Three New Species and An Unrecord Species of the Genus Cyriopalus Pascoe 1866 and A New Species of the Genus Lateropalus Vitali, Gouverneur & Chemin, 2017 from East Kalimantan, Indonesia (Coleoptera: Cerambycidae: Cerambycinae: Cerambycini)

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Three New Species and An Unrecord Species of the Genus *Cyriopalus* Pascoe 1866 and A New Species of the Genus *Lateropalus* Vitali, Gouverneur & Chemin, 2017 from East Kalimantan, Indonesia (Coleoptera: Cerambycidae: Cerambycinae: Cerambycini)

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Abstract. Four new Cerambycini species, *Cyriopalus sugiartoi* **sp. nov.**, *C. morimotoi* **sp. nov.**, *C. glacilicornis* **sp. nov.**, and *Lateropalus crassicornis* **sp. nov.**, are described from East Kalimantan, Indonesia. We also recorded *Cyriopalus wallacei* Pascoe, 1866 from East Kalimantan. Keys to species of *Cyriopalus* and *Lateropalus* are provided.

Key words: Biodiversity, Borneo, longhorn beetles, taxonomy.

Introduction

The Tropical Rainforest Research Project in Indonesia was conducted at Mulawarman University as a collaboration between the Ministry of Education and Culture of Indonesia and the Japan International Cooperation Agency (JICA) from 1985 to 1999. The first author, Hiroshi Makihara, carried out an insect faunal survey in East Kalimantan as a part of this project. The insects collected during that time were deposited in the collections of the Museum Zoologicum Bogoriense (MZB; Cibinong, Indonesia), National Research and Innovation Agency (Indonesian: Badan Riset dan Inovasi Nasional (BRIN)), and Mulawarman University (Samarinda, Indonesia). The authors re-examined the specimens of longhorn beetles in the Museum Zoologicum Bogoriense and found three unknown species and an unrecorded species belonging to the genus *Cyriopalus* Pascoe, 1866 and an unknown species belonging to the genus *Lateropalus* Vitali, Gouverneur & Chemin, 2017.

Based on the results of our re-examination, we report as an unrecorded species *Cyriopalus wallacei* Pascoe, and describe them as *Cyriopalus sugiartoi* **sp. nov.**, *C. morimotoi* **sp. nov.**, *C. glacilicornis* **sp. nov.** and *Lateropalus crassicornis* **sp. nov**. We also provide keys to species for *Cyriopalus* and *Laterpalus* including the four new species described here.

Materials and methods

The specimens used in this study are deposited in MZB. Morphological comparisons with other congeneric species were made mainly based on the description and figures of Vitali *et al*. (2017). Representations of male genital organs are followed Ehara (1954).

Taxonomy

Cyriopalus wallacei Pascoe, 1866

(Figs 1A, A', 2A, A', 3A, A', 4A, A', 5A, A', 6A, 7A, E, 8A, A', 9A, A')

Cyriopalus wallacei Pascoe, 1866: 530.

Male. Color dark brown. Body covered with fine whitish to yellowish pubescence giving the appearance of a greyish to ochre coloration.

Head with an inter-antennal furrow, forming a distinct fovea in slightly shorter and wider spindle-shape deep in basal half, gradually shallower apically (Fig. 2A).

Antennae 0.9 times as long as body; ratio of each antennomere: 10.8 : 2.2 : 9.7 : 7.5 : 7.0 : 7.0 : 5.4 : 5.4 : 5.4 : 5.4 : 6.5 : 28.0 (Figs 1A,

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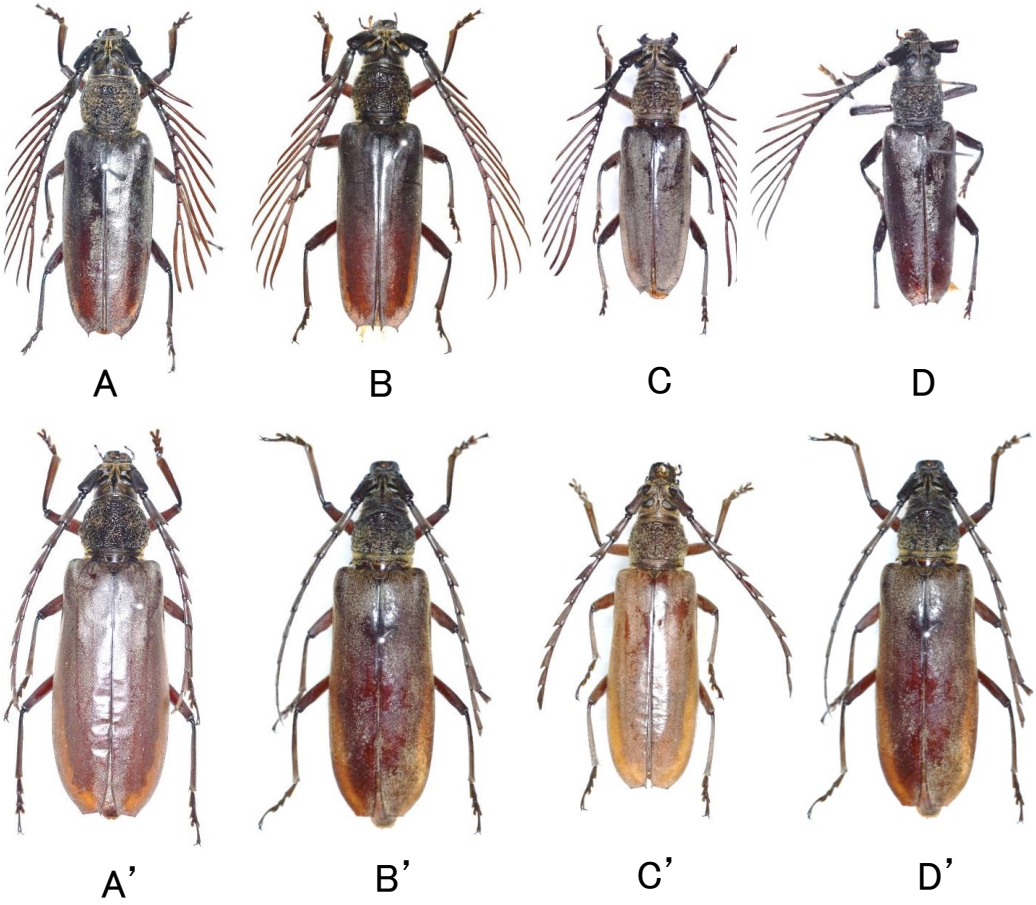

FIGURE 1. *Cyriopalus* spp. A–D: male; A'-D': female. A, A'. *Cyriopalus wallacei* Pascoe; B, B'. *C. sugiartoi* **sp. nov.**; C, C'. *C. morimotoi* **sp. nov.**; D, D'. *C. glacilicornis* **sp. nov**.

4A); scape conical, flat and smooth dorsally; antennomeres III to XI flabellate ectoapically; flabellum of III long and slender, pointed at apex, as long as pronotum and about 1.5 times as long as the antennomere (Fig. 3A); flabellum of IX longest, more than 5.8 times as long as the antennomere (4A).

Pronotum as long as wide, sometimes angulated at sides, dorsally convex and transversely covered by irregular wrinkles (Fig. 5A).

Elytra 0.65 times as long as body, 2.2 times as long as wide, stout, slightly wider near middle, slightly convex, strongly toothed at each apex. Legs relatively short and thin; each ventral side of meso- and metafemora with a pubescent cavity (Figs 6A, 7A, E).

Prosternal process sloping posteriorly, weakly bifurcated at apex, provided with a narrow knob-like dorsal ridge on middle (Fig. 8A).

Male genitalia with ventral plate of median lobe weakly projected at apex (Fig. 9A). Lateral lobes of tegmen rather stout and long, provided with slightly long hairs on each ventral side of apical portion (Fig. 9A').

Female. Inter-antennal furrow forming a distinct long fovea, deep and rather wide in basal half, shallower in apically (Fig. 2A').

Antennae 0.73 times as long as body; ratio of each antennomere: 10.0 : 2.2 : 12.8 : 8.9 : 11.1 : 10.0 : 8.9 : 8.3 : 8.9 : 7.8: 11.1; XI subdivided into two parts (Fig. 4A'), of which the basal part is flat and the apical part is narrow; antennomeres III to X each serrate ectoapically (Figs 3A', 4A'); serration of antennomere III short, about 0.2 times as long as the antennomere (Fig. 3A'); serration of antennomere IV longest, more than 0.2 times as long as the antennomere (Fig. 3A').

Pronotum slightly wider than in male (Fig. 5A').

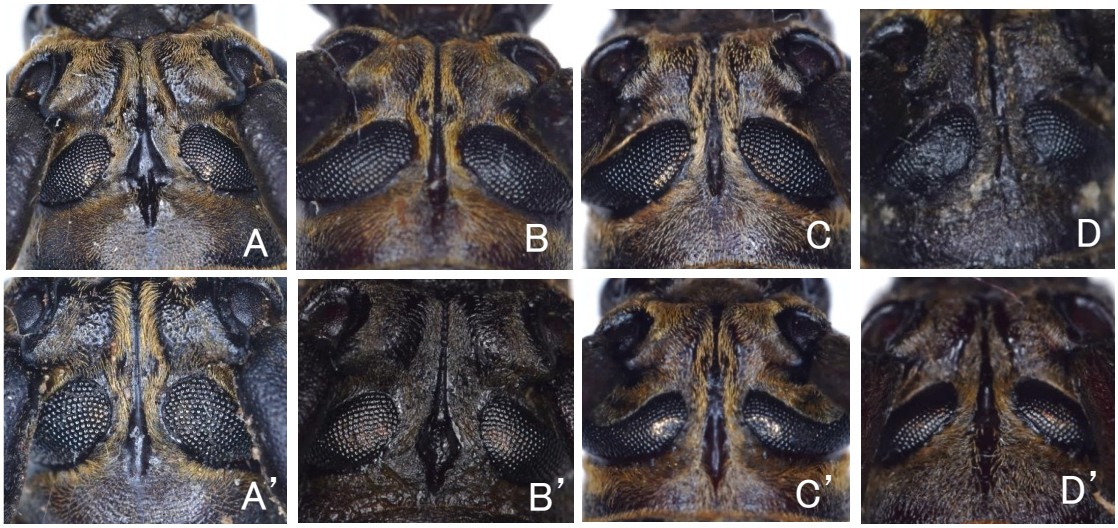

FIGURE 2. Longitudinal grooves on vertex and occiput. A–D: male; A' –D': female. A, A'. *Cyriopalus wallacei* Pascoe; B, B'. *C. sugiartoi* **sp. nov.**; C, C'. *C. morimotoi* **sp. nov.**; D, D'. *C. glacilicornis* **sp. nov**.

Prosternal process sloping posteriorly, slightly narrowed at middle and rather strongly raised near central portion (Fig. 8A').

Body length. 35–48 mm in male (n = 2), 46–54 mm in female (n = 2); width 10-12 mm in male (n = 2), 12–16 mm in female (n = 2).

Examined material. 1♂, Bukit Bangkirai, E. Kalimantan, 1.VI.1999, LT, H. Makihara & Sugiarto leg.; 1♂, Bukit Soeharto, E. Kalimantan, 21.XII.1998, LT, H. Makihara & Sugiarto leg.; 1♀, Bukit Bangkirai, E. Kalimantan, 3.VIII.1999, LT, H. Makihara & Sugiarto leg,; 1♀, Bukit Soeharto, 19.XI.1998, LT, H. Makihara & Sugiarto leg.

Note. *Cyriopalus wallacei* has been recorded from East Kalimantan (Makihara, 1999), but close examination revealed that this identification was a mistake and that it was a different species. The above record is first from East Kalimantan. It should be noted that the specimens used here were identified by comparing the photo image of the lectotype male of *C. wallacei* from Sarawak illustrated by Vitali *et al*. (2017).

Cyriopalus sugiartoi Makihara, W. A. Noerdjito & Kahono, sp. nov.

(Figs 1B, B', 2B, B'', 3B, B', 4B, B', 5B, B', 6B, 7B, F, 8B, B', 9B, 9B')

ZooBank taxon
LSID:zoobank.org:pub:840F40FB-6461-4A5B-88E8-C19431D0649C

Male. Color blackish brown, except for dark reddish-brown abdomen. Body covered with fine greyish to yellowish pubescence giving the appearance of pale greyish coloration; frons with yellowish hairs; antennal flabellum with whitish pubescence.

Head with an inter-antennal furrow forming a distinct fovea in elongate spindle-shape on occiput, deep in basal half, gradually shallower apically (Fig. 2B). Mandibles hooked, rather densely punctate, with indentations composed of deep longitudinal grooves except for each smooth apical portion. Frons with a semi-circular raised rim at base, covered with a few long hairs, sparse short erect hairs, and dense pubescence. Occiput densely and finely punctate, covered with rather sparse pubescence.

Antennae 0.9 times as long as body; ratio of each antennomere: 7.9 : 2.1 : 7.9 : 7.9 : 6.9 : 6.9 : 7.4 : 7.9 : 6.9 : 7.4 : 9.5 : 21.2 (Figs 1B, 4B); scape short and club-shaped; antennomeres III to XI each with a flabellum ectoapically; flabellum of III stout and bent, pointed at apex, 0.6 times as long as pronotum and about 1.5 times as long as the antennomere (Fig 3A); flabellum of IX longest, more than 5 times as long as the antennomere.

Pronotum as long as wide; basal margin wider than apical margin; sides rounded, widest near middle; disk slightly convex, provided with transverse irregular wrinkles, partly coarsely and partly sparsely pubescent, especially sparse in central portion (Fig. 5B).

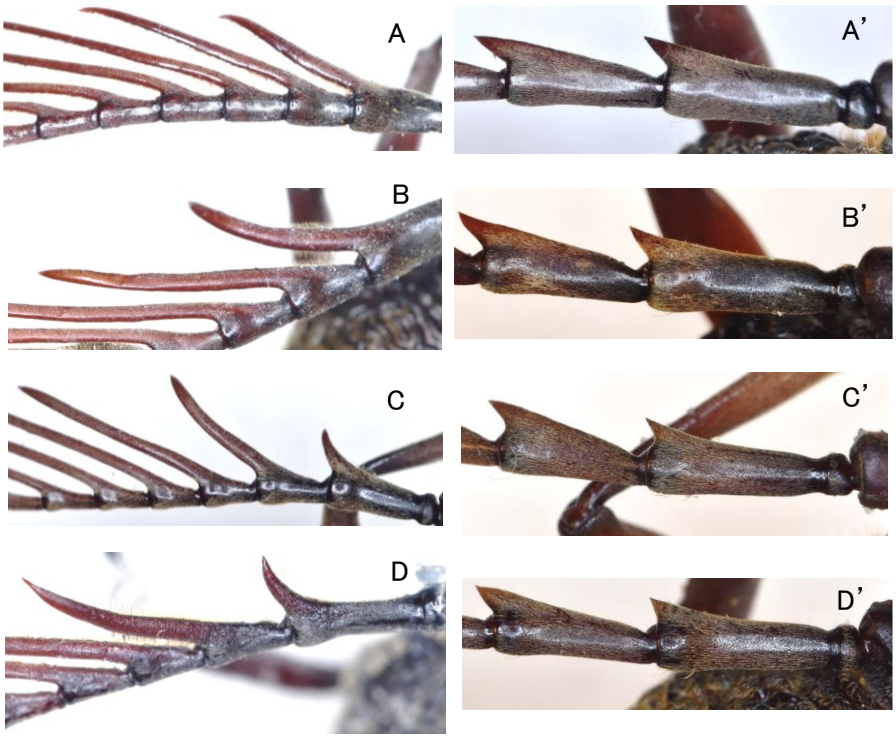

FIGURE 3. 3rd and 4th antennal segments of *Cyriopalus* spp. A–D: male; A' –D': female. A. *Cyriopalus wallacei* Pascoe; B. *C. sugiartoi* **sp. nov.**; C. *C. morimotoi* **sp. nov.**; D. *C. glacilicornis* **sp. nov**. A'. *Cyriopalus wallacei* Pascoe; B'. *C. sugiartoi* **sp. nov.**; C'. *C. morimotoi* **sp. nov.**; D'. *C. glacilicornis* **sp. nov**.

Scutellum rather long and semicircular, finely punctate, densely covered with downy pubescence.

Elytra 0.74 times as long as body, 2.4 times as long as wide, stout, almost parallel-sided though slightly wider near middle, slightly convex, toothed at each apex.

Legs relatively thin; meso- and metafemora provided with pubescent semielongate cavity on each ventral side, without the same cavity on profemur (Figs 6B, 7B, F).

Prosternal process sloping posteriorly, narrowed before middle, thence delated posteriorly and weakly bifurcated at apex, provided with a narrow knob-like dorsal ridge on middle (Fig. 8B)

Male genitalia with ventral plate of median lobe strongly projected at apex (Fig. 9B). Lateral lobes of tegmen stout and short, provided with long hairs on each ventral side of apical portion (Fig. 9B').

Female. Inter-antennal furrow forming a distinct long fovea in spindle-shape, deep in basal half, gradually shallower apically and rod-shaped in apical half (Fig. 2B').

Antennae 0.7 times as long as body; ratio of each antennomere: 11.2 : 2.2 : 10.1 : 10.1 : 9.0 : 9.6 : 10.1 : 9.6 : 8.4 : 8.4 : 11.2; antennomere XI subdivided into two parts (Fig. 4B'), of which the basal part is flat, as long as VIII and IX, and the apical part is narrow, very short, less than a quarter length of the basal part; III to X each serrate ectoapically (Figs 3B', 4B'); serration of III short, about 0.2 times as long as the antennomere (Fig. 3B'); serration of IV longest, more than 0.2 times as long as the antennomere (Fig. 3B').

Pronotum slightly broader than in male (Fig. 5B').

Prosternal process sloping posteriorly, slightly narrowed and slightly raised near central portion, provided with a large, round, knob-like ridge at sides of apical portion (Fig. 8B').

Body length. 32–36 mm in male (n = 2), 47 mm in female (n = 1); width 9–10 mm in male (n = 2), 15 mm in female (n = 1).

Holotype: ♂, (MZB Cole 173087), Bukit Soeharto, East Kalimantan, Indonesia,

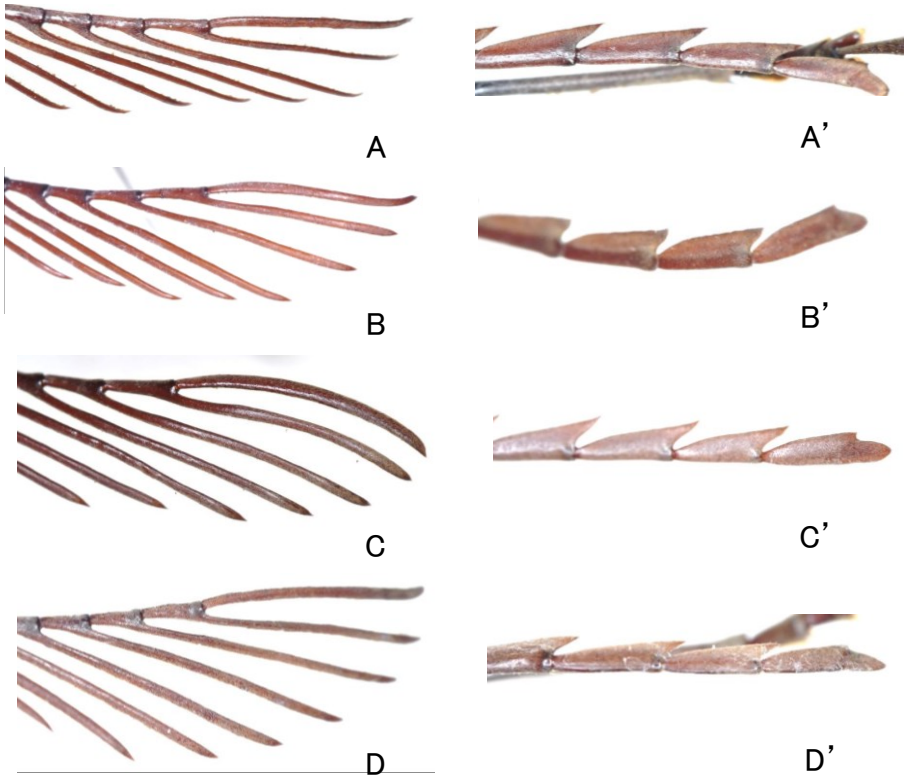

FIGURE 4. 10rd to 12th or 9th to 11th antennal segments of *Cyriopalus* spp. A–D: male; A' – D': female. A. *Cyriopalus sugiartoi* **sp. nov.**, male; B. *C. morimotoi* **sp. nov.**, male; C. *C. glacilicornis* **sp. nov.**, male. A'. *Cyriopalus sugiartoi* **sp. nov.**, femal; B'. *C. morimotoi* **sp. nov.**, female; C'. *C. glacilicornis* **sp. nov.**, female.

15.III.1999, by light trap, H. Makihara & Sugiarto leg. **Paratypes:** 1♂, (MZB Cole 173087), 5.I.1999, same locality and collector as the holotype; 1♀, (MZB Cole 173087), Bukit Bangkirai, East Kalimantan, Indonesia, 26.X.1999, same collector as the holotype.

Distribution. East Kalimantan, Indonesia.

Etymology. The name of this new species is dedicated to the late Dr. Sugiarto for his contributions to the clarification of the insect fauna of East Kalimantan.

Comparative note. Male of this new species has the relatively long flabellum III, and in this respect resembles *Cyriopalus wallacei* Pascoe, 1866, *C. hefferini* Holzschuh, 2007 and *C. javanus* Vitali, Gouverneur & Chemin, 2017. The new species, *C. sugiartoi* **sp. nov.** differs significantly from the other three species by the flabellum of antennomere III is 1.6 times as long as the antennomere, robust, slightly curved and acutely pointed at the apex. Males of the following three species differ from *C. sugiartoi* **sp. nov.** in the following characteristics. In *C. wallacei*, the body is slightly thicker, and the flabellum of antennomere III is elongate and longer than in *C. sugiartoi* **sp. nov.**, about 2.0 times as long as the antennomere, very slightly curved, bluntly pointed at the apex. In *C. hefferini*, the body and antennae are slightly more thinner, and the flabellum of antennomere III is elongate, about 1.3 times as long as the antennomere. In *C. javanus*, the flabellum of antennomere III is very long and slender, about 1.4 times as long as the antennomere, and each profemur is provided with the pubescent cavity. Female of this new species can be distinguished from those of *C. wallacei* and *C. hefferini* (female of *C. javanus* is unknown) by the following characteristics: serration of antennomere IV is longer and slightly curved inward in *C. wallacei*, whereas shorter and curved outward in *C. sugiartoi* **sp. nov.**; elytra are longer, 7/9 length of body in *C. hefferini* (Holzschuh, 2007), whereas 2/3 length of body length in *C. sugiartoi* **sp. nov**.

***Cyriopalus morimotoi* Makihara, W. A. Noerdjito & Kahono, sp. nov.**

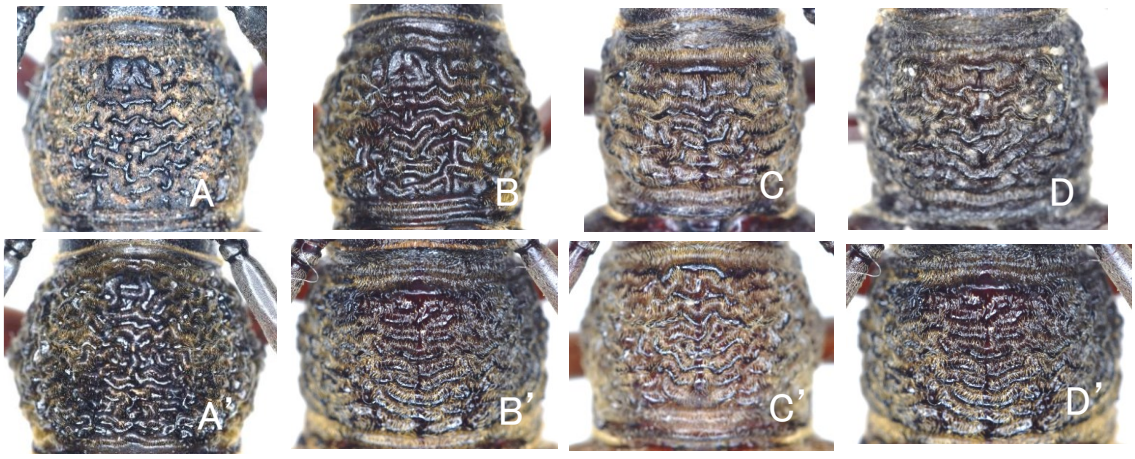

FIGURE 5. Pronotum of *Cyriopalus* spp. A–D: male; A' –D': female. A. *Cyriopalus wallacei*; B. *C. su*giartoi **sp. nov.**; C. C. morimotoi **sp. nov.**; D. C. glacilicornis **sp. nov.** A'. *Cyriopalus wallacei*; B'. *C. sugiartoi* **sp. nov.**; C'. *C. morimotoi* **sp. nov.**; D'. *C. glacilicornis* **sp. nov**.

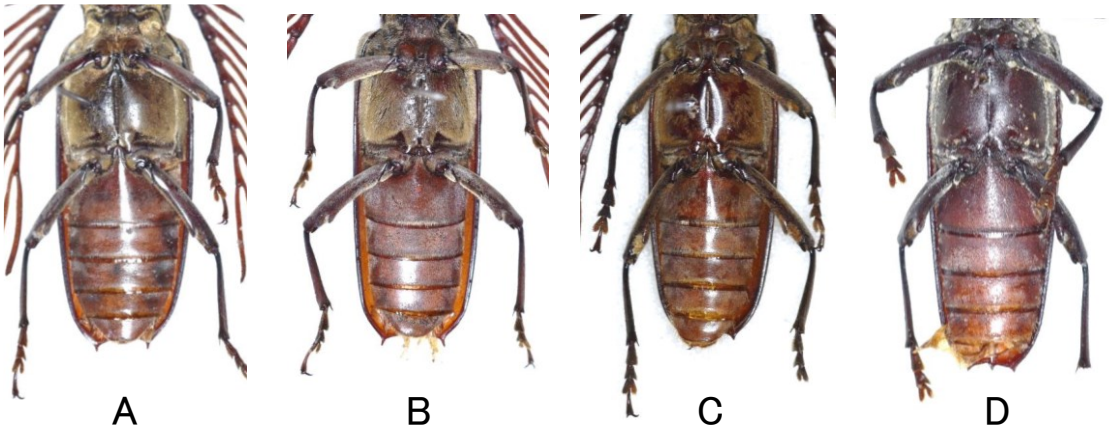

FIGURE 6. Ventral side of pronotum and legs of *Cyriopalus* spp. in male. A. *Cyriopalus wallacei*; B. *C. sugiartoi* **sp. nov.**; C. *C. morimotoi* **sp. nov.**; D. *C. glacilicornis* **sp. nov**.

(Figs 1C, C', 2C, C', 3C, C', 4C, C', 5C, C', 6C, 7C, G, 8C, C', 9C, C')
ZooBank taxon LSID:
zoobank.org:act:041B6A2D-003B-4719-BE15-389510BEAF71

Cyriopalus wallacei (non Pascoe, 1866):
Makihara, 1999: 49, pl. 4, fig. 24.
Trachylophus sp. 3: Makihara, 1999: 50, pl. 5, fig. 31.

Male. Color brown, except for reddish ventral surface, especially in reddish brown abdomen. Body covered with fine golden yellow pubescence; frons covered with yellow and golden yellow hairs.

Head with inter-antennal furrow forming a distinct fovea on occiput, which is slightly thinner than in *C. sugiartoi* **sp. nov.**, gradually shallower apically and lineally extended to apical part (Fig. 2C). Mandibles strongly hooked, punctate, with indentations arranged in longitudinal lines except for smooth apical portion. Frons gently raised in triangle, irregularly and coarsely punctate except for the raised area which is finely punctate, covered with a few long hairs and sparse short erect hairs. Occiput finely and densely punctate, rather sparsely covered with soft short hairs.

Antennae as long as body; scape short, club-shaped, slightly thickened at apex; ratio of each antennomere: 10.9 : 2.0 : 10.1 : 9.0 : 6.8 : 6.2 : 6.8 : 5.6 : 5.6 : 5.6 : 9.6 : 22.8 (Figs 1C, 4C); antennomeres III to XI each with a flabellum

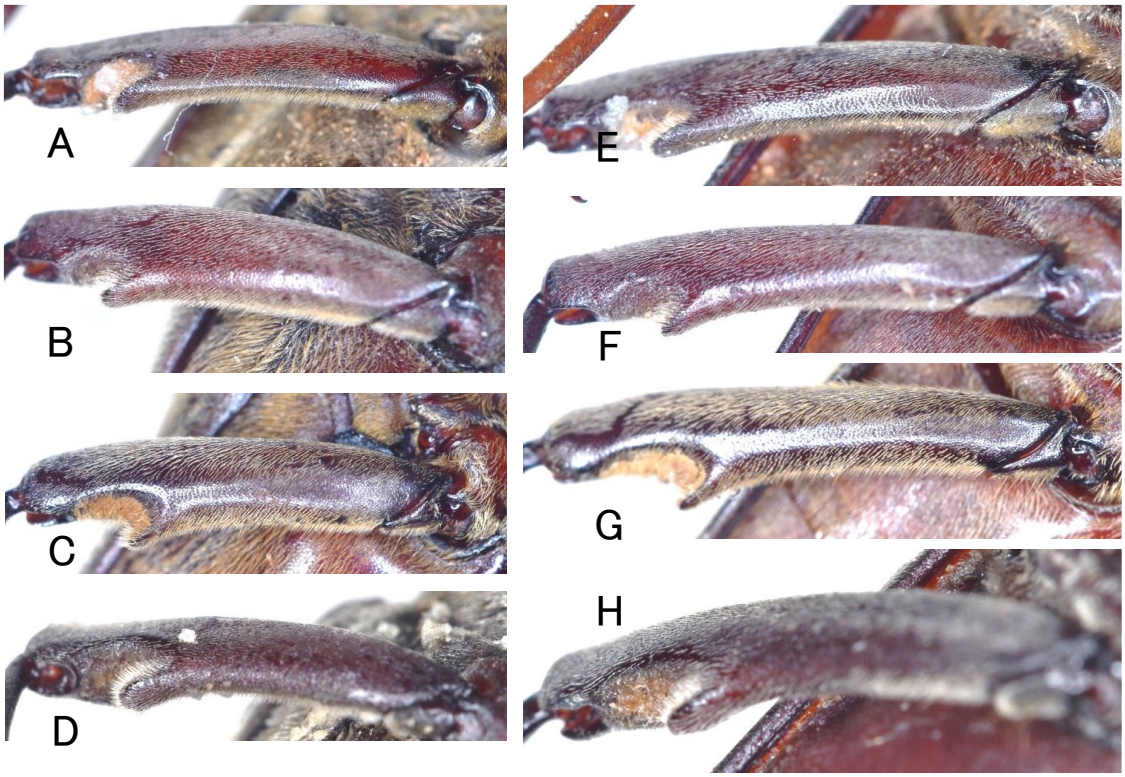

FIGURE 7. *Cyriopalus* spp., meso (A–D) and meta (E–H) femora. A, E. *Cyriopalus wallacei*; B, F. *C. sugiartoi* **sp. nov.**; C, G. *C. morimotoi* **sp. nov.**; D, H. *C. glacilicornis* **sp. nov**.

ectoapically; flabellum of III pointed apically, about 0.75 times as long as the antennomere (Fig. 3C); flabellum of IX the longest, about 5.0 times as long as the antennomere.

Pronotum elongate and almost parallel-sided, 1.1 times as long as wide; basal margin slightly wider than apical margin; disk irregularly provided with transverse long wavy ridges, covered with dense pubescence though rather sparse near middle (Fig. 5C).

Scutellum slightly elongate triangular, rounded at apex, finely punctate, covered with dense pubescence.

Elytra 0.7 times as long as body, 0.21 times as long as width, almost parallel-sided, rather stout, slightly convex, toothed at each apex.

Legs relatively long and thin; meso- and metafemora provided with a pubescent cavity on each ventral side (Fig. 6C), mesofemoral cavity slightly elongate and rounded (Fig. 7C); metafemoral cavity large and distinctly elongate (Fig. 7G).

Prosternal process slightly widened posteriorly and gently sloping, provided with a raised long keel-like ridge on central portion, finely punctate on surface (Fig. 8C)

Male genitalia with ventral plate of median lobe obtusely projecting (Fig. 9C). Lateral lobes of tegmen stout, covered with long hairs on each ventral side of apical portion (Fig. 9C').

Female. Head with inter-antennal furrow forming a distinct long fovea on occiput, elongated spindle-shaped in basal half and rod-shaped in apical half (Fig. 2C').

Antennae about 0.7 times as long as body; ratio of each antennomere: 9.3 : 1.9 : 16.0 : 12.3 : 11.1 : 11.1 : 10.5 : 8.6 : 10.5 : 8.6 : 12.3; antennomere XI subdivided into two parts, of which the first half is flat, as long as X, and the second half is narrow, 1/2 to 1/3 as long as the first (Fig. 4C'); serration of each antennomere pointed; III to X each strongly serrate ectoapically (Figs 3C', 4C'); serration of III very short, about 0.1 times as long as the antennomere (Fig. 3C'); serration of IV the longest, about 0.25 times as long as the antennomere (Fig. 3C').

Pronotum substantially broader than in male (Fig. 5C').

Prosternal process dilated and gentry sloping posteriorly, provided with a somewhat long knob-like process on central portion (Fig. 8C').

Body length. 30–31 mm in male (n = 3), 29–40

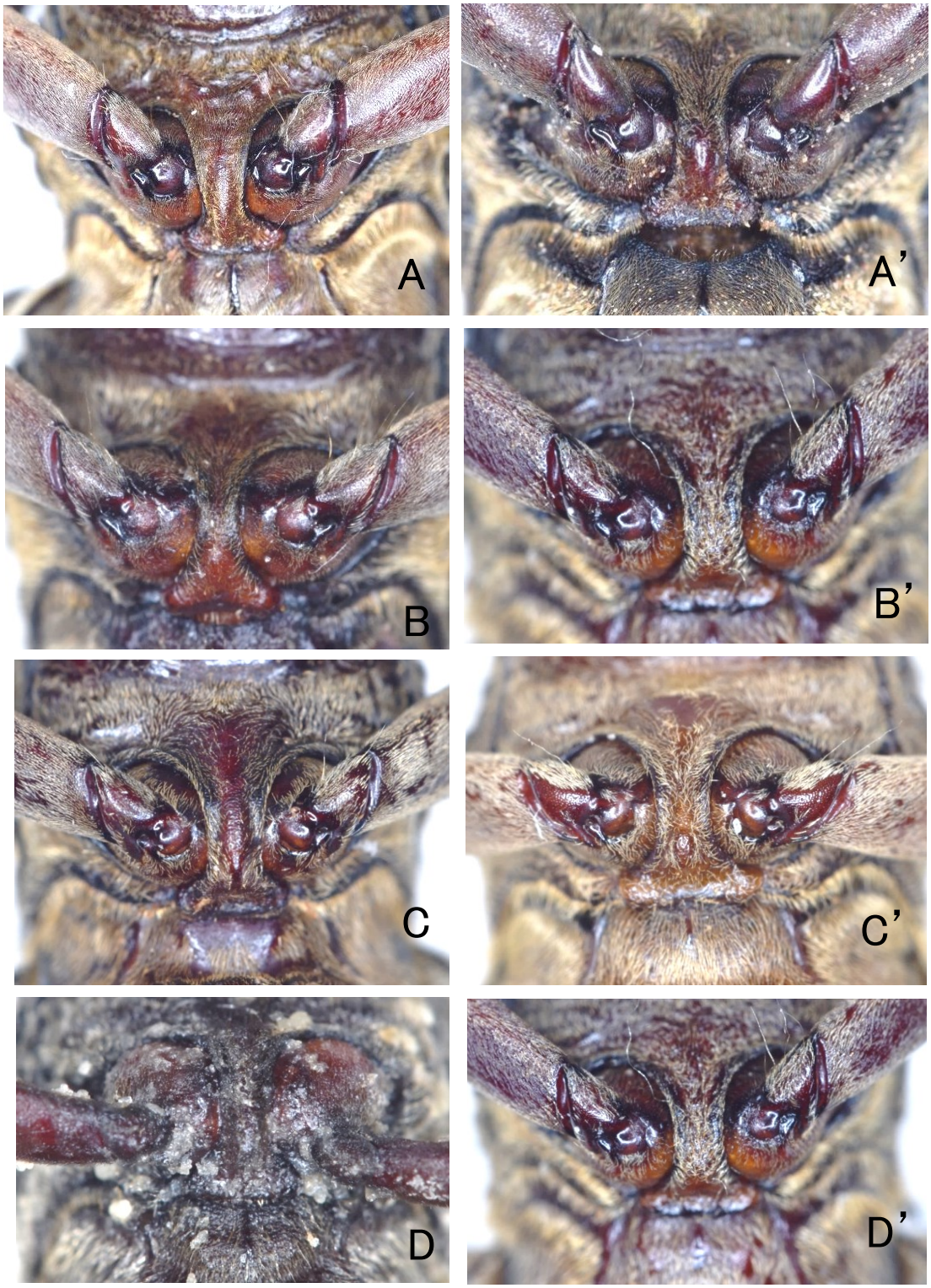

FIGURE 8. Prosternal process of *Cyriopalus* spp. A–D: male; A' –D': female.
A, A'. *Cyriopalus wallacei*; B, B'. *C. sugiartoi* **sp. nov.**; C, C'. *C. morimotoi* **sp. nov.**; D, D'. *C. glacilicornis* **sp. nov**.

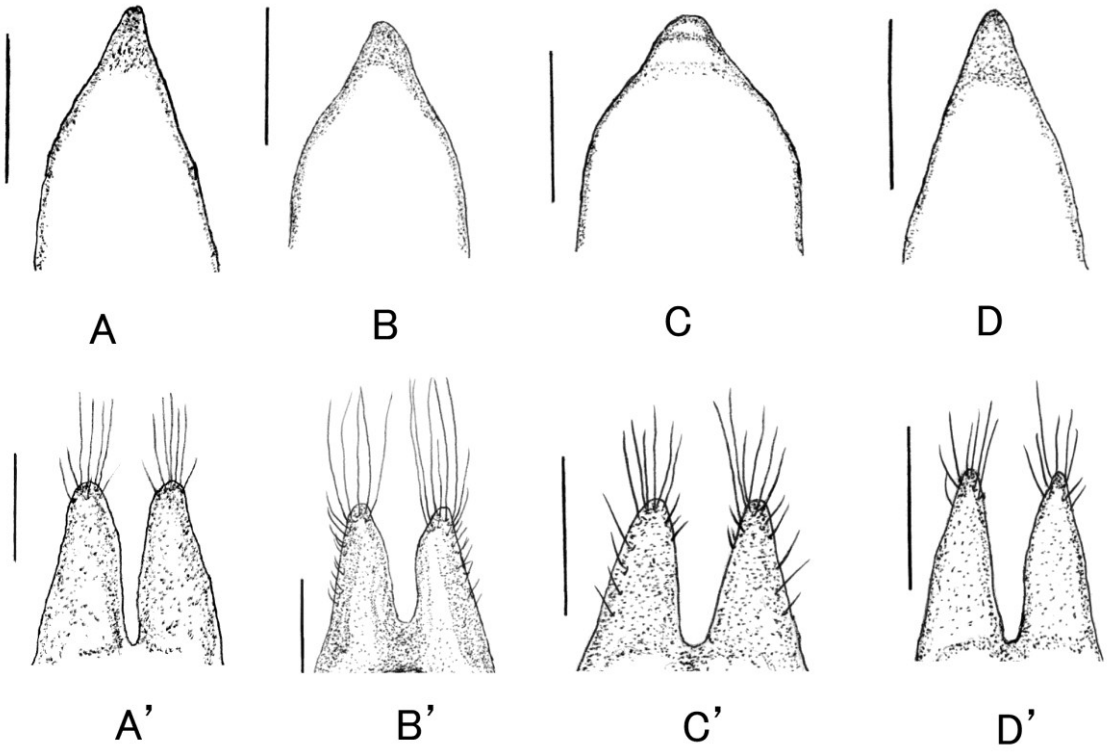

FIGURE 9. Apices of median lobe (A–D) and lateral lobes (A' –D') of *Cyriopalus* spp., scale bar: 0.5 mm. A, A'. *Cyriopalus wallacei*; B, B'. *C. sugiartoi* **sp. nov.**; C, C'. *C. morimotoi* **sp. nov.**; D, D'. *C. glacilicornis* **sp. nov**.

mm in female (n = 3); width 8 mm in male (n = 3), 7–13 mm in female (n = 3).

Holotype: ♂, (MZB Cole 173088), Bukit Soeharto, East Kalimantan, Indonesia, 1.II.1999, light trap, H. Makihara & Sugiarto leg. **Paratypes***:* 1♀, (MZB Cole 173088), 2.VI.1998, light trap, same locality and collector as the holotype; 1♀, (MZB Cole 173088), 14.IX.1998, light trap, same locality and collector as the holotype; 1♀, (MZB Cole 173088), 23.II.1998, light trap, H. Makihara leg., same locality as the holotype; 1♂, (MZB Cole 173088), 11.I.2000, same locality and collector as the holotype; 1♂, (MZB Cole 173088), Bukit Bangkirai, East Kalimantan, Indonesia, 23.IV.2000, light trap, same collector as the holotype.

Distribution. East Kalimantan, Indonesia.

Etymology. The name of this new species is dedicated to the late Dr. Katsura Morimoto for his great contribution to systematics of Coleoptera, especially in the superfamily Curculionoidea all over the world.

Comparative note. This new species belongs to the group in having the short flabellum of antennomere III. Its comparative comment will be mentioned together in the section of the following new species.

***Cyriopalus glacilicornis* Makihara, W. A. Noerdjito & Kahono, sp. nov.**

(Figs 1D, D, 2D, D', 3D, D', 4D, D', 5D, D', 6D, 7D, H, 8D, D', 9D, D')

ZooBank taxon LSID: zoobank.org:act:3E471C64-5241-4582-B63E-A300C7F54639

Trachylophus sp. 2: Makihara, 1999: 50, pl. 5, fig. 30.

Male. Color dark blackish brown, except for reddish ventral side, especially in reddish brown abdomen. Body covered with fine greyish to yellowish pubescence; antennal flabella covered with white hairs.

Head with an inter-antennal furrow forming a distinct fovea in elongated spindle-shape on occiput, rather deep in basal half, gradually shallower and lineally extended apically (Fig. 2D). Mandibles hooked, punctate, with indentations arranged in longitudinal furrows

except for each smooth apical portion. Frons raised in trapezoidal which is shallowly and sparsely punctate at base, irregularly and finely indentations except for the raised area. Occiput with dense fine indentations, covered with sparse pubescence.

Antennae 0.8 times as long as body; scape short and club-shaped, slightly bent inwardly; ratio of each antennomere: 8.1 : 2.0 : 6.8 : 4.7 : 4.1 : 5.4 : 6.1 : 5.4 : 6.8 : 6.8 : 6.8 : 37.2; antennomeres III to XI each with a slender flabellum ectoapically; flabellum of III slightly angular, pointed apically, about 0.5 times as long as the antennomere (Fig. 3D); flabellum of IX the longest, 5.8 times as long as the antennomere.

Pronotum 1.08 times as long as width, wider at base than at apex; sides almost parallel, slightly rounded near middle; disk provided with transverse wavy, irregular wrinkles (Fig. 5D).

Scutellum elongate, semicircular, finely punctate, densely pubescent especially at sides. Elytra slender, almost parallel-sided, convex, 3.5 times as long as width, 0.7 times as long as body, toothed at each apex.

Legs slender and thin; meso- and metafemora provided with pubescent cavity on each ventral side (Fig. 6D), mesofemoral cavity rounded (Fig. 7D), though metafemoral one elongate (Fig. 7H).

Prosternal process very wide, delated and suddenly sloping posteriorly, provided with a long weak ridge at middle, finely punctate on surface (Fig. 8D).

Male genitalia with ventral plate of median lobe elongated triangular (Fig. 9D). Lateral lobes of tegmen slender, covered with long hairs on ventral side of each apical portion (Fig. 9D').

Female. Body slightly larger than male. Head with inter-antennal furrow forming a distinct long fovea, which is slightly elongated and spindle-shaped in basal half, and rod-shaped in apical half (Fig. 2D').

Antennae 0.8 times as long as body; ratio of each antennomere: 11.0 : 2.2 : 11.0 : 10.5. : 11.0 : 9.9 : 8.8 : 8.8 : 8.8 : 7.7 : 9.9; antennomeres III to X provided with rather weakly serration ectoapically (Figs 3D', 4D'); serration of III particularly short, 0.03 times as long as the antennomere (Fig. 3D'); all serrations pointed, but the points becoming blunter toward apical antennomeres; XI subdivided into two parts, of which the basal part is 2.5 times as long as the apical part (Fig. 4D').

Pronotum 0.89 times as long as width, broader than in male (Fig. 5D').

Prosternal process wide, delated and suddenly sloping posteriorly, provided with a slightly raised portion in middle, broadly raised at base" (Fig. 8D').

Body length. 32 mm in male (n = 1), 45 mm in female (n = 1); width 8.5 mm in male (n = 1), 11 mm in female (n = 1).

Distribution. East Kalimantan, Indonesia.

Holotype: ♂, (MZB Cole 173089), Bukit Soeharto, East Kalimantan, Indonesia, Light traps, 15.X.1998, H. Makihara & Sugiarto leg.

Paratype: 1♀, (MZB Cole 173089), Bukit Bangkirai, East Kalimantan, Indonesia, light trap, 15.X.2000, H. Makihara & Sugiarto leg.

Etymology. The name of this new species, glacilicornis, is derived from the slender (glacilis) antennae (corne) compared to other species of the genus.

Comparative note. Among the members of *Cyriopalus*, the males of four species, *C. befui* Vitali, Gouverneur & Chemin, 2017 from Peninsular Malaysia, *C. kalimantanus* Vitali, Gouverneur & Chemin, 2017 from Kalimantan, *C. morimotoi* **sp. nov.**, and the present new species, *C. glacilicornis* **sp. nov.** are common in the short flabellum of antennomere III which is shorter than the antennomere. Of those species, *C. kalimantanus* differs from the other three species in having the transverse pronotum. *Cyriopalus morimotoi* **sp. nov.** and *C. befui* might be closely related each other because of sharing the structure on the pronotal disk with transverse wavy and irregular wrinkles. They differ in the following features: *C. morimotoi* **sp. nov.** has the small body (30–31 mm in length), whereas *C. befui* has the large body (35–40 mm in length) and the longer elytra (Comparison above is made based on only the male, because *C. befui* and *C. kalimantanus* **sp. nov.** were described only based on the males, and female is known). *Cyriopalus morimotoi* **sp. nov.** can be clearly distinguished from *C. glacilicornis* **sp. nov.** by the broad antennal flabella (Fig. 4C), whereas *C. glacilicornis* has slender ones (Fig. 4D). *Cyriopalus glacilicornis* **sp. nov.** also has more elongate pronotum than in *C. morimotoi* **sp. nov.** (Figs 5C, D). Females can be clearly distinguished by their serrations as well; *C. morimotoi* **sp. nov.** has the broad serrations of antennae (Fig. 4C'), whereas those of the latter are slender (Fig. 4D').

Key to species of the genus *Cyriopalus*

Since *Cyriopalus* is significantly different in characteristics between male and female, the key is shown separately. Females of *Cyriopalus befui*, *C. javanus* and *C. kalimantanus* are unknown.

A Antennae 12-segmented, rather long, 0.7 to 1.0 times as long as body; antennomeres III to XI each with a flabellum ectoapically (Fig. 1A–D) ..... Male; go to couplet 1

B Antennae 11-segmented; antennomeres III to X each with a sharp serration ectoapically; antennomere XI subdivided into two parts (Fig. 1A'–D') ..... Female; go to couplet 8

1. Flabellum of antennomere III longer than the antennomere (Fig. 3A, B) 2
— Flabellum of antennomere III shorter than the antennomere (Fig. 3C, D) 5
2. Flabellum of antennomere III very long, as long as pronotum (Java) ..... *C. javanus*
— Flabellum of antennomere III long, but shorter than pronotum..... 3
3. Flabellum of antennomere III long, longer than 2/3 length of pronotum 4
— Flabellum of antennomere III short, about 3/5 length of pronotum (Fig. 3B) (Borneo: East Kalimantan) ..... *C. sugiartoi* **sp. nov.**
4. Antennae stout, with flabella slightly thick; pronotum angulate at sides, provided with transverse irregular wrinkled ridge but without wavy furrows on disk; elytra rather stout, parallel-sided (Borneo: Sarawak, West Kalimantan, East Kalimantan; Malay Peninsula, Myanmar, Thailand) ..... *C. wallacei*
— Antennae slender, with flabella slightly thin; pronotum conical, slightly wider at base than at apex, provided with transverse wavy furrows; elytra rather slender, gradually tapering toward apex (Malay Peninsula, Borneo: Sabah, Sumatra)..... *C. hefferini*
4. Pronotum transverse (Borneo: West Kalimantan)..... *C. kalimantanus*
— Pronotum longer than width 6
6. Pronotum strongly rounded at sides (Malay Peninsula) ..... *C. befui*
— Pronotum almost parallel-sided (Fig. 5C, D) 7
7. Antennae stout and long, as long as body, with broad flabella (Fig. 4C) (Borneo: East Kalimantan)..... *C. morimotoi* **sp. nov.**
— Antennae slender and short, 0.8 times as long as body, with slender flabella (Fig. 4D) (Borneo: East Kalimantan)..... *C. glacilicornis* **sp. nov.**
8. Elytra slimmer, 4.8 times as long as pronotum (Malay Peninsula, Borneo: Sabah, Sumatra)..... *C. hefferini*
— Elytra somewhat short, less than 0.4 times as long as pronotum..... 9
9. Pronotum provided with transverse irregular wrinkles (Fig. 5A', B')..... 10
— Pronotum provided with irregular but transverse long wavy ridges (Fig. 5C', D') 11
10. Serration of antennomere IV slightly long, 1/5 length of the antennomere (Fig. 3B') (Borneo: East Kalimatan) ..... *C. sugiartoi* **sp. nov.**
— Serration of antennomere IV slightly short, 1/4 length of the antennomere, slightly curved outward (Borneo: Sarawak; Malay Peninsula, Myanmar, Thailand) ..... *C. wallacei*
11. Antennae stout; antennomere III clearly longer than IV (Fig. 3C') (Borneo: East Kalimantan) ..... *C. morimotoi* **sp. nov.**
— Antennae slender; antennomere III slightly longer than IV (Fig. 3D') (Borneo: East Kalimantan) ..... *C. glacilicornis* **sp. nov.**

***Lateropalus crassicornis* Makihara, W. A. Noerdjiti & Kahono, sp. nov.**

(Figs 10A-J, 11A-D, 12A, 13A-F, 14A)

ZooBank taxon LSID: zoobank.org:act:59DC0002-6026-45BC-BF45-BDFBDB2297A0

Cyriopalus pascoei (non Thomson, 1878): Makihara, 1999: 50, pl. 4, fig. 25.

Male. Color blackish brown except for dark reddish brown abdomen. Body densely covered with fine greyish pubescence, giving the appearance of pale greyish coloration; pronotum covered with yellowish brown pubescence.

Head with inter-antennal furrow forming a distinct fovea on occiput, that is elongate spindle-shaped in basal half and rod-shaped in apical half (Fig. 10C). Mandibles hooked, with a pair of knob-like ridges at each base, provided with longitudinal sulcus, covered with dense pubescence except for each apical part (Fig. 10B). Frons densely covered with rather long

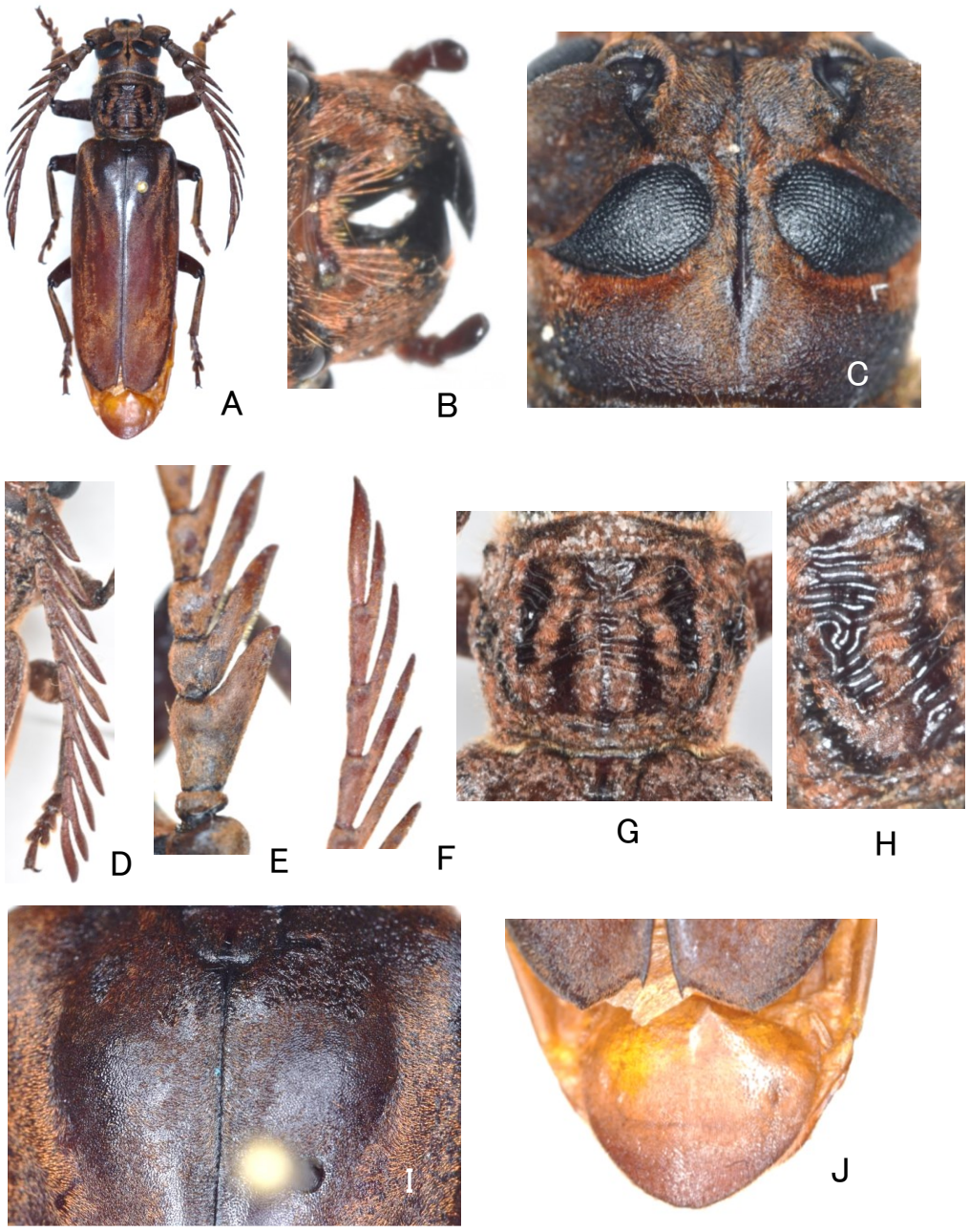

FIGURE 10. *Lateropalus crassicornis* **sp. nov.**, male, dorsal view. A. Holotype; B. mandible; C: head; D. antennomere I–XII; E. antennomere III–V; F. antennomere IX–XII; G. pronotum; H. oblique view; I. basal part of elytra; J. elytral apices.

pubescence. Occiput densely covered with fine pubescence.

Antennae 0.5 times as long as body; ratio of each antennomere: 12.2 : 2.0 : 10.2 : 6.9 : 7.7 : 7.3 : 6.5 : 6.9 : 8.5 : 8.1 : 9.3 : 14.2; antennomeres III to XI each with a flabellum ectoapically (Fig. 10D); III sparsely knobbed, strongly swollen apically, but widely concave, with flabellum pointed, slightly longer than the antennomere; IV rather sparsely knobbed, swollen apically, but widely concave, with flabellum pointed, about 2.0 times as long as the antennomere; V sparsely

FIGURE 11. *Lateropalus crassicornis* **sp. nov.**, ventral side. A. Holotype; B. prosternal process; C. thorax; D. abdomen.

knobbed, weakly concave in apical half, with flabellum pointed, about 2.2 times as long as the antennomere (Figs 10E, F); flabella of III and IV thick and robust; flabellum of V rather slimmer (Figs 10E, 12A); flabella of VI to XI longer than each antennomere; XII elongate, spindle-shaped, bluntly pointed (Fig. 10F).

Pronotum transverse, 0.83 times as long as width, widest at apical 2/5; basal margin slightly narrower than apical margin; disk provided with 15 transverse wrinkles in a wavy pattern, the number of wrinkles increasing in a whirling pattern to 22 near middle; glabrous areas on disk forming black irregular stripes, arranged as a thin, long median stripe, two thick and two thin longitudinal stripes on each side (Fig. 10G, H).

Scutellum inverted trapezoidal, roundish, covered with pubescence though glabrous near

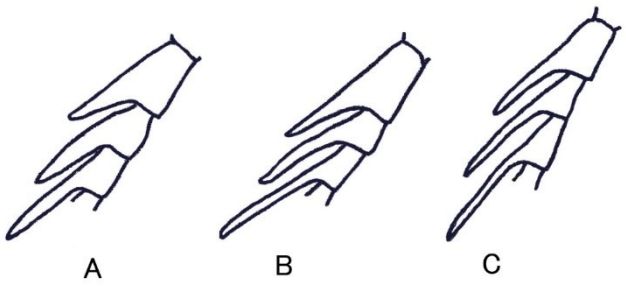

FIGURE 12. Antennomeres III–V and their flabella (B, C: Transcription from Vitali *et al*., 2017). A. *Lateropalus gracilicornis*. B. *L. pascoei*. C. *L. continentalis.*

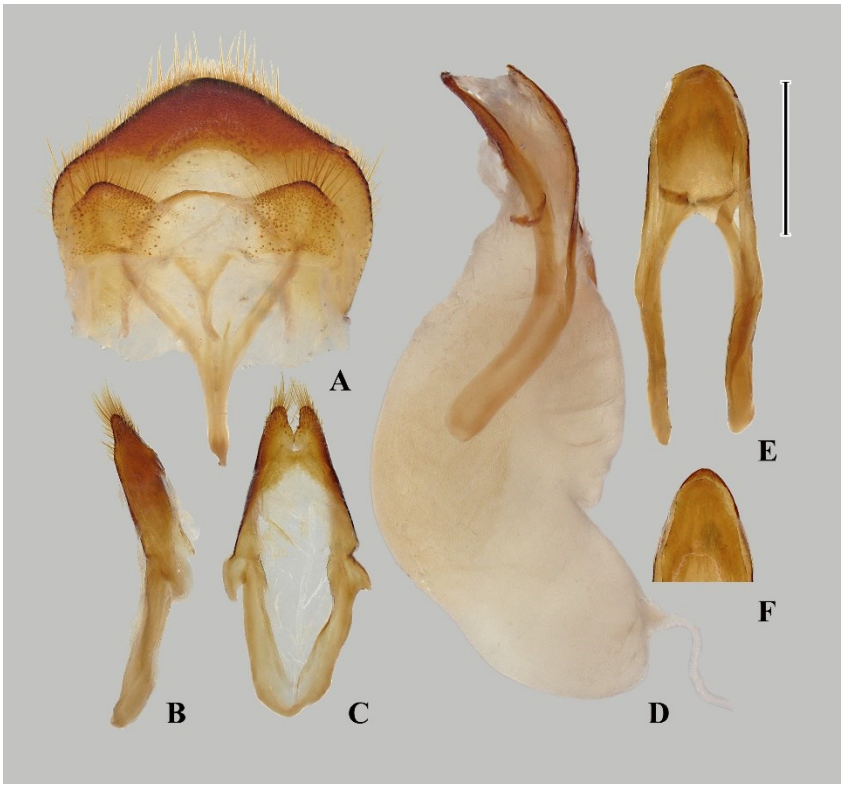

FIGURE 13. Male genitalia of *Lateropalus crassicornis* **sp. nov.** A. Abdominal segments VIII–IX, ventral view; B. tegmen, lateral view; C. ditto, dorsal view; D. median lobe with inflated endophallus, lateral view; E. median lobe, dorsal view; F, ditto, apical part, dorsal view. Scale 1 mm.

middle and forming a black crest (Fig. 10I).

Elytra parallel-sided, finely punctate in basal part (Fig. 10I), roughly punctate on apical portions, oblique and arcuately truncate at each apex, with a sharp sutural projection (Fig. 10J).

Legs short and flat; meso- and metafemora provided with a cavity on ventral side near each apex.

Prosternal process wide and posteriorly sloping, provided with a small ridge on narrow central area (Fig. 11B). Metasternum finely and densely punctate (Fig. 11C). Abdominal sternites III to VII sparsely covered with pubescence (Fig. 11D); sternite VIII with insertion hole for male genital organ (Fig. 11D).

Male genitalia with ventral plate of median lobe weakly projected (Fig. 13D, F). Tegmen with slightly long lateral lobes (Figs 13, 14A) and elongated ringed part (Figs 13, 14A)

Female. Unknown.

Body length. 53 mm (including abdominal sternite VIII), width. 10 mm (n = 1).

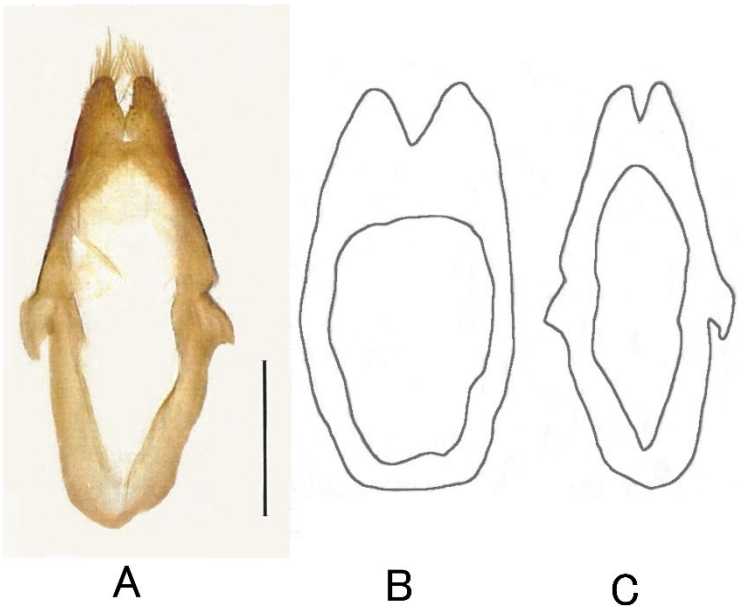

FIGURE 14. Tegmen of *Lateropalus* spp., ventral view. Simplified drawings (B and C: modified from Vitali *et al*., 2017). Scale: 1 mm. A. *Lateropalus crassicornis* **sp. nov.**; B. *L. pascoei* (Thomson); C. *L. continentalis* Vitali *et al*.

Holotype: ♂, (MZB, Cole 173090), Bukit Soeharto, East Kalimantan, Indonesia, 21.IX.1998, light trap, H. Makihara & Sugiarto leg.

Distribution. East Kalimantan, Indonesia.

Etymology. The specific name, crassicornis, is derived from the characteristic thick (crassum) antennae (corne) of this new species.

Comparative note. Only two species have so far been known under this genus, *Lateropalus pascoei* (Thomson, 1878) from Borneo and the Malay Peninsula, and *L. continentalis* Vitali, Gouverneur & Chemin, 2017 from Laos and Vietnam. The males of three species including the new species are clearly distinguished from the following key (Female of *Lateropalus* species is only known in *L. pascoei*).

Key to species of the genus *Lateropalus* in male

1. Flabellum of antennomere III robust (Fig. 12A, B) 2
— Flabella of antennomere III, IV and V slimmer (Fig. 12C); pronotum with median transversal ridges composed of 5 to 8 lateral carinae; tegmen with slightly long lateral lobes (Fig. 14C) and elongated oval shaped ringed part (Fig. 14C) (Laos, Vietnam) .... *L. continentalis*
2. Flabella of antennomere IV and V robust (Fig. 12A): pronotum with median transversal ridges composed of 15 lateral carinae, some of which are swirling (Fig. 10G, H); tegmen with slightly short lateral lobes (Fig. 14A) and elongated ringed part (Fig. 14A) (Borneo: East Kalimantan) .... *L. crassicornis* **sp. nov.**
— Flabellum of antennomere IV rather stout thou V rather slimmer (Fig. 12B); pronotum with median transversal ridges composed of 9 to 12 lateral carinae; tegmen with short and robust lateral lobes (Fig. 14B) and with rectangle shaped ringed part (Fig. 20A) (Borneo: Sabah, Malay Peninsula)..... ..... *L. pascoei*

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