

Research Article

***Calodema antonkozlovi* nov. sp. (Coleoptera: Buprestidae): a new species of Stigmoderini from the Arfak Mountains, Indonesia**

Calodema antonkozlovi sp. nov. (Coleoptera: Buprestidae): una nueva especie de Stigmoderini de las montañas de Arfak, Indonesia

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ZooBank: urn:lsid:zoobank.org:pub: B7B30D91-3559-4B3F-A885-4B6614118E6A
<https://doi.org/10.35249/rche.46.1.20.10>

Abstract. *Calodema antonkozlovi* nov. sp., known only from the Arfak Mountains, West Papua Province, Indonesia, is described and illustrated. The new taxon can be distinguished from *C. bifasciata* Neef de Sainval and Lander, 1993 by its wider and more robust body; elytral color bluish black with two yellow fasciae, the anterior one broadest, reaching suture, at lateral margins extending anteriorly and covering part of humerus, and elytral apices with three strongly developed spines.

Key words: Australasian Region, endemism, jewel beetles, taxonomy.

Resumen. *Calodema antonkozlovi* sp. nov. es descrita e ilustrada, conocida sólo de las montañas de Arfak, Provincia de Papúa Occidental, Indonesia. El nuevo taxón se distingue de *C. bifasciata* Neef de Sainval y Lander, 1993 por su cuerpo más ancho y robusto; color elitral negro azulado con dos fascias amarillas, la anterior más ancha, alcanzando la sutura, en los márgenes laterales extendiéndose anteriormente y cubriendo parte del humero, y ápices de los élitros con tres espinas fuertemente desarrolladas.

Palabras clave: Australasia, endemismo, escarabajos joya, taxonomía.

Introduction

Calodema Gory and Laporte, 1838 contains 15 species found in rainforest habitats in Australia, New Guinea and some adjacent islands (Bellamy 2008; Barker 1993). Nylander (2008) recognized four species groups: *C. regalis* species-group, *C. ribbei* species-group A, *C. ribbei* species-group B and *C. plebeia* species-group. The *C. ribbei* species-group B includes five species: *C. bifasciata* Neef de Sainval and Lander, 1993, *C. hanloni* Nylander, 2008, *C. longitarsis* Nylander, 2008, *C. mariettae* Nylander, 1993 and *C. ryoi* Endo, 1998.

Herein we describe a new species of the *C. ribbei* species-group B from Arfak Mountains, located in the Indonesian province of West Papua. These mountains are a well-known hotspot of endemism. The new species, herein described as *Calodema antonkozlovi* nov. sp., was first reported by Nylander (2008) as *C. bifasciata* (Type locality: Kerowagi, Papua New Guinea), due to similarities in color pattern and body shape.

Received 9 December 2019 / Accepted 24 January 2020 / Published online 31 January 2020

Responsible Editor: José Mondaca E.

Material and Methods

The identification of the *C. bifasciata* specimens used for comparison was made using the original description and photograph of Neef de Sainval and Lander (1993), and the description and photographs of Nylander (2008). Photographs were taken with a Canon EOS 1000D with a 100-mm lens. Measurements were taken in millimeters using a digital caliper; body length was measured from the apex of the head to the apex of the abdomen; body width was measured across the humeri. Label data are given verbatim between quotation marks "", different lines of a label are separated by a diagonal slash /, different labels are indicated by double slashes //, additional information not written on the label is given between square brackets []. Collection abbreviations used in the text are: Zoological Institute of the Russian Academy of Sciences, Saint Petersburg, Russia (ZIN); Anton Kozlov Private Collection, Moscow, Russia (AKPC); Cristian Pineda Private Collection, Valparaíso, Chile (CPCP); Dusan Farbiak Private Collection, Banska Stiavnica, Slovakia (DFPC).

Results

Calodema antonkozlovi **nov. sp.**
(Figs. 1-8)

Type material. Holotype ♀ in ZIN, labeled: "Indonesia, West Papua, Arfak / Mountains, Anggi district, 7 km / from Anggi town, near Penebut / village, H=2000 m., 08/IX/2019, / local collector leg." // "*Calodema antonkozlovi* / Pineda & Curletti / HOLOTYPE" [red printed label]. **Paratypes:** Paratype ♀ in AKPC, same data, except, 20/IX/2019. // "*Calodema antonkozlovi* / Pineda & Curletti / PARATYPE" [yellow printed label]. Paratype ♀ in CPCP, labeled: "Indonesia, Irian Jaya, Mt. Arfak, VI.2006" // "*Calodema antonkozlovi* / Pineda & Curletti / PARATYPE" [yellow printed label].

Description. Holotype female: Total length, 32.5 mm. Body robust and wide; elytra black with metallic blue sheen, except fasciae yellow. Pronotum yellow with black spots. Head and antennae metallic green; venter metallic green, except sides of pronotum, ventrites 1-4 and posterior portion of ventrite 1 yellow; setae white. **Head:** Glabrous, moderately dense punctate with punctures separated by about a puncture diameter. Frons slightly depressed medially, with punctures denser in depression. Antennae serrate from antennomere 4. Clypeus with anterior emargination exposing the membrane between clypeus and labrum. Labrum slightly broader than long, with median longitudinal groove. **Pronotum:** Glabrous, finely punctate with punctures separated by about 1-3 puncture diameters; 1.93 times wider than long ($L/W = 0.51$), with a central-anterior spot and two anterolateral small dots, the central-anterior one divided in the middle into two subreniform spots. **Scutellum:** Glabrous, impunctate, pentagonal and small; 1.6 times wider than long ($L/W = 0.6$). **Elytra:** Glabrous, with punctuation as fine as that of pronotum but more dispersed; striae very fine; interstriae wide and elevated, six times as wide as striae; 2.16 times wider than long ($L/W = 0.47$); each elytron with two yellow fasciae, the anterior one broadest, reaching suture, at lateral margins extending anteriorly and covering part of humerus; apices with three strongly developed spines separated by deep notches, the internal spine shorter than the other two. **Venter:** Finely punctate, except moderately coarsely punctate towards prosternum; prosternum, meso- and metaventrite with long setae along lateral margins. Prosternal process with anterior prominence in lateral view. Abdominal ventrites 2-4 subequal in length; ventrite 1 about as long as ventrites 2-3 combined; ventrite 5 rounded posteriorly. **Ovipositor:** Rectangular in shape, with deep median longitudinal groove; 1.4 times wider than long; anterior margin with sparse, short and tick setae; stylus very short and thick, inconspicuous.

Intraspecific variation. (n=3): 32.5-34.0 mm. The paratypes have the anterior fasciae completely fused. One paratype has a narrower space between the internal spines (Fig. 5).

Comparison. The new taxon is similar to *C. bifasciata* but differs in the characters mentioned in Table 1:

Table 1. Differential characters between *C. bifasciata* and *C. antonkozlovi* **nov. sp.**

Character	<i>C. bifasciata</i> Neef de Sainval and Lander	<i>C. antonkozlovi</i> nov. sp.
Body shape	More slender body	Wider and robust body
Elytral proportions	Width/length of elytra much less than 0.5	Width/length of elytra slightly less than 0.5
Elytral pattern	Black with two yellow fasciae, not reaching suture, the anterior one reaching the lateral margins	Black with two yellow fasciae, the anterior one broadest, reaching suture, at lateral margins advancing forward and bending up covering elytral humeri
Elytral apices	Generally with three very short and weakly developed spines, second and third spines sometimes absent	With three strongly developed spines
Female abdominal ventrites	Ventrites 1-4 yellow with metallic dark blue color at middle, ventrite 5 completely yellow	Ventrite 1 yellow with anterior portion metallic green, ventrites 2-5 completely yellow without metallic color

Etymology. We name this species in honor of Russian entomologist Anton Olegovich Kozlov (Moscow, Russia), who first recognized this species as new.

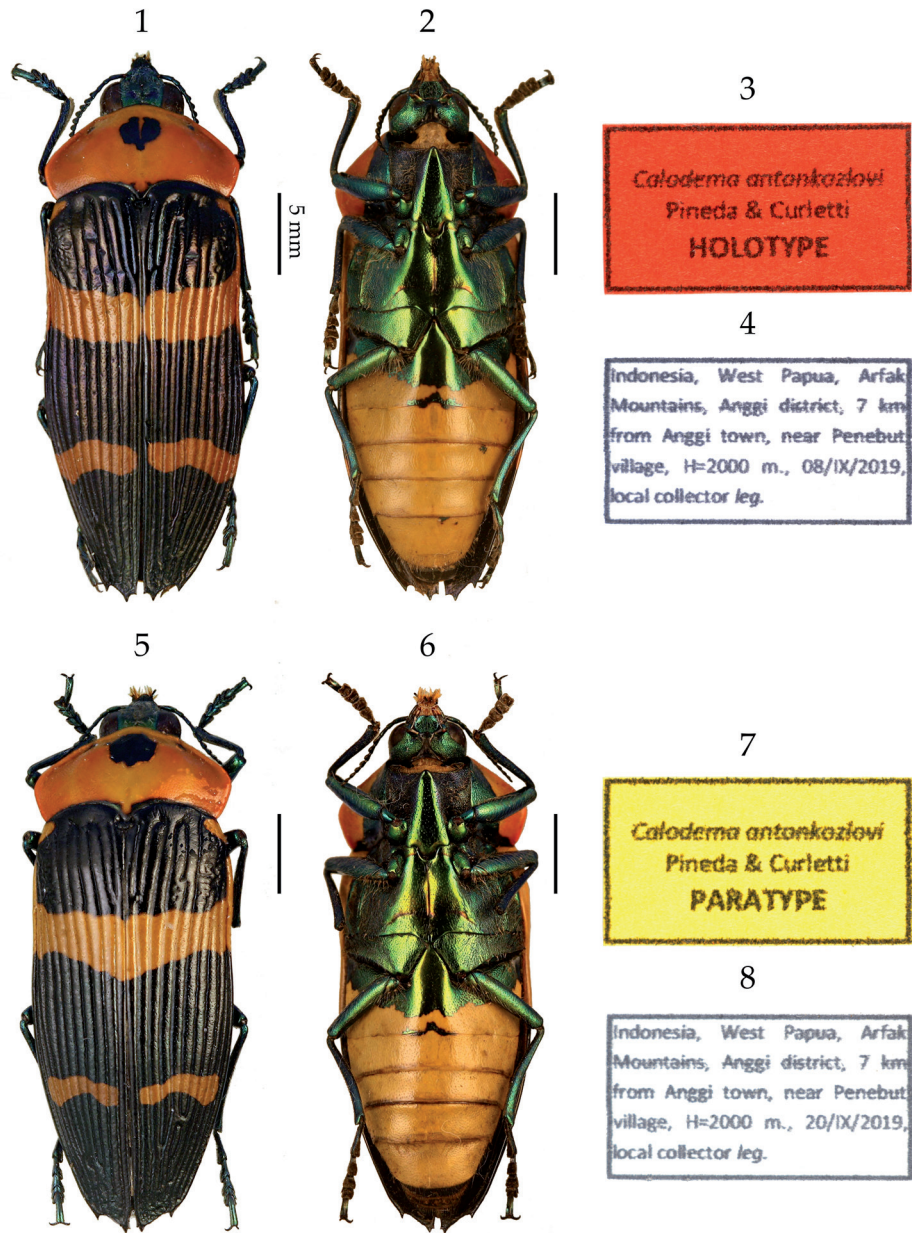
Other material examined. *C. bifasciata*: 1 male from Papua New Guinea, Simbu Prov. Kerowagi, kawa vill, 21.IX.2007, local coll. leg. (DFPC).

Discussion

Calodema antonkozlovi belongs to the *C. ribbei* species-group B and is morphologically similar to *C. bifasciata*. *Calodema ribbei* species-group B is characterized by the pronotum broader than elytra ($L/W = 0.50-0.55$), diverging strongly in a smooth curve to its maximum width without angular projection; pronotal posterior median lobe short, concave, abutting on scutellum, and elytra strongly striate (Nylander 2008). As one of the distinguishing characters between the species of this group, Nylander (2008) mentioned the elytral apex. It can be bidentate (*C. longitarsis*), tridentate (*C. hanloni*, *C. mariettae*, *C. ryoi*), or mono-, bi-, or tridentate in the case of *C. bifasciata*. The Arfak Mountains specimens (*C. antonkozlovi*) have well developed elytral spines (tridentate). Instead, the specimens from Papua New Guinea (*C. bifasciata*) also have three apical spines, but are very short and weakly developed, therefore some smaller specimens have only one or two visible apical spines (monodentate or bidentate).

Currently, *C. antonkozlovi* is only known from Arfak Mountains, Indonesia. *C. antonkozlovi* was first reported as *C. bifasciata* by Nylander (2008), based on a single specimen collected in 2006 in Mt. Arfak, Indonesia. Nylander (2008) points out the following differences between the single Arfak specimen examined by him (*C. antonkozlovi*) and those from Papua

New Guinea (*C. bifasciata*): elytral ground color black with two yellow fasciae reaching suture, the anterior one broadest, at lateral margins advancing forwards and bending up covering elytral anterior-lateral angle; apices with three well developed spines; aedeagus with median lobe rather broad, and parameres more rounded at apex. Despite the above mentioned differences, Nylander (2008) stated that *C. bifasciata* apparently has an unusual large natural variability. However, our three Arfak specimens (*C. antonkozlovi*) confirm the differences mentioned by Nylander (2008) for the single Arfak specimen examined by him, and show additional differences between this new taxon and *C. bifasciata* as can be seen in the Table 1.



Figures 1-8. *Calodema antonkozlovi* nov. sp. 1-4. Holotype female. 1-2. Dorsal and ventral views. 3-4. Labels. 5-8. Paratype female. 5-6. Dorsal and ventral views. 7-8. Labels.

Acknowledgments

We thank Anton Olegovich Kozlov (Moscow, Russia) who provided the specimens used in this study. We thank Paola Michelazzo for taking the photographs of the specimens.

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