

Two New Species of the Genus *Flavohelodes*
(Coleoptera, Scirtidae) from Taiwan

Hiroyuki YOSHITOMI

Zoological Laboratory, Faculty of Agriculture, Meijo University,
Tempaku-ku, Nagoya, 468 Japan

and

Masataka SATÔ

Biological Laboratory, Nagoya Women's University,
Mizuho-ku, Nagoya, 467 Japan

Abstract Two new scirtid beetles belonging to the genus *Flavohelodes*, viz. *F. taiwanensis* sp. nov. and *F. humeralis* sp. nov., are described from Taiwan. This is the first record of the genus *Flavohelodes* from Taiwan.

The genus *Flavohelodes* KLAUSNITZER, 1980 has been represented by fifteen species recorded from the Holarctic and Oriental Regions. Recently, we had an opportunity to examine some Taiwanese specimens of the genus hitherto unrecorded from the island. After a careful study, we have come to the conclusion that they comprise two new species.

In this paper, we are going to describe them under the names *Flavohelodes taiwanensis* sp. nov. and *F. humeralis* sp. nov. It is interesting to note that the present species are more closely related to the Holarctic species than to the Oriental ones in view of male genitalic features. They may be the relicts of Holarctic element which spread from the continent in the past.

The abbreviations used in the present paper are as follows: PL – length of pronotum; PW – width of pronotum; EL – length of elytra; EW – width of elytra; TL – total length (PL plus EL).

The holotypes to be designated are preserved in the collection of the National Science Museum (Nat. Hist.), Tokyo, and the paratypes are in the Biological Laboratory, Nagoya Women's University.

Flavohelodes taiwanensis YOSHITOMI et M. SATÔ, sp. nov.

(Figs. 1–9)

Male. Body oval, moderately convex, shining, closely covered with yellowish



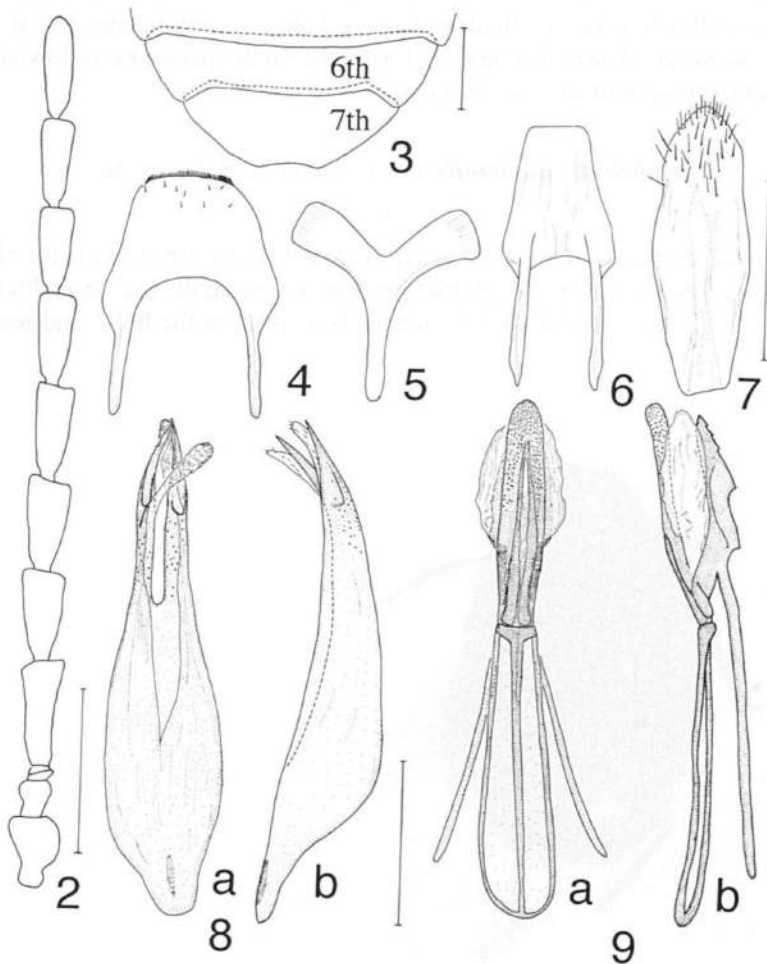
Fig. 1. *Flavohelodes taiwanensis* sp. nov., holotype male.

white hairs. Head brown; labrum and maxillary palpus yellowish brown; antenna brown except for basal three segments which are yellowish brown; pronotum and scutellum yellowish orange; elytra and ventral surface of body black, with the apex of 7th abdominal sternite somewhat pale; legs yellowish orange.

Head slightly convex, minutely granulate. Clypeus closely and minutely granulate, with the front margin almost straight. Labrum transverse, covered with long hairs. Eye large, prominent; the distance between eyes about 1.3 times as long as the diameter of an eye. Antennae long, thick, reaching about proximal 1/3 of elytra; 4th to 10th segments slightly serrate; approximate ratio of each segment (paratype) as 4.5:2.5:1.0:7.0:6.0:6.5:6.5:6.3:5.8:5.8:6.8. Pronotum semicircular, broadest at posterior end, wider than long ($PW/PL=1.6-1.8$), moderately granulate. Scutellum triangular, finely punctate. Elytra oval, broadest at middle, distinctly and closely punctate; EL larger than EW ($EL/EW=1.3$) and than PL ($EL/PL=3.0-3.4$); EW larger than PW ($EW/PW=1.4$). Ventral surface of thoraces and abdominal sternites closely covered with punctures and short hairs; apical margin of 7th abdominal sternite shallowly concave.

Eighth tergite well sclerotized, trapezoidal, covered with minute spines on posterior margin and some minute setae in posterior area, with a pair of stout apodemes pro-

jecting from near antero-lateral corners; 8th sternite slightly sclerotized, Y-shaped; 9th tergite weakly sclerotized, trapezoidal, with a pair of apodemes protruding from near antero-lateral corners; 9th sternite oblong-oval, weakly sclerotized, covered with short setae in caudal 1/3. Tegmen long, well sclerotized, bifid in about apical 1/3 (parameres), with pointed apices; a pair of membranous lobes projecting from inner margins of parameres, closely covered with minute spines. Penis long, well sclerotized; dorsal piece about 6.8 times as long as wide, subparallel-sided from near anterior end to near posterior end, its proximal half elongated elliptical, its caudal half lobed in a club-like form, clearly punctate in apical area; ventral piece connected with the middle of dorsal



Figs. 2-9. *Flavohelodes taiwanensis* sp. nov., male. — 2, Antenna; 3, 6th to 7th abdominal sternites; 4, 8th tergite; 5, 8th sternite; 6, 9th tergite; 7, 9th sternite; 8, tegmen (a, dorsal aspect; b, left lateral aspect); 9, penis (a, dorsal aspect; b, left lateral aspect). (Scale=0.5 mm.)

piece, with a pair of rod-like lobes protruding antero-laterally, its ventral edge sharp and serrate, with pointed apex.

Measurements (n=2). TL, 3.5–3.6 mm; EW, 1.9–2.0 mm; PL, 0.8–0.9 mm; EL, 2.7 mm; PW, 1.4 mm.

Female. Unknown.

Type series. Holotype: ♂, Kao-i, alt. 600 m, Taoyuan Hsien, Taiwan, 17–III–1981, T. SHIMOMURA leg. (genitalia on slides Nos. HY 163 and 164; abdominal sternite on slide No. HY 162). Paratype: ♂, same data as for the holotype (right antenna on slide No. HY 161; genitalia on slide No. HY 210).

Remarks. This species is similar to *F. protecta* (HAROLD, 1881) known from Japan in the shallowly concave 7th abdominal sternite and bifid tegmen (KLAUSNITZER, 1973). It is, however, clearly distinguished from the latter species by yellowish orange scutellum and unique conformation of penis.

Flavohelodes humeralis YOSHITOMI et M. SATÔ, sp. nov.

(Figs. 10–22)

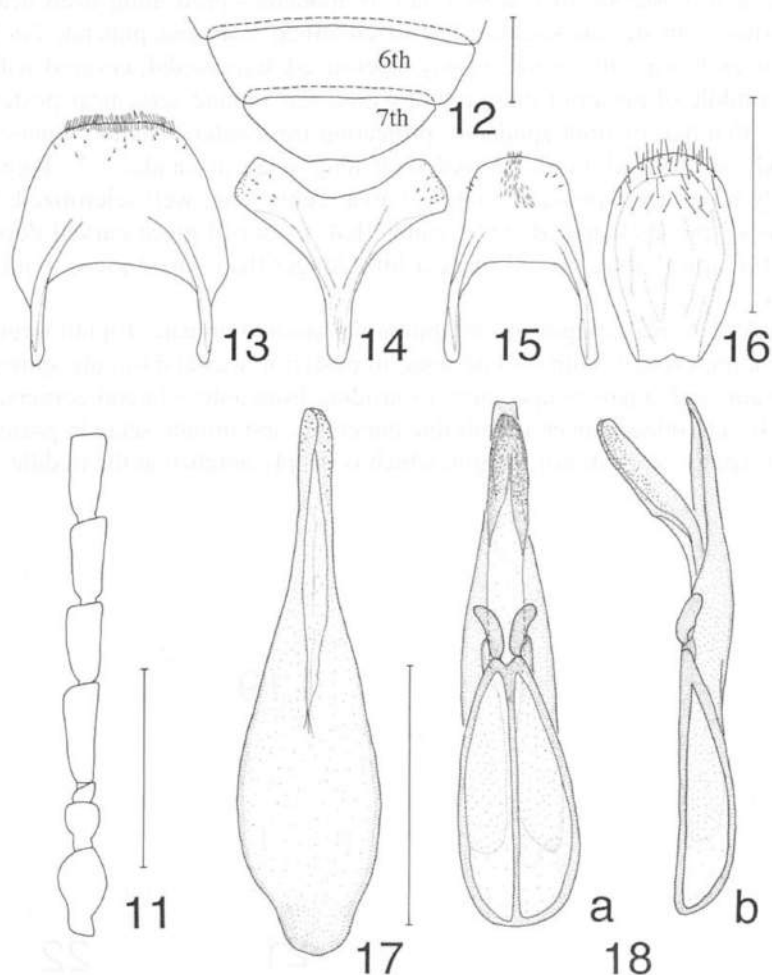
Body oval, convex, shining, closely covered with yellowish white hairs. Head and mouth parts yellowish brown, though the vertex is somewhat dusky; 1st to 7th antennal segments yellowish brown (8th to 11th segments missing in the holo- and paratypes);



Fig. 10. *Flavohelodes humeralis* sp. nov., holotype male.

pronotum yellowish orange; scutellum yellowish brown; elytra brownish black, with a pair of yellowish orange markings on humeral angles, which reach about proximal 1/5 of elytral margins, oblique in the holotype and fan-shaped in the paratypes; ventral surface of body brownish black, except for yellowish orange proximal 1/5 of epipleura and fuscous apex of 7th abdominal sternite; legs orange.

Head slightly convex, minutely granulate. Clypeus closely and minutely granulate, its front margin somewhat concave. Labrum transverse, covered with long hairs. Eye large, prominent; the distance between eyes about 1.2 times as large as the diameter of an eye. Antennae somewhat thin, not serrate; approximate ratio of 1st to 7th seg-

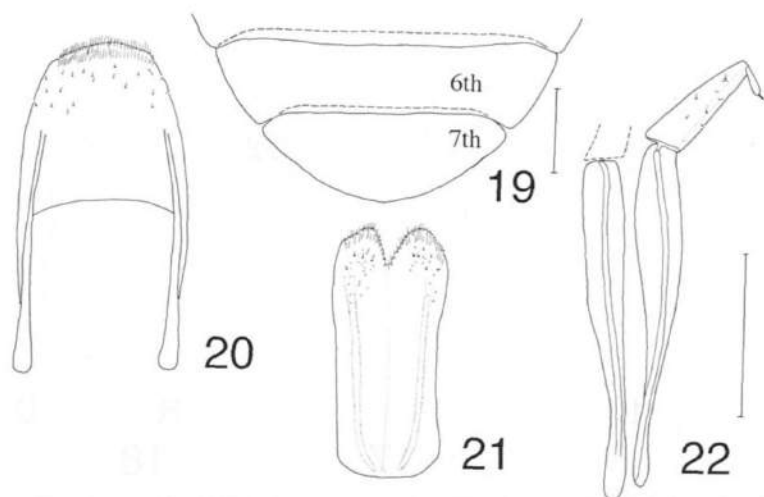


Figs. 11–18. *Flavohelodes humeralis* sp. nov., male. — 11, Antenna (holotype); 12, 6th to 7th abdominal sternites; 13, 8th tergite; 14, 8th sternite; 15, 9th tergite; 16, 9th sternite; 17, tegmen; 18, penis (a, dorsal aspect; b, left lateral aspect). (Scale=0.5 mm.)

ments in male ($n=2$, mean) as 3.8:2.0:1.0:4.6:3.8:3.9:3.7. Pronotum semicircular, broadest at posterior end, wider than long ($PW/PL=1.9$), closely covered with long hairs. Scutellum triangular, closely punctate. Elytra oblong-oval, broadest a little before the middle, distinctly and closely punctate; EL larger than EW ($EL/EW=1.4$) and than PL ($EL/PL=3.8-3.9$ in male, 3.3 in female); EW larger than PW ($EW/PW=1.5$ in male, 1.4 in female). Ventral surface of thoraces and abdominal sternites closely covered with fine punctures and short hairs.

Male. Apical margin of 7th abdominal sternite almost straight. Eighth tergite well sclerotized, trapezoidal, covered with long spines on posterior margin and some minute setae in posterior area, with a pair of apodemes protruding from near antero-lateral corners; 8th sternite slightly sclerotized, broad Y-shaped, punctate finely in apical area of each arm; 9th tergite weakly sclerotized, trapezoidal, covered with minute spines in middle of posterior margin and with a few minute setae near postero-lateral corners, with a pair of stout apodemes projecting from antero-lateral corners; 9th sternite weakly sclerotized, oval, covered with long setae in caudal 1/3. Tegmen long, moderately sclerotized, punctate in apical area. Penis long, well sclerotized; proximal half of dorsal piece elongated ovate; caudal half of dorsal piece curved dorsally, and punctured in apical area; ventral piece a little longer than dorsal piece, with the apex biangulate.

Female. Apical margin of 7th abdominal sternite arcuate. Eighth tergite poorly sclerotized, trapezoidal, with minute setae in posterior area and minute spines on posterior margin, with a pair of apodemes protruding from antero-lateral corners; 8th sternite weakly sclerotized, covered with fine punctures and minute setae in posterior area, with small spines on posterior margin, which is deeply notched at the middle. Ovipositor



Figs. 19-22. *Flavohelodes humeralis* sp. nov., female. — 19, Sixth to 7th abdominal sternites; 20, 8th tergite; 21, 8th sternites; 22, ovipositor. (Scale=0.5 mm.)

tor moderate in length; stylus with two setae at the apical end; coxite with some minute setae; approximate ratio of the lengths of stylus, coxite and baculus as follows: 1.0:4.0:11.2.

Measurements. Male (n=2): TL, 3.8–3.9 mm; EW, 2.2 mm; PL, 0.8 mm; EL, 3.0–3.1 mm; PW, 1.5 mm. Female (n=1): TL, 4.3 mm; EW, 2.4 mm; PL, 1.0 mm; EL, 3.3 mm; PW, 1.7 mm.

Type series. Holotype: ♂, Meifeng, Nantou Hsien, Taiwan, 13–V–1975, S. IMASAKA leg. (right antenna on slide No. HY 245). Paratypes: 1 ♂, same data as for the holotype (left antenna on slide No. HY 242; 8th and 9th abdominal segments on slide No. HY 243); 1 ♀, Sungkang, Nantou Hsien, Taiwan, 24–IV–1988, no collector's name (genitalia on slide No. HY 244).

Remarks. This species is very similar in male genitalic structure to *F. flavicollis* (KIESENWETTER, 1859), the type species of the genus, known from Europe and Siberia, and also to *F. thoracica* (MELSHEIMER, 1864) from North America (KLAUSNITZER, 1973, 1974). It is, however, easily distinguished from them by the yellowish orange markings on the humeral angles.

Acknowledgments

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要 約

吉富博之・佐藤正孝：台湾のキムネマルハナノミ属の2新種。——台湾から未記録であったキムネマルハナノミ属 *Flavohelodes* の2新種，*F. taiwanensis* YOSHITOMI et M. SATÔ と *F. humeralis* YOSHITOMI et M. SATÔ を記載した。この2種は雄交尾器の特徴から，東洋区の種類より全北区のものに近縁であり，生物地理学的に興味が高い。

References

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