

TWO NEW SPECIES OF *COMPSOSOMA* LACORDAIRE FROM SOUTH AMERICA (COLEOPTERA: CERAMBYCIDAE: LAMIINAE: COMPSOSOMATINI)

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urn/lsid/zoobank.org/author/8CB85FB5-19CF-4357-81E3-FE9BFC9B04AA
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Abstract.—Two new species of *Compsosoma* Lacordaire are described from South America: *Compsosoma oculata* from Bolivia, Santa Cruz Department, Refugio Los Volcanes and *Compsosoma marcelae* from Peru, Amazonas Department, 3 km east of Bagua Grande. *Compsosoma alboapicalis* Breuning is synonymized with *Desmiphoropsis variegata* (Audinet-Serville). A key to the 13 known species of *Compsosoma* is presented.

Key Words: key, biodiversity, distribution, longhorned woodborer, Neotropics

Resumen.—Dos especies nuevas de *Compsosoma* Lacordaire se describen de América del Sur: *Compsosoma oculata* de Bolivia, Departamento de Santa Cruz, Refugio los Volcanes y *Compsosoma marcelae* del Perú, Departamento de Amazonas, 3 km este del Bagua Grande. *Compsosoma alboapicalis* Breuning es sinónimo de *Desmiphoropsis variegata* (Audinet-Serville). Se presenta una clave para las 13 especies de *Compsosoma*.

Palabras-clave: clave, biodiversidad, distribución, longicorneos, Neotrópicos

DOI: 10.4289/0013-8797.116.3.283

urn/lsid/zoobank.org/pub/BF1EEDF4-4C58-4401-B0BD-DBB03D8D558E

Compsosoma Lacordaire is a genus of robust, attractive lamiine Cerambycidae that are convex dorsally with a deflexed head. Most have a combination of short, recumbent and long, erect pubescence forming intricate patterns. Superficially, due to their shape, proportions, color, and setation, many species resemble large orb-web spiders of the family Araneidae. Interestingly, early taxonomists of this group, including Audinet-Serville (1835) and Lacordaire (1830), presumed that members of the genus could not fly. However, this is not supported by their

hindwing development. Several species have been observed to be girdlers, including *C. perpulchrum* (Vigors), that attacks the invasive *Eucalyptus* trees in South America (Giacomel, 1979; Souza, et al., 1995). Species in this genus are solely South American and known from French Guiana, Brazil, Peru, Bolivia, Paraguay, and Argentina.

Although the genus *Compsosoma* was described by Lacordaire in 1830, he did not originally include any species. The first species included are those from Audinet-Serville (1835), e.g. *Lamia mutillaria* Klug, 1825, *Compsosoma niveosignatum* Audinet-Serville, 1835, and *Compsosoma variegatum* Audinet-Serville, 1835. Desmarest (1860: 325) designated *Compsosoma niveosignatum* Audinet-Serville, 1835 as the type species.

Prior to this work, 12 species were placed in *Compsosoma* (Monné, 2014). Two new species are described herein, one from Peru and one from Bolivia. Based on discussions with Miguel Monné (pers. comm.) we also transfer from *Compsosoma* one species (*C. alboapicalis* Breuning) into *Desmiphoropsis*, leaving 13 species in the genus. We present an identification key to all known species.

MATERIALS AND METHODS

For more than a decade, numerous collecting expeditions to Bolivia involving many coleopterists were made to diverse localities in Santa Cruz, Cochabamba, Beni, and Tarija Departments. This has generated a huge amount of material that is serving as a basis for our knowledge of Bolivia's longhorned beetle biodiversity. In addition to these field expeditions, all known collections of Bolivian Cerambycidae (acronyms and collections listed below) in the USA, Brazil, and Bolivia were examined for additional specimens of the new species described herein.

Websites containing photographs, such as Bezark's (2014) photographic catalog of the Cerambycidae of the New World, also facilitated this work. Images were captured with a Zeiss AxioCam HRC camera attached to a Zeiss Discovery.V20 stereomicroscope with a Sycop motorized zoom and focus control. Objectives included PlanApo S 1.0X and 0.63X. For illumination, a Zeiss KL 2500 LCD light source with ring light attachment was used. Axiovision software enabled preparation of montaged images and automatically calibrated measurements. Illustrations were prepared by Taina Litwak (SEL) using Adobe Photoshop CS 6. Label data is verbatim and enclosed within quotation marks. Separate labels are indicated by a forward slash "/".

The collection acronyms and institutional abbreviations used in the text are as follows (note that specimens were not located in all these collections, but they were carefully examined for this and other works):

- ACMT – American Coleoptera Museum (James E. Wappes Collection), San Antonio, Texas, USA
- MNHN – Muséum national d'Histoire naturelle, Paris, France
- MNKM – Museo de Historia Natural, Noel Kempff Mercado, Santa Cruz de la Sierra, Bolivia
- MNRJ – Museu Nacional, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil
- MZSP – Museu de Zoologia, Universidade de São Paulo, São Paulo, Brazil
- SEL – Systematic Entomology Laboratory, USDA, Washington, DC, USA
- SWLC – Steven W. Lingafelter Collection, North Potomac, Maryland, USA
- USNM – National Museum of Natural History, Smithsonian Institution, Washington, DC, USA

RESULTS AND DISCUSSION

Diagnosis of *Compsosoma*.—Body robust and thick (averaging 1.75 times as

long as wide). Elytra densely pubescent (with mixture of short appressed and recumbent pubescence of at least two colors and long erect setae), weakly to strongly projecting at humeri, tapering posteriorly. Elytral apices rounded to suture. Most species with shiny granules scattered in basal half of elytra. Pronotum much narrower than elytra at base, with variably developed, moderately acute lateral tubercles, post-medially located. Pronotum with variably produced central swelling at middle and/or sides of disk. Head moderately to strongly deflexed. Eyes large; lower lobe occupying most of head below antennal tubercle and projecting strongly, laterally, more so in females. Upper eye lobes separated above by two to three times the width of a lobe in males; up to four times the width of a lobe in females. Antennae of males extending beyond elytral apices by about 3 segments; antennae of females not extending beyond elytral apex to extending by less than 2 segments. Antennae with dense, recumbent pubescence throughout, and with a fringe of long setae ventrally and mesally. Most species with very dense, bright pubescence patches on adjacent parts of metasternum, metepisternum, mesepimeron, and mesepisternum, that are distinct from surrounding pubescence.

Synonymy of *Compsosoma alboapicalis* Breuning.—Interestingly, Breuning (1980a) and Monné (1980) both reviewed Compsosomatini in the same year. After Breuning's "revision", in the same year, he described another species of *Compsosoma*: *C. alboapicalis* (1980b). Through examination of the holotype of *C. alboapicalis* Breuning at the MNHN by Miguel Monné, and examination of the original description, it is determined that this species is a small example of *Desmiphoropsis variegata* (Audinet-Serville, 1835). In the original description of *C. alboapicalis*, Breuning gave the length of 8mm,

however, in Monné (1980), the accurate dimension were as follows: 10.4–11.2 mm long (males); 11.4–12.9 mm long (females). The genus *Desmiphoropsis* Gounelle was considered a subgenus of *Compsosoma* in Breuning (1980a), but was elevated to genus by Monné (1980). The holotype label indicates "Brasil" but lacks any more precise locality or collector data. We present the synonymy here, modifying the entry of Monné (2014):

Desmiphoropsis variegata (Audinet-Serville, 1835: 57)

Compsosoma alboapicalis Breuning, 1980b: 69. **New synonym**

***Compsosoma oculata* Lingafelter and Wappes, new species**

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(Figs. 1, 2, 3a)

Diagnosis.—This species is most similar to *C. monnei* Martins & Galileo in size, shape, color, and pubescence. It differs in having the elytron with the angled postmedian white fascia extending posterolaterally into a circular eyespot (Figs. 1, 2) (*C. monnei* has the posteromedial white fascia straight and unmodified). In *C. oculata* (Fig. 3a), the mesoventral margin of the dense white fascia of the mesepimeron has a distinct narrowing or notch (in *C. monnei* [Fig. 3b], the white fascia of the mesepimeron is much broader and lacks a distinct notch or narrowing along mesoventral margin).

Description.—Strongly hemispherical and robust; 10–14 mm long; integument and appendages reddish-brown, covered with dense, appressed, recumbent, reddish-brown, cinereous, and white pubescence and long, erect black and white setae. *Head* with dense coating of recumbent reddish-brown setae on vertex; cinereous on frons and antennal tubercles, partially concealing integument;



Fig. 1. *Compsosoma oculata* Lingafelter and Wappes, n. sp. Photo of live female specimen taken by SWL on 10 December 2011 at Refugio Los Volcanes, Santa Cruz Department, Bolivia.

moderately, coarsely punctate on vertex and frons; each puncture bearing an erect, black seta. Frons flat, gena vestigial below lower eye lobe and above mandibular base; front of head deflexed; frontal-genal ridge absent; ante-clypeal sulcus transverse, poorly defined. Eye large, lower lobe bulging, coarsely faceted; upper lobe connected to lower lobe by 3–4 facets, extending inside plane of antennal tubercle. Upper eye lobes separated from each other by 2.5 (males) to nearly 4 (female) times the width of a lobe; lower lobe much larger than upper lobe, occupying most of head from lateral view. Inter-antennal impression nearly flat with antennal tubercles slightly projecting from within eye emargination. Antenna of male extending beyond elytral apex by

3–4 antennomeres; of female by 2. Antennae densely coated with recumbent, cinereous pubescence and fringed with mixture of long black and cinereous setae along mesal and ventral margin. Scape short, swollen at middle; antennomeres 3–4 distinctly longer than remaining segments which are subequal to each other or gradually decreasing in length. *Prothorax* much narrower at base than elytral base, wider than long (2.4–2.8 mm long, 3.7–4.0 mm wide; pronotal length divided by pronotal width average 0.6); covered in dense, appressed and recumbent, reddish-orange pubescence throughout, mostly concealing integument surface; long, black, erect setae scattered throughout, each emanating from a glabrous puncture. Each side, just posterior to middle,



Fig. 2. *Compsosoma oculata* Lingafelter and Wappes, n. sp. Digital painting of female paratype by Taina Litwak (SEL).

with an acute lateral tubercle projecting toward the base of each elytral humerus; dorsally with vague, swollen, posteromedial callus. Prosternum sparsely pubescent with semi-appressed pale orange

setae, most concentrated on prosternal intercoxal process; sparsely punctate; prosternal process broadly expanded at apex, closing procoxal cavities posteriorly; prosternal process less than half as

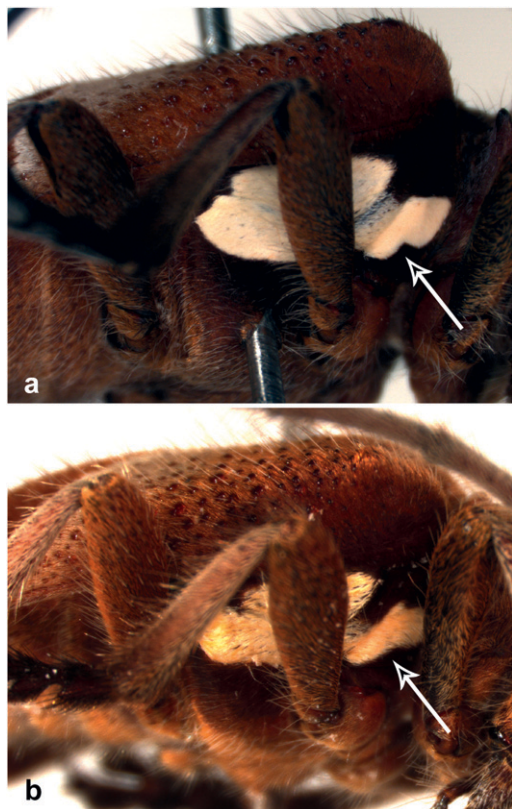


Fig. 3. Lateral meso- and metathoracic pubescence patterns in a) *Compsosoma oculata* Lingafelter and Wappes, n. sp. and b) *Compsosoma monnei* Martins and Galileo.

wide between procoxae as each coxa. *Elytron* produced at humerus, tapering posteriorly, mostly covered in appressed, short, reddish-orange pubescence; from base, pubescence gradually fades into cinereous pubescence, become nearly white in oblique fascia from middle of suture, angling posteriorly to near lateral margin where it is expanded into a circular eye-spot pattern that extends posteriorly. Apical fifth of suture with white to cinereous pubescence. Raised, shiny granules present at base of elytra in region anterior to oblique white fascia, each bearing a single, long, erect, black or translucent seta. Posterior to white fascia are similarly spaced punctures, most of

which bear a single black or translucent seta. Elytral apices rounded to moderately acute sutural angle. Each elytron 7.8–9.0 mm long, 2.8–4.3 mm wide; elytral length divided by elytral width average 2.5. *Scutellum* narrowly rounded in male; more broadly rounded in female; mostly covered, especially at middle, with appressed reddish-orange pubescence. *Legs* stout, short, with femora moderately enlarged at middle; tibiae more linear, expanded at apices; metafemora extending to about apical fourth of elytron; femora densely reddish-orange pubescent; tibiae cinereous pubescent, becoming black pubescent at apices; tarsi black pubescent, strongly contrasting in color from remainder of legs. *Venter* densely pubescent with mixture of short, appressed and long, semi-appressed setae not obscuring integument. Most of metepisternum, adjacent metasternum, mesal half of mesepimeron, and middle of mesepisternum covered in very dense white or off-white pubescent patch; mesepisternum pubescent patch angled or notched along mesoventral margin. Apex of fifth ventrite roughly transverse in males; slightly concave in female, lacking notch in either sex.

Etymology.—The specific epithet *oculata* comes from the Latin *oculus*, meaning “eye” and *atus* (meaning “provided with”) and refers to the eye-like circle of white to cinereous pubescence on the apical portion of the elytron, something that is unique within *Compsosoma*.

Type Material.—Holotype, male: “BOLIVIA: Dept. Santa Cruz, Prov. Florida, Ref. Los Volcanes, 18°06’S, 63°36’W, 1045 m, 9-13 Dec. 2008, S. Lingafelter, T. Henry, D. Windsor (MNKM). Paratypes (2) “BOLIVIA: Santa Cruz Dept. Florida Prov., 4 km N. Bermejo, Refugio Los Volcanes, 1100 m, 18°06’S, 63°36’W, 10 December 2011, beating, S. W. Lingafelter” (1 female,

SWLC); “BOLIVIA Santa Cruz Dpt. 4 km N Bermejo, 4-9 December 2013, Wappes & Skillman / Refugio Los Volcanes, EL 1045-1350 m, 18°06’S, 63°36’W (1 male, ACMT).

***Composoma marcelae* Lingafelter
and Wappes, new species**

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(Fig. 4)

Diagnosis.—This is among the largest of the *Composoma* species with the only known specimen being 16 mm in length. It is easily distinguished from all other species in the genus, except *C. mniszeczhii* Thomson, by the broad off-white band narrowly margined with ochraceous setae that extends from the scutellum to the posterolateral margin where it narrows and continues around the elytral apex and along the suture toward its origin. It differs from *C. mniszeczhii* in that, contained within this band on each elytron is a narrow ochraceous, inverted L-shaped band of pubescence. In *C. mniszeczhii*, there is a broad ochraceous patch on the elytral apex and the middle pronotal fascia is expanded into two, acute projections at center (the central pronotal fascia is roughly parallel-sided in *C. marcelae*). The elytra and pronotum are coarsely granulate-punctate with most punctures bearing a long, erect, black or translucent seta.

Description.—Strongly hemispherical and robust; 16 mm long, 8.5 mm wide between humeri; integument and appendages black, covered with dense, appressed, recumbent off-white, cinereous, ochraceous, and black pubescence forming various bands on the elytra and pronotum, combined with sparse, erect, long black and semitranslucent setae. *Head* with appressed, recumbent off-white setae throughout, around punctures, not concealing black integument; densely,

coarsely punctate throughout, most punctures bearing a long, ivory-colored, erect seta. Frons flat, gena very reduced below lower eye lobe and above mandibular base; front of head weakly deflexed; frontal-genal ridge absent; ante-clypeal sulcus semi-transverse, poorly defined. Eye large, lower lobe bulging, coarsely faceted; upper lobe connected to lower lobe by 5 facets, extending inside plane of antennal tubercle. Upper eye lobes separated from each other by about 3 times the width of a lobe (female); lower lobe much larger than upper lobe, occupying most of head from lateral view. Inter-antennal impression nearly flat with antennal tubercles slightly projecting from within eye emargination. Antenna of female extending to elytral apex. Antennae densely coated with recumbent, cinereous pubescence and fringed with longer cinereous setae along mesal and ventral margin. Scape short, swollen at middle; antennomeres 3–4 longest, slightly arcuate and distinctly longer than remaining segments which gradually decrease in length. *Prothorax* much narrower at base than elytral base, wider than long (3.8 mm long, 5.8 mm wide; pronotal length divided by pronotal width equals 0.66); black with a broad median off-white band of pubescence narrowly margined with ochraceous setae; elsewhere with recumbent black setae not obscuring the integument; long, black, ivory, and ochraceous, erect setae scattered throughout, each emanating from a glabrous puncture. Each side, just posterior to middle, with an acute lateral tubercle projecting toward the base of each elytral humerus and encircled by recumbent and ochraceous setae; dorsally, pronotal disk on mesal side of lateral tubercles with vague, swollen, callus. Prosternum densely pubescent with mixture of recumbent and semi-erect ivory and ochraceous setae, most concentrated



Fig. 4. *Comptosoma marcelae* Lingafelter and Wappes, n. sp. Digital painting of female holotype by Taina Litwak (SEL).

on prosternal intercoxal process; punctate, but obscured; prosternal process moderately expanded at apex, closing procoxal cavities posteriorly; prosternal process one third as wide between procoxae as each coxa. *Elytron* weakly produced at humerus, tapering posteriorly, with broad off-white pubescent band narrowly margined with ochraceous setae; band extends from the scutellum to the posterolateral margin where it narrows and continues around the elytral apex and along the suture to the basal third; additional, narrow, ochraceous, inverted L-shaped band of pubescence present in black region within ivory-ochraceous loop; elytra coarsely granulate-punctate with most punctures bearing a long, erect, black or translucent seta. Elytral apices rounded to sutural angle. Each elytron 12 mm long, 4.7 mm wide; elytral length divided by elytral width equals 2.6. *Scutellum* broadly rounded; mostly covered with appressed, recumbent ochraceous and ivory pubescence. *Legs* stout, short, with femora moderately enlarged at middle; tibiae more linear, expanded apicolaterally (especially protibiae); metafemora extending to about apical fourth of elytron; femora black, mostly glabrous at basal half with moderate recumbent ochraceous and ivory pubescence at apex; tibiae densely ochraceous to ivory pubescent, becoming black pubescent at apices; tarsi black pubescent, strongly contrasting in color from tibiae, but similar to femora. *Venter* with sternites margined with dense, ivory colored pubescence, black elsewhere. Most of ventral half of metepisternum, adjacent metasternum, mesepimeron, and middle of mesepisternum covered in very dense ivory-colored to white, recumbent and appressed pubescence. Apex of fifth ventrite roughly transverse in female, lacking notch.

Etymology.—The species epithet is a genitive matronym in honor of Marcela Monné (MNRJ) for her prolific work in

Neotropical Cerambycidae, and collaborative spirit.

Type Material.—Holotype, female: “Peru, Depto Amazonas; 3 km E Bagua Grande, at Km 232; 3-10.Sept.2005; ME Irwin; 530 m, 5°46.54’S, 78°24.41’W” (USNM).

KEY TO *COMPSOSOMA* SPECIES

Monné (1980) provided a key to the 10 known species at that time. With the subsequent description of *C. monnei* (Martins and Galileo, 1996), and the two species described herein, we present a new, modified identification key to species in the genus.

1. Elytra and pronotum with predominately black pubescence; elytral disk with orange macula 2
 - Elytra and pronotum without abundant, black pubescence; elytral disk without orange macula 3
2. A single, lateral, spot-shaped orange macula present on each elytron; pronotum with a basal pair of small cinereous pubescent maculae (French Guiana, Brazil, Peru). *geayi* Gounelle
 - Two spot-shaped orange maculae present on each elytron, base of pronotum without macula (Brazil) *mutillarium* (Klug)
3. Elytra piceous, with white to whitish-gray, pubescent fasciae that, at least partially, are narrowly margined with ochraceous pubescence. 4
 - Elytra brown with whitish pubescent areas and fasciae, but without ochraceous margins 5
4. Elytra with inverted V-shaped, basal fascia distinctly margined with a narrow band of ochraceous pubescence on both anterior and posterior margins; pronotal disk with parallel-sided whitish-gray pubescent band (Peru). *marcelae* n. sp.
 - Elytra with inverted V-shaped, basal fascia indistinctly margined with ochraceous pubescence, less so or even lacking along

- posterior margin; pronotal disk with inverted arrow-shaped white fascia (Brazil, Peru) *mniszechii* Thomson
5. Each elytron with a narrow, oblique, white pubescent fascia that extends anteriorly on the sutural margin and separates the brown apical area from the lighter basal area . . . 6
 - Elytra with a broad transverse (or nearly so) band that separates the apical brown area from the basal lighter area, or with a narrow, oblique, white pubescent fascia that extends anteriorly along the lateral (not the sutural) margins 9
 6. Elytra with apical third brown, lacking distinct white macula(e) along the suture or elsewhere (other than diffuse cinereous pubescence on the anterior two-thirds) (Brazil, Argentina) *perpulchrum* (Vigors)
 - Elytra with sutural or other white pubescent fasciae in apical brown region 7
 7. Elytra with a distinct dark brown basal area, margined apically by whitish pubescence and a short, narrow, whitish pubescent fascia extending forward from near the apices (Brazil) *fasciatum* Monné
 - Elytra with a distinct apical brown area margined anteriorly with whitish pubescence, but lacking a darker, distinctly margined basal area 8
 8. Elytra with short, sutural, white fascia apically and a lateral, circular white fascia that extends down from the apicolateral margin of the oblique central fascia; mesepimeron pubescent patch with a distinct narrowing or notch along the mesoventral margin (Bolivia) *oculata* n. sp.
 - Elytra with short, sutural white fascia apically but margin of oblique, central fascia straight; mesepimeron pubescent patch nearly straight and barely narrowed along the mesoventral margin (Bolivia). *monnei* Martins and Galileo
 9. Elytra with a central, narrow, white pubescent line that separates the brown apical area from the lighter basal area and extends anteriorly to the lateral margin (Brazil). *phaleratum* Thomson
 - Elytra with wide, transverse, white band across the middle, with separate irregular white fasciae in apical brown area 10
 10. Pronotum with distinct dark brown basal areas on each side of disk (Brazil). *v-notatum* (Vigors)
 - Pronotum unicolorous, without distinct darker areas 11
 11. Elytra with a broad white band at basal third having both apical and basal margins well defined (Brazil). *chabrilacii* (Thomson)
 - Elytra with posterior margin of broad white band well defined but anterior margin indistinct 12
 12. Elytra with posterior margin of central white band almost straight, macula in apical brown area large and U-shaped (Brazil) *vestitipenne* Zajciw
 - Elytra with posterior margin of central white band irregular and angled slightly forward at suture; macula of apical brown area moderate-sized, triangular in shape with acute apical point (Brazil, Bolivia, Paraguay). *nubilum* Gounelle

ACKNOWLEDGMENTS

We thank Julieta Ledezma (MNKM) for permits and logistical support during our many trips to Bolivia. We thank Miguel Monné and Marcela Monné (MNRJ) for searching their collection for specimens and their continued collaboration on Cerambycidae studies. Miguel, in particular, generously shared his advice and justification for the new synonymy of *C. alboapicalis*, for which we are grateful. We thank Taina Litwak (SEL) for her beautiful digital paintings of the new species. We thank the curators at all the institutions above for their help in providing access to their material. We thank Norman Woodley (SEL) and Miguel Monné (MNRJ) for their critical reviews and improvements of

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