**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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**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.
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); Christian 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                        | C. bifasciata Neef de Sainval and Lander | C. antonkozlovi 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.
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