

Two New Cnodalonine Beetles (Coleoptera, Tenebrionidae) from Southeast Asia

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Abstract Two new cnodalonine tenebrionid beetles from Southeast Asia are described under the names *Augolesthus* (s. str.) *yoshihikoi* sp. nov. and *Tetragonomenes kurosawai* sp. nov.

On this occasion, I would like to select two small but very beautiful species of the tenebrionid tribe Cnodalonini, one belonging to the genus *Augolesthus* and the other to the genus *Tetragonomenes*. This small paper is dedicated to the memory of the late Dr. Yoshihiko KUROSAWA, ex-director of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo, who constantly led me to the study of coleopteran insects, particularly the dung beetles, for 45 years since the time of my junior high school student.

I wish to acknowledge my indebtedness to Dr. Wolfgang SCHAWALLER, Staatliches Museum für Naturkunde in Stuttgart for permission to examine invaluable specimens preserved in that museum. Appreciation should be expressed to Mr. Seiji MORITA (Tokyo) for taking photographs inserted in this paper.

Augolesthus (s. str.) *yoshihikoi* sp. nov.

(Figs. 1, 3 & 4)

Brownish black with weak dark greenish lustre, head, pronotum, scutellum, elytra and legs dark blue, elytra with feeble greenish lustre, basal parts of antennae, tarsi, mouth parts and gula yellowish brown, hairs on ventral surface of protibiae rather golden; dorsal surface strongly, metallicly shining, ventral surface moderately and somewhat alutaceously so. Body elongated elliptical, moderately convex above.

Head subhexagonal, gently inclined apicad, covered with microscopically isodiametric sculpture, moderately closely but rather irregularly punctate; clypeus weakly raised, somewhat widely V-shaped, triangularly emarginate in front, each side of the emargination rounded, fronto-clypeal border grooved; genae rather ax-shaped, raised laterad, depressed in basal parts, scattered with minute punctures; frons wide, gently declined to fronto-clypeal groove, precipitous in lateral parts, bordered from tempora by a deep sulcus, diatone about 3.3 times the width of transverse diameter of an eye.

Eyes rather transversely comma-shaped in dorsal view, obliquely inlaid into head, and gently convex laterad. Antennae moderately clavate, gently flattened, reaching the middle of pronotum, ratio of the length of each segment from base to apex: 0.39, 0.2, 0.37, 0.32, 0.31, 0.28, 0.31, 0.34, 0.32, 0.36, 0.58.

Pronotum subquadrate, 1.36 times as wide as long, widest slightly behind the middle; apex weakly produced in middle, gently sinuous on each side, neither bordered nor margined; base moderately bisinuous, bordered by a punctate groove; sides gently declined to lateral margins, which are bordered by grooves and sparsely crenulate; front angles rectangular, hind angles acute; disc moderately and evenly convex, weakly micro-isodiametrically sculptured, moderately scattered with punctures, which are slightly larger than those on frons, and sometimes intermixed with smaller ones. Scutellum rather widely subcordate, feebly sculptured, sparsely scattered with minute punctures.

Elytra somewhat elongated elliptical, 1.63 times as long as wide, 2.69 times the length and 1.14 times the width of pronotum, subparallel-sided; dorsum rather strongly convex, transversely depressed at basal 2/9, swollen at basal 1/8, depressed in area between the swellings; disc very feebly micro-isodiametrically sculptured, finely punctato-striate, the striae sometimes interrupted in medio-basal part, the punctures somewhat longitudinal; intervals slightly convex in interior parts and strongly convex in lateral parts, microscopically, sparsely punctate, very weakly, somewhat transversely micro-aciculate; humeri narrowly swollen; apices simply rounded.

Profemur with a tooth at the anterior edge of dorsal face near apex; male protibia obtusely toothed at basal 1/3 on dorsal face, noticeably gouged and haired in apical 2/3 of ventral face; ratios of the lengths of pro-, meso- and metatarsomeres: 0.24, 0.18, 0.2, 0.22, 1.2; 0.27, 0.21, 0.2, 0.22, 1.22; 0.62, 0.31, 0.23, 1.22.

Male genitalia slender, 2 mm in length and 0.27 mm in width, very slightly twisted, feebly constricted in an area between basal piece and lateral lobes, gently curved in lateral view; fused lateral lobes rather nib-shaped, 0.49 mm in length.

Body length: 7.4 mm.

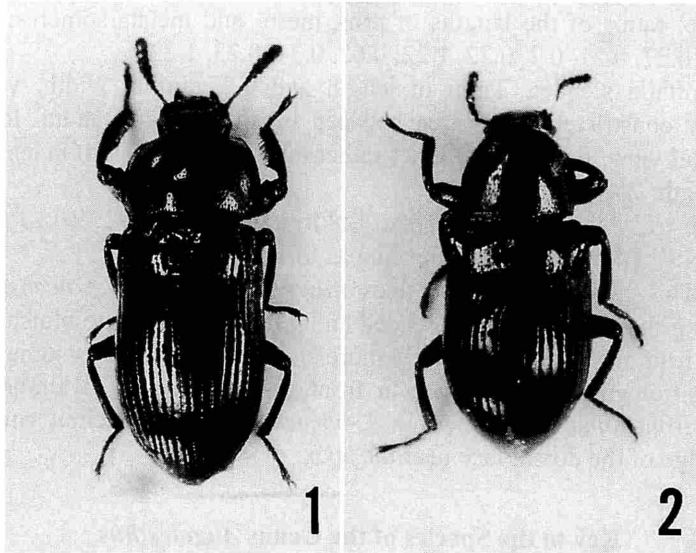
Holotype: ♂, "N-Sumatra: Medan/Bukit Lawang/11.-12. 10, 1990/leg. A. RIEDEL" (SMNS). Paratype: 1 ex., same data as for the holotype.

Notes. This new species resembles *Augolestus* (s. str.) *borneensis* (KULZER, 1952) in having the body subparallel-sided and with dorsal surface bluish, but can be distinguished from the latter by the body more elongate with clypeus somewhat widely V-shaped and triangularly emarginate in front, femora and tibiae almost dark blue (these except front tibiae light brown in *A. borneensis*), and profemur with a tooth at the anterior edge of the dorsal face near the apex.

Key to the Species of the Genus *Augolesthus*

- 1(4) Elytra neither transversely depressed nor convex anteriorly; protibiae neither thickened nor haired; elytra with a transverse fascia before the middle

- Subgenus *Falsoaugolesthus* MASUMOTO.
- 2(3) Head convex but weakly depressed; pronotum more closely punctate, with apex more strongly produced forwards; elytral fascia shorter, lying in basal 2/5; intervals flat; 8–8.5 mm; Taiwan *A. (F.) kurosawai* MASUMOTO
- 3(2) Head convex but not depressed; pronotum less closely punctate, with apex less strongly produced forwards; elytral fascia longer, lying in basal 1/3; intervals gently convex; 7–8 mm; North Vietnam *A. (F.) pulcher* (PIC).
- 4(1) Elytra transversely depressed anteriorly and often convex before the depression; protibiae distinctly thickened and haired; elytra with a transverse fascia in some species but without in others
- Subgenus *Augolesthus* MOTSCHULSKY.
- 5(12) Elytra without transverse fascia in the middle.
- 6(7) Body rather elongate; elytral striae deeper; intervals more strongly convex; larger species (7.5–8.8 mm); Thailand, Laos. *A. thailandicus* MASUMOTO.
- 7(6) Body oblong-ovate; elytral striae shallower; intervals less strongly convex; smaller species (6.2–8.5 mm).
- 8(9) Elytral intervals flat; punctures on dorsal surface weaker; lateral margins of pronotum not crenulate; 7 mm; Singapore *A. protensus* (FAIRMAIRE).
- 9(8) Elytral intervals distinctly convex in lateral portions; punctures on dorsal surface stronger; lateral margins of pronotum more or less crenulate.



Figs. 1–2. Habitus. — 1, *Augolesthus* (s. str.) *yoshihikoi* sp. nov., holotype, ♂; 2, *Tetragonomenes kurosawai* sp. nov., holotype, ♂.

- 10(11) Profemur with a tooth at anterior edge of dorsal face near apex; clypeus noticeably triangularly emarginate in front; 7.4 mm; Sumatra
 *A. yoshihikoi* sp. nov.
- 11(10) Profemur without tooth at anterior edge of dorsal face near apex; clypeus not so noticeably triangularly emarginate in front; 6.2–8.5 mm; Borneo
 *A. borneensis* (KULZER).
- 12(5) Elytra with a distinct transverse fascia in the middle.
- 13(14) Profemur without tooth at anterior edge of dorsal face near apex; elytral fascia lying slightly before the middle; 8–9.5 mm; Borneo, Sumatra
 *A. purpureofasciatus* MOTSCHULSKY.
- 14(13) Profemur with a tooth at anterior edge of dorsal face near apex.
- 15(16) Body noticeably robust (profemur with a distinct tooth near apex; elytral fascia short and lying in basal 1/3, with anterior margin produced forwards); 8.5–9 mm; Borneo *A. latus* (KULZER).
- 16(15) Body noticeably slender.
- 17(18) Female (type!): pronotum with apex distinctly narrower than base; profemoral tooth triangular and acute; elytral fascia shorter, lying in basal 1/3; 9 mm; Java *A. violaceofasciatus* (PIC).
- 18(17) Female: pronotum somewhat barrel-shaped, with apex as wide as base; profemoral tooth obtuse; elytral fascia longer, lying in basal 2/5; 7–8 mm; Malay Peninsula *A. andoi* MASUMOTO.

***Tetragonomenes kurosawai* sp. nov.**

(Figs. 2, 5 & 6)

Brownish black with weak dark bluish tinge, head golden green with feeble bluish tinge, pronotum, scutellum and dorsal surfaces of legs dark blue with very feeble greenish tinge, basal 1/4 of elytra dark blue, apical 3/4 of elytra deep purple; head sericeously shining, pronotum, scutellum and legs moderately shining, basal 1/4 of elytra strongly shining, apical 3/4 of elytra rather weakly shining. Oblong-ovate; strongly convex above.

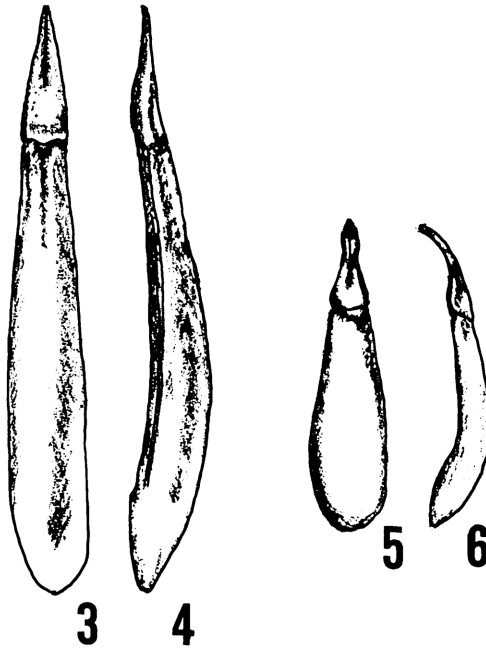
Head transversely subhexagonal, strongly raised in basal part, depressed in clypeus and genae, microsculptured, rather closely, finely punctate; clypeus somewhat invertedly trapezoidal, very slightly bilobed in front, raised medially, feebly depressed on each side, fronto-clypeal suture indistinct and irregularly punctate; genae before eyes gently raised in basal parts, flattened in anterior part, with outer margins rounded, those behind eyes subparallel-sided, weakly depressed; frons raised with a declivity in middle, noticeably swollen on each side, outer margins of the swellings precipitous and deeply sulcate; diatone about 3 times the width of transverse diameter of an eye. Eyes subreniform, gently convex laterad, obliquely and roundly inlaid into head, interior margins not sulcate. Antennae subclavate, reaching the midst of pronotum, ratio of the length of each segment from base to apex: 0.38, 0.2, 0.33, 0.24, 0.22, 0.45, 0.49, 0.51,

0.52, 0.55, 0.75.

Pronotum subquadrate, 1.22 times as wide as long; apex feebly produced and arched; base triangularly produced, sinuous on each side, finely rimmed; sides steeply declined to lateral margins, which are slightly expanded laterad, very finely rimmed and crenulate; front angles obtuse, hind angles nearly rectangular, weakly projected postero-laterad; disc strongly convex and almost hemispherical, highest at apical 2/5, very slightly microsculptured, rather closely punctate, the punctures small, somewhat ovate, and feebly umbilicate with minute hairs. Scutellum triangular with slightly emarginate base and feebly rounded sides, microscopically, transversely wrinkled, scattered with small punctures in lateral parts.

Elytra subelliptical, 1.6 times as long as wide, 2.5 times the length and 1.39 times the width of pronotum, widest at the middle; dorsum strongly convex in apical 3/4, highest at the middle, gently, obliquely depressed in area around basal 1/4; disc finely punctato-striate, the punctures in basal 1/4 (dark bluish part) slightly larger than those in the remaining part, 5th stria deepened close to base; intervals gently convex, sparsely scattered with small punctures, further with microscopic punctures which are visible under 40X, weakly, rather transversely aciculate; humeri rather strongly swollen in a gibbose shape; apices very feebly, roundly produced.

Legs rather stout, without special modification; ratios of the lengths of pro-,



Figs. 3-6. Male genitalia. — 3-4. *Augolesthus* (s. str.) *yoshihikoi* sp. nov.; 3, dorsal view; 4, lateral view. — 5-6, *Tetragonomenes kurosawai* sp. nov.; 5, dorsal view; 6, lateral view.

meso- and metatarsomeres: 0.31, 0.21, 0.2, 0.23, 1.2; 0.34, 0.21, 0.22, 0.23, 1.22; 0.62, 0.27, 0.21, 1.2.

Male genitalia short fusiform, 1.1 mm in length and 0.2 mm in width, with a basal part weakly curved in lateral view; fused lateral lobes 0.3 mm in length, gently constricted in middle, with spatulate apices.

Body length: 3.5 mm.

Holotype: ♂, "BORNEO: Sarawak / Belanga, Long Linau / 17.-21.3.1990/ leg. A. RIEDEL" (SMNS).

Notes. No species allied to this new tenebrionid has hitherto been known, in view of its remarkable coloration and peculiar shape of the head and elytra. Judging from general appearance, *e.g.*, the subparallel-sided body and the moderately convex eyes, this new species seems to belong to the genus *Tetragonomenes*. It also resembles some species of the genus *Malayaplamius* in having the modified head and the strongly convex posterior parts of the elytra. It may, therefore, be an annectant of the above two genera. More than 80 species of the genus *Tetragonomenes* are distributed over East Asia and the northern part of Australia. When a detailed study is made in the future, this genus would possibly be divided into several subgenera or genera, because the genus in the current sense is obviously heterogeneous.

要 約

益本仁雄：東南アジア産ニジゴミムシダマシ族の2種。—— 東南アジア産ゴミムシダマシ科ニジゴミムシダマシ族 (Cnodalonini) の2新種を、永年ご指導くださった故黒澤良彦博士に因み、*Augolesthus* (s. str.) *yoshihikoi* sp. nov. および *Tetragonomenes kurosawai* sp. nov. と命名して記載した。

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