Elytra, Tokyo, **23** (1): 61–69, May 15, 1995

Three New Species of the Passalid Beetles (Coleoptera, Passalidae) from Borneo

Kazuo IWASE

3–15–10, Shirasagi, Nakano-ku, Tokyo, 165 Japan

Abstract Two new species of the genus *Aceraius* and one new species of the genus *Ophrygonius* are described from Borneo. *Aceraius symmetricus* sp. nov. has a strange left mandible, *A. katsurae* sp. nov. is related to *A. boucheri*, and *O. planus* sp. nov. is related to *O. inaequalis*.

Aceraius symmetricus sp. nov.

(Figs. 1–3)

Black and shining; rather flat.

Antenna with six rather long lamellae. Labrum with anterior border slightly emarginate, anterior angles rounded. Right mandible: anterior lower tooth rather large, sharp, smaller than lowest terminal tooth; dorsal border behind upper terminal tooth indistinctly convex. Left mandible: anterior lower tooth smaller than lowest terminal tooth, bifid, upper tip sharp, lower tip rounded; upper terminal tooth with a rather large swelling at the dorsal base; upper tooth low, located just before the middle of mandible. Anterior border of middle part of mentum bi-emarginate, and the ridge along anterior border extending to lateral pieces; lateral piece divided into two portions by the transverse ridge, one forming the anterior lower portion and the other posterior higher portion (in ventral view); middle part smooth and hairless, lateral piece rather densely hairy.

Head symmetrical, with anterior angle angulate, but not projecting anteriorly. Outer tubercle nearly acute isosceles triangular, both (internal and external) borders slightly emarginate, apex rounded. Inner tubercle distinct, a little pedunculate in lateral view. Central tubercle low, frontal ridge extending to base of inner tubercle, accompanied with anterior groove. Parietal ridge a little raised near distal ends, supraoccipital ridge strongly bent inward at the lateral ends, and joining supraorbital ridge. Frontal area semicircular, smooth and hairless; the depressed area of head finely rugose anteriorly, densely covered with hair-bearing punctures before and behind parietal ridge. Hypostomal process smooth or with scattered punctures antero-externally.

Pronotum polished, median groove very fine, anterior angle not produced anteriorly, lateral marginal groove with a series of dense hair-bearing punctures, scar

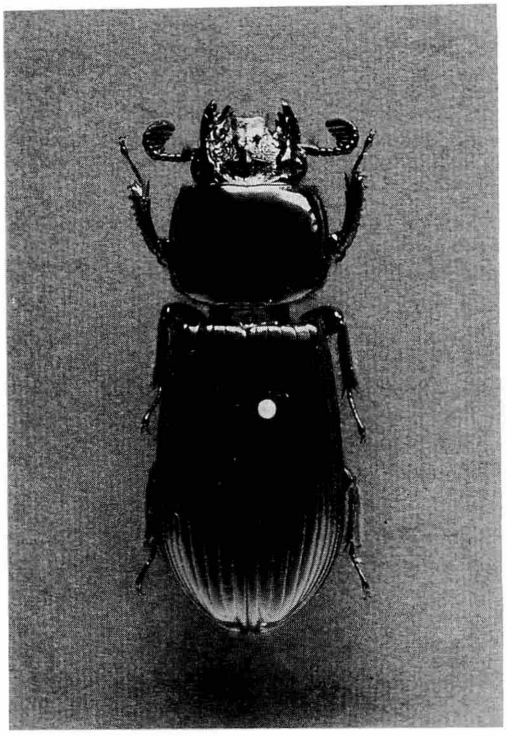


Fig. 1. *Aceraius symmetricus* sp. nov.; dorsal aspect.

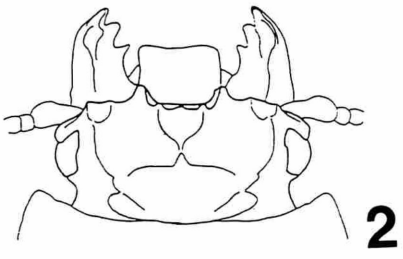


Fig. 2. *Aceraius symmetricus* sp. nov.; head.

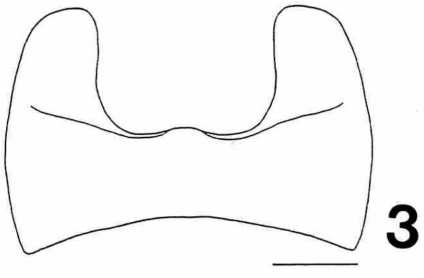


Fig. 3. *Aceraius symmetricus* sp. nov.; mentum (scale: 1 mm).

densely covered with hair-bearing punctures.

Elytra widest at basal 2/3, grooves finely but rather distinctly punctured, anterior vertical protion with scattered hairs between suture and fifth groove, and with rather dense ones in front of shoulder.

Posterior plate of prosternum almost coriaceous and opaque, but smooth and shining at the middle. Mesosternum polished, scar narrow, sharply defined, extending to near posterior border, finely roughened. Central area of metasternum polished;

lateral area sharply defined throughout, rather densely covered with hair-bearing punctures; anterior intermediate area rather densely covered with hair-bearing punctures; posterior intermediate area smooth with confluent dents along central and lateral areas. Second to fourth abdominal sternites with rather large lateral scars, respectively.

Length: 38–40 mm; elytral width: 14–15 mm.

Holotype: ♀, V～VI–1994, Crocker Range near Keningau, Sabah, Borneo; paratypes: 2♀♀, same data as the holotype; 1♀, VI～VII–1994, same locality as the holotype. The holotype will be preserved in the National Science Museum (Nat. Hist.), Tokyo.

This new species is distinct in having the symmetrical head and the swelling of the left upper terminal tooth.

Aceraius katsurae sp. nov.

(Figs. 4, 5a, 6)

Black and shining; rather convex.

Antenna with three short and three somewhat longer lamellae. Labrum hairy,

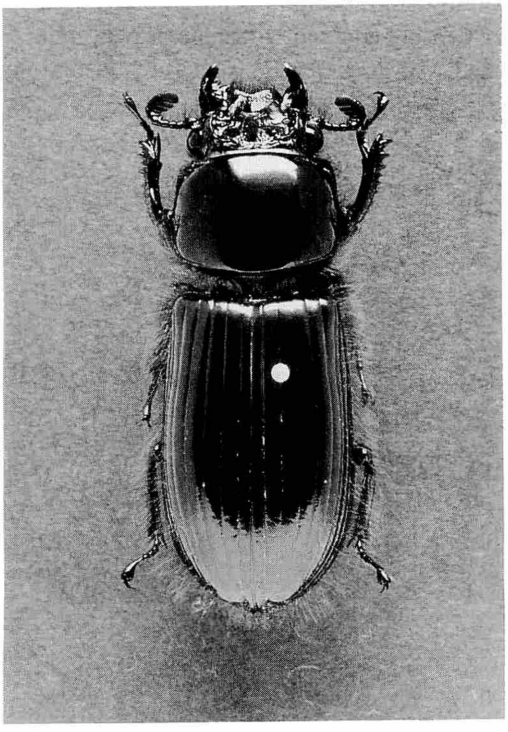


Fig. 4. *Aceraius katsurae* sp. nov.; dorsal aspect.

angles rounded, anterior border emarginate, left angle more projecting anteriorly than the right one. Right mandible: lowest terminal tooth distinct, located a little more anteriorly than anterior tip of upper denticle of anterior lower tooth; lower denticle of anterior lower tooth located more posteriorly than anterior tip of upper denticle; anterior tip of upper denticle of anterior lower tooth nearly rectangular, posterior one obtuse. Left mandible: anterior lower tooth much larger than lowest terminal tooth, bifid above and below at the apex; upper tooth highly raised at posterior part of mandible. Mentum without scar; middle part sparsely, lateral pieces densely covered with hair-bearing punctures. Eye gibbous, more strongly projecting externally than eye canthus.

Head asymmetrical, anterior angle of head not projecting anteriorly, located more posteriorly than apex of inner branch of supraorbital ridge. Left outer tubercle produced internally, obliquely truncate at distal end; external border with a slight swelling near base, internal apex slightly bent downward. Right outer tubercle short, produced anteriorly, obliquely truncate at distal end; external apex located more anteriorly than internal one, acute, and very slightly pointed outward; internal apex very obtuse. Inner tubercle rather large; ridge between the two inner tubercles emarginate in dorsal view. Frontal ridge accompanied with anterior groove, extending behind inner tubercle. Parietal ridge weakly curved, and a little raised near distal end; supraorbital ridge joining supraoccipital one. Frontal area rough and hairless; the depressed area rather densely covered with hair-bearing punctures.

Pronotum polished with hair-bearing punctures in marginal grooves and lateral

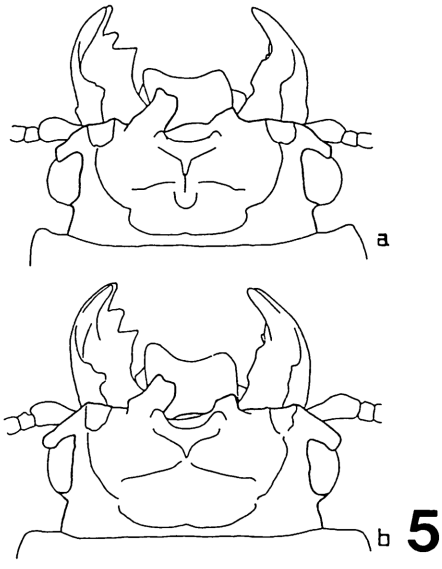


Fig. 5. *Aceraius* spp., head; a, *A. katsurae* sp. nov.; b, *A. boucheri* KON, ARAYA et JOHKI.

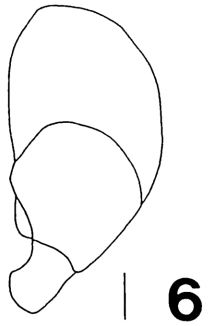


Fig. 6. *Aceraius katsurae* ap. nov.; male genitalia, lateral view (scale: 0.5 mm).

scars, and along lateral borders; median groove indistinct.

Seventh rib of elytron rather sparsely hairy; eighth rib hairless; ninth rib densely hairy anteriorly, sparsely hairy posteriorly; tenth rib rather densely hairy just behind shoulder, hairless at the remaining portion.

Posterior plate of prosternum rather densely hairy at the middle. Mesosternum hairless; scar finely rough, short. Central area of metasternum smooth; anterior intermediate and lateral areas densely hairy; posterior intermediate area smooth at the middle, densely hairy along posterior border, with irregular dents along central area. Second abdominal sternite rather densely hairy posteriorly. Distal end of fifth tarsus with hood-like projection dorsally in all legs.

Male genitalia as shown in Fig. 6.

Body length: 39–43 mm; elytral width: 14–15 mm.

Holotype: ♂, VI～VII–1994, Crocker Range near Keningau, Sabah, Borneo; paratypes, 1♂, same data as the holotype; 1♂, V～VI–1994, same locality as the holotype. The holotype will be preserved in the National Science Museum (Nat. Hist.), Tokyo.

This new species is very similar to *A. boucheri* KON, ARAYA et JOHKI, though distinguished from the latter as follows: body a little larger, eye gibbous, elytra more densely hairy, and hairs much longer.

Aceraius boucheri KON, ARAYA et JOHKI

(Fig. 5b)

Aceraius boucheri KON, ARAYA et JOHKI, 1993, p. 712.
Aceraius moescheri: KON & JOHKI, 1992, p. 211 (not KUWERT).

Specimen examined. 1♀, VI～VII–1994, Crocker Range near Keningau, Sabah, Borneo.

Genus *Ophrygonius* ZANG

Ophrygonius ZANG, 1904, p. 697.——GRAVELY, 1914, p. 196.
Ophrygonius: GRAVELY, 1914, pp. 284, 320 (part); 1918, pp. 79, 86 (part).——HINCKS & DIBB, 1935, p. 79 (part); 1958, p. 22 (part).——BOUCHER, 1993, pp. 156, 157, 158 (part).

Type species: *Ophrygonius quadrifer* ZANG (monotypical).

The genus *Ophrygonius* was established by ZANG (1904), and the generic definition was later modified by GRAVELY (1914, 1918) and BOUCHER (1993), mainly based on the shape of mandibles.

In this paper, the present author regards the genus *Ophrygonius* as the original definition with a little adjustment, that is, as having the following combination of characters: 1) antenna with four lamellae, fifth and sixth antennal segments without pubescence, 2) labrum with anterior border more or less bisinuate, 3) dentition of mandibles complete, teeth not modified, upper teeth located at the middle, not highly

raised, 4) mentum without primary scar, 5) frontal ridge without groove, 6) frontal area quadrangular, 7) pronotum with deep median groove, 8) punctures of elytron distinct, weak in dorsal grooves, strong in lateral ones.

Ophrygonius planus sp. nov.

(Figs. 7, 8a, 9)

Black and shining; flat.

Antenna with four short lamellae. Labrum with anterior border very slightly bisinuate; right angle more strongly rounded. Right mandible: anterior lower tooth smaller than lowest terminal tooth, and smaller than left anterior lower tooth. Left mandible: anterior lower tooth a little larger than lowest terminal tooth, not bifid. Middle part of mentum smooth and hairless, with a pair of large depressions along anterior border; lateral piece with scattered hair-bearing punctures.

Head with anterior angle sharply angulate, but not strongly projecting anteriorly. Left outer tubercle a little larger than right one, but similar in shape to each other, its external border produced antero-internally and slightly bent anteriorly near apex, with an obtuse convexity near base, internal border produced anteriorly and bent

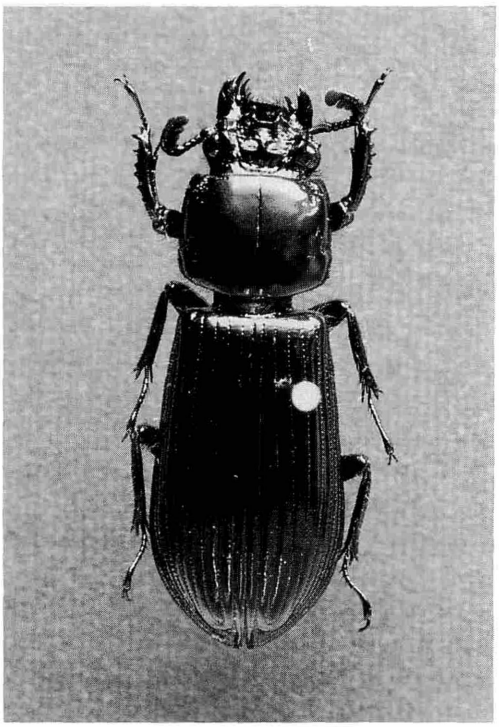


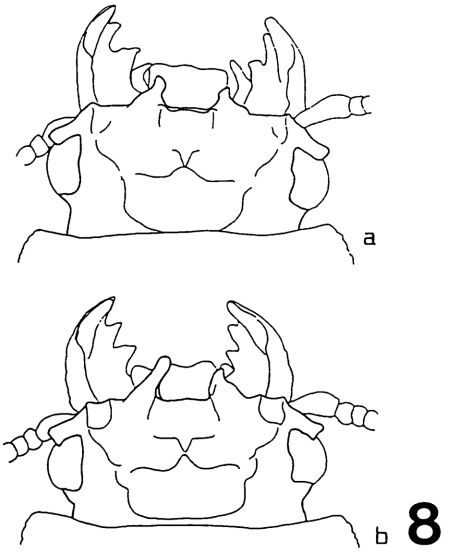
Fig. 7. *Ophrygonius planus* sp. nov.; dorsal aspect.

externally near apex. Inner tubercle obtuse, located at the base of outer tubercle; ridge between the two inner tubercles bisinuate. Central tubercle obtuse in lateral view; frontal ridge very fine near central tubercle, indistinct at the middle, obtuse and costate anteriorly, and reaching inner tubercle; parietal ridge slightly sinuate. Frontal area smooth and hairless, slightly depressed, parallel anteriorly; the depressed area of head almost hairless, with a few hairs behind parietal ridge. Hypostomal process smooth and hairless.

Pronotum polished with deep median groove, anterior border weakly sinuate, anterior angle not produced anteriorly, lateral border serrate anteriorly; side with scattered punctures behind anterior angle and in lateral scar, and with a few hairs under scar and along lateral border.

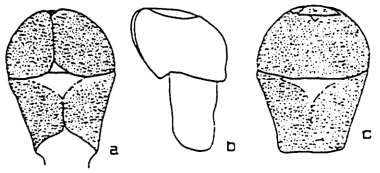
Elytra widest at basal 2/3; punctures of first to fifth grooves small and rounded but distinct, those of sixth to ninth grooves transverse, larger than those of dorsal ones, tenth groove with one or two rows of small punctures. Anterior vertical portion sparsely hairy, hairs long in front of shoulder; seventh rib with much scattered hairs near base, eighth rib hairless, ninth rib with rather scattered hairs at basal 1/3, tenth rib hairless, and tenth groove with scattered hairs at basal 1/4.

Prosternum almost coriaceous, with posterior plate sparsely hairy at the middle; median keel rather smooth and shining. Mesosternum polished at the middle, lateral scar large triangular, rugose, extending to posterior border. Central area of metasternum polished; lateral area widened posteriorly, sharply defined from inter-



8

Fig. 8. *Ophrygonius* spp. head; a, *O. planus* sp. nov.; b, *O. inaequalis* (BURMEISTER).



9

Fig. 9. *Ophrygonius planus* sp. nov.; male genitalia: a, dorsal view, b, lateral view, c, ventral view (scale: 0.5 mm).

mediate area; anterior intermediate and lateral areas rather densely covered with hair-bearing punctures; posterior intermediate area almost smooth with scattered dents at the middle. Second abdominal sternite with rather scattered hair-bearing punctures; third to fifth ones with narrow lateral scars, which are finely punctured and extending to near the middle; sixth one with lateral scars extending along posterior border. Anterior tibia with seven external teeth including apical one; middle tibia with rather scattered hairs; posterior tibia as middle one.

Male genitalia as shown in Fig. 9.

Length: 26 mm; elytral width: 9 mm.

Holotype: ♂, V～VI–1994, Crocker Range near Keningau, Sabah, Borneo. The holotype will be preserved in the National Science Museum (Nat. Hist.), Tokyo.

This new species is related to *O. inaequalis* (BURMEISTER), but is easily distinguished by the shape of their outer tubercles of head.

Ophrygonius inaequalis (BURMEISTER)

(Fig. 8b)

Passalus inaequalis BURMEISTER, 1844, p. 468.
Basilianus inaequalis: KAUP, 1871, p. 56.
Ophrygonius inaequalis: ZANG, 1905, p. 192.——GRAVELY, 1914, pp. 227, 285, 320, 332, pl. 12, fig. 24–24a; 1918, pp. 87, 89, pl. 1.
Basilianus sinkepicus KUWERT, 1898, p. 339 (after GRAVELY).
Ophrygonius quadrifer ZANG, 1904, p. 697, text-fig. 3; 1905, p. 192 (syn. of *O. inaequalis*).

The identification was made by the GRAVELY (1914, 1918)'s redescription and key.

Specimens examined. 1♀, VI–1990, Mt. Serapi, Sarawak, Borneo; 1♀, V–1993, Sipura Is., Mentawai Islands, Sumatera Barat.

Acknowledgement

I would like to thank Dr. S.-I. UÉNO of the National Science Museum (Nat. Hist.), Tokyo, for reviewing this manuscript. My thanks also goes to Mr. M. FUJIOKA, Tokyo, for his help to my study of the passalid beetles.

要　約

岩瀬一男：ボルネオ産クロツヤムシ類の3新種．——ボルネオ産のクロツヤムシから，*Aceraius*属の2種と*Ophrygonius*属の1種を新種として記載した．*A. symmetricus* sp. nov. は左右対称の頭部をもち，左大顎の上面先端近くに明瞭な瘤状突起をもつことを特徴とする．*A. katsurae* sp. nov. は*A. boucheri*に似ているが，体は大型，眼が大きくまた上翅の毛も長く密であることで区別される．*O. planus* sp. nov. は*O. inaequalis*に近縁であるが，より左右対称に近い頭部をもち，上翅の側方に毛のあることで区別される．なお，*Ophrygonius*属の範囲としては，ZANGの原記載に近いものを設定し，GRAVELYやBOUCHERの考え方とは異なるものである．

Literature Cited

BOUCHER, S., 1993. Référence spéciale sur les caractères morphologiques—clés séparant les genres indo-malais *Aceraius* KAUP et *Ophrygonius* ZANG, avec les descriptions de sept nouveaux *Ophrygonius* (Coleoptera, Passalidae). *Nouv. Revue Ent.*, (n.s.), **10**: 153–172.

GRAVELY, F. H., 1914. An account of the Oriental Passalidae based primarily on the collection in the Indian Museum. *Mem. Ind. Mus.*, **3**, 177–353.

———1918. A contribution toward the revision of the Passalidae of the world. *Ibid.*, **7**: 1–144.

HINCKS, W. D., & J. R. DIBB, 1935. Passalidae. *In* JUNK, W., & S. SCHENKLING (eds.), *Coleopterorum Catalogus*, pars 142: 1–118. W. Junk, Berlin.

——— & ——— 1958. Passalidae. *In* HINCKS, W. D. (eds.), *Coleopterorum Catalogus Supplementa*, pars 142: 1–32. W. Junk,'s-Gravenhage.

KON, M., K. ARAYA & Y. JOHKI, 1993. A new species of *Aceraius* (Coleoptera, Passalidae) from Sabah, Borneo, with redescription of *A. moeschleri* KUWERT. *Jpn. J. Ent.*, **61**: 711–717.

——— & Y. JOHKI, 1992. Passalid Beetles (Coleoptera, Passalidae) collected from Sabah, Borneo, with special reference to their colony composition and habitats. *Elytra, Tokyo*, **20**: 207–216.

ZANG, R., 1904. *Parapelopides* und *Ophrygonius*, zwei neue Gattungen der Passaliden (Coleoptera). *Zool. Anz.*, **27**: 694–701.

——— 1905. Neotropische und indo-australische Passaliden. *Dt. ent. Z.*, **1905**: 189–192.