

A Revision of the Taiwanese Species of *Robustanoplodera* (Coleoptera, Cerambycidae, Lepturinae)

Tôru SHIMOMURA

1–17, Ohi 3-chome, Shinagawa-ku, Tokyo, 140 Japan

Abstract A new species, *Robustanoplodera taiyal*, is described from Taiwan. A key is given for the two species of *Robustanoplodera* from Taiwan.

The genus *Robustanoplodera* was known from Taiwan only from the species *tricolor* (GRESSITT, 1935). However, I found another species which is easily distinguishable from *R. tricolor* by the coloration of the prothorax and by the shape of the last abdominal sternite in the male. This species was regarded by SEKI (1944) and HAYASHI (1960) as an aberrant form of *R. tricolor*. Actually, however, it seems closer to a species from North Vietnam than to *R. tricolor*, and I am describing it as a distinct species.

Genus *Robustanoplodera* PIC

Anoplodera (*Robustanoplodera*) PIC, 1954, L'Échange, **70** (538): 13 (Type species: *A. (R.) bicolorimembris* PIC, 1954, China).

Tamanukia HAYASHI, 1960, Niponius, **1** (6): 9 (Type species: *Anoplodera*? *tricolor* GRESSITT, 1935, Taiwan).

Koichius HAYASHI, 1966, Bull. Osaka Jonan Women's Jr. Coll., **1**: 2 (n. n. for *Tamanukia* HAYASHI, 1960, which was preoccupied by *Tamanukia* N. BARANOV, 1935, a parasitic fly genus, Tachinidae, Diptera).

Robustanoplodera: HAYASHI & VILLIERS, 1985, Bull. Osaka Jonan Women's Jr. Coll., **19–20**: 6–7, 40–41.

This genus seems related to *Anoploderomorpha*, but can be characterized by the following characteristics: male genitalia with lateral lobes of parameres broadened and concave on the ventral side, under part of parameres projecting inside in ventral view; metasternum in male with a distinct, longitudinal groove on the median line, the lateral margins of the groove narrowly elevated; 5th abdominal sternite in male excavated and lateral margins expanded; hind femora in male with a pair of small teeth on the underside.

Key to the Species of *Robustanoplodera* from Taiwan

1. Antennae with apex of 11th segment barely reaching or slightly surpassing elytral apices; elytra distinctly narrowed near the middle, then slightly broadened just before apex; underside of hind femora with a pair of small teeth (Figs. 7–8);

- 5th abdominal sternite excavated Males.... 2.
- Antennae with apex of 11th segment barely reaching basal two-thirds of elytra; elytra nearly parallel-sided or slightly narrowed towards apex; underside of hind femora without small teeth; 5th abdominal sternite only slightly impressed.... Females.... 3.
2. Pronotum black and densely covered with golden recumbent pubescence except for the posterior portion; abdominal sternites usually yellowish brown, but 1st to 3rd sternites are sometimes dark brown to black; 5th abdominal sternite deeply excavated, with lateral margins distinctly expanded; hind tibiae dilated in lateral view (Fig. 9); undersides of meso-metathoraces black and densely covered with silvery pubescence *R. taiyal* sp. nov.
- Pronotum brownish red with anterior and median parts of posterior margins black, sparsely covered with golden pubescence; abdominal sternites greenish black with intercoxal process of 1st, apical margins of 3rd and 4th, and 5th sternites yellowish brown; 5th abdominal sternite shallowly excavated, with lateral margins feebly expanded; hind tibiae simple (Fig. 10); undersides of meso-metathoraces black with a green tint and sparsely covered with silvery pubescence *R. tricolor* (GRESSITT).
3. Pronotum densely covered with golden recumbent pubescence except for the posterior portion; elytra distinctly convex above; apex of 5th abdominal tergite dully bilobed (Fig. 11); undersides of meso-metathoraces black..... *R. taiyal* sp. nov.
- Pronotum sparsely covered with golden recumbent pubescence; elytra convex above but nearly flat near suture; apex of 5th abdominal tergite sharply bilobed (Fig. 12); undersides of meso-metathoraces black with a green tint..... *R. tricolor* (GRESSITT).

***Robustanoplodera taiyal* sp. nov.**

(Figs. 1-2, 5, 7, 9, 11, 13 & 15)

Leptura (*Anoploderomorpha*) *tricolor* GRESSITT, ab. *nigrithoracica* SEKI, 1944, Ins. World, Gifu, **48**: 129. ♂.

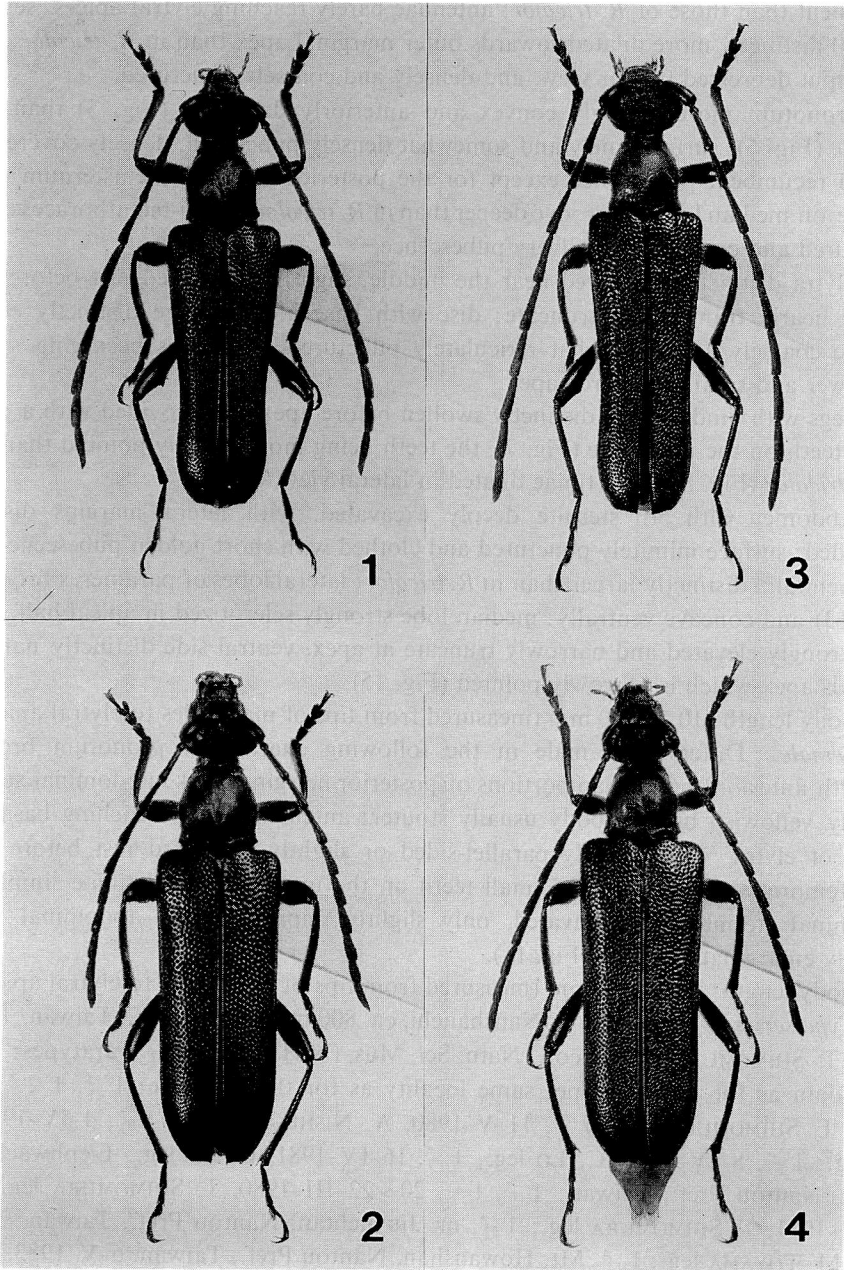
Leptura (*Anoploderomorpha*) *tricolor* GRESSITT, ab. *rufiventris* SEKI, 1944, Ins. World, Gifu, **48**: 129. ♀.

Tamanukia tricolor ab. *aurosignaticollis* HAYASHI, 1960, Niponius, Takamatsu, **1** (6): 9-10. ♂.

Koichius tricolor: SHIMOMURA & SAITO, 1979, Nat. & Ins., Tokyo, **14** (12): 24, 26, pl. 4, no. 5.

Male. Head black with maxillary and labial palpi dark brown, antennae with apical margin of 2nd segment dark brown, undersides of antennae sometimes dark brown; prothorax and undersides of meso-metathoraces black; elytra metallic dark green to blue; legs usually black, inner sides of hind tibiae sometimes dark brown; abdominal sternites yellowish brown but 1st to 3rd sternites sometimes dark brown to black; abdominal tergites black with 4th and 5th tergites yellowish brown.

Head slightly broader than posterior width of prothorax; eyes larger and more



Figs. 1-4. *Robustanoplodera taiyal* sp. nov. and *R. tricolor* (GRESSITT). — 1-2. *R. taiyal*; 1, male; 2, female. — 3-4. *R. tricolor*; 3, male; 4, female.

prominent than those of *R. tricolor*; antennae barely reaching elytral apices, segments 5 to 10 distinctly more dilated towards outer marginal apex than in *R. tricolor*; vertex to occiput depressed in rear view, and densely and coarsely punctured.

Pronotum more strongly convex and anteriorly declivous (Fig. 5) than in *R. tricolor* (Fig. 6); surface finely and somewhat densely punctured, densely covered with golden recumbent pubescence except for the posterior portion; metasternum with a groove on median line, the groove deeper than in *R. tricolor*; meso-metathoraces densely punctured and covered with silvery pubescence.

Elytra distinctly narrowed near the middle, slightly broadened just before apex; apices nearly transversely truncate; disc with base along suture distinctly convex; surface coarsely and somewhat reticulately punctured, punctures becoming sparser, shallower and smaller towards apex.

Legs with hind femora distinctly swollen before apex and provided with a pair of small teeth on the underside (Fig. 7), the teeth being more sharply pointed than those of *R. tricolor* (Fig. 8); hind tibiae dilated in lateral view (Fig. 9).

Abdomen with 5th sternite deeply excavated, with lateral margins distinctly expanded; surface minutely punctured and clothed with short golden pubescence.

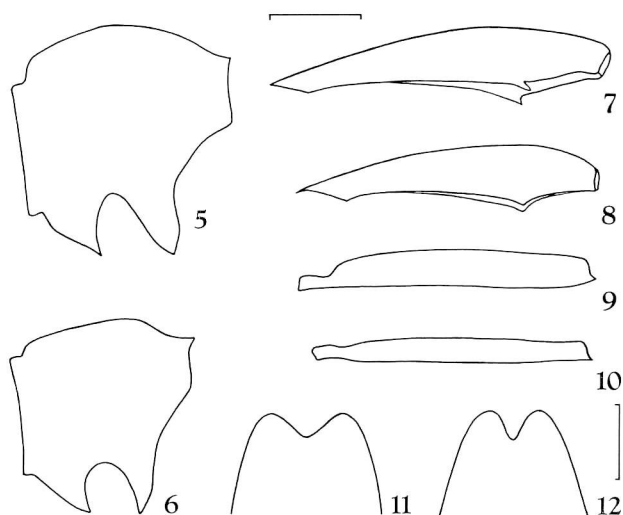
Genitalia distinctly larger than in *R. tricolor*; lateral lobes of parameres broadened (Fig. 13) and concave ventrally; median lobe strongly sclerotized in apical half, dorsal side strongly elevated and narrowly truncate at apex, ventral side distinctly narrowed towards apex which is narrowly pointed (Fig. 15).

Body length: 10.5–14.0 mm (measured from tips of mandibles to elytral apices).

Female. Differs from male in the following characters: pronotum brownish red with anterior and median portions of posterior margins black; abdominal sternites entirely yellowish brown; body usually stouter; antennae barely reaching basal two-thirds of elytra; elytra nearly parallel-sided or slightly narrowed just before apex; hind femora without a pair of small teeth on the underside, hind tibiae simple; 5th abdominal sternite not excavated, only slightly impressed; 5th abdominal tergite broadly emarginate at apex (Fig. 11).

Body length: 12.5–15.0 mm (measured from tips of mandibles to elytral apices).

Type series. Holotype: ♂, Nanshanchi, ca. 800 m, Nantou Pref., Taiwan, 11–IV–1980, T. SHIMOMURA leg. (in coll. Natn. Sci. Mus. (N.H.), Tokyo). Paratypes: 2 ♂♂, same data as for the holotype; same locality as for the holotype: 1 ♂, 1 ♀, 10–V–1976, T. SHIMOMURA leg.; 1 ♀, 11–V–1980, A. NISHIYAMA leg.; 1 ♂, 4–IV–1981, C. Lo leg.; 1 ♂, 8–IV–1981, C. Lo leg.; 1 ♂, 16–IV–1981, C. Lo leg.; Lienhwachi, ca. 750 m, Nantou Pref., Taiwan: 1 ♂, 1 ♀, 20–22–III–1980, T. SHIMOMURA leg.; 1 ♂, 24–III–1981, T. SHIMOMURA leg.; 1 ♂, nr. Jiuyuehtan, Nantou Pref., Taiwan, 29–IV–1978, M. TÔYAMA leg.; 1 ♂, Mt. Howanshan, Nantou Pref., Taiwan, 6–V–1983, C. Lo leg.; 1 ♂, nr. Ssuling, Taoyuan Pref., Taiwan, 6–IV–1981, T. SHIMOMURA leg.; nr. Mt. Lalashan, ca. 1,500–1,600 m alt., Taoyuan Pref., Taiwan: 1 ♀, 29–V–1978, T. SHIMOMURA leg.; 1 ♂, 25–V–1981, C. Lo leg.; 3 ♂♂, 26–V–1981, C. Lo leg.; 2 ♂♂, 11–VI–1981, C. Lo leg.; 1 ♂, 28–V–1982, T. SHIMOMURA leg.; 1 ♂, 29–V–1982, T. SHIMOMURA

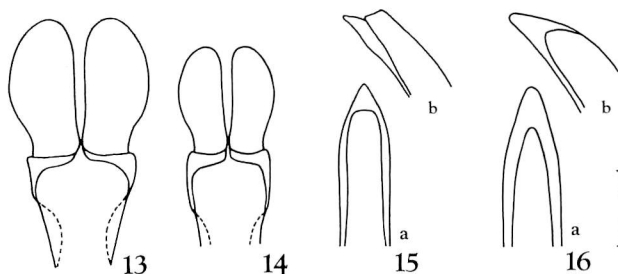


Figs. 5–12. Prothorax, left hind femur, right hind tibia of male and apical portion of 5th abdominal tergite of female of *Robustanoplodera taiyal* sp. nov. and *R. tricolor* (GRESSION). — 5, 7, 9 & 11, *R. taiyal*; 6, 8, 10 & 12, *R. tricolor*; 5–6, prothorax in lateral view; 7–8, left hind femur in sublateral view; 9–10, right hind tibia in inner-lateral view; 11–12, apical portion of 5th abdominal tergite in female in dorsal view. Transversal scale: 1.0 mm, for Figs. 5–10; longitudinal scale: 0.5 mm, for Figs. 11–12.

leg.; 1 ♀, 20–VI–1982, T. SHIMOMURA leg. (in coll. T. SHIMOMURA); 1 ♂, Hori, Formosa, VII–1959; 1 ♂, Hori, Formosa, V–1941, coll. K. SEKI (type of ab. *nigrithoracica* SEKI, 1944); 1 ♀, Seitohzan, Formosa, 4–V–1941, coll. K. SEKI (type of ab. *rufiventris* SEKI, 1944) (coll. Natn. Sci. Mus. (N.H.), Tokyo).

Diagnostic notes. The male of *R. taiyal* is similar to *R. albopubescens* HAYASHI et VILLIERS, 1985, from Tonkin, Vietnam. Males of *R. taiyal* can be recognized on the following characters: abdominal sternites yellowish brown though the 1st to 3rd sternites are sometimes dark brown to black and the elytral disc is more distinctly convex. The female of *R. taiyal* is similar to that of *R. viridipennis* (PIC, 1923), from Tonkin, Vietnam, the type of which is a female as was confirmed by HAYASHI and VILLIERS (1985). Females of *R. taiyal* can be distinguished from those of *R. viridipennis* by the following characteristics: pronotum brownish red with the anterior and median portions of the posterior margins black. The abdominal sternites are entirely yellowish brown. *Robustanoplodera taiyal* is distinguishable from *R. inauraticollis* (PIC, 1933) from Szechuan, China, by the golden pubescence on the pronotum, instead of grayish.

It is distinguishable from *R. bicolorimembris* (PIC, 1954) and *R. lepesmei* (PIC, 1956) from China by the entirely black femora, instead of bicolored of black in apical portions and yellowish brown in basal portions. “Taiyal” is the name of the tribe inhabiting the mountains of northcentral Taiwan. *Robustanoplodera albopubescens* HAYASHI et VILLIERS, 1985, may be a synonym of *R. viridipennis* (PIC, 1923), and *R.*



Figs. 13–16. Apical portions of parameres and median lobe of male genitalia of *Robustanoploclera taiyal* sp. nov. and *R. tricolor* (GRESSITT). — 13 & 15, *R. taiyal*; 14 & 16, *R. tricolor*; 13–14, parameres; 15–16, median lobe, a, dorsal view, b, sublateral view. Scale: 0.5 mm.

lepesmei (PIC, 1956) may be a synonym of *R. bicolorimembris* (PIC, 1954).

Robustanoploclera tricolor (GRESSITT)

(Figs. 3–4, 6, 8, 10, 12, 14 & 16)

Anoploclera (?) *tricolor* GRESSITT, 1935, Philip. J. Sci., **58**: 258–259.

Leptura (*Anoplocleromorpha*) *tricolor*: MITONO, 1940, Cat. Coleopt. japon., (94): 34; TAMANUKI, 1942, Fn. Nipp., **10** (8–15): 72–73, fig. 105.

Anoploclera (*Anoplocleromorpha*) *tricolor*: GRESSITT, 1951, Longicornia, **2**: 82, 87; HUA, 1982, Check List Longicorn Beetles China, p. 10.

Tamanukia tricolor: HAYASHI, 1960, Niponius, Takamatsu, **1** (6): 9–10.

Koichius tricolor: HAYASHI, 1966, Bull. Osaka Jonan Women's Jr. Coll., **1**: 2; HAYASHI, 1974, Bull. Osaka Jonan Women's Jr. Coll., **9**: 10–11.

Robustanoploclera tricolor: HAYASHI & VILLIERS, 1985, Bull. Osaka Jonan Women's Jr. Coll., **19–20**: 7, 40–43, text-figs. 5–6; NAKAMURA *et al.*, 1992, Check-list Longicorn-beetles Taiwan, pp. 15–16.

Type locality. “Hassenzan, Formosa, alt. 2,000 m.”

Specimens examined. Body length: ♂, 11.0–13.0 mm; ♀, 14.0 mm (measured from tips of mandibles to elytral apices). 21 ♂♂, 1 ♀, nr. Sungkang, ca. 1,900–2,000 m, Nantou Pref., Taiwan; data as follows: 1 ♂, 30–VI–1981, C. Lo leg.; 1 ♂, 12–VI–1982, C. Lo leg.; 1 ♂, 13–VI–1982, C. Lo leg.; 2 ♂♂, 19–VI–1982, C. Lo leg.; 2 ♂♂, 26–VI–1982, C. Lo & T. SHIMOMURA leg.; 3 ♂♂, 28–VI–1982, C. Lo leg.; 1 ♂, 1 ♀, 30–VI–1982, C. Lo leg.; 3 ♂♂, 11–VII–1982, C. Lo leg.; 2 ♂♂, 20–VII–1982, C. Lo leg.; 1 ♂, 23–VII–1982, C. Lo leg.; 4 ♂♂, 29–VI–1983, C. Lo leg. (in coll. T. SHIMOMURA); 1 ♂, Hori, Formosa, VII–1959 (coll. Natn. Sci. Mus. (N.H.), Tokyo).

Notes. This species was described on a probable male. Judging from the original description, the type specimen is undoubtedly a male because of the length of the antennae and the coloration of the abdomen. I determined the above specimens examined as *R. tricolor* in view of the coloration of the pronotum, the shape of the tibiae, etc. Judging from the illustrations of the male genitalia given by HAYASHI (1960, p. 10 & 1985, p. 43), his specimens belong to *R. taiyal*. The locality of the specimens

examined, nr. Sungkang, ca. 1,900–2,000 m, Nantou Prefecture, is located about 18 km southeast of the type locality, Mt. Hassenzan (=Mt. Pahsienshan, Taichung Pref.), across a wide valley. This species is distributed at higher elevations than *R. taiyal*, though they may be sympatric in certain areas.

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要 約

下村 徹: 台湾産 *Robustanoplodera* 属に含まれる種の再検討. — 台湾産の *Robustanoplodera* 属に含まれる種は *R. tricolor* (GRESSITT, 1935) のみが知られ, SEKI (1944) は *nigrithoracica* (♂) と *rufiventris* (♀) を, また, HAYASHI (1960) は *aurosignaticollis* (♂) をそれぞれ *R. tricolor* の aberrant form として報告している.

手元にある台湾産の本属に含まれる標本には明らかに 2 種が含まれ, *R. tricolor* の原記載や *nigrithoracica*, *rufiventris* の基準標本などを検討した結果, *R. tricolor* と ab. form として報告されていたものとは異なった独立種であることが判明したので, 後者に対し, 新種として *R. taiyal* と命名し記載した. またこれら台湾産 *Robustanoplodera* 属 2 種の検索表を付けた. これら 2 種の雄については, *R. tricolor* の前胸が, 前縁・後縁を除き赤色～赤褐色になるのに対し, *R. taiyal* の前胸は全体が黒色で黄金色の毛が目立ち, また第 5 腹板の形状などの特徴によっても容易に識別される. 雌では, 第 5 腹背板の形状や上翅の後方から見た状態などの特徴によって識別される. *R. tricolor* は *R. taiyal* よりも高標高地に分布しているようである.

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