different photograph, which was mislaid.

Bohumiljania humboldti is confined to Mount Humboldt, where it has only been collected at high altitude, between the refuge at 1380m and the summit at 1610m (Jolivet *et al*. 2005). The hostplant is *Myrtastrum rufopunctatum* (Myrtaceae). The late instar larva is free-living and yellowish-brown, with dark brown head, pronotal sclerite and legs (described from photograph in Jolivet *et al*. 2005, fig. 6). Adults and larvae were collected in February, presumably by beating.

Bohumiljania lafoa **sp. nov.**

(Figs 7, 15, 28–32, 37–38, 41, 49, 57–61, 69, 73, 77–79, 86, 89–91, 98, 102–104, 111–113, 121–123, 131, 138–140, 147, 149–152, 154)

Bohumiljania caledonica sensu auctt., nec Jolivet 1957; Jolivet, Verma & Mille 2003; Jolivet, Verma & Mille 2005; Verma & Jolivet 2004; Gomez-Zurita *et al*. 2005; Verma & Jolivet 2006; Gomez-Zurita *et al*. 2007; Jolivet & Verma 2008b; Jolivet & Verma 2009.

Material examined

Types: Holotype: male/ Nouvelle-Caledonie, La Foa SRFP, Lat. S21.73205 Long. E165.89936, alt. 32m/ collecté sur *Syzygium cumini* par battage, le 14.ii.2007, par J. Brnon (LELF); Paratypes (7): male, female, mature larva/ [printed label] New Caledonia, Pocquereuse [sic], Lou Fou [sic], xii.2001, P. Jolivet/ [handwritten] Nlle Caledonie Pocquereux La Foa, xii.2001 P. Jolivet/ (FCAG); male, female, same data but without handwritten label (FCAG); female/ Sarramea N. Caledonie, Reserve du Col d'Amieu le 17.iii.2007 par T. Samson, amp. vap. mercure (LELF); male/ La Foa, Sarramea GPS 21:40.201 S ; 165:48.548 E & 21:40.203S 165:48.512E &, on *Syzygium cumini*, 24 & 30m, xi.2009, G. Kergoat (AMS).

Non-type: female/ 1km SW Mandjella, 20:24S 164:32E, 750m, mv light rainforest, 11904, 5.i.2005, G. Monteith (QMB).

Description

Length: male 14–15.5mm, female 17–20mm; body elongate parallel-sided, length male 2.6x width, female 2.5–2.8x width, length 2.8–3.3x height, elevated towards elytral base in profile with slightly convex pronotum. Body and appendages yellow to orange, but most of dorsal surface lime-green or green including: head posterior to antennae (except margins of eyes), pronotum (except apical margin in some specimens) and pronotal hypomeron (at least laterally), elytra except epipleura and internal edge of suture, apical third of femora, external faces of tibiae, sides of metaventrite, metepisternum, sides of abdominal ventrites I–IV, ventrite V; antennomeres 1–6 reddish-orange with black or blackish anterior edges, 7–11 dull red; edges of tarsomeres 1–3 blackish; apices of mandibles, edge of buccal cavity at antennal sockets, and extreme apices of femora and tibiae black. Head punctures each armed with recumbent short white setae, long and dense on genae. Pronotal punctures mostly setose but setae min-

ute, apparently glabrous on disc. Vertex and frontoclypeus microreticulate, at least at sides, pronotum and elytra shining, without microreticulation.

Head: distinctly pubescent, short recumbent setae denser at sides; puncturation dense (intervals about equal to diameters) and moderately fine throughout or coarser and sparser at middle; midline of head shallowly depressed and sides of frontoclypeal suture deeply grooved; eyes large and laterally prominent, with small internal canthus, separated by c. 4x eye widths (male) or c. 4.5x eye width (female); temples short, c. 0.2x length eye, not posteriorly truncate; gena short, 0.3x eye length (male) or 0.25x eye length (female), genal lobe ratio 1.5–2; antennae situated at anterior of head, in laterally directed sockets, 4.5–5.0x socket diameter apart, c. 0.65x body length (male) or 0.6x body length (female); all antennomeres elongate: 2 shortest (c. 0.5x first), <3=6, <1=4, <5, <8, <10, <7=9, <11 (male), or 2, <3, <1=6, <4, (or <1, <4=6), <5, <8, <7=9=10, (or <10, <7=9), <11 (female); antennomere 7 comparatively slightly expanded; labrum not densely setose, with 1 pair of prominent setae on disc and 2–3 pairs at sides; apical maxillary palpomere elongate, with narrow tip in both sexes, preapical as long as apical, or slightly shorter; mentum strongly transverse, width 3x median length, with prominent anterior angles; gula smooth, with distinct transverse ridges.

Thorax: pronotum almost glabrous, but minute sparse recumbent setae present, longer and more evident at sides; pronotal hypomeron with dense pubesence on inner half; pronotum almost parallel-sided, slightly narrowed anteriorly, anterior truncate or slightly convex, base broadly convex at middle; pronotal width 1.15–1.3x length; anterior angles strongly laterally produced, c. 45–70°, posterior angles not or slightly produced, 80–90°; anterior not margined except near angles, sides and base margined; sides of disc longitudinally shallowly depressed in basal half, with a slight swelling (variable) between depression and lateral margin; pronotal punctures variable in size and density, from fine and sparse to coarse and coalescent, generally more closely and strongly punctured in lateral depressions, at sides and anterior, but always absent from a smooth oval or circular area on anterior of midline; anterior corner of hypomeron strongly punctured; prosternum punctured and densely pubescent at sides, process smooth, almost impunctate and glabrous; prosternal process elevated from base, flat, elongate, slightly concave sides expanded to strongly bilobed apex, angle between lobes U- or V-shaped, 75–110°; scutellum impunctate, almost quadrate with rounded apex, to semi-oval, flat or medially depressed; elytron apparently glabrous (with minute setae at extreme apex); slight elongate depression between humerus and epipleuron; elytral sculpture variable, coarsening towards apex from smoother basal half closely and usually strongly punctured, generally with shallow grooves between punctures, to at least apical sixth (usually apical third) strigose-rugose with punctures more or less obliterated; upper margin epipleuron reaching angle of humerus at base but absent in apical tenth; mesoventrite median process abruptly elevated to strongly bilobed apex, angle between lobes U- to V-shaped, 80–90° (less than apex of prosternal process in 4 of 5 specimens); wing fully developed, with uncoloured medial fleck; metaventrite shining and glabrous medially, densely pubescent and finely punctured at sides, apical lobe with or without lateral margination and flat or shallowly depressed; metepisternum densely finely punctured and pubescent; 1 short spur on protibia, 2 on remainder; tarsi broad, length first metatarsomere 1.5x with (male), 1.3–1.4x width (female); length second metatarsomere 1.1x width (male), = width (female).

Abdomen: ventrites I and II entirely fused; ventrites shallowly microreticulate, mostly smooth and shining, especially at middle, but generally with sparse recumbent setae and punctures, sides of I with denser patch of fine punctures and V with longer more erect setae; ventrite 1 almost entirely laterally keeled, II keeled for basal 2/3–3/4, III with (1m, 2f) or without (2m, 1f) partial lateral keel, IV with (2f) or without (3m, 1f) partial lateral keel, V without lateral keel; apex ventrite V with broad shallow excision in male, evenly rounded in female.

Genitalia: spiculum relictum transversely rectangular, with shallowly concave apical margin; tegmen with prominent symmetrical keel in basal half; penis long and narrow, apex rounded in dorsal view, acute and straight in lateral view; membrane in ostium of penis with pair of darker struts at edge; endophallic sclerite well-developed, c. 0.5 length of penis, flagellar but not exerted in repose; apex female sternite VIII narrowly and shallowly concave, basal apodeme small and triangular with narrow truncate apex, or elongate with slightly expanded apex; gonostylus ovate, flattened, almost fused to gonocoxite; spermatheca falcate, with slight median swelling, duct short and thick, strongly twisted before insertion of gland; rectal kotpresse with denser transverse bands of spinules, band elongately lobed on venter, narrow on dorsum.

Notes

Etymology: named from the most frequently used place name in association with the type locality, La Foa, a noun in apposition.

At the time of writing (2010), no material had been lodged in Paris Museum although this was said to have happened in 2002 (Jolivet *et al*. 2003). Fortunately we have borrowed from other collections some of the original material collected by Jolivet and colleagues, plus specimens collected later at the same locality. The published and labelled material appears to have been collected at several different localities, using the following names: Col d'Amieu, La Foa south-east of Bourail (Jolivet *et al*. 2003:5), Sarramea (label data on specimens borrowed), Pocquereux (Jolivet *et al*. 2009, plates 38–40). We are advised that the first three localities refer to the same cluster of trees: "all the specimens (including those collected by C. Mille, P. Jolivet or D. Paulaud) have been collected in the same locality (it is a large field with a great number of *Syzygium*).... in Sarramea (near La Foa)" (G. Kergoat, *in litt*. July 2010). Pocquereux is the location of the agronomic laboratory where the specimens were reared and photographed; there are no *Syzygium* trees and thus no *B. lafoa* in this locality.

Bohumiljania lafoa has been treated as *B. caledonica* by earlier authors, but the redescription of *B. caledonica* by Jolivet *et al*. (2003) differs considerably from its original description (Monrós, 1958; see above under *B. caledonica*). In particular, the two descriptions differ in: body and appendage colour, shape and surface sculpture of pronotum and elytra. If the unique specimen of *B. caledonica* was a female, as its rounded sternite VII indicates (Fig. 2), the two species also differ in size. Furthermore, Jolivet (1957), described a coloured medial fleck (Fig. 4) which is absent from the material from Sarramea at our disposal (Fig. 73). Clearly two different species have been confused under *B. caledonica*, with the species collected by Jolivet and others being undescribed. However, we also note that the description provided by Jolivet *et al*. (2003), based on exactly the same material we have examined, erroneously describes the antennae as "shining black, practically glabrous", also elytra "practically smooth", tarsi "generally black", "anterior side of the pronotum black", "upper side of... pronotum glabrous", "front coxae globular". There are further discrepancies in the drawing provided (Jolivet *et al*. 2003, Plate 1, Figure 1): all antennal segments of similar width, anterior pronotal angles smoothly rounded, elytra striate, posterior tarsi with short segments. Several of these observations are clearly at variance with the photograph of a specimen provided in the same paper (Jolivet *et al*. 2003, Plate 6, Figure 2).

The description above includes the single female listed in 'non-types' from Mandjelia, c. 150km north of Sarramea, which was collected at 750m altitude. Compared with Sarramea material, this specimen is small, 17mm in contrast to the 18–20mm females from Sarramea, with slightly less densely punctate head and slightly smoother elytra (wrinkles shallow and confined to elytral apex), parallel-sided prosternal process (Fig. 61) and almost entirely lime-green elytra (epipleuron narrowly yellowish-green). The spermatheca is identical to that of Sarramea material (Fig. 140). Other character states are more or less identical (compare Figs 28–32, 77–79, 111–113, 121–123). The variability shown by five specimens from the type locality suggests that the characters distinguishing this specimen are weak. Therefore we are reluctant to identify the Mandjelia specimen as belonging to a new taxon. A large male specimen (17mm) collected at the same locality is discussed under *B. xanthogramma* (q.v.).

Bohumiljania lafoa is the only lowland and only western species of the genus. However the single locality is a plot of introduced *Syzigium cumini*, an invasive weed native to the Indian subcontinent (Morton 1987; Swarbrick 1997). This suggests (i) *B. lafoa* could be widespread in New Caledonia, wherever this weedy tree occurs, and/or (ii) *B. lafoa* was accidentally introduced to the La Foa region from another part of the island; (iii) the original host is a native species of *Syzygium*, of which more than 90 occur on New Caledonia, mostly in the same species group as *S. cumini* (Craven & Biffin 2010; L. Craven pers. com., October 2010).

The following notes on biology of this species are from Jolivet *et al.* (2003). Eggs are laid on leaf lamina in groups of 4 under a cap of mixed faecal and glandular material. The first-instar larva bores into the host stem but later instars feed openly on leaves. The morphology of the mature larva is briefly described above, under the generic description. Larvae are pale yellow with dark brown head, abdominal stripes and anal plate. Pupation is thought to be in soil. Adults are abundant in December, but specimen data indicate this species is also present in November and February. One of the type specimens was collected at mv light, in common with other species of the genus.

The adult specimens collected by Jolivet and co-authors are damaged, missing apices of tarsi and antennae, which suggests they were kept in confinement together before being killed. This aggressive behaviour between conspecifics is common in other Chrysomelidae, especially Chrysomelinae, Cryptocephalinae and Eumolpinae (CAMR, *pers. obs*.).

Partial molecular sequences have been published for *B. lafoa* under the name *B. caledonica* (Gomez-Zurita *et al*. 2005; Gomez-Zurita *et al*. 2007).

***Bohumiljania mandjelia* sp. nov.**
(Figs 8, 16, 23–24, 42, 50, 62, 80, 87, 92, 99, 105, 109, 114, 124, 132, 141, 153)

Material examined

Types: Holotype: male/ Mandjella Lower Creek, 20:24S 164:31E, 600m, mv light rainforest, 11906, 12.xii.2004, G. Monteith (MHNP); Paratypes (2): female/ Mandjella Lower Creek, 20:24S 164:31E, 580m, rainforest, beating, 11949, 12–13.xii.2004, G. Monteith (QMB); female/ Mandjella summit, 20:24S 164:32E, 780m, beating, rainforest, 11905, 13.xii.2004, G. Monteith (MHNP)

Description

Length: male 8mm, female 11.5–12mm; body elongate parallel-sided, length c. 3x width, length c. 4x height, slightly elevated to elytral base in profile, with anteriorly convex pronotum. Body and appendages yellowish-brown to orange, except: disc of pronotum and antennomeres 5–6 darker in male; elytra green with vaguely defined lateral yellow or pale yellow stripe from humerus along side margin (including base of epipleuron) to before apex (only basal half in male); antennomeres 7–11 dull red, darker in male); head dorsal to antennal sockets, extreme edges pronotum and anterior face apical half metafemora dark reddish-brown; apices mandibles, labrum (one female only) black or blackish-brown; bases of tibiae slightly reddish. Head and pronotal punctures each armed with recumbent short white setae. Head microreticulate, pronotum and elytra shining, without microreticulation.

Head: pubescent throughout, setae dense, short and recumbent, sparser on clypeus and above antennae; puncturation fine and dense (interspaces < diameters), slightly sparser but larger on clypeus; midline of head shallowly depressed, sides of frontoclypeal suture not deeply grooved; eyes large and laterally prominent, with small internal canthus, separated by 4x (male) or 4.3x eye width (female); temples short, c. 0.1x length eye, not posteriorly truncate; gena 0.3x (male) or 0.4x eye length (female), genal lobe ratio 1.2–1.3; antennae situated at anterior of head, in laterally directed sockets, c. 4x socket diameter apart, 0.75x (male) or 0.6x body length (female); all antennomeres elongate: 2 shortest, 0.5 (male)–0.65x (female) first, <3, <4, <1, <6, <5, <8, <7, <10, <9, <11 (male), or <1=3=4, <6, <5, <8=10, <9, <7, <11 (female); antennomere 7 distinctly expanded; labrum not densely setose, but with 2–3 pairs of prominent setae on disc and 3 pairs at apical margin; apical maxillary palpomere fusiform, with narrow tip in female, broader in male, preapical as long as apical (female), or shorter (male); mentum strongly transverse, width 3x median length, with prominent anterior angles; gula distinctly transversely grooved.

Thorax: pronotum pubescent throughout with dense recumbent setae, except basal 2/3 of midline, hypomeron densely setose throughout; pronotum with convex sides, broadest at middle (male and one female) or basal 2/3 almost parallel-sided, anterior truncate, base medially convex; pronotal width c. 1.3x length; anterior angles strongly laterally produced, c. 60°, posterior angles feebly laterally produced, c. 100°; anterior and posterior not margined except near angles; lateral margination strong and even; sides of disc feebly depressed in basal half, with slight swelling laterally; pronotal midline impunctate for basal 2/3, remainder of pronotum including hypomeron finely (but punctures variable in diameter) and densely (as head) punctured, especially on small oval median patch anterior to middle, punctures larger and sparser on sides of disc, coalescent and rugose at sides and on hypomeron; prosternum laterally sparsely punctured and pubescent, process almost glabrous and impunctate but with row of setae at sides; prosternal process elongate, medially grooved in apical half, almost parallel sides slightly expanded to strongly bilobed apex, angle between lobes V-shaped, c. 45°; scutellum impunctate, quadrate with rounded apex (male), or semi-ovate (female), flat; elytron glabrous (except sparse erect setae at extreme apex), without oval depression between humerus and epipleuron; sculpture almost uniform, punctures large and close (separated by 1–3 diameters), shallower at base and apex, interspaces with scattered minute punctures and shallow transverse grooves, apical 1/6 more sparsely punctured and weakly wrinkled; upper margin epipleuron reaching angle of humerus at base, absent at apex; mesoventrite median process gradually elevated to strongly bilobed apex, angle between lobes V-shaped, c. 90°; wing fully developed, with uncoloured or faintly yellowish medial fleck; metaventrite shining and glabrous medially, at sides densely pubescent, laterally strigose and finely punctured, apical lobe not margined, flat or medially depressed; metepisternum densely finely punctured and pubescent; 1 short spur on

protibia, 2 on remainder; tarsi narrow, length first metatarsomere 2x width; length second metatarsomere 1.3x width.

Abdomen: ventrites I and II entirely fused; ventrites shallowly microreticulate, mostly smooth and shining at middle, with dense minute setae and punctures at sides, I–II with denser patches of fine punctures and V with longer more erect setae and larger punctures; ventrites I–V almost entirely laterally keeled in male, I–II and base of IV keeled in female; apex ventrite V truncate (female) or shallowly concave (male).

Genitalia: spiculum relictum transversely rectangular, with shallowly concave apical margin and minute asymmetric spiculum at base; penis thick, with large basal foramen (0.6x penis length), apex rounded but concave at tip in dorsal view, acute and straight in lateral view; ostium of penis without sclerites; base of tegmen with semicircular median ridge**;** endophallic sclerite strongly developed, not exerted in repose; apex female sternite VIII almost truncate, basal apodeme large and transverse, apex strongly expanded; median sclerite thin; gonostylus ovoid, not fused to gonocoxite; spermatheca falcate, with swelling near base, duct short and thick with ovoid swelling before insertion of gland; rectal kotpresse similar to *B. xaracuu* (Fig. 148), with dense elongate ventral spinule patch and strips of dense spinules dorsally.

Notes

Etymology: from the type locality, Mandjelia, a noun in apposition. This is the standard spelling of the type locality.

Bohumiljania mandjelia is similar in colour, size and surface sculpture to *B. tango*. While the sample of these species is small (one male and two females of *B. mandjelia*, one female of *B. tango*), we feel the sum of small differences is significant, including: pronotal anterior and posterior angle shapes, prosternal process sculpture, elytral sculpture (apical punctures, setae, area between humerus and epipleuron), lateral keeling of ventrites, swelling of spermathecal duct.

Bohumiljania mandjelia is only known from the vicinity of Mandjelia, a hill of moderate elevation in NW New Caledonia. The species has been collected there from three localities, at 580–780m altitude. Specimens were collected at mv light and by beating, in December. The published record of *B. humboldti* from Mandjelia may refer to this species (Jolivet *et al*. 2005). If so, the hostplant is *Metrosideros laurifolia* (Myrtaceae) (*loc. cit.*).

Bohumiljania tango **sp. nov.**

(Figs 9, 17, 25, 43, 51, 63, 81, 115, 125, 133, 142, 155)

Material examined

Type: Holotype: female/ Plateau de Tango, 20:59S 165:06E, 340m, lower creek, mv light, 11971, 3.i.2005, G. Monteith (MHNP).

Description [female only]

Length: female 12mm; body elongate parallel-sided, length c. 3x width, length c. 4x height, slightly elevated to elytral base in profile, with anteriorly convex pronotum. Body and appendages yellowish-brown to orange, except: elytra green with vaguely defined lateral orange stripe from humerus along side margin (including base of epipleuron) to before apex; antennomeres 7–11 dull red; head dorsal to antennal sockets, and extreme edges pronotum dark reddish-brown; apices mandibles, labrum, apical half last maxillary palpomere, anterior face of apical half hind femora, apex of hind tibia black or blackish-brown. Head and pronotal punctures each armed with recumbent short white setae. Head microreticulate, pronotum and elytra shining, without microreticulation.

Head: pubescent throughout, setae dense, short and recumbent, sparser on clypeus and above antennae; puncturation fine and dense (interspaces < puncture diameters), slightly sparser but larger along midline and clypeus; midline of head shallowly depressed, sides of frontoclypeal suture not deeply grooved; eyes large and laterally prominent, with small internal canthus, separated by c. 4.3x eye width (female); temples short, c. 0.1x length eye, not posteriorly truncate; gena c. 0.4x eye length (female), genal lobe ratio 1.2; antennae situated at anterior of head, in laterally directed sockets, c. 4x socket diameter apart, c. 0.6x body length (female); all antennomeres elongate: 2 shortest (c. 0.65x first), <1=3, <4, <6, <8, <5=9=10, <7, <11 (female); antennomere 7 (female) distinctly expanded; labrum not densely setose, with 2 pairs of prominent setae on disc and 3 pairs at apical margin; apical maxillary

palpomere fusiform, with narrow tip, preapical as long as apical (female); mentum strongly transverse, width 3x median length, with prominent anterior angles; gula distinctly transversely grooved.

Thorax: pronotum pubescent throughout with dense recumbent setae, except basal 2/3 of midline, hypomeron densely setose throughout; pronotum with convex sides, broadest at middle, anterior truncate, base medially convex; pronotal width c. 1.3x length; anterior angles strongly laterally produced, c. 45°, posterior angles distinctly produced, c. 90°; anterior and posterior not margined except near angles; lateral margination strong and even; sides of disc feebly depressed in basal half, with slight swelling laterally; pronotal midline impunctate for basal 2/3, remainder of pronotum including hypomeron finely (but diameters variable) and densely (as head) punctured, especially on small oval median patch anterior to middle, punctures larger and sparser on sides of disc, coalescent and rugose at sides and on hypomeron; prosternum including process closely punctured and pubescent; prosternal process elongate, entirely medially grooved, almost parallel sides feebly expanded to strongly bilobed apex, angle between lobes V-shaped, c. 75°; scutellum impunctate, quadrate with rounded apex, flat; elytron glabrous (except sparse erect setae on apical 1/6), with oval depression between humerus and epipleuron; sculpture variable, punctures large and close (separated by 1–2 diameters) on basal 4/5, interspaces with scattered minute punctures and shallow transverse grooves, apical 1/5 irregularly shallowly wrinkled, with punctures sparser or obliterated; upper margin epipleuron reaching angle of humerus at base, absent at apex; mesoventrite median process gradually elevated to strongly bilobed apex, angle between lobes V-shaped, c. 90°; wing fully developed, with uncoloured medial fleck; metaventrite shining and glabrous medially, at sides densely pubescent, laterally strigose and finely punctured, apical lobe not margined, flat; metepisternum densely finely punctured and pubescent; 1 short spur on protibia, 2 on remainder; tarsi narrow, length first metatarsomere 2x width; length second metatarsomere 1.3x width.

Abdomen: ventrites I and II entirely fused; ventrites shallowly microreticulate, mostly smooth and shining at middle, with dense minute setae and punctures at sides, I–II with denser patches of fine punctures and V with longer more erect setae and larger punctures; ventrite I almost entirely laterally keeled, II keeled in basal 2/3, III with short keel in basal half, IV–V unkeeled; apex ventrite V truncate (female).

Genitalia: apex female sternite VIII truncate, basal apodeme large and transverse, apex strongly expanded; median sclerite thin; gonostylus ovoid, not fused to gonocoxite; spermatheca falcate, duct short and thick with small ovoid swelling before gland insertion; rectal kotpresse similar to *B. xaracuu* (Fig. 148), with dense elongate ventral spinule patch and strips of dense spinules dorsally.

Notes

Etymology: named from the type locality, Plateau de Tango, a noun in apposition.

Bohumiljania tango is similar to *B. mandjelia* (*q.v. supra*) and may possibly represent a variant of that species. We have separated them based on: shape of pronotal anterior and posterior angles, prosternal process sculpture, elytral sculpture (apical punctures, setae, area between humerus and epipleuron), lateral keeling of ventrites, swelling of spermathecal duct.

Bohumiljania tango is known from a single specimen collected at 340m, in the Plateau de Tango area, SE New Caledonia. The specimen was collected in January, at mv light.

Bohumiljania xanthogramma **sp. nov.**

(Figs 10, 18, 33–36, 44, 52, 64–66, 82–83, 93–96, 100, 106–108, 116–117, 126–127, 134, 143–144, 154)

Material examined

Types: Holotype: male/ N slope Pic D'Amoa, 20:58S 165: 17E, 480m, mv light rainforest, 11912, 15.xii.2004, G. Monteith (MHNP); Paratypes (3): male, female, same data as holotype (ANIC, MHNP); female, ditto, except 500m, at mv light, 8690, 10.xi.2001/ leg →Farrell for DNA/ (QMB).

Non-type: male/ Mandjella Lower Creek, 20:24S 164:31E, 600m, mv light rainforest, 11906, 12.xii.2004, G. Monteith (AMS)

Description

Length: males 16.5–17mm, females 21–23mm; body elongate parallel-sided, length c. 2.8x width, length c.

3.4x height, elevated towards elytral base in profile with flat pronotum. Body and appendages yellow to orange, but most of dorsal surface lime-green including: head posterior to antennae, pronotum and pronotal hypomeron, elytra except sutural and lateral margins; tibiae, sides of metaventrite, metepisternum, sides of abdominal ventrites I–III and ventrites IV–V with variable greenish hue; antennomeres 1–6 reddish-orange with blackish anterior edges, 7–11 dull red; edges of tarsomeres 1–3 slightly darkened; apices of mandibles and edge of buccal cavity at antennal sockets black. Head and pronotal punctures each armed with recumbent short white setae. Head microreticulate, pronotum and elytra shining, without microreticulation.

Head: distinctly pubescent, recumbent setae long and dense on genae; puncturation dense (intervals </= diameters) and fine posteriorly, larger and sparser between and anterior to eyes; midline of head shallowly depressed; eyes large and laterally prominent, with small internal canthus, separated by c. 4x eye width (male) or c. 4.2x eye width (female); temples short, c. 0.2x length eye, not posteriorly truncate; gena short, 0.25x eye length (male) or 0.2x eye length (female), genal lobe ratio 1.5–2; antennae situated at anterior of head, in laterally directed sockets, c. 5x socket diameter apart, c. 0.6x body length (male) or 0.5x body length (female); all antennomeres elongate: 2 shortest (c. 0.5x first), <3, <1, <4=6, <5, <8, <7=9, <10, <11 (male), or 2, <3=6, <1=4, <5, <7=8, <9=10=11 (female); antennomeres 7 & 8 (male) or 7 (female) comparatively slightly expanded; labrum not densely setose, with 1 pair of prominent setae on disc and 2 pairs at sides; apical maxillary palpomere elongate, with narrow tip in both sexes, preapical as long as apical (female) or slightly shorter (male); mentum strongly transverse, width 3x median length, with prominent anterior angles; gula with distinct transverse ridges.

Thorax: pronotum distinctly pubescent, with sparse recumbent setae except glabrous anterior of middle, inner part of hypomeron densely pubescent; pronotum almost parallel-sided, slightly narrowed anteriorly, anterior truncate, base broadly convex; pronotal width c. 1.15x length; anterior angles strongly laterally produced, c. 60°, posterior angles not produced, 90°; anterior not margined except near angles, sides and base margined; sides of disc longitudinally shallowly grooved in basal half, with a slight swelling between groove and lateral margin; pronotal punctures variable in size and density: generally more closely and strongly punctured in lateral grooves, at sides and anterior, more finely and sparsely at base and absent from a circular area on anterior of disc; anterior corner of hypomeron strongly punctured; prosternum densely punctured and pubescent at sides, process smooth, almost impunctate and glabrous; prosternal process elongate, strongly elevated from middle of prosternum, flat, straight sides slightly expanded to strongly bilobed apex, angle between lobes V-shaped, c. 90°; scutellum impunctate, almost quadrate, with rounded apex, medially depressed; elytron glabrous, elongate groove between humerus and epipleuron, sculpture coarsening towards apex, from basal half strongly and densely punctured with shallow grooves between punctures to apical half entirely strigose-rugose with punctures more or less obliterated; upper margin epipleuron reaching angle of humerus at base but obliterated by rugose sculpture in apical tenth; mesoventrite median process abruptly elevated to strongly bilobed apex, angle between lobes U-shaped, c. 75°; wing fully developed, with uncoloured medial fleck; metaventrite shining and glabrous medially, densely pubescent and finely punctured at sides, apical lobe laterally margined and flat or shallowly depressed; metepisternum densely finely punctured and pubescent; 1 short spur on protibia, 2 on remainder; tarsi short, length first metatarsomere 1.7x width (male), 1.5x width (female); length second metatarsomere 1.1x width (male), = width (female).

Abdomen: ventrites I and II entirely fused; ventrites shallowly microreticulate, mostly smooth and shining, especially at middle, but generally with sparse recumbent setae and punctures, sides of I with denser patches of fine punctures and V with longer more erect setae; ventrite 1 almost entirely laterally keeled, II keeled for basal 2/3–3/4, III–V without lateral keels; apex ventrite V with broad V-shaped excision in male, evenly rounded in female.

Genitalia: spiculum relictum transversely rectangular, with shallowly concave apical margin; base of tegmen with asymmetric median keel; penis thick, apex angulate with narrowly concave tip in dorsal view, acute and acuminate in lateral view; ostium of penis without distinct sclerites; endophallic sclerite well-developed, not exerted in repose; apex female sternite VIII narrowly and shallowly concave, basal apodeme small and quadrate to elongate with slightly expanded apex; gonostylus ovate, flattened, almost fused to gonocoxite; spermatheca strongly folded, with median swelling, duct short and thick with long tight loop before insertion of gland; rectal kotpresse as *B. lafoa* (Fig. 147), with denser transverse band of spinules, band elongately lobed on venter, narrow on dorsum.

Notes

Etymology: from Greek, *xantho* (yellow) and *gramma* (line), in reference to the yellow suture.

The male specimen from Mandjelia is treated here as *B. xanthogramma* but without type status. It differs slightly from all other specimens of *B. xanthogramma* (all from Pic D'Amoa) in elytral colour, pronotal sculpture and penis shape (Fig. 108, not acuminate in lateral view), but without additional material we are reluctant to describe it as new. This male specimen was collected near a single female of a specimen we have described under *B. lafoa* (q.v.). We reject conspecificity of these two specimens because of: different colour; similar size (all other species show a large difference between male and female), slightly different pronotal and elytral sculpture.

Bohumiljania xanthogramma has been collected at two localities in central and NW New Caledonia, Pic D'Amoa and possibly Mandjelia, both of moderate elevation, 480–600m asl. Possibly this is a relatively widespread species of medium elevation rainforest in northern New Caledonia. All specimens were taken at mv light, in November & December. The hostplant is unknown.

One specimen is labelled with a note indicating provision of a leg to Harvard University for molecular analysis. As far as we are aware no molecular sequence has been published for this species.

***Bohumiljania xaracuu* sp. nov.**
(Figs 11, 19, 26, 45, 53, 67, 70, 84, 118, 128, 135, 145, 148, 153)

Material examined

Type Holotype: female/ Mt Do, 1000m, summit forest, 27.x.1978, J. S. Dugdale/ diurnal/ (LRL).

Description [female only]

Length: female 15.5mm; body elongate parallel-sided, length c. 2.8x width, length c. 3.4x height, flat at elytral base in profile, with slightly convex pronotum. Body and appendages dark reddish-brown, except: elytra green with small yellow humeral spot and lateral yellow stripe from humerus broadly along side margin (excluding base of epipleuron) to apex, including apex of suture, remainder of suture narrowly reddish-brown; midline of venter olive-brown; sides of venter and middle of femora slightly bronzed; antennae reddish-orange; labrum and palpi yellow; tarsi entirely dull yellow; apices of mandibles and edge of buccal cavity at antennal sockets black. Head and pronotal punctures each armed with recumbent short yellowish setae. Head, pronotum and elytra shining, without microreticulation.

Head: pubescent throughout, setae dense, short and recumbent, sparser at middle; puncturation fine and dense, interspaces </= puncture diameters, slightly sparser along midline and dorsal to antennae; midline of head deeply depressed, sides of frontoclypeal suture deeply grooved; eyes large and laterally prominent, with small internal canthus, separated by c. 4.1x eye width (female); temples short, c. 0.2x length eye, not posteriorly truncate; gena c. 0.25x eye length (female), genal lobe ratio 1.4; antennae situated at anterior of head, in laterally directed sockets, c. 4x socket diameter apart, c. 0.5x body length (female); all antennomeres elongate: 2 shortest (c. 0.5x first), <3, <4=6, <1=5, <8, <10, <7=9, <11 (female); antennomere 7 (female) distinctly expanded; labrum not densely setose, with 1 pair of prominent setae on disc and 3 pairs at apical margin; mentum transversely rectangular, width c. 2x median length, without prominent anterior angles; apical maxillary palpomere fusiform, with broad tip, preapical slightly shorter than apical (female); gula distinctly transversely grooved.

Thorax: pronotum pubescent throughout with dense recumbent setae, except in apparently worn off patches and on elevated parts of midline and lateral edges, hypomeron densely setose throughout; pronotum almost parallel-sided, anterior truncate, base medially strongly convex; pronotal width c. 1.15x length; anterior angles laterally produced, c. 85°, posterior angles slightly produced, c. 90°; anterior and posterior not margined except near angles, margination of sides obscured by elongate ridges and grooves; sides of disc longitudinally broadly and irregularly depressed in basal half, with a swelling laterally and groove between swelling and impunctate and ridged lateral edge; pronotal midline slightly elevated in basal half and in a circle anterior to middle, elevated areas impunctate; remainder of pronotum including hypomeron finely and densely punctured, as head, punctures larger and sparser on sides of disc, coalescent and rugose at sides and on hypomeron; prosternum closely punctured and pubescent at sides, process smooth, with scattered punctures but almost glabrous; prosternal process elongate, medially grooved in apical half, straight sides slightly expanded to strongly bilobed apex, angle between lobes V-shaped, c. 100°; scutellum impunctate, quadrate with rounded apex, flat; elytron glabrous (except minute setae at extreme apex), without groove between humerus and epipleuron, sculpture uniform, fine and scattered punctures, without shallow grooves between punctures; upper margin epipleuron reaching angle of humerus at base and complete to apex;

mesoventrite median process abruptly elevated to strongly bilobed apex, angle between lobes U-shaped, c. 80°; wing fully developed, with pale yellowish medial fleck; metaventrite shining and glabrous medially, at sides densely pubescent, laterally strigose and finely punctured, apical lobe not margined, flat; metepisternum densely finely punctured and pubescent; 1 short spur on protibia, 2 on remainder; tarsi moderately broad, length first metatarsomere 1.5x width; length second metatarsomere 1.2x width.

Abdomen: ventrites I and II entirely fused; ventrites shallowly microreticulate, mostly smooth and shining at middle, with dense recumbent setae and punctures at sides, I–II with denser patches of fine punctures and V with longer more erect setae; ventrite I almost entirely laterally keeled, II keeled in basal 2/3, III–V without lateral keels; apex ventrite V truncate (female).

Genitalia: apex female sternite VIII truncate, basal apodeme quadrate, but apex strongly expanded; gonostylus ovoid, not fused to gonocoxite; median sclerite elongate, narrow; spermatheca falcate, duct short and thick, twisted before insertion of gland; rectal kotpresse with dense elongate ventral spinule patch and strips of dense spinules dorsally.

Notes

Etymology: named for the Xaracuu people, indigenous to the Mount Do area (Anonymous 2010), a noun in apposition.

Bohumiljania xaracuu is known from a single locality, the summit of Mt Do, SE New Caledonia, altitude 1000m. An attached label notes that the specimen was 'diurnal'. The hostplant is unknown.

***Bohumiljania yuaga* sp. nov.**

(Figs 12, 20, 27, 46, 54, 68, 74, 85, 119, 129, 136, 146, 155)

Material examined

Type: Holotype: female/ 1km SW Mandjella, 20:24S 164:32E, 750m, mv light rainforest, 11904, 5.i.2005, G. Monteith (MHNP).

Description [female only]

Length: female 17mm; body elongate parallel-sided, length c. 3x width, length c. 3.7x height, slightly elevated to elytral base in profile, with slightly convex pronotum. Body and appendages dark reddish-brown, except: disc pronotum slightly paler; elytra olive-brown with paler basal half epipleuron; labrum, palpi, antennomeres 1–6, meso- and metaventrite processes, trochanters, tarsi, orange to reddish-orange (antennomeres paler ventrally); antennomeres 7–11 dull red; elytra, femora, tibiae, prosternum, metaventrite and abdominal ventrites with slight bronze reflection; apices of mandibles and edge of buccal cavity at antennal sockets dark brown. Head and pronotal punctures each armed with recumbent short white setae. Head microreticulate, pronotum and elytra shining, without microreticulation.

Head: pubescent throughout, setae dense, short and recumbent, sparser on clypeus and above antennal sockets; puncturation fine and dense (intervals equal diameters), sparser and larger on clypeus and absent dorsal to antennae; midline of head depressed, deeply at junction with frontoclypeus, with 3–4 irregular pits between this and eyes, sides of frontoclypeal suture deeply grooved; eyes small and laterally prominent, with small internal canthus, separated by c. 5x eye width (female); temples abruptly truncated, short, c. 0.1x length eye; gena c. 0.3x eye length (female), genal lobe ratio 1.3; antennae situated at anterior of head, in laterally directed sockets, c. 4.5x socket diameter apart, c. 0.5x body length (female); all antennomeres elongate: 2 shortest (c. 0.6x first), <1, <3=4=6, <5, <8, <10, <9, <7, <11 (female); antennomere 7 (female) distinctly expanded; labrum not densely setose, with 1 pair of prominent setae on disc and 3 pairs at apical margin; apical maxillary palpomere cylindrical with truncate apex, preapical slightly shorter than apical (female); mentum strongly transverse, width 3x median length, with prominent anterior angles; gula distinctly transversely grooved.

Thorax: pronotum pubescent throughout with dense recumbent setae in tufts, except glabrous elevated parts of midline, hypomeron densely setose throughout; pronotum almost parallel-sided, anterior concave, base medially convex; pronotal width c. 1.25x length; anterior angles feebly laterally produced, c. 90°, posterior angles rounded, c. 120°; anterior edge not margined except near angles, posterior margined except at midline, margination of sides

strong and even; sides of disc longitudinally deeply grooved in basal half, with a swelling laterally and circular depression between swelling and lateral edge; pronotal midline slightly elevated in basal half and oval anterior to middle, elevated areas impunctate, otherwise pronotal disc finely punctured in dense mostly transverse clusters of 3–6, dense and evenly spaced in elevated median oval patch, punctures coarse with rugose interspaces at sides and on hypomeron; prosternum closely punctured and pubescent at deeply transversely grooved sides, process smooth, but with scattered punctures and setae, more numerous on apical lobes; prosternal process elongate, entirely medially grooved, concave sides expanded to strongly bilobed apex, angle between lobes V-shaped, c. 75°; scutellum finely punctured and setose at base, quadrate, flat; elytron pubescent throughout except glabrous sparsely punctured patch at base of suture (possibly worn off), setae in tufts based in irregular clusters of fine punctures, intervals almost smooth at base and on disc (with trace of shallow grooves between puncture clusters), but convex (rugose) laterally and in apical 1/6; with oval depression between humerus and epipleuron; upper margin epipleuron reaching angle of humerus at base and absent at apex; mesoventrite median process abruptly elevated to strongly bilobed apex, angle between lobes V-shaped, c. 90°; wing fully developed, with distinct brown medial fleck; metaventrite shining and glabrous medially, at sides densely pubescent, laterally strigose and finely punctured, apical lobe not margined, flat; metepisternum densely finely punctured and pubescent; 1 short spur on protibia, 2 on remainder; tarsi broad, length first metatarsomere 1.5x width; length second metatarsomere = width.

Abdomen: ventrites I and II entirely fused; ventrites shallowly microreticulate, more sparsely punctured and pubescent at middle, with dense recumbent setae and fine punctures at sides, I–II with denser punctures and V with larger punctures and longer more erect setae; ventrites I and II almost entirely laterally keeled, III keeled in basal 1/2, IV with trace of keel at middle of side; V unkeeled; apex ventrite V truncate (female).

Genitalia: apex female sternite VIII almost truncate, basal apodeme elongate, but apex strongly expanded; gonostylus conical and fused to gonocoxite; spermatheca falcate, duct short and thick, with short lobe before insertion of gland; rectal kotpresse similar to *B. xaracuu* (Fig. 148), with dense elongate ventral spinule patch and strips of dense spinules dorsally.

Notes

Etymology: named for the Yuaga people, indigenous to the Mandjelia area (Anonymous 2010), a noun in apposition.

Bohumiljania yuaga is known from a single locality, Mandjelia, in NW New Caledonia. It was collected at 750m altitude in submontane rainforest, at mv light, in January. The hostplant is unknown.

Acknowledgements

This project was funded by a grant to CAMR from the Australian Biological Resources Study, to which we are extremely grateful. We thank the following curators and colleagues for the loan or use of material in their care: John Dugdale (LRL), Gael Kergoat (French National Institute for Agricultural Research, Montferrier-sur-Lez), Antoine Mantilleri (MHNP), Geoff Monteith (QMB), Christian Mille (LELF), Paul Skelley (FCAG), Marek Wanat (Wrocław University, Wrocław) and Tom Weir (ANIC). Particular thanks to Gael Kergoat and Antoine Mantilleri for information about types and type localities. At AMS, we are grateful to our colleagues Michael Elliott for preparing the maps and Maria Capa for translation of Spanish. Lyn Craven (Australian National Herbarium, Canberra) kindly helped with literature on Myrtaceae. John Lawrence kindly reviewed a copy of the manuscript. We are particularly grateful to John and also Pierre Jolivet for a larval specimen of *Bohumiljania*. We thank Bruce Halliday (ANIC and committee member of the ICZN) for gentle but persuasive discussion of the Code and its application to the type species of *Bohumiljania*. We thank the Royal Belgian Institute of Natural Sciences for permission to reproduce Figure 4.

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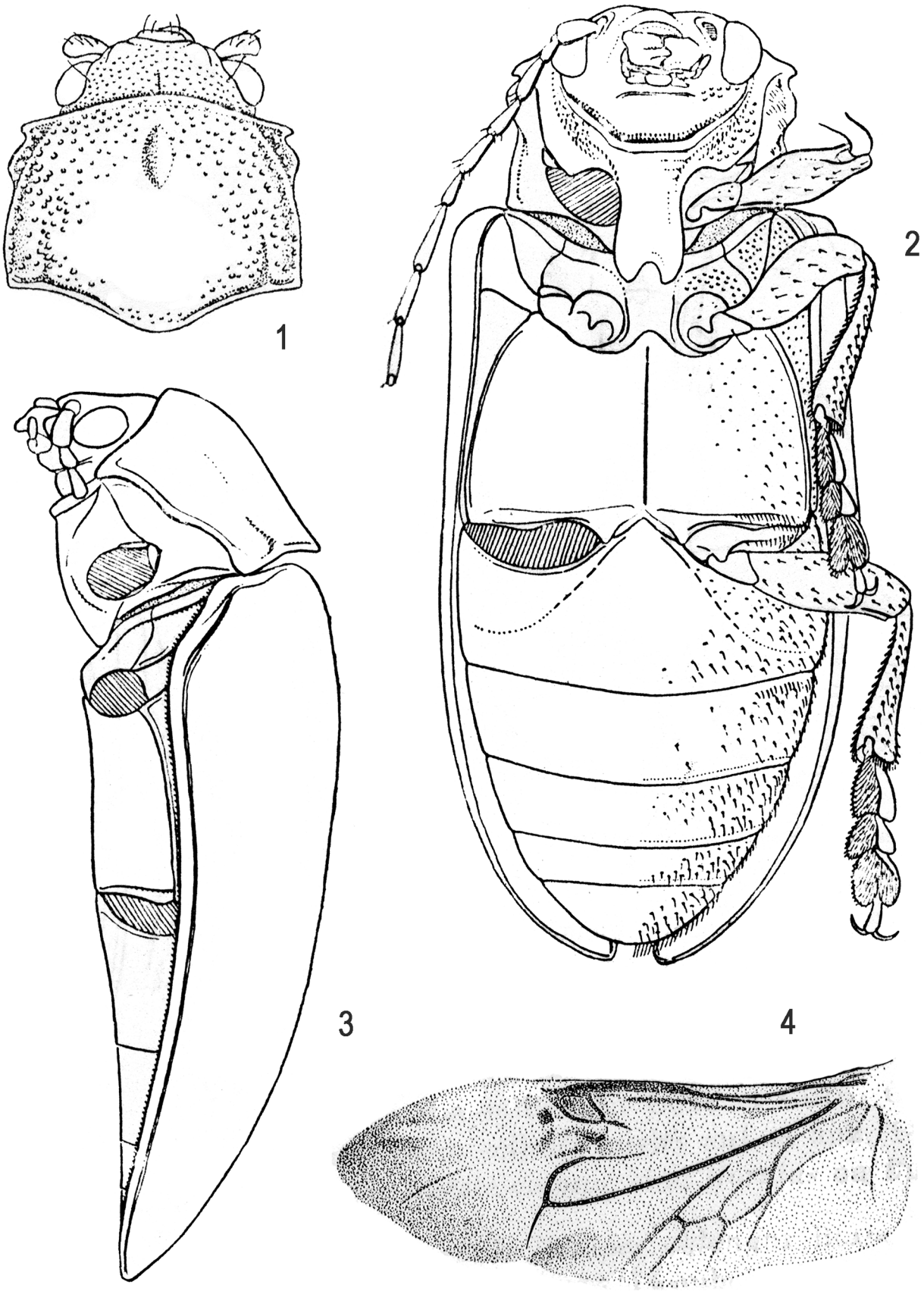
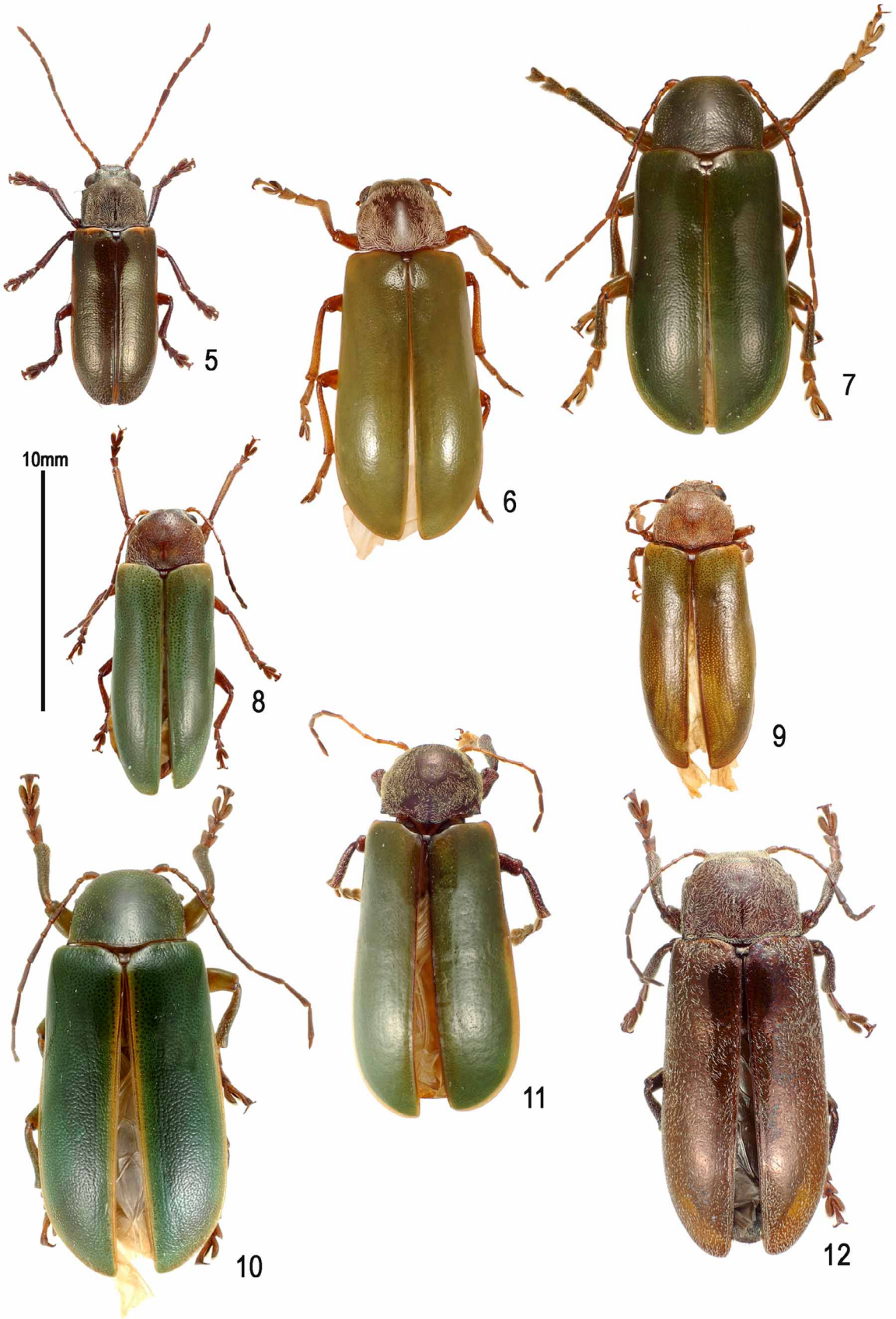
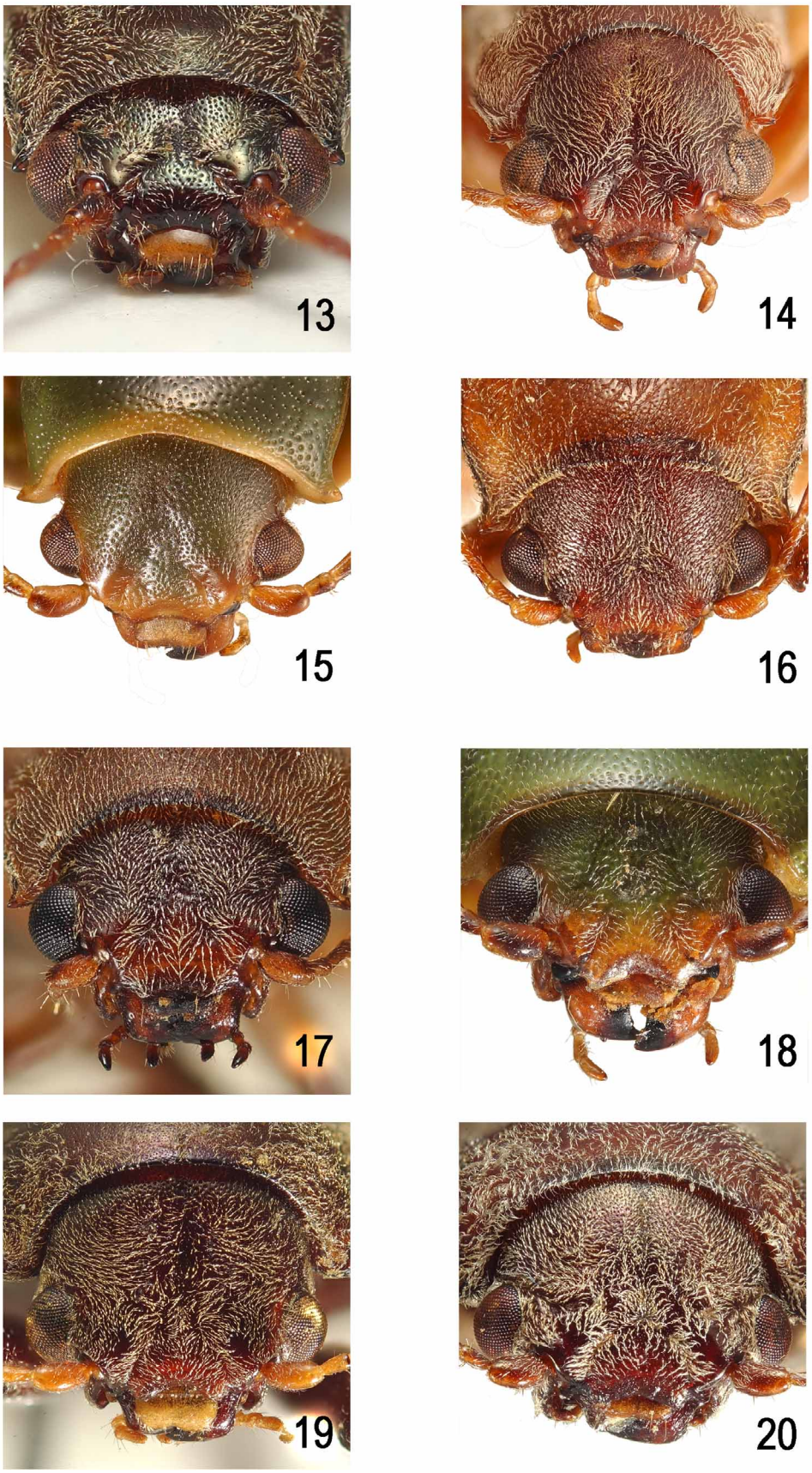


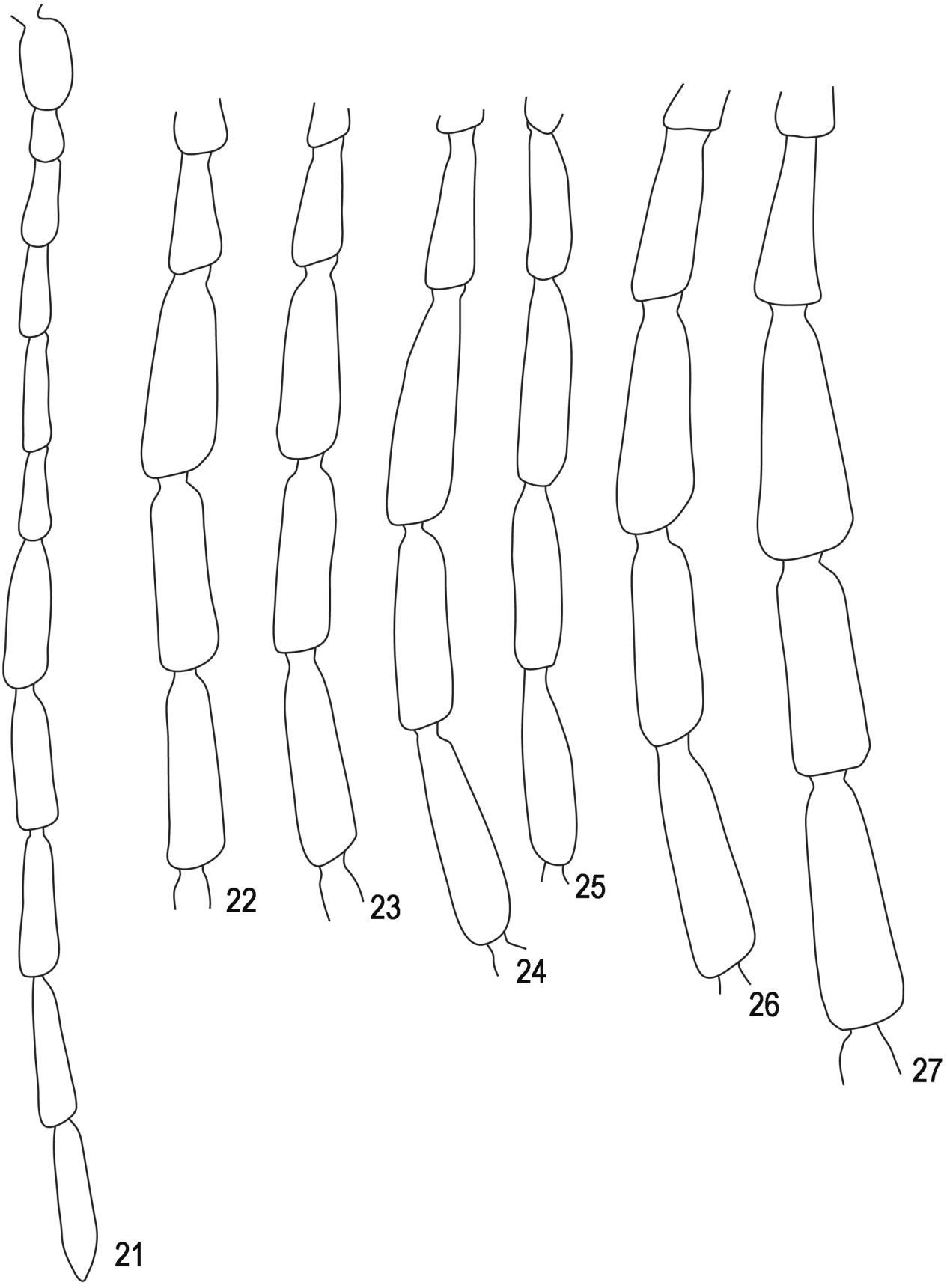
FIGURES 1–4. *Bohumiljania caledonica* (Jolivet). Figs 1–3, reproductions of original drawings of the holotype by Monrós (1958): 1, head & pronotum; 2, ventral, with antenna; 3, lateral. Reproduced from *Acta Zoologica Lilloana*. Fig. 4, reproduction of original drawing of the wing of the holotype (Jolivet 1957). Reproduced from *Mémoires de l'Institut royale des Sciences naturelles de Belgique*.



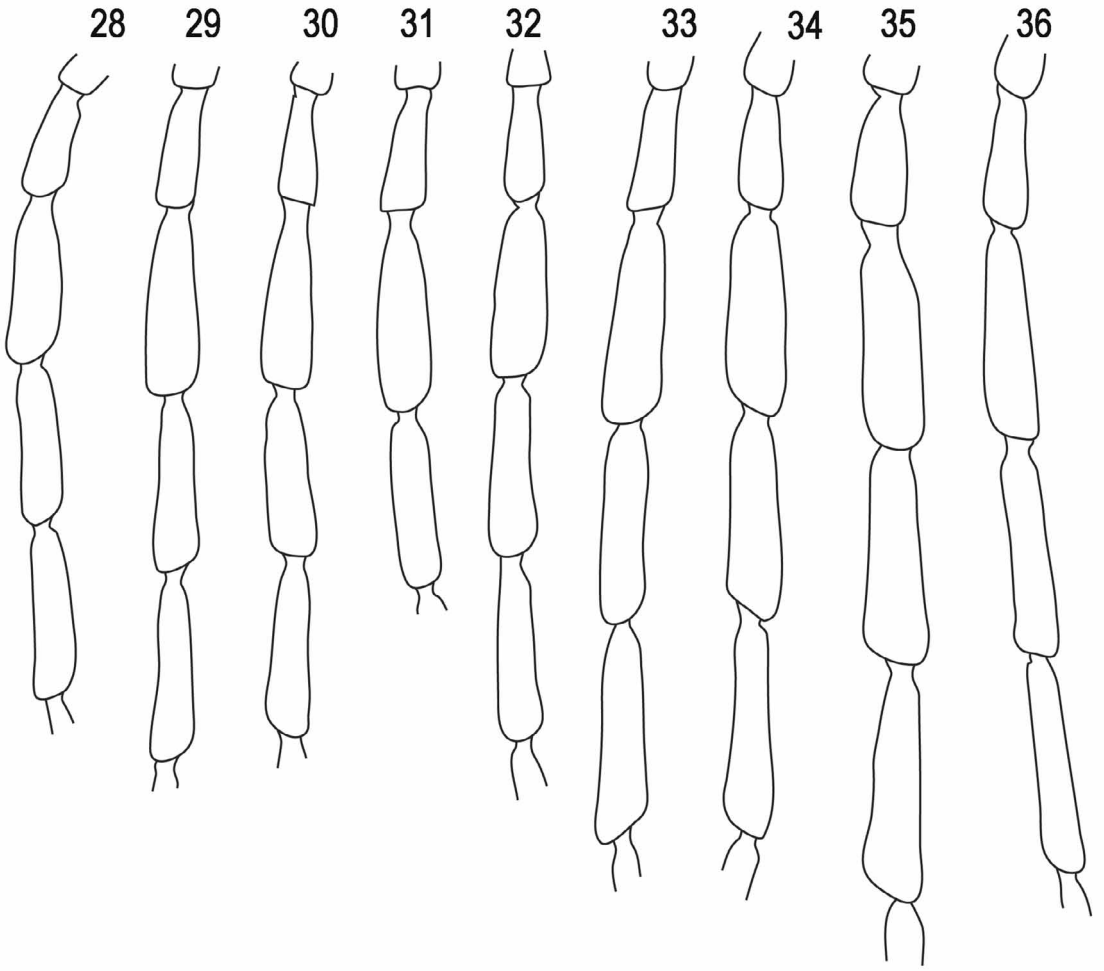
FIGURES 5–12. *Bohumiljania* species, dorsal: 5, *B. aoupinie* sp. nov., male; 6, *B. humboldti* Jolivet, Verma & Mille, female; 7, *B. lafoa* sp. nov., male; 8, *B. mandjelia* sp. nov., male; 9, *B. tango* sp. nov., female; 10, *B. xanthogramma* sp nov., female; 11, *B. xaracuu* sp. nov., female; 12, *B. yuaga* sp. nov., female. Scale bar = 10mm.

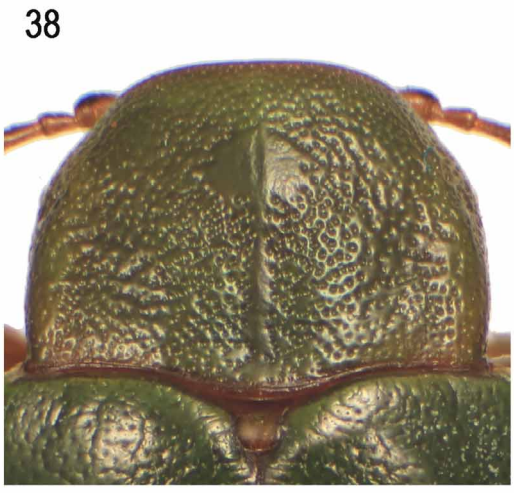


FIGURES 13–20. *Bohumiljania* species, head: 13, *B. aoupinie* sp. nov.; 14, *B. humboldti* Jolivet, Verma & Mille; 15, *B. lafoa* sp. nov.; 16, *B. mandjelia* sp. nov.; 17, *B. tango* sp. nov.; 18, *B. xanthogramma* sp nov.; 19, *B. xaracuu* sp. nov.; 20, *B. yuaga* sp. nov.

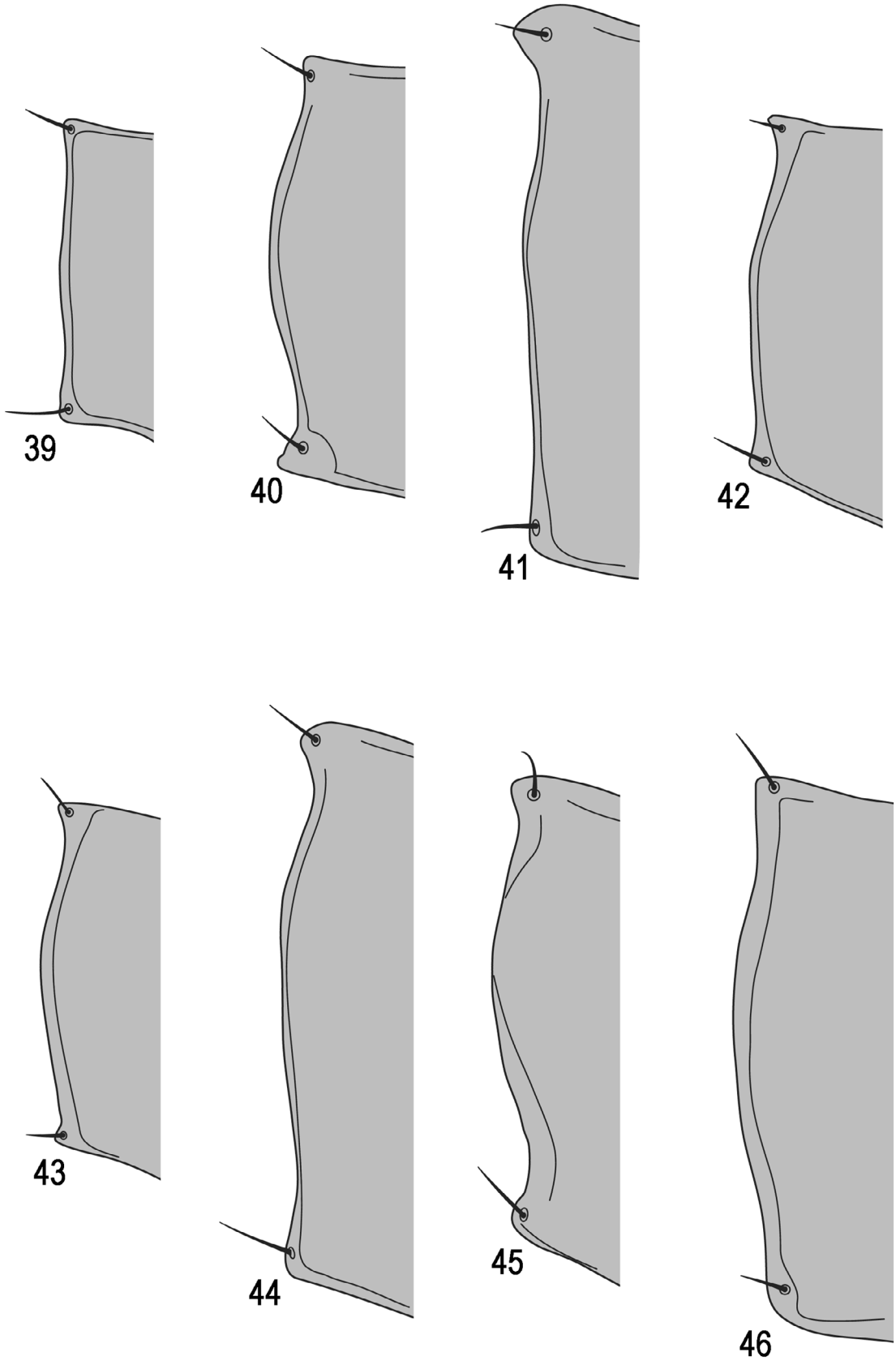


FIGURES 21–27. *Bohumiljania* species, antenna. Fig. 21, *B. aoupinie* sp. nov. (♂). Figs 22–27, antennomeres 6–9: 22, *B. aoupinie* sp. nov. (♂); 23, *B. mandjelia* sp. nov. (♂); 24, *B. mandjelia* sp. nov. (♀); 25, *B. tango* sp. nov. (♀); 26, *B. xaracuu* sp. nov. (♀); 27, *B. yuaga* sp. nov. (♀). Figures 22–27 drawn to same scale.



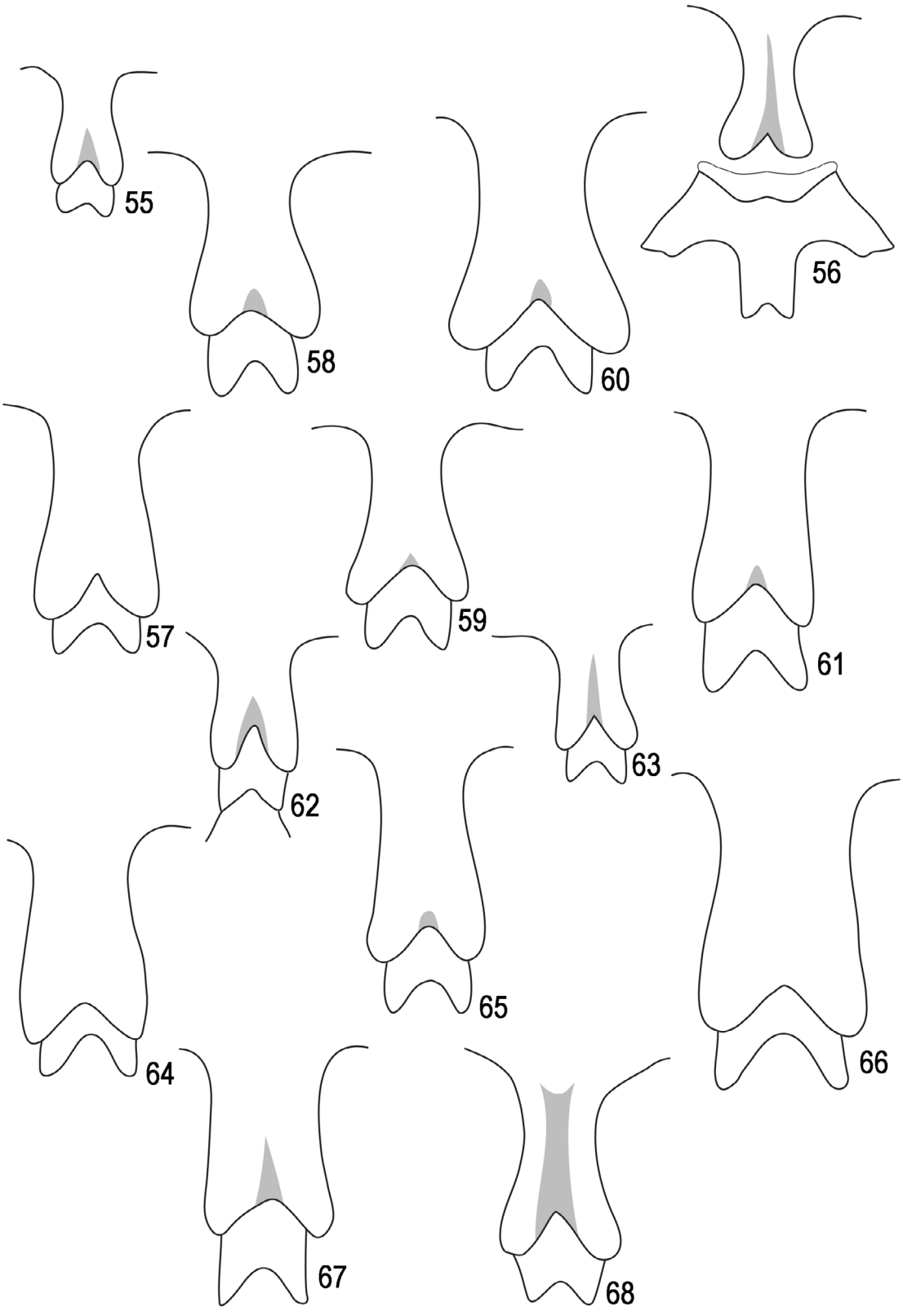


FIGURES 28–38. *Bohumiljania* species. Figs. 28–36, antennomeres 6–9: 28, *B. lafoa* sp. nov. (♂, Sarramea); 29, *B. lafoa* sp. nov. (♂, La Foa); 30, *B. lafoa* sp. nov. (♀, Pocquereux); 31, *B. lafoa* sp. nov. (♀, Pocquereux); 32, *B. lafoa* sp. nov. (♀, Mandjelia); 33, *B. xanthogramma* sp. nov. (♂, Pic D'Amoa); 34, *B. xanthogramma* sp. nov. (♂, Pic D'Amoa); 35, *B. xanthogramma* sp. nov. (♂, Mandjelia); 36, *B. xanthogramma* sp. nov. (♀, Pic D'Amoa). Figs 37–38, pronotum of *B. lafoa* sp. nov. (males from La Foa), to show variation in sculpture: 37, smoothest specimen; 38, roughest specimen. Figures 28–36 drawn to same scale.

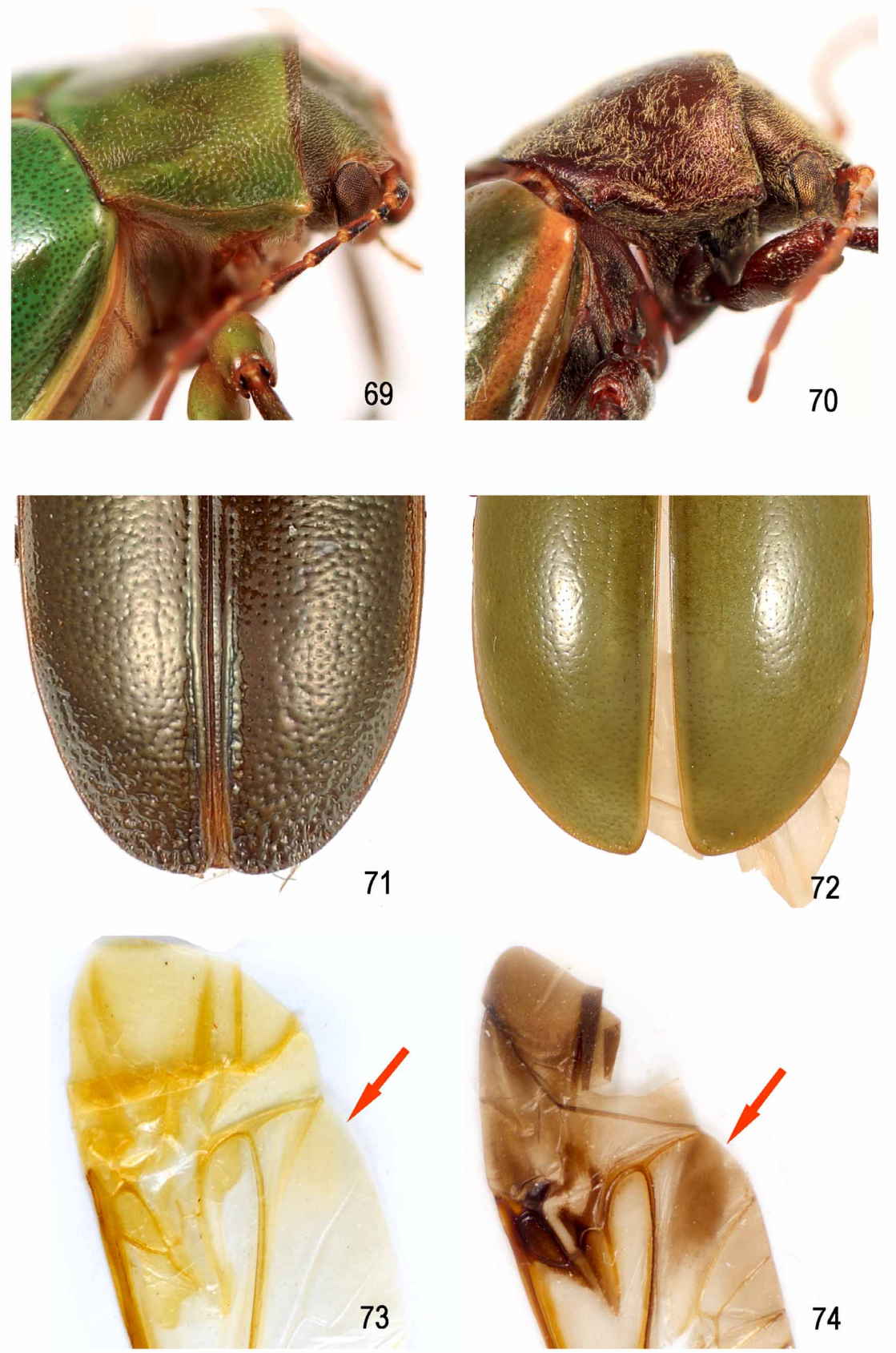


FIGURES 39–46. *Bohumiljania* species, dorsal view of left margin of pronotum: 39, *B. aoupinie* sp. nov.; 40, *B. humboldti* Jolivet, Verma & Mille; 41, *B. lafoa* sp. nov.; 42, *B. mandjelia* sp. nov.; 43, *B. tango* sp. nov.; 44, *B. xanthogramma* sp nov.; 45, *B. xaracuu* sp. nov.; 46, *B. yuaga* sp. nov. Drawn to same scale.

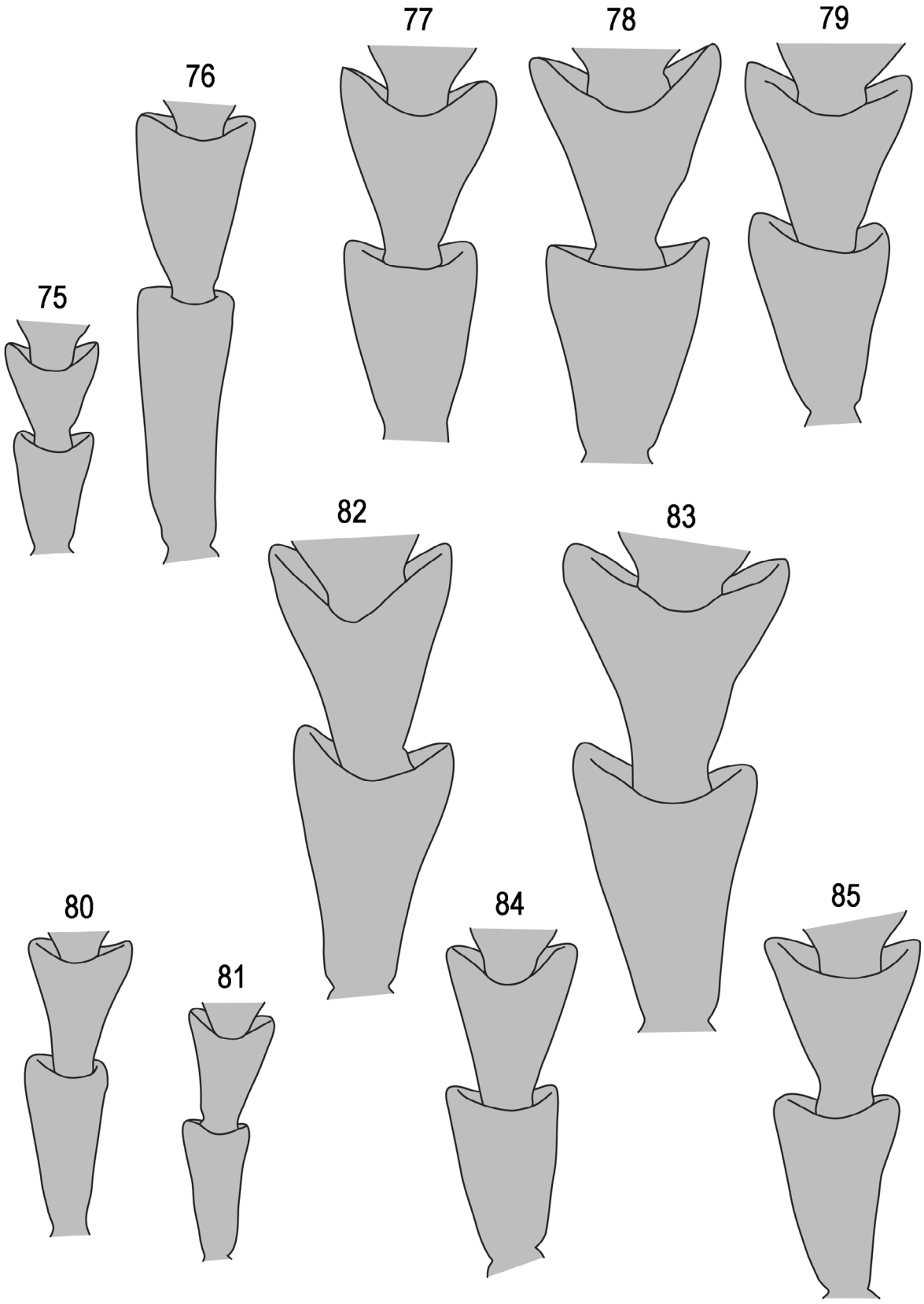
FIGURES 47–54. *Bohumiljania* species, prosternal and mesoventrite processes: 47, *B. aoupinie* sp. nov.; 48, *B. humboldti* Jolivet, Verma & Mille; 49, *B. lafoa* sp. nov.; 50, *B. mandjelia* sp. nov.; 51, *B. tango* sp. nov.; 52, *B. xanthogramma* sp nov.; 53, *B. xaracuu* sp. nov.; 54, *B. yuaga* sp. nov.



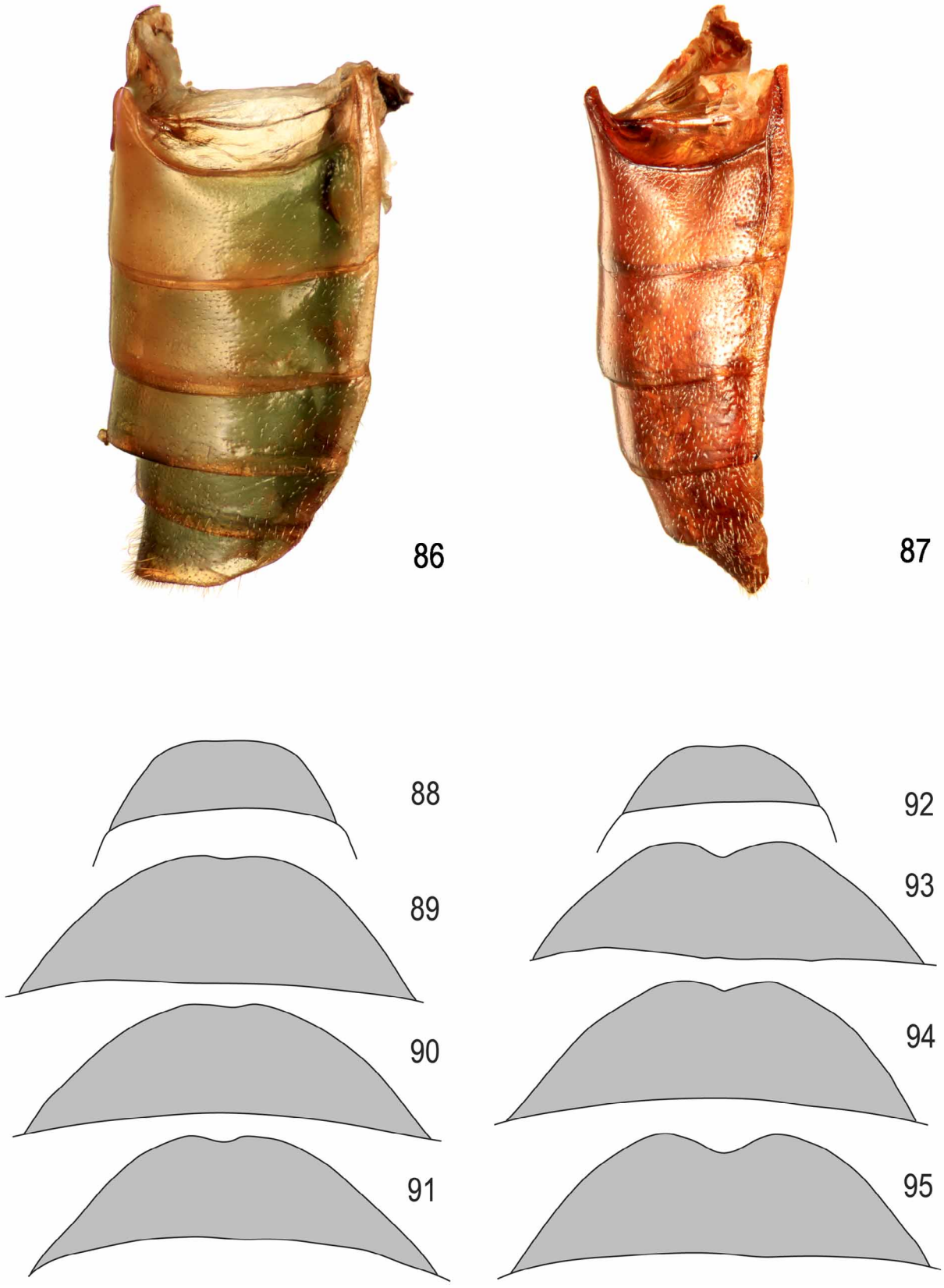
FIGURES 55–68. *Bohumiljania* species, prosternal and mesoventrite processes: 55, *B. aoupinie* sp. nov.; 56, *B. humboldti* Jolivet, Verma & Mille; 57, *B. lafoa* sp. nov. (♂, La Foa); 58, *B. lafoa* sp. nov. (♂, La Foa); 59, *B. lafoa* sp. nov. (♂, Sarramea); 60, *B. lafoa* sp. nov. (♀, La Foa); 61, *B. lafoa* sp. nov. (♀, Mandjelia); 62, *B. mandjelia* sp. nov.; 63, *B. tango* sp. nov.; 64, *B. xanthogramma* sp. nov. (♂, Pic D'Amoa); 65, *B. xanthogramma* sp. nov. (♂, Mandjelia); 66, *B. xanthogramma* sp. nov. (♀, Pic D'Amoa); 67, *B. xaracuu* sp. nov.; 68, *B. yuaga* sp. nov. Drawn to same scale.



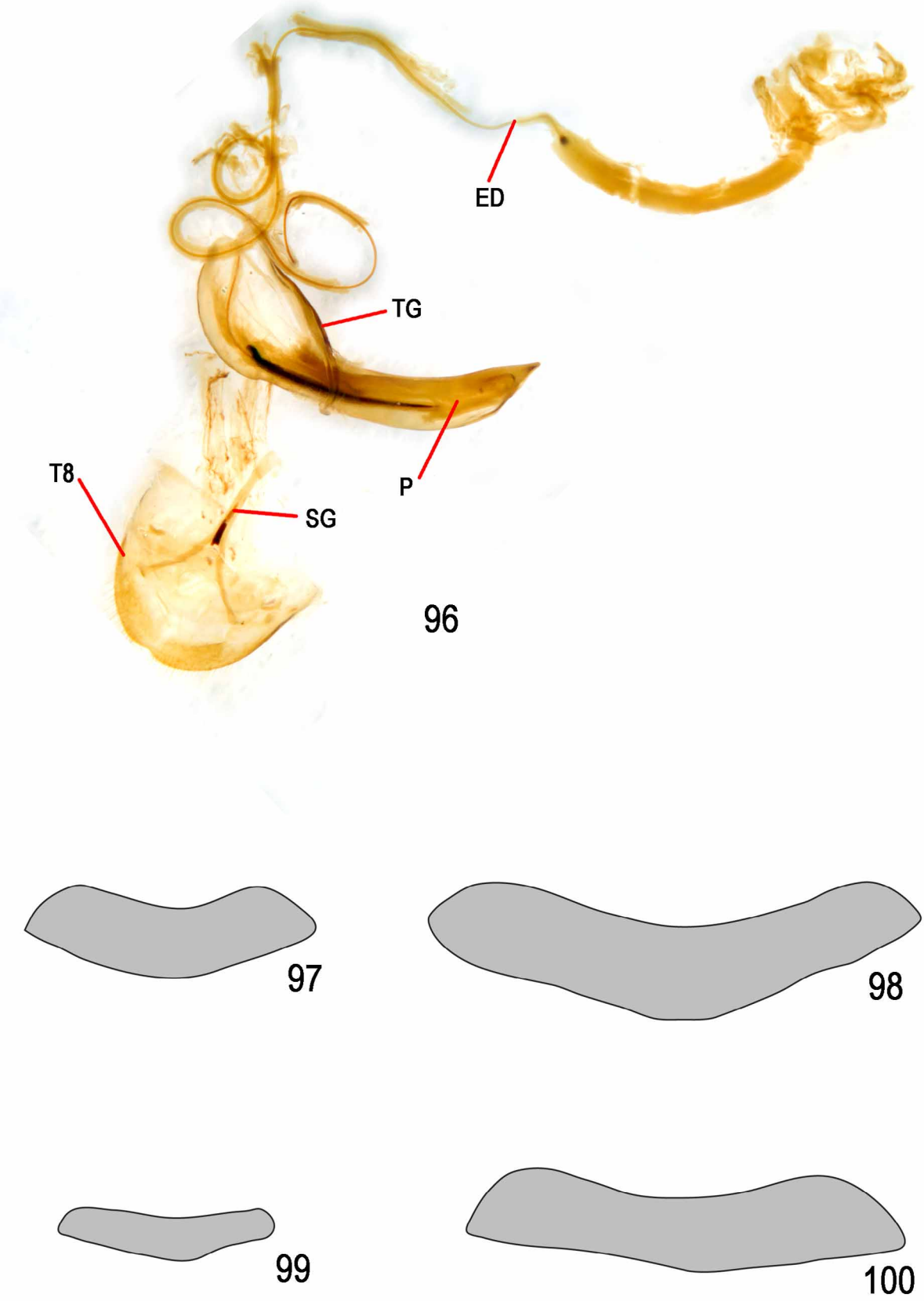
FIGURES 69–74. *Bohumiljania* species. Figs 69–70, lateral of pronotum: 69, *B. lafoa* sp. nov.; 70, *B. xaracuu* sp. nov. Figs 71–72, apex of elytra: 71, *B. aoupinie* sp. nov.; 72, *B. humboldti* Jolivet, Verma & Mille. Figs 73–74, base of wing, with medial fleck indicated: 73, *B. lafoa* sp. nov.; 74, *B. yuaga* sp. nov.



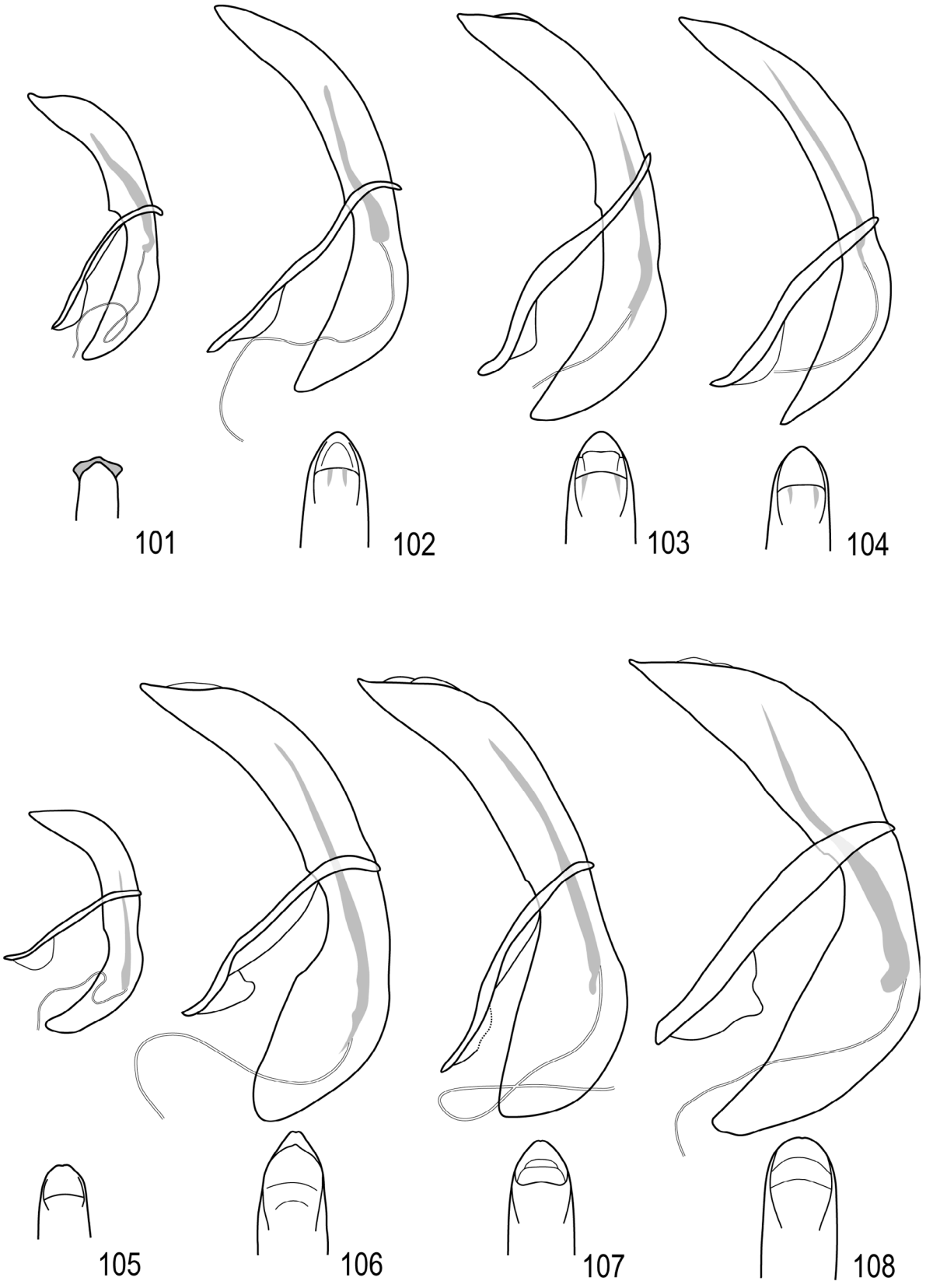
FIGURES 75–85. *Bohumiljania* species, metatarsomeres 1–2: 75, *B. aoupinie* sp. nov. (♂); 76, *B. humboldti* sp. nov. (♀); 77, *B. lafoa* sp. nov. (♂, La Foa); 78, *B. lafoa* sp. nov. (♀, La Foa); 79, *B. lafoa* sp. nov. (♀, Mandjelia); 80, *B. mandjelia* sp. nov. (♀); 81, *B. tango* sp. nov. (♀); 82, *B. xanthogramma* sp. nov. (♂, Pic D'Amoa); 83, *B. xanthogramma* sp. nov. (♀, Pic D'Amoa); 84, *B. xaracuu* sp. nov.; 85, *B. yuaga* sp. nov. Drawn to same scale.



FIGURES 86–95. *Bohumiljania* species. Figs 86–87, abdominal ventrites, lateral: 86, *B. lafoa* sp. nov; 87, *B. mandjelia* sp. nov. Figs 88–95, apex male sternite 7: 88, *B. aoupinie* sp. nov.; 89, *B. lafoa* sp. nov. (La Foa); 90, *B. lafoa* sp. nov. (La Foa); 91, *B. lafoa* sp. nov. (Sarramea); 92, *B. mandjelia* sp. nov.; 93, *B. xanthogramma* sp. nov. (Pic D'Amoa); 94, *B. xanthogramma* sp. nov. (Pic D'Amoa); 95, *B. xanthogramma* sp. nov. (Mandjelia). Figs 88–95 drawn to same scale.



FIGURES 96–100. 96, *Bohumiljania xanthogramma* sp. nov., male genitalia. ED = ejaculatory duct, P = penis, SG = spiculum gastrale, TG = tegmen, T8 = tergite 8. Figs 97–100, *Bohumiljania* species, male sternite 8 (spiculum relictum): 97, *B. aoupinie* sp. nov.; 98, *B. lafoa* sp. nov.; 99, *B. mandjelia* sp. nov.; 100, *B. xanthogramma* sp. nov. Figures 97–100 drawn to same scale.



FIGURES 101–108. *Bohumiljania* species, penis and tegmen, lateral with shape of spiculum indicated, and apex of penis, dorsal (except Fig. 101 ventral): 101, *B. aoupinie* sp. nov.; 102, *B. lafoa* sp. nov. (La Foa); 103, *B. lafoa* sp. nov. (La Foa); 104, *B. lafoa* sp. nov. (Sarramea); 105, *B. mandjelia* sp. nov.; 106, *B. xanthogramma* sp. nov. (Pic D'Amoa); 107, *B. xanthogramma* sp. nov. (Pic D'Amoa); 108, *B. xanthogramma* sp. nov. (Mandjelia). Lateral views drawn to same scale.

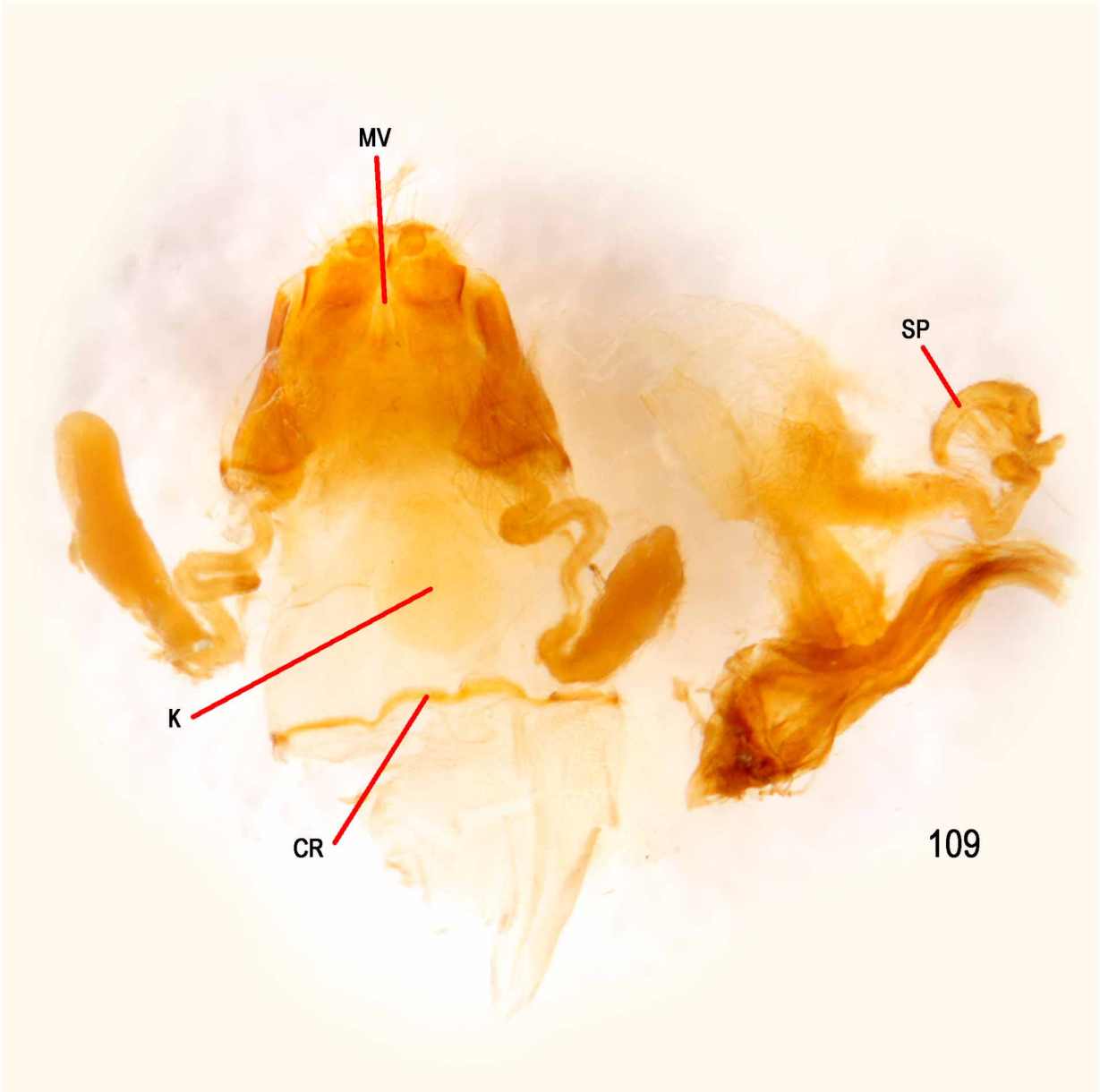
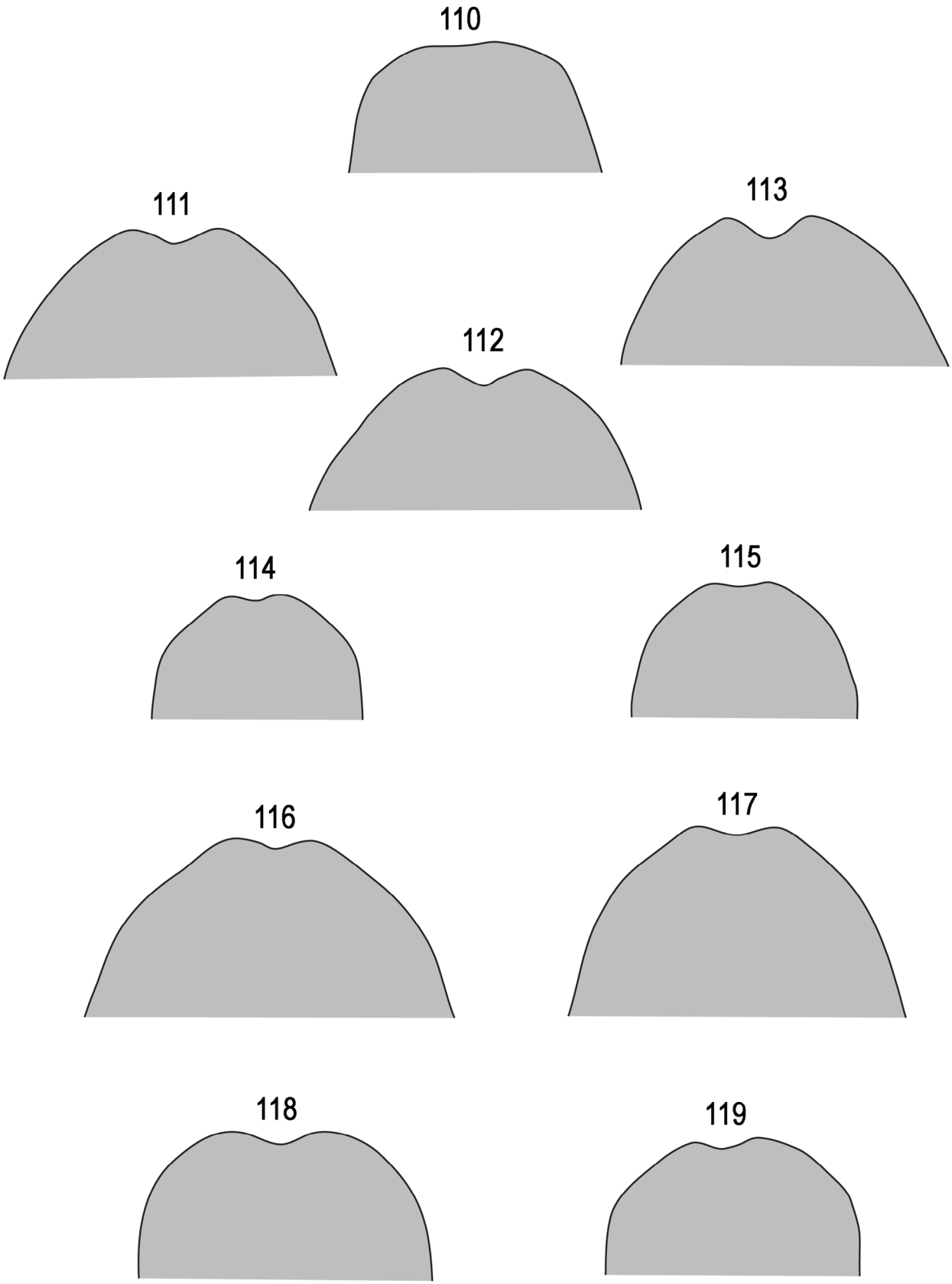
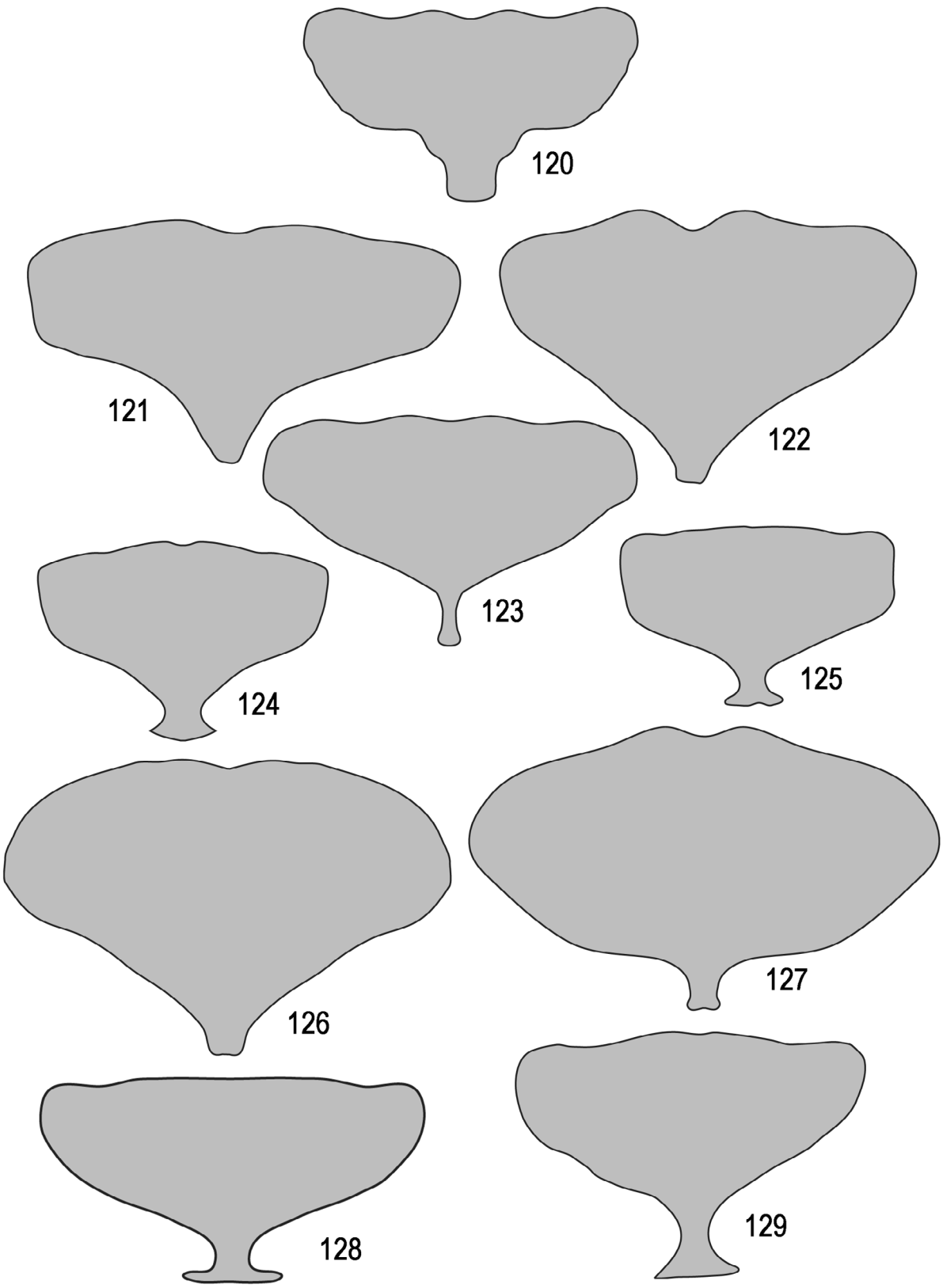


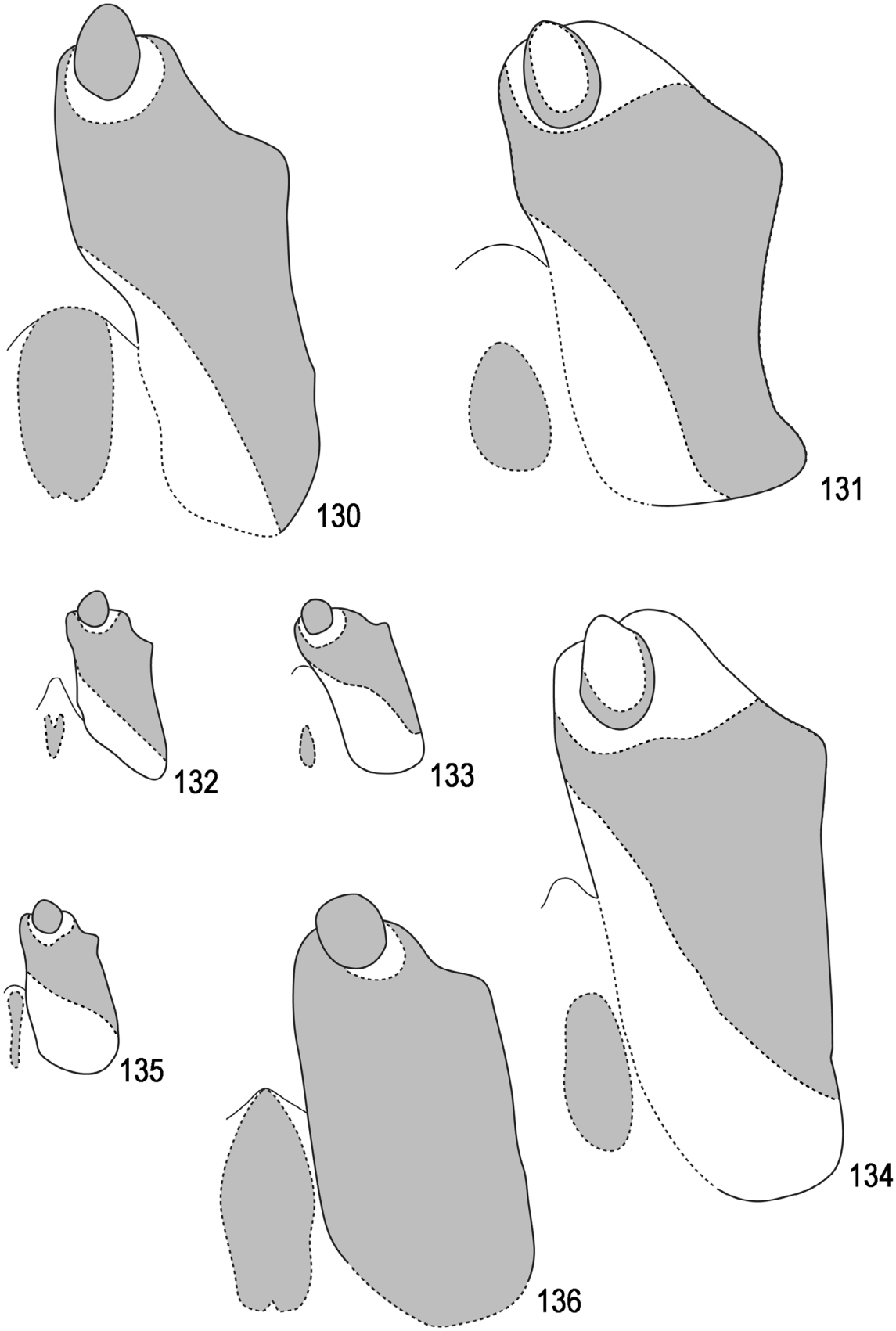
FIGURE 109. *Bohumiljania mandjelia* sp. nov., female genitalia. CR = chitin ring; K = kotpresse; MV = median ventral sclerite; SP = spermatheca.



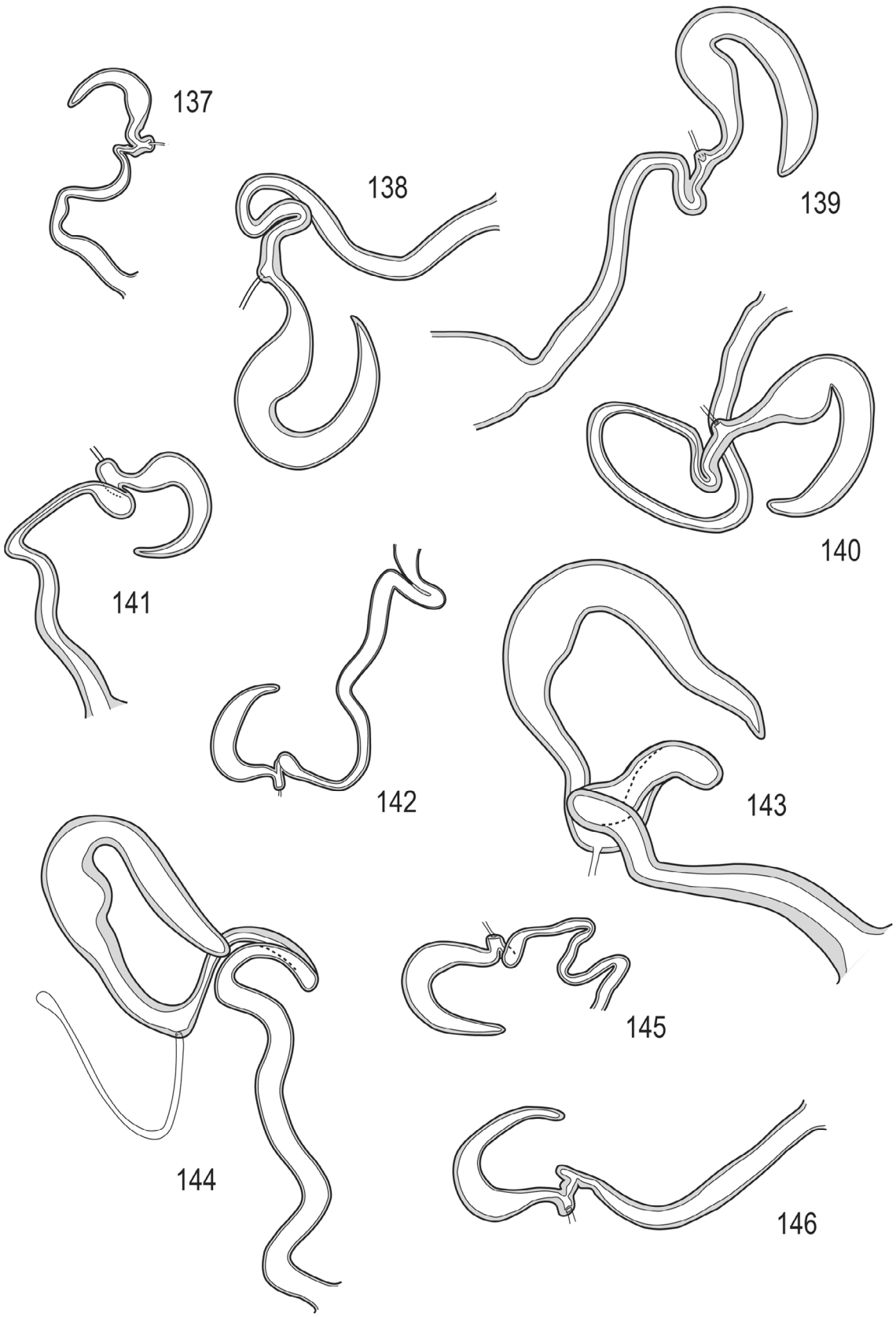
FIGURES 110–119. *Bohumiljania* species, apical margin female tergite 8: 110, *B. humboldti* sp. nov.; 111, *B. lafoa* sp. nov. (La Foa); 112, *B. lafoa* sp. nov. (La Foa); 113, *B. lafoa* sp. nov. (Mandjelia); 114, *B. mandjelia* sp. nov.; 115, *B. tango* sp. nov.; 116, *B. xanthogramma* sp. nov. (Pic D'Amoa); 117, *B. xanthogramma* sp. nov. (Pic D'Amoa); 118, *B. xaracuu* sp. nov.; 119, *B. yuaga* sp. nov. Drawn to same scale.



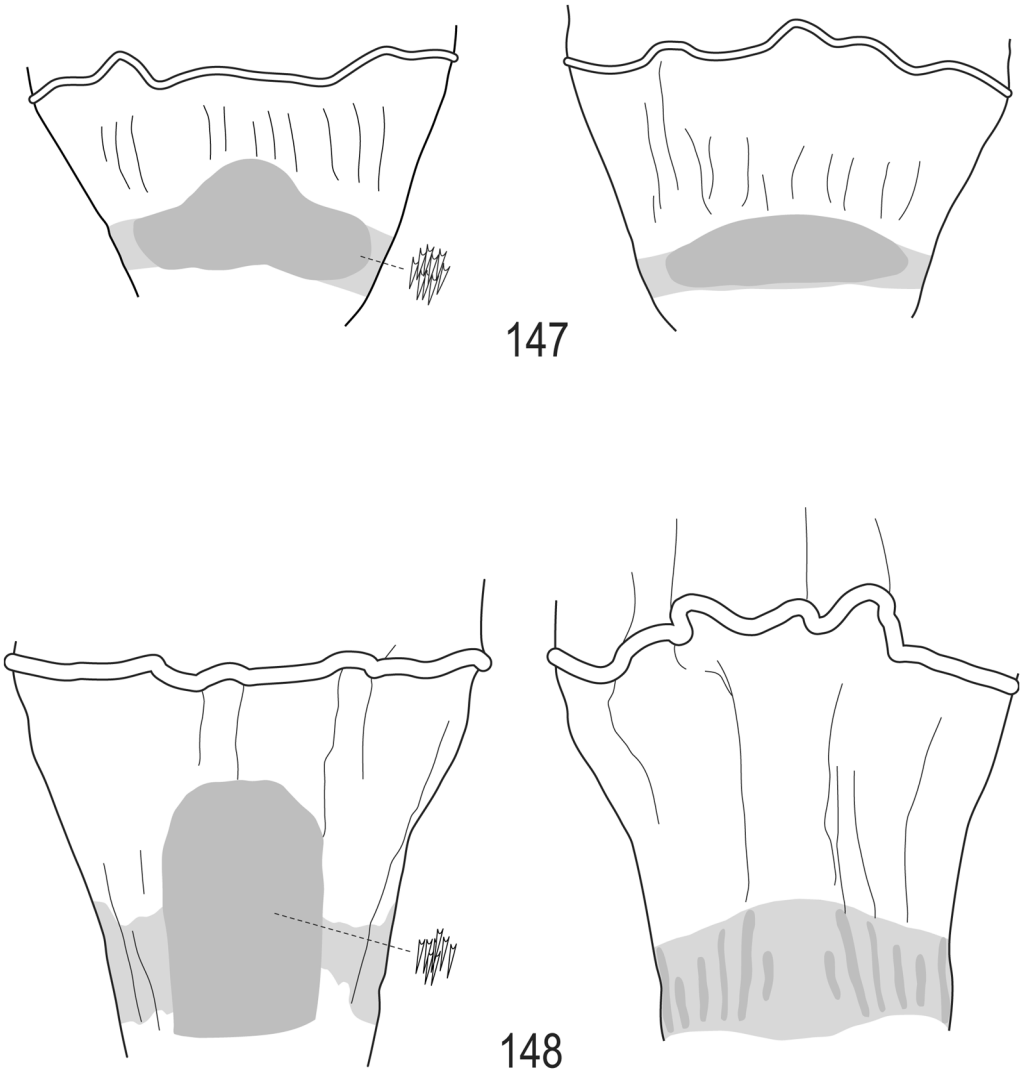
FIGURES 120–129. *Bohumiljania* species, female sternite 8: 120, *B. humboldti* sp. nov.; 121, *B. lafoa* sp. nov. (La Foa); 122, *B. lafoa* sp. nov. (La Foa); 123, *B. lafoa* sp. nov. (Mandjelia); 124, *B. mandjelia* sp. nov.; 125, *B. tango* sp. nov.; 126, *B. xanthogramma* sp. nov. (Pic D'Amoa); 127, *B. xanthogramma* sp. nov. (Pic D'Amoa); 128, *B. xaracuu* sp. nov.; 129, *B. yuaga* sp. nov. Drawn to same scale.



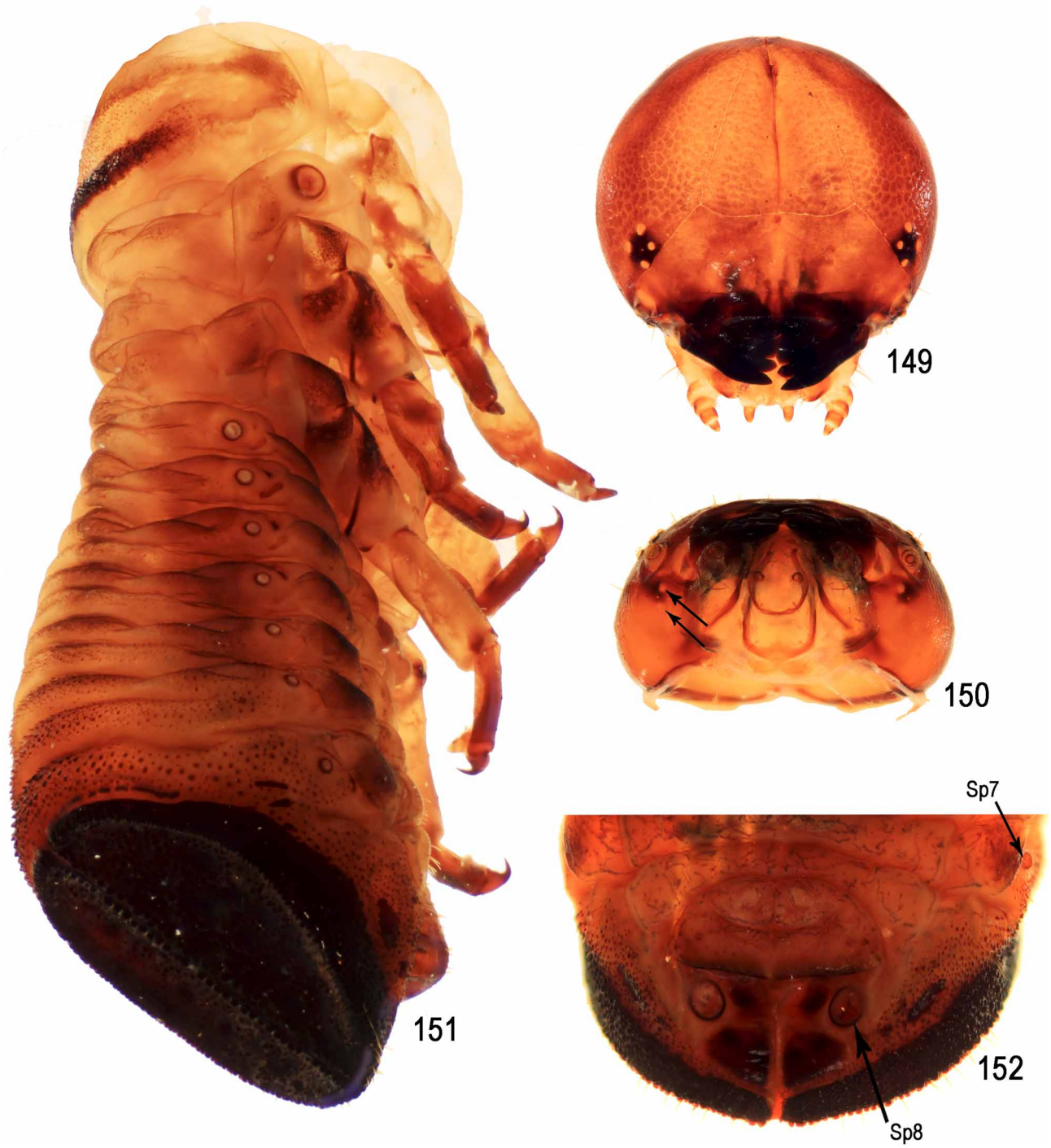
FIGURES 130–136. *Bohumiljania* species, gonocoxite, stylus and median sclerite of ovipositor: 130, *B. humboldti* sp. nov.; 131, *B. lafoa* sp. nov.; 132, *B. mandjelia* sp. nov.; 133, *B. tango* sp. nov.; 134, *B. xanthogramma* sp. nov.; 135, *B. xaracuu* sp. nov.; 136, *B. yuaga* sp. nov. Not drawn to scale.



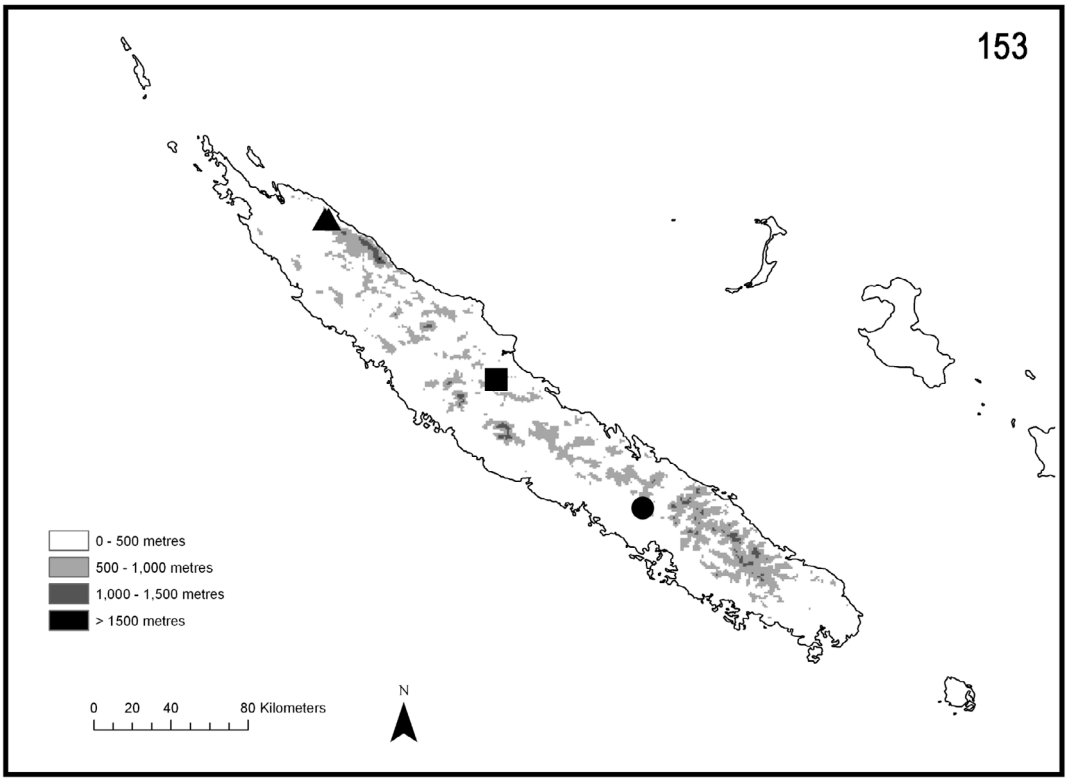
FIGURES 137–146. *Bohumiljania* species, spermatheca: 137, *B. humboldti* sp. nov.; 138, *B. lafoa* sp. nov. (La Foa); 139, *B. lafoa* sp. nov. (La Foa); 140, *B. lafoa* sp. nov. (Mandjelia); 141, *B. mandjelia* sp. nov.; 142, *B. tango* sp. nov.; 143, *B. xanthogramma* sp. nov. (Pic D'Amoa); 144, *B. xanthogramma* sp. nov. (Pic D'Amoa); 145, *B. xaracuu* sp. nov.; 146, *B. yuaga* sp. nov. Drawn to same scale.



FIGURES 147–148. *Bohumiljania* species, rectal kotpresse, dorsal (left) and ventral (right): 147, *B. lafoa* sp. nov.; 148, *B. xaracuu* sp. nov.



FIGURES 149–152. Late instar larva of *Bohumiljania lafoa* sp. nov.: 149, head capsule, antero-dorsal; 150, head capsule, ventral (two ventral stemmata arrowed); 151, body, lateral; 152, apex of abdomen, ventral (Sp7 = spiracle on 7th abdominal segment; Sp8= spiracle on 8th abdominal segment).



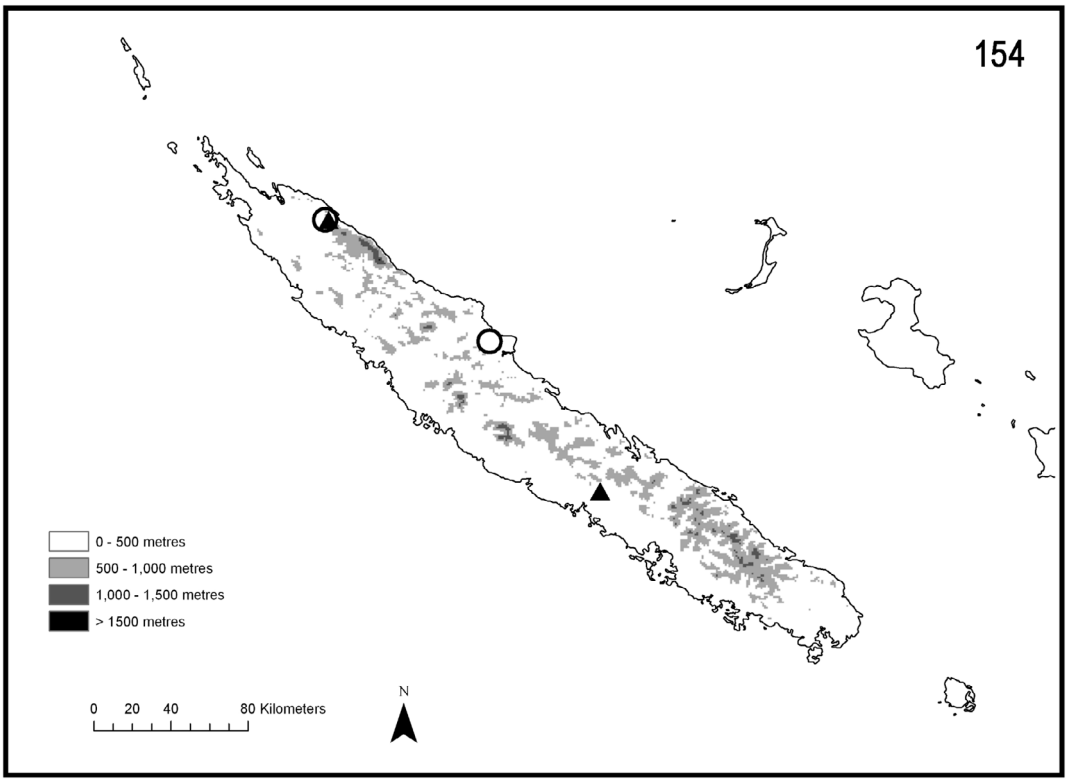


FIGURE 153. Map of New Caledonia, showing distribution of *Bohumiljania* species. ● = *B. aoupinie* sp. nov.; ▲ = *B. mandjelia* sp. nov.; ■ = *B. xaracuu* sp. nov.

FIGURE 154. Map of New Caledonia, showing distribution of *Bohumiljania* species. ○ = *B. lafoa* sp. nov.; ▲ = *B. xanthogramma* sp nov.

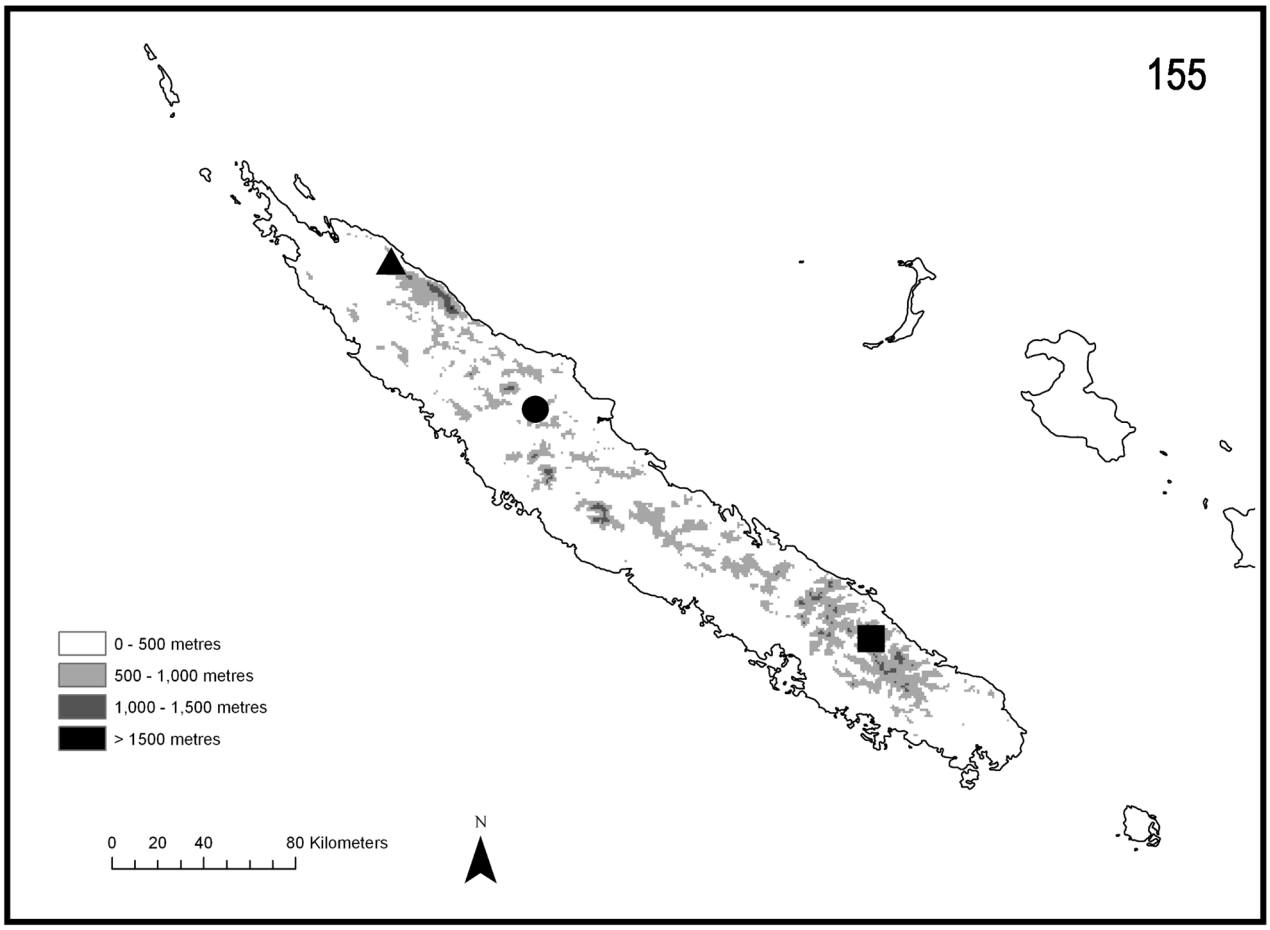


FIGURE 155. Map of New Caledonia, showing distribution of *Bohumiljania* species. ■ = *B. humboldti* Jolivet, Verma & Mille; ● = *B. tango* sp. nov.; ▲ = *B. yuaga* sp. nov.