

Study of Tenebrionid Fauna of Sulawesi

V. Tribe Ulomini BLANCHARD, 1845, with Seven New Species of the Genus *Uloma* DEJEAN, 1821
(Coleoptera, Tenebrionidae)

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Abstract The Sulawesi species belonging to three genera of the tenebrionid tribe Ulomini (*Cneocnemis* GEBIEN, 1914, *Ulomimus* BATES, 1873) and *Uloma* DEJEAN, 1821, are reviewed. *Cneocnemis haemorrhoea* (FAIRMAIRE, 1893), *Ulomimus indicus* BATES, 1873, *Uloma (Uloma) rubripes rubripes* (HOPE, 1831), *U. (U.) hirticornis* KASZAB, 1980, *U. (U.) laesifrons* FAIRMAIRE, 1882, *U. (U.) bituberosa bituberosa* KIRSCH, 1875 and *U. (U.) picicornis* FAIRMAIRE, 1882 are recorded from Sulawesi (*Ulomimus indicus* is recorded also from Myanmar, *Uloma bituberosa* is also from Solomon Islands) for the first time. Seven new species are described: *Uloma (Uloma) minutissima* sp. nov., *U. (U.) ogawai* sp. nov., *U. (U.) palapoensis* sp. nov., *U. (U.) pelengensis* sp. nov., *U. (U.) robusticollis* sp. nov., *U. (U.) sulawesensis* sp. nov., and *U. (U.) superciliosa* sp. nov. A new synonym is proposed: *Uloma emarginata hamata* GEBIEN, 1920, syn. nov. = *Uloma (Uloma) bituberosa bituberosa* KIRSCH, 1875. A key to the Sulawesi species of *Uloma* is given.

Introduction

The tribe Ulomini BLANCHARD, 1845 belongs to the subfamily Tenebrioninae LATREILLE, 1802 of the family Tenebrionidae LATREILLE, 1802. It includes nearly 30 genera, and is widely distributed in all zoogeographical regions except Antarctica (SCHAWALLER, 2000, 2015). According to the knowledge of the authors of the present paper, no species of Ulomini had been recorded from Sulawesi so far. In the material examined, however, fourteen species of three genera, *Cneocnemis* GEBIEN, 1914, *Ulomimus* BATES, 1873, and *Uloma* DEJEAN, 1821 are found from Sulawesi.

The genus *Cneocnemis* comprises nine described species distributed from Nepal to New Guinea through South and Southeast Asia (GRIMM, 2017) except one from the Arabian Peninsula (SCHAWALLER *et al.*, 2013). The most widely distributed species, *Cneocnemis haemorrhoea* (FAIRMAIRE, 1893) is recorded hereunder for the first time from Sulawesi.

The species of the monotypic genus *Ulomimus*, *U. indicus* BATES, 1873 had been known from Sri Lanka to southern China and Sumatra (LIU *et al.*, 2013). Its distribution is hereunder extended eastward to Sulawesi.

The highly speciose genus *Uloma* contains more than 200 described species from all zoogeographical regions except Antarctica (SCHAWALLER, 2000). Its species-diversity is the highest in the tropics (especially in Asia), but several species occur in the northern temperate areas as well (BOUSQUET *et al.*, 2018; LÖBL *et al.*, 2008). As for the areas with at least some relevance to Sulawesi, more or less comprehensive studies are available from Japan and Taiwan (MASUMOTO & NISHIKAWA, 1986), Borneo and Sumatra (SCHAWALLER, 2000), New Guinea (GEBIEN, 1920; KASZAB, 1939), and Australia (KASZAB, 1982). In this study, twelve species are recognised in Sulawesi, of which five were already described earlier from other areas and seven are newly described hereunder. One of the species recorded from Sulawesi, *Uloma bituberosa bituberosa* KIRSCH, 1875, had been known only from

New Guinea, and the remaining four species from Southeast Asia. KASZAB (1982) described the subgenus *Apterulomoides* for a flightless Australian species, *Uloma (Apterulomoides) rotundipennis* KASZAB, 1982, but subgeneric division has not been proposed for the remaining species. Therefore all other species should be regarded at the moment as members of the nominotypical subgenus *Uloma*.

The present study is based on a limited number of specimens collected mainly by Japanese researchers, so it is highly possible that a number of further new species await for description in materials deposited in other collections or collected in the future.

Material and Methods

The specimens used for description and comparison are deposited in the Department of Zoology, Hungarian Natural History Museum (HNHM), the Ehime University Museum, Matsuyama, Japan (EUMJ), and the private collection of Kiyoshi ANDO, Osaka, Japan (KAOJ) (acronyms are in parentheses). Specimens were examined with a Leica MZ16 stereomicroscope with an object lens Planapo 1.0x. Male and female terminalia were dissected from specimens relaxed in hot water for about 1 hours, cleared in hot KOH, neutralised with weak acetic acid, and rinsed with water. Drawings were made with the use of Leica drawing tubes. The terminalia are preserved on a paper card with water-soluble glue. Photographs of specimens were taken by a reflex camera (Canon EOS 7D) with two macro lens (Canon macro photo lens MP-E 65 mm or EF 100 mm), and were combined using digital image processing software (Helicon Focus, v. 6.2.2 Lite). Morphological terminology follows that of MATTHEWS and BOUCHARD (2008). Body length means the median length from the apex of labrum to the apices of elytra, excluding antennae. Abbreviations of measurements in the descriptions are as follows: EL — length of elytra along midline; EW — maximum width of elytra; FL — maximum length of pronotal anterior impression; FW — maximum width of pronotal anterior impression; IE — distance between eyes; PL — length of pronotum along midline; PW — maximum width of pronotum; TD — transverse diameter of an eye in dorsal view.

Of the examined types and some examined specimens, the attached labels are separated by double slash (//), and line brakes of the same label are demarcated by a slash (/).

Female specimens were excluded from the type series of the new species, because at the moment the authors cannot separate reliably the females of different species.

Taxonomy

For the differentiating features of *Cneocnemis* GEBIEN, 1914, *Uloma* DEJEAN, 1821, and *Uloimus* BATES, 1873, see LIU *et al.* (2013).

Genus *Cneocnemis* GEBIEN, 1914

Cneocnemis haemorrhoea (FAIRMAIRE, 1893)

(Fig. 86)

Uloma haemorrhoea FAIRMAIRE, 1893 a: 24. Type locality: “Borneo: Sintang”.

Cneocnemis haemorrhoea: GEBIEN, 1940: 770 [577]; KASZAB, 1980: 175; MASUMOTO & MAKIHARA, 1997: 120; SCHAWALLER, 1998: 464.

Alphitobius recticollis PIC, 1923: 24. Type locality: “Borneo”. Synonymised by SCHAWALLER, 1998: 464.

Cneocnemis recticollis: KASZAB, 1983: 137.

Cneocnemis sumatrensis MASUMOTO, 1985: 3. Type locality: “Benakat, South Sumatra”. MASUMOTO & MAKIHARA, 1997: 120. Synonymised by SCHAWALLER, 1998: 464.

Specimens examined. 2 ♂♂, 2 ♀♀, Southeast Sulawesi, Telkom Popalia (160 m), Wolasia, Konda, Kendari, at light, 31.XII.2001, S. SAITO leg. (KAOJ).

Distribution. Borneo (Brunei, Sabah, Kalimantan), Sumatra, Thailand, Peninsular Malaysia, Vietnam, Sulawesi (new record).

Genus *Ulomimus* BATES, 1873

Ulomimus indicus BATES, 1873

(Fig. 87)

Ulomimus indica BATES, 1873: 202. Type locality: "East India".

Ulomimus indicus BATES, 1873; GEBIEN, 1911: 399; GEBIEN, 1940: 770 [577]; KASZAB, 1979: 88; KASZAB, 1980: 175; MERKL, 1992: 263; LIU *et al.*, 2013: 46.

Pseuduloma cribricollis FAIRMAIRE, 1893 b: 27; GEBIEN, 1911: 404. Synonymised by GEBIEN, 1940: 770 [577].

Specimen examined. 1 ♂, South Sulawesi, Bantimurung, Maros, 6.V.1993, S. SAITO leg. (KAOJ).

Distribution. Sri Lanka, Thailand, Burma (new record, see Notes), Vietnam, Sumatra, China (Guangxi, Hainan), Sulawesi (new record).

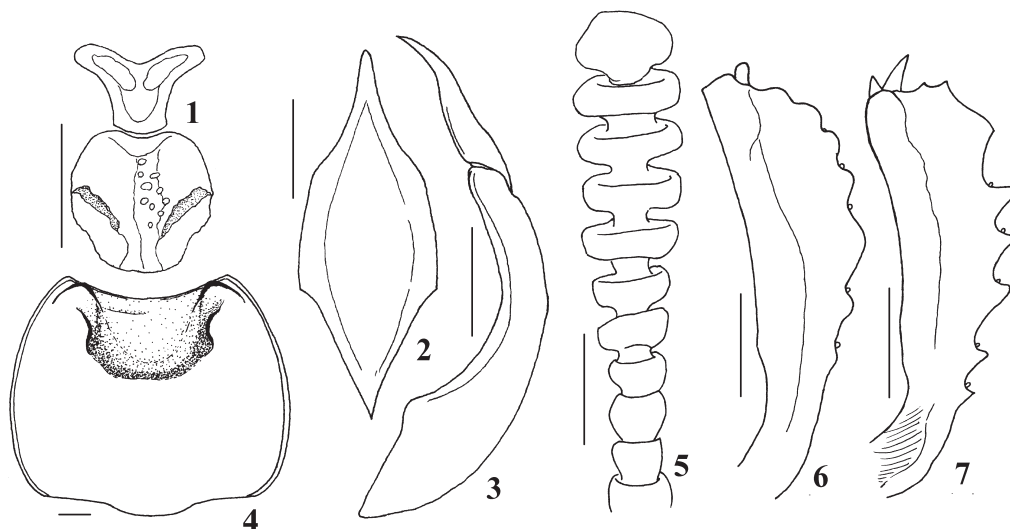
Notes. Martin LILLIG (Saarbrücken, Germany) informed us (email letter to the senior author, 21 August 2018) that in his collection he has a specimen identified by him in 2009 as *Ulomimus indicus* with the following data: Myanmar (Burma), Kachin State, Straße von Bhamo nach Shwegu [road from Bhamo to Schwegu], 05.VI.2006, leg. Michael LANGER, Lichtfang am Irrawaddy [at light on the Irrawaddy river], H [altitude] = 157 m, N 24°07'387", E 097°01'577", coll. M. LANGER. The specimen represents a new country record.

Genus *Uloma* DEJEAN, 1821

Key to the Species of Sulawesian *Uloma* Based on Males

1. Clypeus with a pair of horns or tubercles. 2
- Clypeus without horns or tubercles. 3
2. Antennomeres 5 and 7 strongly projected at inner apical angle (may be reduced on smaller specimens); clypeus with a pair of very short horns; mentum cordate, strongly depressed, with hearth-shaped narrow hair ring; prementum V-shaped, deeply depressed and densely setiferous; apicale of aedeagus divergent towards apex from middle. Body length 10.68–14.32 mm. *U. (U.) rubripes rubripes* (HOPE, 1831)
- Antennomeres not projected; clypeus with a pair of tubercles; mentum flabellate, coarsely and irregularly punctate, without pubescence; prementum raised in Y-shape, flat, with a few setae apically; apicale of aedeagus beak-shaped in apical third. Body length 7.85 mm. *U. (U.) laesifrons* FAIRMAIRE, 1882
3. Antennomeres 4 to 10 with long hairs on inner and ventral sides forming almost continuous hair fringe in dorsal view; mentum rounded hexagonal, flat, glabrous, with shallow arcuate groove along margins, interrupted anteriorly and posteriorly. Body length 14.50 mm. *U. (U.) hirticornis* KASZAB, 1980
- Hairs on inner side of antennomeres normal, not longer than on outer side; mentum different in shape, never with shallow arcuate groove along margins. 4

4. Clypeus very strongly elevated. 5
 — Clypeus moderately to strongly convex. 9
5. Pronotal anterior impression without posterior protuberances. 6
 — Pronotal anterior impression with posterior protuberances. 7
6. Body short, 6.00–7.02 mm; frons weakly excavated, with large and dense punctures; eyes transversely rounded, without inner ocular sulci; mentum cordate; vertex moderately declivous forwards; pronotal anterior impression without any protuberances; apicale of aedeagus narrowly spatulate in apical half. *U. (U.) minutissima* sp. nov.
 — Body long, 10.00–11.72 mm; frons strongly excavated, with obscure and sparse punctures; eyes transversely quadrate, with distinct inner ocular sulci; mentum ginko-leaf shaped; vertex steeply declivous anteriorly; pronotal anterior impression with a pair of antero-lateral protuberances; apicale of aedeagus not spatulate in apical half.
*U. (U.) bituberosa bituberosa* KIRSCH, 1875
7. Head with supraorbital protuberances; clypeus forming elevated platform bordered by deep grooves; frons sparsely and finely punctate; antennomeres 6 to 11 weakly dilated; body length 13.89–16.17 mm. *U. (U.) superciliosa* sp. nov.
 — Head without supraorbital protuberances; clypeus elevated but not forming platform bordered by deep grooves; frons with coarse and dense punctures; antennomeres 7 to 10 strongly transverse; body length 10.68–14.78 mm. 8
8. Body length 13.45–14.78 mm; eyes slender and transverse in dorsal view, without inner ocular sulci; mentum inverted pear-shaped, with lateral hairs long; pronotum very finely punctate; elytral intervals weakly convex; apicale of aedeagus pointed.*U. (U.) robusticollis* sp. nov.
 — Body length 10.68 mm; eyes transverse elliptical, not slender in dorsal view, with very fine inner ocular sulci; mentum hexagonal, with lateral hairs moderate in length; punctures on pronotum moderate in size; elytral intervals almost flat; apicale of aedeagus truncate at apex.
 *U. (U.) ogawai* sp. nov.
9. Clypeus rounded at apex; strial punctures on elytra coarser. 10
 — Clypeus truncate or subtruncate at apex; strial punctures on elytra finer. 11
10. Body broader; pronotum with weak protuberances around anterior impression; mentum cordiform; prementum bisinuate anteriorly, sparsely setiferous; antennomere 6 pointed in inner margin; apicale of aedeagus slender beak-shaped, regularly tapering towards apex; protibia with midlongitudinal row of granules distinct in apical two-thirds; body length 8.24 mm.
 *U. (U.) palapoensis* sp. nov.
 — Body slender; pronotum without protuberances around anterior impression; mentum ginkgo-leaf shaped; prementum bi-angulate anteriorly, densely setiferous; antennomere 6 not pointed in the inner margin; apicale of aedeagus broad beak-shaped, dilated apical half; protibia with midlongitudinal row of obscure granules; body length 6.77–8.05 mm.
 *U. (U.) pelengensis* sp. nov.
11. Mentum inverted pear-shaped, flat with coarse minute tubercles; apicale of aedeagus abruptly and angulately narrowing in apical third, with posterior margin strongly and triangularly produced; body length: 7.23–8.42 mm. *U. (U.) sulawesiensis* sp. nov.
 — Mentum oblong, flat with dense punctures; apicale gently constricted in apical half, with posterior margin rounded; body length: 8.00–10.18 mm. *U. (U.) picicornis* FAIRMAIRE, 1882



Figs. 1–7. *Uloma (Uloma) bituberosa bituberosa* KIRSCH, 1875. — 1, Prementum and mentum; 2, apicale; 3, aedeagus in lateral view; 4, pronotum; 5, right antenna; 6 & 7, male right tibiae, two patterns. Scales: 0.3 mm for 1 & 2; 0.5 mm for 3–7.

The Known Species of *Uloma* from Sulawesi

Uloma (Uloma) bituberosa bituberosa KIRSCH, 1875

(Figs. 1–7, 62 & 76)

Uloma bituberosa KIRSCH, 1875: 145. Type locality: “Ins. Mafoor”. GEBIEN, 1920: 277, 493; GEBIEN, 1940: 775 [582]; MATTHEWS & BOUCHARD, 2008: 320.

Uloma emarginata (non MONTROUZIER, 1855: 31): GEBIEN, 1920: 274 [misidentification]; KASZAB, 1939: 213, 217 [misidentification].

Uloma emarginata hamata GEBIEN, 1920: 274. Type locality: “Sattelberg, Friedrich-Wilhelmshafen, Toricelli-Gebirge” (New Guinea). KASZAB, 1939: 213 (as *Uloma emarginata* var. *hamata*), 217 (as *Uloma hamata*). New synonymy. *Uloma bituberosa hamata* GEBIEN, 1920: 277, 493; GEBIEN, 1940: 775 [582].

Specimens examined (from Sulawesi). 1 ♂, South Sulawesi, Iuwu Prefecture, Malangkep, 26.VIII.2002, native leg. (KAOJ); 4 ♂♂, Sulawesi Tenggara [sic: Tengah], Peleng I., Mt. Osan, Prop. V.2015, native leg. (KAOJ).

Measurements. Male (n = 5): Body length: 10.00–11.72 mm; IE/TD 2.86–3.08; PW/PL 1.26–1.36; PL/FL 2.16–2.87; PW/FW 1.84–2.25; EL/EW 1.64–1.75.

Specimens and types examined used for the comparison. [New Guinea] 2 ♂♂, Waigion / Coll. R. Oberthur / ex coll. Deyrolle (1 ♂, identified by Z. KASZAB in 1956 as *Uloma bituberosa hamata* GEBIEN, 1920, 1 ♂, identified by O. MERKL in 2010 as *Uloma bituberosa* KIRSCH, 1875) (HNHM); 8 ♂♂, 1 ♀, N.-Guinea / Biró 1900 // Sattelberg / Huon Golf (7 ♂♂, identified by Z. KASZAB in 1956 as *Uloma bituberosa* KIRSCH, 1875, 1 ♂, identified by Z. KASZAB in 1956 as *Uloma bituberosa hamata* GEBIEN, 1920, 1 ♀, identified by Z. KASZAB in 1956 as *Uloma bituberosa hamata* GEBIEN, 1920) (HNHM); 9 ♂♂, 7 ♀♀, N.-Guinea / Biró 1899 // Sattelberg / Huon Golf (6 ♂♂, identified by Z. KASZ-

AB in 1956 as *Uloma bituberosa* KIRSCH, 1875, 3 ♂♂, identified by Z. KASZAB in 1956 as *Uloma bituberosa hamata* GEBIEN, 1920 (one has two further labels: “*Uloma emarginata* v. *hamata* GEB. det. dr. KASZAB” and “*Uloma bituberosa* v. *hamata* GEB. det. dr. KASZAB”), 5 ♀♀, identified by Z. KASZAB in 1956 as *Uloma bituberosa* KIRSCH, 1875, 2 ♀♀, identified by Z. KASZAB in 1956 as *Uloma bituberosa hamata* GEBIEN, 1920) (HNHM); 1 ♀, NEW GUINEA /SE/ Kiunga, 23.VII- / 2.VIII.1969 // /No. NGK-U/+M/2. / leg.Dr.J.Balogh (identified by O. MERKL in 2010 as *Uloma bituberosa* KIRSCH, 1875) (HNHM); 1 ♂, S.E.Papua / Oct., 1914– / Apr., 1915 / Eland Shaw // W.W.Froggatt / Collection // *Uloma bituberosa* KIRSCH / Id. by H.J. CARTER (identified by O. MERKL in 2010 as *Uloma bituberosa* KIRSCH, 1875) (HNHM); 1 ♀, NEW GUINEA /SE// Kiunga, 23.VII- / 2.VIII.1969 // /No. NGK-M.5. / / leg.Dr.J.Balogh (identified by O. MERKL in 2010 as *Uloma bituberosa* KIRSCH, 1875) (HNHM); 4 ♀♀, NEW GUINEA /NE// Wau,Mt.Kaindi / 24–25.VIII.1968 // /No. NG–W.C.9./ / leg.Dr.J.Balogh (identified by O. MERKL in 2010 as *Uloma bituberosa* KIRSCH, 1875) (HNHM); 1 ♀, NEW GUINEA / NE/ / Wau, 22.IX- / 30.IX.1969 // /No. NGW–R.9./ / leg. Dr. J. Balogh (identified by O. MERKL in 2010 as *Uloma bituberosa* KIRSCH, 1875) (HNHM); 1 ♂, Bulolo, N. Guinea / II.13–III.13.1979 / 800m. J. Sedlacek (identified by O. MERKL in 2010 as *Uloma bituberosa* KIRSCH, 1875) (HNHM). [Bismarck Archipelago] 1 ♀, Mope, Neupommern. / P. Jos. Schneider leg. / 1938 24.XI (identified by Z. KASZAB in unknown year as *Uloma bituberosa* KIRSCH, 1875) (HNHM); 1 ♂, Mope, Neupommern. / P. Jos. Schneider leg. / 1936 22.XI (identified by Z. KASZAB in unknown year as *Uloma bituberosa* KIRSCH, 1875) (HNHM); 1 ♀, Mope, Neupommern. / P. Jos. Schneider leg. / 1937 14.II (identified by Z. KASZAB in unknown year as *Uloma bituberosa* KIRSCH, 1875) (HNHM); 1 ♂, 1 ♀, Ulamona, Neupommern. / P. Jos. Schneider leg. / 1935 18.IV (1 ♂, identified by Z. KASZAB in unknown year as *Uloma bituberosa* KIRSCH, 1875, 1 ♀, identified by Z. KASZAB in unknown year as *Uloma bituberosa* KIRSCH, 1875) (HNHM); 1 ♂, Ulamona, Neupommern. / P. Jos. Schneider leg. / 1935 14.V (identified by Z. KASZAB in unknown year as *Uloma bituberosa* KIRSCH, 1875) (HNHM). [Solomon Islands] 1 ♂, SOLOMON IS. / Guadalcanal, 29 km / SE Honiara, Nalim- / bu R., 5.VI.1960 // C.W.O’Brien / Collector (identified by Z. KASZAB in 1964 as *Uloma bituberosa* KIRSCH, 1875) (HNHM); 3 ♂♂, 2 ♀♀, Guadalcanal / Nalimbu River / BSIP, VI-5-1960 / Jan Schenk (3 ♂♂, identified by O. MERKL in 2018 as *Uloma bituberosa* KIRSCH, 1875, 2 ♀♀, identified by O. MERKL in 2018 as *Uloma bituberosa* KIRSCH, 1875) (HNHM); 1 ♂, SOLOMON IS. / Pres. / PJM.Greenslade / B.M.1966–477. // Gizo Is. [illegible] / log.10/4/67 / PJMG.13374 (identified by Z. KASZAB in unknown year as *Uloma emarginata* (MONTROUZIER, 1855)) (HNHM); 1 ♂, SOLOMON IS. / Pres. / PJM.Greenslade / B.M.1966–477. // SOLOMON IS. / Russel Is. / Yandina / In logs / 22–24/II/1967 / PJM.Greenslade / 13468 (identified by Z. KASZAB in unknown year as *Uloma emarginata* (MONTROUZIER, 1855), in 1969 as *Uloma bituberosa* KIRSCH, 1875) (HNHM); 1 ♂ (holotype), Sidney / Australien // Holotypus 1982 ♂ / *Uloma bituberosa* KIRSCH / sidneyana KASZAB (*Uloma bituberosa sydneyana* Kaszab, 1982) (HNHM).

M a l e. Ovate-elongate, blackish brown to dark reddish brown, antennae and legs constantly dark reddish brown. Head without supraorbital protuberances. Clypeus evenly and strongly convex, somewhat matt in middle, slightly emarginate at apex. Frons strongly excavated, obscurely or sparsely punctate. Vertex very steeply declivous anteriorly. Eyes transversely quadrate in dorsal view; inner ocular sulci distinct. Antennae with antennomeres 6 to 10 transversely quadrate. Mentum ginkgo-leaf shaped, flat, notched anteriorly, unevenly depressed in middle, without pubescence; prementum weak and short Y-shaped, with double excavations, without setae.

Pronotum rounded emarginate anteriorly, finely punctate, widest at middle (three specimens), widest behind middle (one specimen), or widest before base (one specimen); pronotal anterior impression extremely deep, with only two large anterior protuberances on each lateral side.

Elytral intervals moderately convex; strial punctures sparse, about twice as wide as striae.

Protibiae with distinct midlongitudinal keel; external teeth weak, short and blunt; medio-distal corner not produced.

Aedeagus with apical beak-shaped in apical third, pointed at apex; basal margin acutely and triangularly produced backwards.

Distribution. New Guinea, Bismarck Archipelago, Solomon Islands (new record, based on specimens in the HNHM from Ghizo, Guadalcanal and Russell Islands), Sulawesi (new record).

Notes. *Uloma (Uloma) emarginata hamata* GEBIEN, 1920 cannot be separated from the *U. (U.) bituberosa bituberosa*. The type specimens identified as *U. (U.) emarginata hamata* or *U. (U.) bituberosa hamata* are *U. (U.) bituberosa bituberosa*, with large sized body and somewhat more prominent protuberances in the antero-lateral edge of pronotal impression. However smaller and larger specimens with higher or lower protuberances are found mixed in series from the same Papua New Guinea localities (Kiunga, Sattelberg, Wau) in the HNHM. Therefore, *Uloma (U.) emarginata hamata* GEBIEN, 1920 is herewith synonymised with *Uloma (U.) bituberosa bituberosa* KIRSCH, 1875.

Another subspecies, *Uloma (Uloma) bituberosa sydneyana* KASZAB, 1982 described from Sydney (KASZAB, 1982: 265), is based on the single male holotype deposited in HNHM. It differs from the nominotypical *Uloma (U.) bituberosa* in several details features of mentum, genae, tibiae, aedeagus, convexity of elytral intervals etc., so it might be separable from *U. (U.) bituberosa bituberosa* as a distinct species. Apart from the type label added by KASZAB, the holotype has a single handwritten label with no more text than "Sidney Australien". The detailed origin of the specimen and the reliability of the locality are unknown, therefore further material is needed to clarify the validity of the subspecies.

***Uloma (Uloma) hirticornis* KASZAB, 1980**

(Figs. 8–11, 63 & 75)

Uloma hirticornis KASZAB, 1980: 175. Type locality: "Ha tuyen: NW der Umgebung Tam dao, Son duong" [Vietnam].

Specimen examined. 1 ♂, Southeast Sulawesi, Telkom Popalia (160 m), Wolasia, Konda, Kendari, 31.XII.2001, at light, S. SAITO leg. (HNHM).

Measurements. Male (n = 1): Body length: 14.50 mm; IE/TD 2.45; PW/PL 1.35; PL/FL 2.13; PW/FW 2.07; EL/ EW 1.40.

M a l e. Elongate, parallel-sided, completely dark reddish brown. Head without supraorbital protuberances. Clypeus strongly convex, slightly emarginate at apex, without horns or tubercles, surface finely punctate. Frons deeply impressed, densely and finely punctate. Eyes slightly transverse, without inner ocular sulci. Antennae without inner apical projections, antennomeres 5 to 10 strongly transverse; antennomeres 4 to 10 with long hairs on inner and ventral sides (much longer than on outer and dorsal sides), forming almost continuous hair fringe in dorsal view. Mentum rounded hexagonal, glabrous, entirely flat, slightly notched anteriorly, with shallow, glabrous groove along margins, interrupted anteriorly and posteriorly; prementum V-shaped, deeply depressed, sparsely setiferous.

Pronotum gently and arcuately emarginate at apex, sparsely and finely punctate, but more coarsely and densely punctate in anterior impression, widest at basal third; pronotal anterior impression shallow, without protuberances.

Elytral intervals moderately convex; striae very narrow, stria punctures sparsely set, 1.5 times as wide as striae.

Protibiae wide and incurved, with short midlongitudinal keel distinct in apical fifth, without long apical setae; inner margin strongly constricted before base, slightly produced at medio-distal corner; external teeth sharp, irregular in size; medio-distal corner not produced.

Aedeagus with apicale broadly beak-shaped in apical two-thirds; basal margin arcuately produced backwards in dorsal view.

Distribution. China (Yunnan), Vietnam, Sulawesi (new record).

Notes. The distribution of *Uloma (Uloma) hirticornis* has a seemingly considerable gap between Indochina and Sulawesi, but this is probably a result of the rarity of the species. Many species of *Uloma (U. (U.) rubripes*, for instance) as well as many other saproxylic Tenebrionidae generally have a wide range in Southeast Asia to New Guinea. The Sulawesi specimen's general stature, mentum, aedeagus, pronotal impression and especially the distinctively pubescent antennae are virtually identical with those of the male holotype housed in the HNHM. Further investigation may fill in this gap.

Uloma (Uloma) laesifrons FAIRMAIRE, 1882

(Figs. 12–14, 64 & 80)

Uloma laesifrons FAIRMAIRE, 1882: 225. Type locality: Rawas [Sumatra]. GEBIEN, 1940: 774 [581]; SCHAWALLER, 2000: 8.

Specimen examined. 1 ♂, South Sulawesi, Puncak Palopo, 2.I.2000, K. ANDO leg. (KAOJ).

Measurements. Male (n = 1): Body length: 7.85 mm; IE/TD 4.44; PW/PL 1.52; PL/FL 3.25; PW/FW 2.48; EL/EW 1.55.

Male. Elongate, dark reddish brown, paler reddish brown in part. Head without supraorbital protuberances. Clypeus weakly convex forwards, subtruncate at apex, with a pair of weak tubercles. Frons weakly convex, slightly depressed anteriorly, with punctures moderately dense. Eyes rounded in dorsal view, without inner ocular sulci. Distal 7 antennomeres strongly dilated. Mentum flabellate, flattened in middle, with coarse punctures at sides and irregular ones medially, without pubescence; prementum Y-shaped, flat, with a few setae apically.

Pronotum widest before base, with anterior margin V-shaped; punctures moderately dense, larger than on frons; pronotal anterior impression shallow, without protuberances.

Elytral intervals strongly convex; striae punctures rather sparse, about 3.0 times as wide as striae.

Protibiae without midlongitudinal keel, strongly dilated apically, with inner margin weakly constricted before base; external teeth sharp; medio-distal corner not produced.

Aedeagus with apicale beak-shaped in apical third, with a few punctures near apex; basal margin slightly produced.

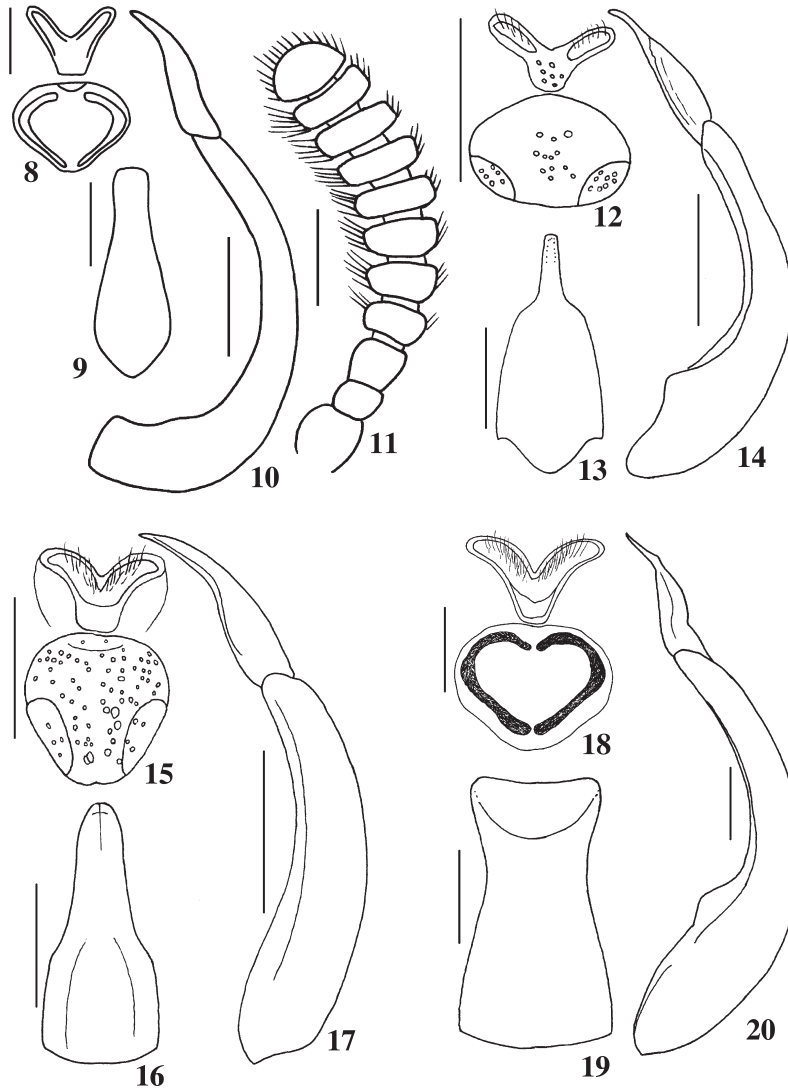
Distribution. Sumatra, Borneo, Sulawesi (new record).

Uloma (Uloma) picicornis FAIRMAIRE, 1882

(Figs. 15–17, 65 & 78)

Uloma picicornis FAIRMAIRE, 1882: 224. Type locality: "Silago, dans le district Rawas et à Koetoer" [Sumatra]. GEBIEN, 1914 b: 30; GEBIEN, 1940: 773 [580]; KASZAB, 1939: 211; KASZAB, 1980: 176; KULZER, 1957: 228; MERKL, 1992: 263; SCHAWALLER, 2000: 15; ANDO, 2015: 391.

Specimens examined. 12 ♂♂, 13 ♀♀, South Sulawesi, Tanah Toraja, Karum Ganga, I.2000, native leg. (8 ♂♂ & 13 ♀♀ in KAOJ & 4 ♂♂ in HNHM); 4 ♂♂, 5 ♀♀, ditto, Gala BECCE leg. (KAOJ); 2 ♀♀, South Sulawesi, Mt. Lompo Battang, ditto, 25.XII.1999, K. ANDO leg. (KAOJ); 3 ♂♂, 6 ♀♀, ditto, 26.XII.1999, K. ANDO leg. (2 ♂♂ & 6 ♀♀ in KAOJ & 1 ♂ in HNHM); 1 ♂, West Sulawesi, Salo Bao, Mamasa, Sulbar, 22.XI.2012, Kiyoshi ANDO leg. (KAOJ); 1 ♂, 1 ♀, South Sulawesi, Puncak Palopo, Luwu, Palopo, To'Rea, 18.I.2000, G. BECCE leg. (KAOJ); 1 ♂, Central Sulawesi, Mangkaluku, Malimbu, Sabbang, 27–29.IV.2009, A. SAITO leg. (KAOJ); 1 ♀, South Sulawesi, Palopo, Kilo Lima



Figs. 8–20. *Uloma* spp. from Sulawesi. — 8–11, *Uloma (Uloma) hirticornis* KASZAB, 1980; 12–14, *U. (U.) laesifrons* FAIRMAIRE, 1882; 15–17, *U. (U.) picicornis* FAIRMAIRE, 1882; 18–20, *U. (U.) rubripes rubripes* (HOPE, 1831). — 8, 12, 15 & 18, Prementum and mentum; 9, 13, 16 & 19, apicali in dorsal view; 10, 14, 17 & 20, aedeagi in lateral view; 11, right antenna. Scales: 0.3 mm for 8–9, 12–13, 15–16 & 18–19 (prementum, mentum and apicali); 0.5 mm for 10, 11, 14, 17 & 20 (aedeagi and antenna).

Belas, Battang, Wara Barat, S02°57', E120°07', alt. 300 m, 2.II.2013, Kiyoshi ANDO leg. (KAOJ); 1 ♀, South Sulawesi, Puncak Palopo, 2.I.2000, M. ANDO leg. (KAOJ); 1 ♀, ditto, 3.I.2000, Y. UTSUNOMIYA leg. (KAOJ); 1 ♀, South Sulawesi, Pine Tree Forest, Battang, Tanah Toraja, 10.II.2013, Kiyoshi ANDO leg. (KAOJ); 1 ♂, Sulawesi, Bone Bone, V.2000, local collector leg. (HNHM).

Measurements. Male (n = 21): Body length: 8.00–10.18 mm; IE/TD 2.29–3.03; PW/PL 1.43–1.54; PL/FL 2.21–3.33; PW/FW 1.68–1.97; EL/EW 1.57–1.74 (two abnormal specimens each has

IE/TD 3.15 or 3.48). Female (n = 31): Body length: 6.93–9.92 mm; IE/TD 2.33–3.33; PW/PL 1.39–1.52; EL/EW 1.54–1.76. (An abnormal specimen has IE/TD 3.48) Pronotum in females widest at middle (one specimen); widest behind middle (three specimens); widest at basal third (three specimens); widest at basal fourth (five specimens); or widest before base (19 specimens).

M a l e. Elongate, black to dark reddish brown, legs constantly dark reddish brown. Head without supraorbital protuberances. Clypeus weakly to moderately convex, asperate and irregularly punctate on surface, rounded at apex though truncate or slightly emarginate in middle. Frons feebly excavated behind clypeus or rarely weakly convex, finely and densely punctate, punctures sometimes obscure. Eyes transverse, without inner ocular sulci. Mentum oblong, flattened in middle, flabellate anteriorly and convergent posteriorly, very coarsely punctate, without pubescence; prementum V-shaped, excavate anteriorly and ridged posteriorly, with setae in impression.

Pronotum strongly and roundly emarginate anteriorly, coarsely and moderately punctate including anterior impression, widest at middle (three specimens), widest behind middle (seven specimens), widest at basal third (four specimens), or widest before base (seven specimens); pronotal anterior impression shallow and oblique forwards, without protuberances.

Elytral intervals weakly convex; striae punctures sparse, more than 2.0 to 3.0 times as wide as striae.

Protibiae slightly incurved, with very fine midlongitudinal keel, and with long apical setae; inner margin slightly constricted before base; external teeth sharp, irregular in size; medio-distal corner not produced.

Aedeagus with apical beak-shaped in apical two-thirds; basal margin not produced.

Distribution. Sumatra, Java, Borneo, Sulawesi (new record), Vietnam, Japan (Iwô-tô Is.), Mariana Isls., Caroline Is.

Notes. *Uloma (Uloma) picicornis* is widely distributed in the Sundaland, and many specimens are available from Borneo, Sumatra and other regions. The Sulawesi series is surprisingly diverse in size: some specimens are nearly 30 per cent longer than others. However, the male features (mentum, pronotal anterior impression, antennae, aedeagus) are quite uniform. Nevertheless, we are not quite sure whether the whole series is conspecific or not, although we are unable to separate different morphospecies.

Uloma (Uloma) rubripes rubripes (HOPE, 1831)

(Figs. 18–20, 66 & 74)

Tenebrio rubripes HOPE, 1831: 31. Type locality: Nepaul [Nepal], mentioned in the title.

Uloma rubripes: GEBIEN, 1940: 773 [580]; KASZAB, 1980: 175; SCHAWALLER, 1996: 116; SCHAWALLER, 2000: 17; LIU & REN, 2016: 115.

Uloma rubripes rubripes: ANDO *et al.*, 2016: 23.

Uloma orientalis LAPORTE, 1840: 220. Type locality: Java. GEBIEN, 1914 b: 28; GEBIEN, 1920: 273. Synonymised by GEBIEN, 1940: 773 [580].

Uloma orientalis minor GEBIEN, 1914 b: 28. Type locality: Borneo. KASZAB, 1980: 175. Synonymised by SCHAWALLER, 1996: 116.

Uloma orientalis edentata GEBIEN, 1927: 35. Type locality: Sumatra. Synonymised by SCHAWALLER, 1996: 116.

Uloma denticornis FAIRMAIRE, 1882: 225. Type locality: Silago, Si Bakoer in Rawas [Sumatra]. Synonymised with *Uloma orientalis* by GEBIEN, 1914 a: 392.

Trogosita retusa FABRICIUS, 1801: 150 [nec *Tenebrio retusus* FABRICIUS, 1801: 149]. Type locality: Sumatra. Synonymised with *Uloma denticornis* by GEBIEN, 1906: 220.

Uloma prehimalayana KASZAB, 1975: 325. Type locality: Bhutan. Synonymised by SCHAWALLER, 1996: 116.

Specimens examined. 1 ♂, Sulawesi, Palolo, Keleakan, IX.1994, native leg. (KAOJ); 3 ♂♂, 2 ♀♀, South Sulawesi, Pine Tree Forest, Battang, Tanah Toraja, 10.II.2013, Kiyoshi ANDO leg. (2 ♂♂ & 2 ♀♀ in KAOJ & 1 ♂ in HNHM); 1 ♂, 1 ♀, South Sulawesi, Palopo, Kilo Lima Belas, Battang, Wara Barat, alt. 300 m, 2.II.2013, Kiyoshi ANDO leg., S02°57', E120°07' (KAOJ); 1 ♂, 1 ♀, Southeast Sulawesi, Telkom Popalia (160 m), Wolasia, Konda, Kendari, 31.XII.2001, at light, S. SAITO leg. (KAOJ); 1 ♀, Southeast Sulawesi, Pativoso, 100 m alt., Kolaka, 25.XII.1999–3.I.2000, at light, Shusei SAITO leg. (KAOJ); 1 ♀, Central Sulawesi, Mangkaluku, Malimbu, Sabbang, 27–29.IV.2009, A. SAITO leg. (KAOJ); 3 ♂♂, 6 ♀♀, South Sulawesi, Puncak Palopo, Sam Puna, alt. 1,050 m, 23.I.2000, G. BECCE leg. (KAOJ); 1 ♂, 3 ♀♀, South Sulawesi, Puncak Palopo, Luwu, Palopo, KM 27, 20.I.2000, G. BECCE leg. (KAOJ); 1 ♀, South Sulawesi, Puncak Palopo, Luwu, Palopo, To'Rea, 18.I.2000, G. BECCE leg. (KAOJ); 1 ♂, 2 ♀♀, South Sulawesi, Puncak Palopo, 2.I.2000, M. ANDO leg. (KAOJ); 1 ♂, 4 ♀♀, ditto, K. ANDO leg. (KAOJ); 3 ♂♂, 5 ♀♀, South Sulawesi, Luwu, Puncak Palopo, Mt. Sampuna, I.2000, Gala BECCE leg. (KAOJ); 3 ♂♂, 4 ♀♀, South Sulawesi, Puncak Palopo, Kaleakan, 26.I.2000, Gala BECCE leg. (2 ♂♂ & 4 ♀♀ in KAOJ & 1 ♂ in HNHM); 1 ♀, South Sulawesi, Sa'dam Balusa, Tanah Toraja, alt. 2,500 m, 21–22.I.2000, Gala BECCE leg. (KAOJ); 4 ♀♀, South Sulawesi, Tanah Toraja, Karum Ganga, I.2000, native coll. (KAOJ); 13 ♂♂, 14 ♀♀, Sulawesi Tenggara [sic: Tengah], Peleng I., Mt. Osan, Prop, V.2015, native leg. (KAOJ); 1 ♀, West Sulawesi, Mamasa, Kampung Busu, Sulbar, 21.XI.2012, Kiyoshi ANDO leg. (KAOJ); 1 ♂, West Sulawesi, Mamasa, Sumarorong, Sulbar, 20.XI.2012, Kiyoshi ANDO leg. (KAOJ); 1 ♂, 1 ♀, West Sulawesi, Salo Bao, Mamasa, Sulbar, 22.XI.2012, Kiyoshi ANDO leg. (KAOJ); 1 ♀, South Sulawesi, Gowa Indonesia, Parangloe, near Malino, 2.V.2010, Ryo OGAWA leg. (KAOJ); 1 ♂, South Sulawesi, Palolo Palu, VIII.2012, Sainuddin BAKRI leg. (KAOJ); 1 ♀, Sulawesi, Bone Bone, V.2000, local collector (HNHM).

Measurements. Male (n = 34): Body length: 10.68–14.32 mm; IE/TD 2.41–3.20; PW/PL 1.25–1.51; PL/FL 2.30–3.00; PW/FW 1.85–2.80; EL/EW 1.60–1.75. (an abnormal specimen has IE/TD 2.22). Female (n = 52): Body length: 10.37–14.65 mm; IE/TD 2.35–3.08; PW/PL 1.34–1.52; EL/EW 1.58–1.80. Pronotum in females widest before base (26 specimens), widest behind middle (11 specimens), widest at basal fourth (13 specimens), or widest at middle (two specimens).

M a l e. Elongate, black to dark reddish brown, antennae and legs constantly dark reddish brown. Head without supraorbital protuberances. Clypeus strongly convex, distinctly emarginate at apex; surface asperate and finely punctate, with a pair of short horns. Frons weakly depressed, distinctly excavated behind clypeus, densely and irregularly punctate. Eyes slightly transverse, without inner ocular sulci. Antennae with inner apical projection on antennomeres 5 and 7 (may be reduced on smaller specimens). Mentum cordate, strongly depressed, with hearth-shaped narrow ring of pubescence along margins; prementum V-shaped, deeply depressed, densely setiferous.

Pronotum gently and arcuately emarginate at apex, moderately densely and rather finely punctate, but coarsely and densely so in anterior impression, widest at middle (four specimens), widest behind middle (15 specimens), widest at basal third (three specimens), or widest before base (twelve specimens); pronotal anterior impression shallow and oblique forwards, with two weak protuberances recognised each lateral margin and another two at middle of posterior margin.

Elytral intervals moderately convex; striae tenuous, strial punctures sparsely set, 1.5 to 2.0 times as wide as striae.

Protibiae almost straight, with midlongitudinal keel distinct even in apical half, without long apical setae; inner margin strongly constricted before base; external teeth sharp, irregular in size; medio-distal corner slightly produced.

Aedeagus with apicale broad, distinctly divergent in apical third and truncate at apex; basal margin not produced.

Distribution. The nominotypical subspecies occurs in the Himalayas (northern India, Nepal, Bhutan), Andaman Is., Vietnam, Thailand, Taiwan, Philippines, Greater Sunda Is., (including Sulawesi, new record), Lesser Sunda Is., Kai Is. and New Guinea.

Notes. This is the most common species of Sulawesian *Uloma*. It is quite easy to recognise (even in the females) by the large, somewhat broad and depressed stature and reddish legs. The females usually have a vague and slightly more coarsely punctate trace of anterior impression on the pronotum.

Another subspecies, *Uloma (Uloma) rubripes tridentata* KULZER, 1957 (with inner apical projection also on antennomere 9) was described from the Indonesian island Buru, recorded also from the Caroline Is. (KULZER, 1957), and one male specimen in the HHNM is from the Indonesian island Ceram.

Descriptions of New Species of *Uloma* from Sulawesi

Uloma (Uloma) minutissima MERKL et ANDO, sp. nov.

(Figs. 21–26, 67 & 79)

Type series. Holotype: ♂, C. [sic: South] Sulawesi, Palopo, Buntu Kayu Angin, Battang, Wara Barat, alt. 350 m, 31.I.2013, Kiyoshi ANDO leg., S02°57', E120°08' (EUMJ). Paratype: 1 ♂, W. [= West] Sulawesi, Salo Bao, Mamasa, Sulbar, 22.XI.2012, Kiyoshi ANDO leg. (KAJ).

Non-type possibly conspecific specimens examined. 1 ♀, same data as for the holotype; 3 ♀♀, same data as for the paratype.

Measurements. Male (n = 2): Body length: 6.00–7.02 mm; IE/TD 2.22–2.42; PW/PL 1.35–1.58; PL/FL 3.13–3.71; PW/FW 1.88–2.43; EL/EW 1.63–1.77. Female (n = 4): Body length: 7.00–7.42 mm; IE/TD 2.22–2.50; PW/PL 1.39–1.43; EL/EW 1.70–1.78. Pronotum in females widest at middle (one specimen), or widest before base (three specimens).

Male. Elongate, small and shiny, blackish brown, antennae and legs reddish brown. Head without supraorbital protuberances. Clypeus convex, weakly rounded, but slightly emarginate at median portion of apex, with small matt area at middle. Frons weakly excavate, with large and dense punctures. Eyes transversely rounded in dorsal view, without inner ocular sulci. Antennae with antennomeres 7 to 10 slightly transverse. Mentum cordiform, almost flat, with very shallow medial impression and narrow basolateral impressions, anterior margin almost straight, finely rugulose and obscurely punctate, without pubescence; prementum broad and very short Y-shaped, distinctly depressed, with short setae.

Pronotum strongly convex anteriorly, coarsely and densely punctate, widest at middle or widest before base, slightly and roundly emarginate at apex; pronotal anterior impression broad and strongly oblique, without protuberances.

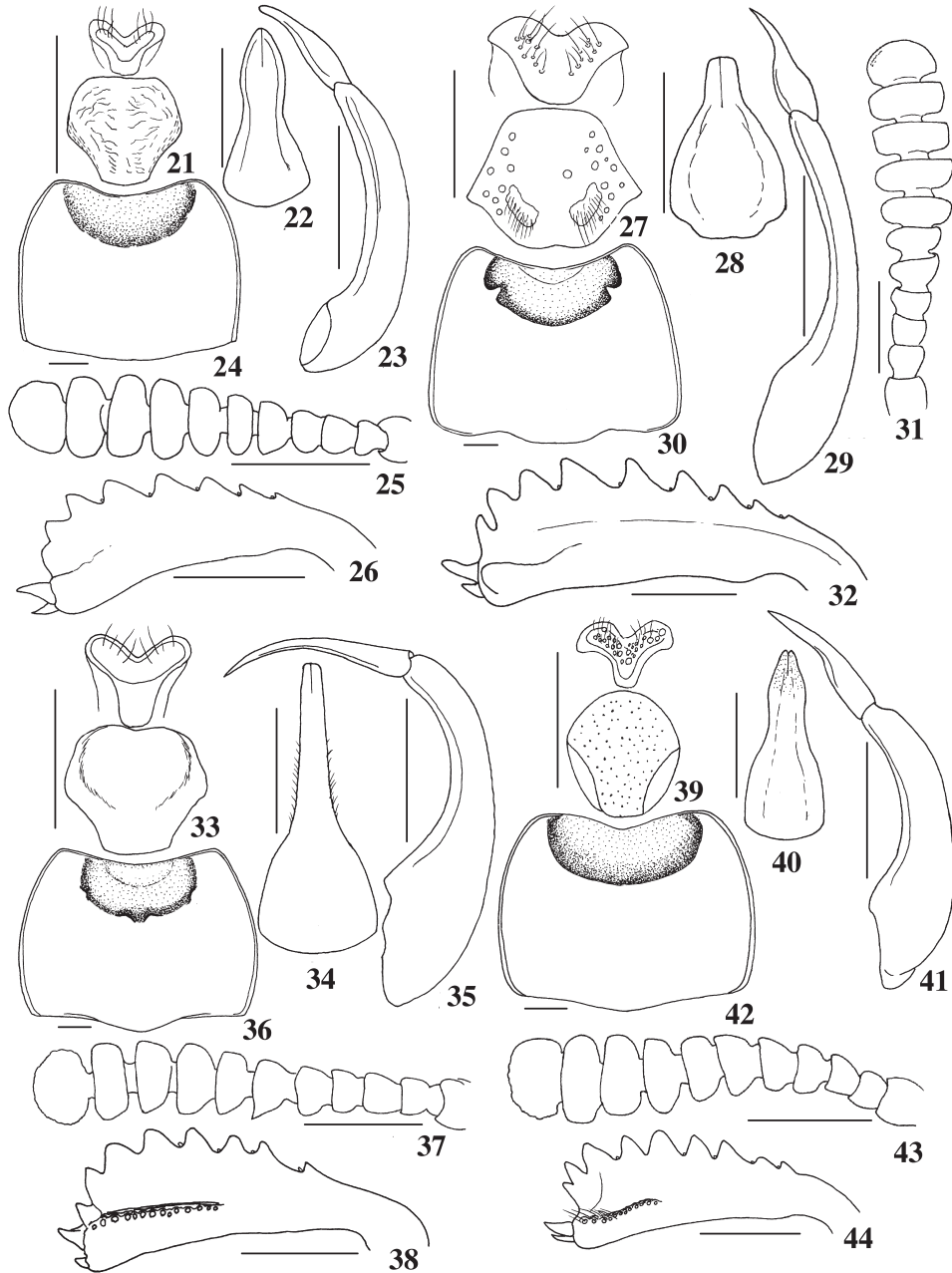
Elytral intervals weakly convex; elytral striae fine, strial punctures also small, more than 2.0 times as wide as striae.

Protibiae coarsely punctate, without midlongitudinal keel; external teeth sharp; medio-distal corner not produced.

Aedeagus with apicale slender, finely and moderately punctate, tapering anteriorly, but slightly widening before apex; basal margin barely produced backwards.

Distribution. Sulawesi.

Etymology. The specific epithet refers to the body length which is the smallest among Sulawesian *Uloma*.



Figs. 21–44. *Uloma* spp. from Sulawesi — 21–26, *Uloma (Uloma) minutissima* sp. nov.; 27–32, *U. (U.) ogawai* sp. nov.; 33–38, *U. (U.) palapoensis* sp. nov.; 39–44, *U. (U.) pelengensis* sp. nov. — 21, 27, 33 & 39, Prementum and mentum; 22, 28, 34 & 40, apicali in dorsal view; 23, 29, 35 & 41, aedeagi in lateral view; 24, 30, 36 & 42, pronota in dorsal view; 25, 31, 37 & 43, right antennae; 26, 32, 38 & 44, right tibiae. Scales: 0.3 mm for 21, 22, 27, 28, 33, 34, 39 & 40 (prementum, mentum and apicali); 0.5 mm for 23–26, 29–32, 35–38 & 41–44 (aedeagi, pronota, antennae and tibiae).

Diagnosis. *Uloma (Uloma) minutissima* sp. nov. is similar to *U. (U.) planicollis* KASZAB, 1939 (New Guinea) in having small size, narrow body, simply impressed male pronotum and similar aedeagus, but easily separable from the latter in having the mentum almost flat, with very shallowly medial impression and narrow basolateral impressions, anterior margin almost straight (*U. (U.) planicollis*: mentum with shallow but distinct anterior impression and wide basolateral impressions, anterior margin slightly concave); pronotum with deeper semicircular anterior impression (*U. (U.) planicollis*: anterior impression narrower and shallow); apicale of aedeagus with distal part slightly widening before apex in dorsal view (*U. (U.) planicollis*: distal part completely parallel-sided, not widening in dorsal view; see fig. 26c in KASZAB, 1939).

***Uloma (Uloma) ogawai* MERKL et ANDO, sp. nov.**

(Figs. 27–32, 68 & 83)

Type series. Holotype: ♂, Gorontalo, Bonebolango, Mt. Tilongkabila (Gunung Tilongkabila), alt. ca. 100–800 m, 0°33'10"N, 123°10'34"E-0°34'28"N, 123°11'30"E, 23–24.II.2013, Ryo OGAWA leg. (EUMJ).

Measurements. Male (n = 1): Body length: 10.68 mm; IE/TD 2.35; PW/PL 1.47; PL/FL 3.31; PW/FW 1.73; EL/EW 1.79.

M a l e. Elongate, robust, shiny, blackish brown, antennae and legs reddish brown. Head without supraorbital protuberances. Clypeus strongly elevated, moderately convex, weakly rounded at apex but slightly emarginate in its median portion; surface matt in posterior portion. Frons deeply and broadly excavated, coarsely and moderately punctate, finely microsculptured. Eyes transverse elliptical in dorsal view, with very fine inner ocular sulci. Antennae with strongly dilated antennomeres 7 to 10. Mentum hexagonal, weakly depressed, with irregular coarse punctures along each side, each puncture with moderately long seta; prementum moderately excavated, with dense setiferous punctures.

Pronotum moderately emarginate at apex, widest just before base, with punctures dense, moderate in size; pronotal anterior impression short, deep and broad, somewhat oblique, with two weak lateral edges and a pair of very weak protuberances along posterior margin.

Elytral intervals almost flat; striae punctures rather dense, more than 2.0 to 3.0 times wider than striae.

Protibiae slightly incurved, with midlongitudinal keel short and obscure; inner margin weakly constricted before base; external teeth large and sharp; medio-distal corner not produced.

Aedeagus with apicale gently tapering in apical third, truncate at apex; basal margin slightly produced.

Distribution. Sulawesi.

Etymology. The specific epithet is dedicated to the collector of the holotype, Dr. Ryô OGAWA (Matsuyama).

Diagnosis. *Uloma (Uloma) ogawai* sp. nov. is similar to *U. (U.) robusticollis* sp. nov. in having elevated clypeus, coarsely and densely punctate frons, strongly transverse antennomeres 7 to 10 and lacking supraorbital protuberances, but differs by mentum hexagonal (*U. (U.) robusticollis*: inverted pear-shaped); elytral intervals almost flat (*U. (U.) robusticollis*: weakly convex); striae punctures rather dense (*U. (U.) robusticollis*: sparse); aedeagus with apicale truncate at apex (*U. (U.) robusticollis*: pointed); protibia with medio-distal corner not produced (*U. (U.) robusticollis*: strongly produced).

***Uloma (Uloma) palopoensis* MERKL et ANDO, sp. nov.**

(Figs. 33–38, 69 & 81)

Type series. Holotype: ♂, S. [= South] Sulawesi, Puncak Palopo, Kaleakan, 26.I.2000, Gala BECCE leg. (EUMJ).

Measurements. Male (n = 1): Body length 8.24 mm; IE/TD 3.08; PW/PL 1.44; PL/FL 3.25; PW/FW 1.97; EL/EW 1.64.

Male. Oblong, weakly convex above, reddish brown, shiny. Head without supraorbital protuberances. Clypeus weakly convex, asperate, weakly rounded at apex. Frons obtriangularly and moderately excavated in middle, coarsely punctate. Antennae with weakly dilated six distal antennomeres; antennomere 6 pointed in inner margin. Mentum transverse oval, strongly elevated, deeply impressed and transversely rugulose in middle; posterior margin elevated, glabrous; prementum roundly bilobed anteriorly, each lobe strongly depressed and coarsely punctate, with a few short setae.

Pronotum shallowly and arcuately emarginate at apex, widest behind middle, finely punctate, punctures coarser in anterior impression; pronotal anterior impression oblique forwards moderately deep, with a pair of weak protuberances at middle of posterior margin.

Elytral intervals moderately convex; strial punctures very sparse, nearly 3.0 times as wide as striae.

Protibiae weakly incurved, with midlongitudinal row of granules in apical half; inner margin very weakly constricted before base; external teeth broad and sharp; medio-distal corner not produced.

Aedeagus with apicale elongate, abruptly narrowing, beak-shaped in apical third in dorsal view, with short sparse setae at sides, distal narrow part much longer than broad proximal part; basal margin not produced.

Distribution. Sulawesi.

Etymology. The specific epithet refers to the type locality, Puncak Palopo in Sulawesi.

Diagnosis. *Uloma (Uloma) palopoensis* sp. nov. resembles *U. (U.) masumotoi* SCHAWALLER, 2000 (Borneo, Sumatra) in having longitudinal row of granules on male protibiae, but differs from the latter in having the mentum transversely oval, deeply impressed, posterior margin elevated, glabrous (*U. (U.) masumotoi*: shallowly impressed, with two arcuate fields of pubescence); only male antennomere 6 pointed in the inner side (*U. (U.) masumotoi*: male antennomeres 6 to 10 pointed in the inner side); apicale of aedeagus is elongate, abruptly narrowing, distal part is longer than broad proximal part in dorsal view (*U. (U.) masumotoi*: apicale more regularly tapering, distal part less narrow, not longer than broad proximal part, see fig. 39 in SCHAWALLER (2000)).

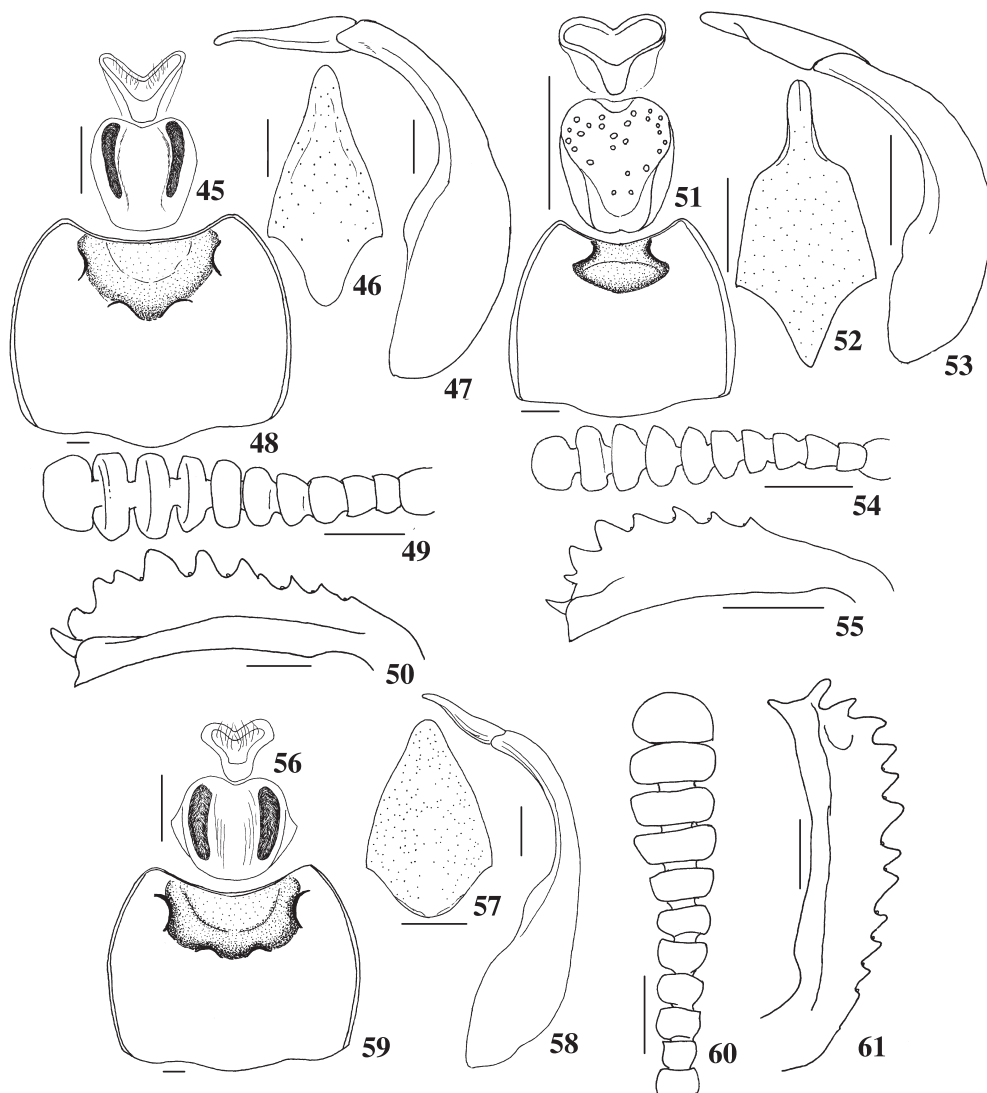
***Uloma (Uloma) pelengensis* MERKL et ANDO, sp. nov.**

(Figs. 39–44, 71 & 85)

Type series. Holotype: ♂, Sulawesi Tenggara [sic: Tengah], Peleng I., Mt. Osan, Prop, V.2015, native leg. (EUMJ). Paratypes: 13 ♂♂, same data as for the holotype (6 ♂♂ in HNHM, 7 ♂♂ in KAOJ).

Non-type possibly conspecific specimens examined. 12 ♀♀, same data as for the holotype (KAJO).

Measurements. Male (n = 14): Body length: 6.77–8.05 mm; IE/TD 2.35–2.67; PW/PL 1.44–1.56; PL/FL 3.07–3.43; PW/FW 1.76–2.11; EL/EW 1.63–1.70. Female (n = 12): Body length: 7.03–7.57 mm; IE/TD 2.42–2.86; PW/PL 1.42–1.51; EL/EW 1.64–1.73. Pronotum in females widest behind middle (three specimens), or widest before base (nine specimens).



Figs. 45–61. *Uloma* spp. from Sulawesi — 45–50, *Uloma (Uloma) robusticollis* sp. nov.; 51–55, *U. (U.) sulawesiensis* sp. nov.; 56–61, *U. (U.) superciliosa* sp. nov. — 45, 51 & 56, Prementum and mentum; 46, 52 & 57, apicali in dorsal view; 47, 53 & 58, aedeagi in lateral view; 49, 54 & 60, right antennae; 50, 55 & 61, right tibiae. Scales: 0.3 mm for 45–46, 51–52 & 56–57 (prementum, mentum and apicali); 0.5 mm for 47–50, 53–55 & 58–61 (aedeagi, antennae and tibiae).

M a l e. Elongate, parallel-sided, dark reddish brown. Head without supraorbital protuberances. Clypeus strongly to moderately convex, asperate, somewhat matt on middle, weakly rounded at apex. Frons strongly and obtriangularly depressed behind clypeus, coarsely and densely punctate. Eyes transverse elliptical, with fine inner ocular sulci. Mentum oblong, weakly convex in middle, obtriangular, finely punctate, shallowly impressed at sides before base, without pubescence; prementum V-shaped, evenly excavate, with setae within impression.

Pronotum moderately and roundly emarginate at apex, finely and rather densely punctate, coarse-



Figs. 62–67. Head and pronotum of *Uloma* spp. from Sulawesi. — 62, *Uloma (Uloma) bituberosa bituberosa* KIRSCH, 1875; 63, *U. (U.) hirticornis* Kaszab, 1980; 64, *U. (U.) laesifrons* FAIRMAIRE, 1882; 65, *U. (U.) picicornis* FAIRMAIRE, 1882; 66, *U. (U.) rubripes rubripes* (HOPE, 1831); 67, *U. (U.) minutissima* sp. nov.

ly and densely so in anterior impression, widest at middle (three specimens), widest behind middle (four specimens), or widest before base (seven specimens); pronotal anterior impression distinctly transverse, shallow and oblique forwards, without protuberances.

Elytral intervals distinctly convex; striae punctures sparse, 3.0 to 4.0 times as wide as striae.

Protibiae weakly incurved; inner margin not constricted before base, with long apical setae; mid-longitudinal row of granules obscure and short; external teeth sharp, irregular in size; medio-distal corner acute, not produced.

Aedeagus with apical beak-shaped and slightly widening in apical half, finely punctate in apical portion; basal margin not produced.

Distribution. Sulawesi.

Etymology. The specific epithet refers to the type locality, Peleng, an offshore island of Central Sulawesi.

Diagnosis. *Uloma (Uloma) pelengensis* sp. nov. resembles *U. (U.) picicornis* FAIRMAIRE, 1882 in absence of protuberances near pronotal anterior impression and shape of mentum, but is readily separable from the latter in the following characters: body smaller (6.77–8.05 mm) and more parallel-sided (*U. (U.) picicornis*: 8.00–10.18 mm, more oval); clypeus weakly rounded at apex (*U. (U.) picicornis*: more rounded); pronotum with punctures coarser, and those in anterior impression even coarser and denser (*U. (U.) picicornis*: very fine); IE/TD 2.35–2.67 (*U. (U.) picicornis*: IE/TD 2.29–3.03); frons strongly and obtriangularly depressed behind clypeus (*U. (U.) picicornis*: deeply excavated); aedeagus with apicale finely punctate in apical portion, slightly widening in apical half (*U. (U.) picicornis*: almost parallel-sided distally) (*U. (U.) picicornis* see Figs. 16 & 17).

***Uloma (Uloma) robusticollis* MERKL et ANDO, sp. nov.**

(Figs. 45–50, 70 & 84)

Type series. Holotype: ♂, C. of S. [= Centre of South] Sulawesi, Tanah Toraja, Karum Ganga, Indonesia, I.2000, Gala BECCE leg. (EUMJ). Paratype: 1 ♂, S. [= South] Sulawesi, Sa'dam Balusa, Tanah Toraja, alt. 2,500 m, Indonesia, 21–22.I.2000, Gala BECCE leg. (KAOJ).

Non-type possibly conspecific specimen examined. 1 ♀, same data as for the holotype (KAOJ).

Measurements. Male (n = 2): Body length 13.45–14.78 mm; IE/TD 3.08; PW/PL 1.41–1.45; PL/FL 3.50–3.87; PW/FW 1.85–1.91; EL/EW 1.75–1.78. Female (n = 1): Body length 13.25 mm; IE/TD 2.96; PW/PL 1.44; EL/EW 1.76. Pronotum in female widest before base.

Male. Elongate, robust, shiny, dark reddish brown, legs lighter. Head without supraorbital protuberances. Clypeus obtrapezoidal, strongly elevated, weakly convex, surface matt in median portion; apex weakly rounded but slightly emarginate at median portion. Frons deeply and broadly excavated, densely punctate, with lineate microsculpture. Eyes slender and transverse in dorsal view, without inner ocular sulci. Antennae with distinctly transverse antennomeres 7 to 10. Mentum inverted pear-shaped, deeply depressed in middle, with elongate depression along each side, with a streak of long erect hairs along elongate depressions; prementum flattened, with a pair of large oval lobes anteriorly, sparsely setiferous and densely punctate.

Pronotum moderately and arcuately emarginate at apex, very finely punctate throughout, widest at middle (one specimen) or widest behind middle (one specimen); pronotal anterior impression deep and broad, with one weak protuberance on each lateral margin and a pair of very weak protuberances along the posterior margin.

Elytral intervals slightly convex; strial punctures sparse, as wide as or a little wider than striae.

Protibiae weakly incurved, with midlongitudinal keel distinct and long; inner margin weakly constricted before base; external teeth large and sharp; medio-distal corner strongly produced.

Aedeagus with apicale gently tapering in apical third, pointed, with sparse and minute punctures; sides slightly concave, nearly straight in lateral view; basal margin strongly produced backwards.

Distribution. Sulawesi.

Etymology. The specific epithet refers to the robust pronotum.

Diagnosis. *Uloma (Uloma) robusticollis* sp. nov. is similar to *U. (U.) cavifrons* KASZAB, 1939 (New Guinea) in having similarly deep impression of male pronotum with two larger anterolateral and two smaller posterior protuberances and excavated frons. However, it is readily separable from the latter in having the mentum with deep midlongitudinal impression and two longitudinal streaks of dense erect hairs (*U. (U.) cavifrons*: mentum almost flat with very shallow midlongitudinal impression, glabrous); elytral intervals slightly convex (*U. (U.) cavifrons*: distinctly convex); apicale of aedeagus al-



Figs. 68–73. Head and pronotum of *Uloma* spp. from Sulawesi. — 68, *Uloma (Uloma) ogawai* sp. nov.; 69, *U. (U.) palopoensis* sp. nov.; 70, *U. (U.) robusticollis* sp. nov.; 71, *U. (U.) pelengensis* sp. nov.; 72, *U. (U.) sulawesiensis* sp. nov.; 73, *U. (U.) superciliosa* sp. nov.

most regularly tapering, with slightly concaved sides in dorsal view, nearly straight in lateral view (*U. (U.) cavifrons*: apicale abruptly narrowing, distal part almost finger-like in dorsal view, arcuate in lateral view, see figs. 29c, d in KASZAB (1939)).

***Uloma (Uloma) sulawesiensis* MERKL et ANDO, sp. nov.**

(Figs. 51–55, 72 & 82)

Type series. Holotype: ♂, S. [= South] Sulawesi, Puncak Palopo, Kaleakan, Indonesia, 26. I.2000, Gala BECCE leg. (EUMJ). Paratypes: 5 ♂♂, same data as for the holotype (KAOJ); 2 ♂♂, C. of S. [= Centre of South] Sulawesi, Luwu, Puncak Palopo, Mt. Sampuna, Indonesia, I.2000, Gala BECCE

leg. (KAOJ); 2 ♂♂, S. [= South] Sulawesi, Puncak Palopo, Sam Puna, alt. 1,050 m, 23.I.2000, G. BECCE leg. (1 ♂ in HNHM, 1 ♂ in KAOJ).

Non-type possibly conspecific specimens examined. 4 ♀♀, same data as for the holotype (KAOJ); 3 ♀♀, Puncak Palopo, Sam Puna, alt. 1,050 m, S. [= South] Sulawesi, 23.I.2000, G. BECCE leg. (KAOJ); 1 ♀, C. of S. [= Centre of South] Sulawesi, Luwu, Puncak Palopo, Mt. Sampuna, Indonesia, I.2000, Gala BECCE leg. (KAOJ); 1 ♀, Puncak Palopo, S. [= South] Sulawesi, 2.I.2000, K. ANDO leg. (KAOJ).

Measurements. Male (n = 10): Body length: 7.23–8.42 mm; IE/TD 4.12–5.00; PW/PL 1.42–1.49; PL/FL 3.21–3.94; PW/FW 2.30–91; EL/EW 1.55–1.67. Female (n = 9): Body length: 7.18–8.11 mm; IE/TD 3.81–4.60; PW/PL 1.36–1.45; EL/EW 1.53–1.64. Pronotum in females widest before base (four specimens), widest behind middle (four specimens), or widest at middle (one specimen).

Male. Elongate, shiny, light to dark reddish brown. Head without supraorbital protuberances. Clypeus convex, densely punctate, shallowly emarginate at apex. Frons weakly excavated behind clypeus. Eyes very short and transverse, without inner ocular sulci. Antennae with distal seven antennomeres weakly dilated. Mentum inverted pear-shaped, flattened in middle, slightly concave anteriorly, with shallow basolateral impressions, coarsely and sparsely punctate, without pubescence; prementum slightly Y-shaped, excavated anteriorly, with a few long setae.

Pronotum distinctly convex, strongly and arcuately emarginate at apex, coarsely and densely punctate throughout, widest behind middle (three specimens), widest before base (five specimens), or widest at middle (two specimens); pronotal anterior impression small, shallow and transverse, with rudimental protuberance laterally and a pair of very weak protuberances at middle along posterior margin.

Ellytral intervals weakly convex; strial punctures sparse, as wide as or a little wider than striae.

Protibiae slightly incurved, with an obscure midlongitudinal keel; inner margin weakly constricted before base; external teeth sharp, irregular in size; medio-distal corner not produced.

Aedeagus with apicale finely and sparsely punctate, very abruptly and angulately narrowing, distal third elongate and parallel-sided; basal margin acutely processed backwards.

Distribution. Sulawesi.

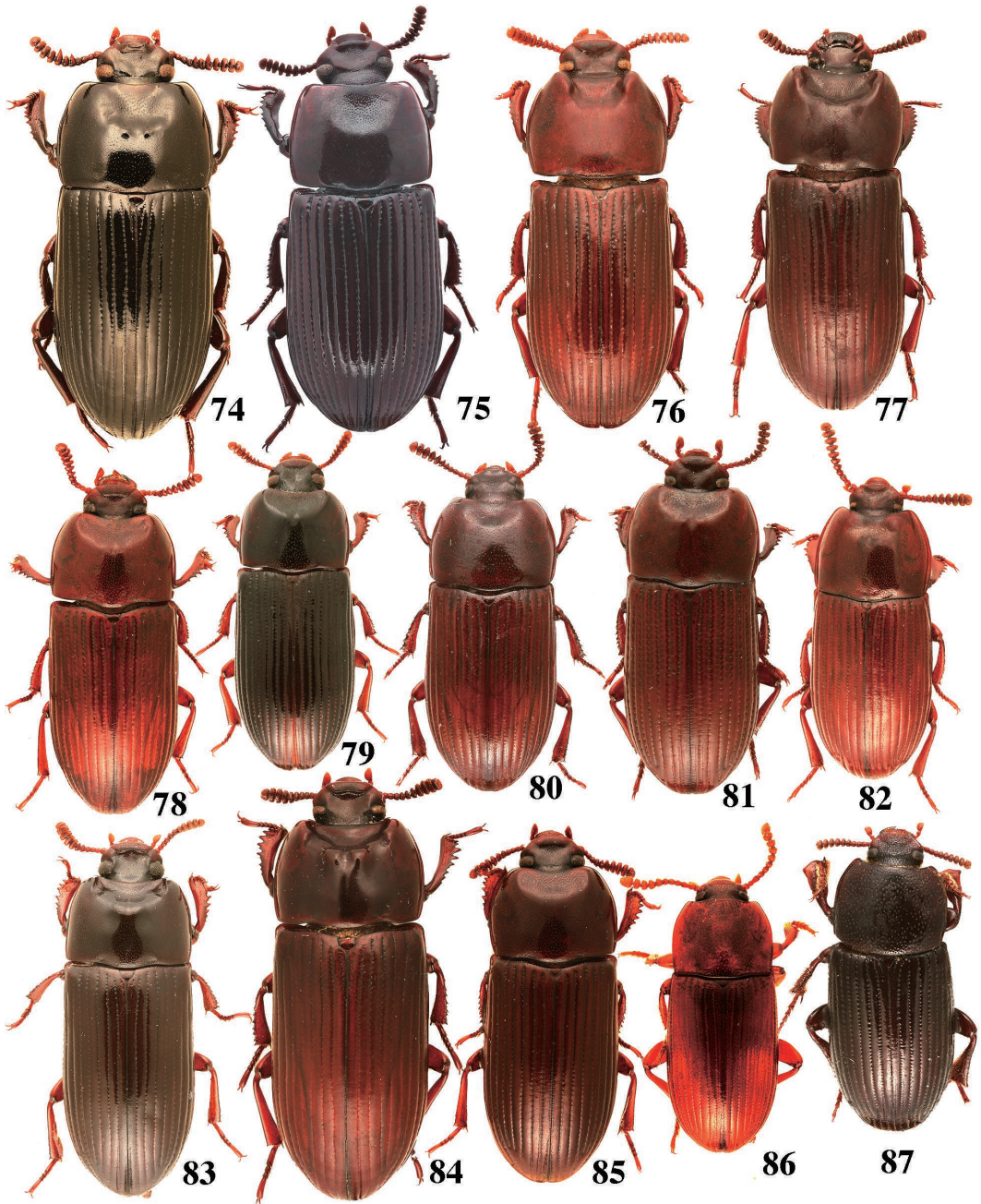
Etymology. The specific epithet refers to the island of Sulawesi.

Diagnosis. *Uloma (Uloma) sulawesiensis* sp. nov. is similar to *U. (U.) simplex* KASZAB, 1939 (New Guinea) in the form of the aedeagus (basal margin of apicale acutely processed backwards, apical part strongly narrowed, also similar to the aedeagus of *U. (U.) binodosa* KASZAB, 1939, see fig. 30c, d) and the mentum (almost flat, slightly concave anteriorly, with shallow basolateral impressions). However, the male pronotum of *U. (U.) sulawesiensis* has narrow and shallow anterior impression, with rudimental protuberances on its rim (*U. simplex*: the impression is deeper and broader, with two weak protuberances on anterolateral edge). The aedeagus of *U. (U.) sulawesiensis* sp. nov. is similar to that of *U. (U.) planicollis* KASZAB, 1939, but the apicale of *U. (U.) sulawesiensis* sp. nov. is abruptly and angulately narrowing, with distal part elongate and parallel-sided (*U. (U.) planicollis*: apicale is abruptly but not angulately narrowing, with distal part less elongate; see fig. 26c in KASZAB (1939)).

***Uloma (Uloma) superciliosa* MERKL et ANDO, sp. nov.**

(Figs. 56–61, 73 & 77)

Type series. Holotype: ♂, C. of S. [= Centre of South] Sulawesi, Tanah Toraja, Karum Ganga, I.2000, native leg. (EUMJ). Paratypes: 1 ♂, same data as for the holotype (HNHM); 1 ♂, ditto, except



Figs. 74–87. Ulomini spp. from Sulawesi, habitus. — 74, *Uloma (Uloma) rubripes rubripes* (HOPE, 1831); 75, *U. (U.) hirticornis* KASZAB, 1980; 76, *U. (U.) bituberosa bituberosa* KIRSCH, 1875; 77, *U. (U.) superciliosa* sp. nov.; 78, *U. (U.) picicornis* FAIRMAIRE, 1882; 79, *U. (U.) minutissima* sp. nov.; 80, *U. (U.) laesifrons* FAIRMAIRE, 1882; 81, *U. (U.) palapoensis* sp. nov.; 82, *U. (U.) sulawesiensis* sp. nov.; 83, *U. (U.) ogawai* sp. nov.; 84, *U. (U.) robusticollis* sp. nov.; 85, *U. (U.) pelengensis* sp. nov.; 86, *Cneocnemis haemorrhoea* (FAIRMAIRE, 1893); 87, *Ulomimus indicus* BATES, 1873.

for the collector name as Gala BECCE leg. (KAJO).

Non-type possibly conspecific specimen examined. 1 ♀, Puncak Palopo, S. [= South] Sulawesi, 2.I.2000, K. ANDO leg.

Measurements. Male (n = 3): Body length: 13.89–16.17 mm; IE/TD 2.67–3.33; PW/PL 1.40–1.60; PL/FL 2.90–3.13; PW/FW 1.19–1.84; EL/EW 1.67–1.72. Female (n = 1): Body length: 14.25 mm; IE/TD 2.76; PW/PL 1.49; EL/EW 1.61. Pronotum in female widest before base.

Male. Elongate, subparallel-sided, black to dark reddish brown, antennae and legs constantly reddish brown. Head with supraorbital protuberances. Clypeus highly elevated, forming trapezoidal platform concave on top, but in the concavity again with a slightly elevated and coarsely punctate opaque part, weakly and roundly produced forwards at apex; elevated platform bordered laterally by deep grooves. Eyes distinctly convex, slender and transverse in dorsal view, without inner ocular sulci. Frons deeply excavated, sparsely and very finely punctate. Antennae with six distal antennomeres rather weakly dilated. Mentum oblong-cordiform, with shallow midlongitudinal impression bordered by two longitudinal streaks of short sparse erect hairs; prementum weak and short Y-shaped, with dense, long setae.

Pronotum arcuately emarginate at apex, very finely punctate, widest at middle (two specimens) or widest behind middle (one specimen); pronotal anterior impression semicircular, deep and broad, with one weak protuberance at each lateral margin and a pair of very weak protuberances along posterior margin of the impression.

Elytral intervals weakly convex; strial punctures sparse, as wide as and/or a little wider than striae.

Protibiae weakly incurved; inner margin weakly constricted before base; midlongitudinal keel distinct throughout whole length; external teeth large and sharp; medio-distal corner with distinct finger-like prolongation.

Aedeagus with apicale short, finely and moderately punctate, evenly tapering in apical third, almost straight in lateral view; basal margin slightly produced backwards in dorsal view.

Distribution. Sulawesi.

Etymology. The specific epithet refers to the supraorbital protuberances (supercilium means eyebrow in Latin).

Diagnosis. *Uloma (Uloma) superciliosa* sp. nov. is separated from other known Indomalayan and Australasian congeners by the structure of the male clypeus, which forms a trapezoidal elevated concave platform bordered by deep grooves and in the concavity with another elevated part. Presence of deep excavation of frons and two supraorbital protuberances at inner side of eyes is also distinctive. The arrangement of protuberances around pronotal impression and the longitudinal hair streaks on mentum are somewhat similar to those of *U. (U.) robusticollis* sp. nov., but the apicale of the aedeagus of the latter is much narrower.

Finger-like prolongation on medio-distal corner of male protibia is present in *Uloma (Uloma) opacicollis* GEBIEN, 1927 (Sumatra), *U. (U.) planimentum* GEBIEN, 1914 (Borneo Sumatra, Sumba), *U. (U.) girardi* SCHAWALLER, 2000 (Java, Sumatra) and *U. (U.) westringi* MANNERHEIM, 1844 (Borneo, Java) (see SCHAWALLER, 2000), but these species are much smaller and have different clypeus.

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要 約

Ottó MERKL・安藤清志：スラウエシ産ゴミムシダマシ相の研究。V. エグリゴミムシダマシ族の記録とエグリゴミムシダマシ属の7新種について（鞘翅目ゴミムシダマシ科）。——— スンダ列島のスラウエシ島では、これまでエグリゴミムシダマシ族の記録は皆無であったが、多くはないが安藤の手許に保管されている本族の種について記録しておく。調査した標本ではアカアシヒメゴミムシダマシ属 *Cneocnemis*, *Ulominus* 属, エグリゴミムシダマシ属 *Uloma* の3属が確認できた。アカアシヒメゴミムシダマシ属 *Cneocnemis*, *Ulominus* 属はそれぞれ1種の既知種, *Cneocnemis haemorrhoea* (FAIRMAIRE, 1893), *Ulominus indicus* BATES, 1873の本島への分布が判明し, エグリゴミムシダマシ属 *Uloma* は12種を確認し, うち5種は既知種であった。この既知種のうち3種, *Uloma (Uloma) rubripes rubripes* (HOPE, 1831), *U. (U.) laesifrons* FAIRMAIRE, 1882, *U. (U.) picicornis* FAIRMAIRE, 1882は東南アジアに比較的に広く分布する種であるが, *U. (U.) hirticornis* KASZAB, 1980はベトナムから記載され, *U. (U.) bituberosa bituberosa* KIRSCH, 1875はニューギニアから記載されたもので, とともにスラウエシでの分布が興味深い。また, 本研究の過程で *Uloma emarginata hamata* GEBIEN, 1920が *U. (U.) bituberosa bituberosa* KIRSCH, 1875の同物異名であると判明したのでその処理を行い, ハンガリー自然史博物館の標本を元に, 本種のソロモン諸島産個体を確認し新分布を加えた。エグリゴミムシダマシ属 *Uloma* の残る7種は新種であったので, 次の新名を与え記載した。 *Uloma (Uloma) minutissima* sp. nov., *U. (U.) ogawai* sp. nov., *U. (U.) palopoensis* sp. nov., *U. (U.) pelengensis* sp. nov., *U. (U.) robusticollis* sp. nov., *U. (U.) sulawesiensis* sp. nov., *U. (U.) superciliosa* sp. nov.

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