

Two Panagaeine Carabid Beetles from the Ryukyu Islands, Southwest Japan (Carabidae)

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Abstract 1) *Peronomerus insularis* SCHÖNFELDT is transferred to the genus *Trichisia*, and is redescribed together with *Euschizomerus liebkei* JEDLIČKA which has hitherto been confused with the former. 2) A key to the genera of Japanese Panagaeini is given.

In 1890 SCHÖNFELDT described *Peronomerus insularis* based on the single female specimen from Amami-Oshima Island, the Ryukyus, Japan. Since then, it has not been correctly recognized for a long time, because of its rareness and especially of the ignorance of its males. Besides, *P. insularis* was often confused with another panagaeine occurring more abundantly in the Ryukyus, that is, *Euschizomerus liebkei* JEDLIČKA.

Recently, I had an opportunity to examine a male specimen of *P. insularis* through the courtesy of Mr. Atsuo IZUMI who had obtained it on the above mentioned island. It agrees well with SCHÖNFELDT's description, though the 1st segment of its fore tarsi is not enlarged and lacking in the adhesive hairs ventrally, and the 4th segment is only emarginate at apex, not bilobed. According to CHAUDOIR's system (1878), *P. insularis* must be placed in the genus *Trichisia* hitherto unrecorded from our faunal region. In this paper, I am going to redescribe and illustrate the two genera and species, and to give a key to the eight genera of Japanese Panagaeini. Before going further, I wish to express my deep gratitude to Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, for not only giving me advice but also loaning literature and critically reading the typescript of this paper, and to Dr. Yoshihiko KUROSAWA of the same museum for affording facilities to examine the specimens under his care. Thanks are also due to Messrs. Atsuo IZUMI, Seiji MORITA and Minoru TAO for their kindness in offering valuable material and help.

The abbreviations used herein are as follows: WH — greatest width of head including eyes; WP — greatest width of pronotum; LP — length of pronotum, measured along the mid-line; WE — greatest width of elytra; LE — length of elytra.

Trichisia insularis (SCHÖNFELDT), comb. nov.

“Okinawa-kebuka-gomimushi”

Peronomerus insularis SCHÖNFELDT, 1890, Ent. Nachr., 16: 168–169.
(Oshima, Liu-Kiu Inseln). — CSIKI, 1929, Coleopt. Cat., pars 104:
364. — JEDLIČKA, 1965, Annot. zool. bot., (12): 10, 11.

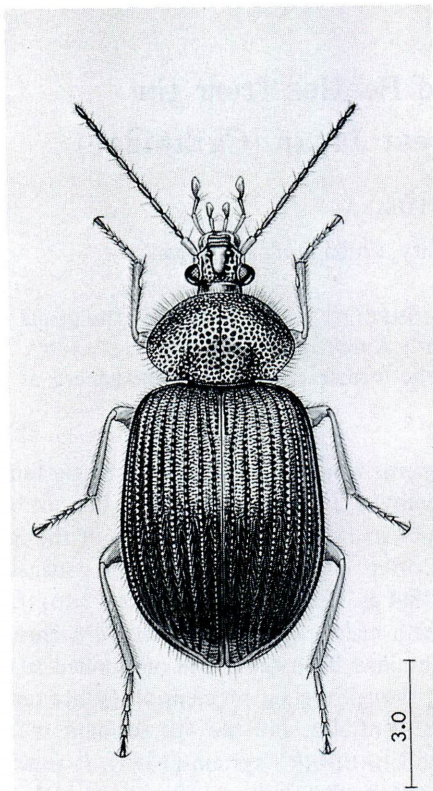


Fig. 1. *Trichisia insularis* (SCHÖNFELDT),
from Amami-Oshima Is.

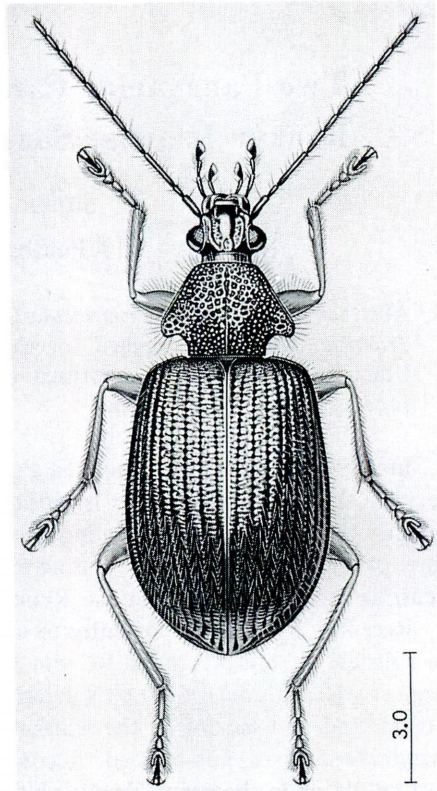


Fig. 2. *Euschizomerus liebkei* JEDLIČKA,
from Ishigaki Is.

Description. Length 8.1–10.0 mm. Width 4.2–4.9 mm. Stouter in general appearance than any of the Japanese species of *Peronomerus*. Wholly pubescent. Black, tinged with dark metallic blue; head shiny; scape, basal segments of palpi and legs reddish brown, rest of antennae and palpi, labrum and mandibles dark reddish brown or blackish.

Head small, subquadrate, almost flat, irregularly with large punctures, except on neck, clypeus and frons, the last one of which forms ob-triangle and is somewhat convex; microsculpture absent, small punctures sparsely visible; labrum emarginate at apex; eyes well prominent, hemispherical; antennae slender, extending beyond shoulder; scape 2.5 times as long as wide, 1.6 times as long as segment 2, segment 3 almost twice as long as segment 2, 1.4 times as long as segment 4; apical segment of palpi widely and triangularly dilated.

Pronotum transverse, moderately convex, widest at basal two-fifths, twice as wide as head, 1.6 times as wide as long (in 1♂, 4♀♀, WP/WH 1.94–2.13, mean 2.06; WP/LP 1.54–1.67, mean 1.60); surface densely and irregularly pitted, microsculpture absent; median sulcus shallow, ambiguous in pits; apical margin almost straight; apical angles obtuse, rounded; basal margin straight at the median part, obliquely sinuate at lateral parts; basal angles rectangular, denticulately protrudent, though rounded at the tips; lateral margins

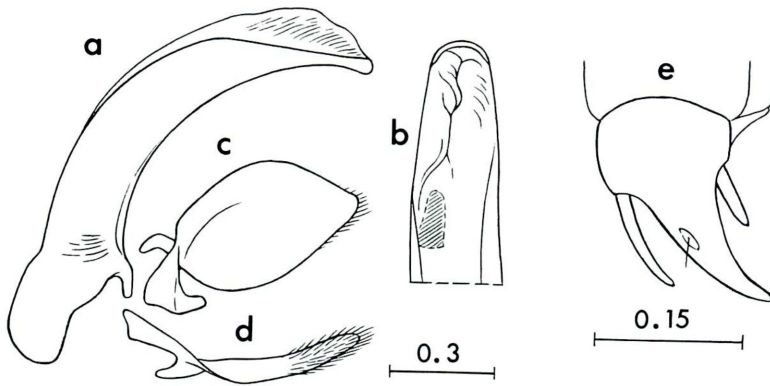


Fig. 3. Genitalia of *Trichisia insularis* (SCHÖNFELDT).

a, Left lateral view of aedeagus; b, apical half of aedeagus in dorsal view; c, left side of left paramere; d, right side of right paramere; e, left stylus of female.

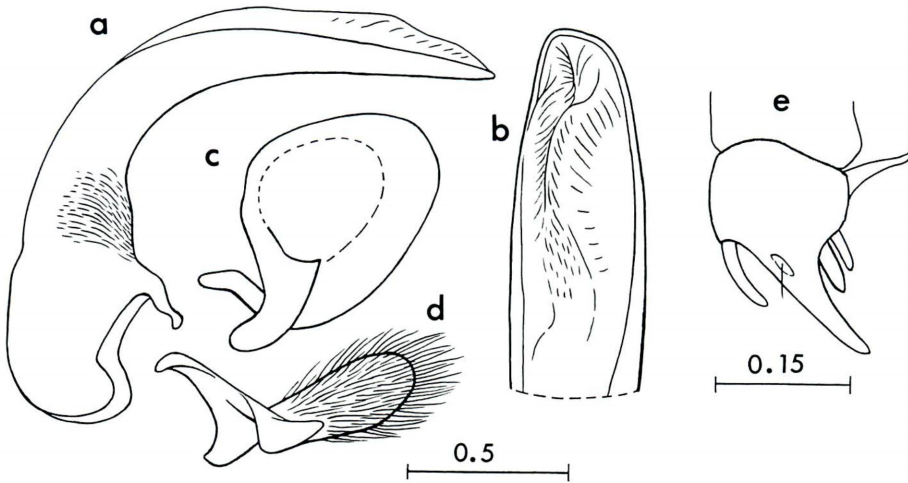


Fig. 4. Genitalia of *Euschizomerus liebkei* JEDLIČKA.

a - e, Same as in Fig. 3.

narrowly bordered from apical angles to behind the widest part, evenly and roundly convergent anteriorly, well arcuate at the widest part, thence fully convergent posteriorly; basal foveae rather deep, sublinear, depressed at the external parts.

Elytra ovate, convex, widest at the middle, 1.4 times as wide as pronotum, as long as wide in the same proportion (in 1♂, 4♀♀, WE/WP 1.35–1.40, mean 1.38; LE/WE 1.37–1.40, mean 1.38); apical situation shallow; striae deep, distinctly punctate; intervals

well convex, with dense punctures which are mostly connected with one another and form transverse wrinkles. Wings full.

Tarsal segment 4 moderately emarginate at apex, though not bilobed; fore tarsal segment 1 similar in both the sexes, not enlarged, without adhesive hairs beneath even in male; hind tarsi 1.33 times as long as the width of head.

Ventral surface rather densely punctate, sternites with small scratch-like punctures at the median area.

Aedeagus evenly and gently arcuate, widely rounded at apex in dorsal view, somewhat tumid ventrally, apical lobe extremely short; left paramere wide, ovate, narrowed towards apex though narrowly rounded at the tip, sparsely pubescent at the apical margin; right paramere slender, rather densely pubescent at apical third on the right side. Styluses of female genitalia wide at basal third, with the foramen at apical third; inner spine long, outer one short.

Distribution. Japan – Ryukyus. Formosa – Botel-Tobago Is.

Notes. The present species resembles *T. cyanea* SCHAUM, 1853 from China, Hongkong and India in the color and size, but may be distinguished from the latter by having wider pronotum which is twice as wide as long. Also resembles *T. violacea* JEDLIČKA, 1935 from the Philippines in the form of pronotum, but may be separated from it by having the basal three segments of antennae reddish brown.

Specimens examined. 1♂, 30-VI-1980, Nishinakama, Amami-Oshima Is., Kagoshima Pref., A. IZUMI leg.; 1♀, IV-1973, Amami-Oshima Is., Kagoshima Pref., M. ITO leg., (through M. TAO); 1♀, 14-VI-1979, Mt. Yonaha, Okinawa Is., Okinawa Pref., T. HORIGUCHI leg., (through M. TAO); 1♀, 1-VI-1962, Hentona, Okinawa Is., Okinawa Pref., S. UÉNO leg., (NSMT); 1♀, date not known, Botel-Tobago Is., Formosa, (KANO collection, NSMT).

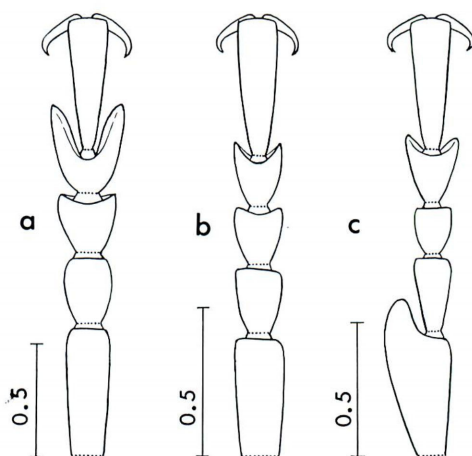


Fig. 5. Male right fore tarsi (setae and pubescence omitted).

a, *Euschizomerus liebkei* JEDLIČKA; b, *Trichisia insularis* (SCHÖNFELDT); c, *Peronomerus auripilis* BATES.

Euschizomerus liebkei JEDLIČKA

"Sedaka-kebuka-gomimushi"

Euschizomerus Liebkei JEDLIČKA, 1932, Acta Soc. ent. Čech., 29: 43, fig. (Umg. Schanghai). — *Euschizomerus liebkei*: JEDLIČKA, 1965, Annot. zool. bot., (12): 9, fig. 7. — KASAHARA, 1981, Kita-Kyushu no Konchu, 28: 60, 65 – 66, 68. — *Peronomerus insularis*: HABU, 1975, Trans. Shikoku ent. Soc., 12: 77*. — HABU, 1975, Ent. Rev. Japan, 28: 71*. — KASAHARA, 1980, Kita-Kyushu no Konchu, 26: 194.

Description. Length 9.8–10.6 mm. Width 4.6–5.0 mm. Shiny black with a tinge of metallic blue which is faint on the dorsal surface, more apparent on the venter; wholly covered with yellowish pubescence. Labrum, mandibles, palpi and antennae reddish black. Legs reddish brown, tarsal segment 4 somewhat darker, claw segment blackish.

Head subquadrate, rather flat; frontal furrows incurved, approaching to each other a little before the post-eye level, irregularly with large punctures; clypeus and frons glabrous, somewhat convex; labrum emarginate at apex; eyes prominent, hemispherical; neck constriction linear on the dorsal side; antennae long and slender, nearly reaching basal third of elytra; scape 3 times as long as wide, 1.5 times as long as segment 2, segment 3 the longest, 2.4 times as long as segment 2, 1.6 times as long as segment 4; apical segment of palpi widely and triangularly dilated.

Pronotum peculiar in shape, somewhat sagittate, widest at basal third, less than 1.75 times as wide as head, 1.5 times as wide as long (WP/WH in 11♂♂, 1.68–1.80, mean 1.70; 11♀♀, 1.67–1.80, mean 1.73; WP/LP in 11♂♂, 1.46–1.55, mean 1.50; 11♀♀, 1.45–1.61, mean 1.53); apex truncate; apical angles obtuse, rounded; base almost straight; basal angles nearly rectangular; lateral margins strongly and almost straightly convergent from the widest part to apical angles; lateral parts protrudent postero-laterally, slightly reflexed dorsally, thence abruptly contracted to basal angles, forming a deep emargination on each side; surface densely pitted, pits irregular in size and form, inter-spaces among them convex, microsculpture absent; median sulcus and basal foveae rather deep, though somewhat ambiguous in pits.

Elytra ovate, well convex, widest at the middle, 1.6 times as wide as pronotum, 1.4 times as long as wide (WE/WP in 11♂♂, 1.49–1.59, mean 1.54; 11♀♀, 1.53–1.64, mean 1.58; LE/WE in 11♂♂, 1.40–1.47, mean 1.45; 11♀♀, 1.39–1.44, mean 1.42); apical sinuation faint; striae deep, with large punctures; intervals rather flat in basal half of 1st—

* I have examined the specimens used by HABU in preparing his papers and now preserved in the Laboratory of Insect Identification and Taxonomy, National Institute of Agricultural Sciences, through the courtesy of Mr. Narao FUKUHARA, to whom I wish to express my heartfelt thanks.

3rd, densely and irregularly punctuate, the punctures mostly connected with one another and forming transverse wrinkles; microsculptures partially and faintly visible. Wings full.

Tarsal segment 4 deeply emarginate at apex, conspicuously bilobed; fore tarsal segments not enlarged in male, without adhesive hairs ventrally; tarsal segments 1-4 thickly with long hairs beneath in both the sexes.

Ventral surface densely pitted except for median areas of sternites which are densely covered with small scratch-like punctures.

Aedeagus curved in 90 degrees at about middle, thence almost straight to apex in lateral view; basal part stout, with dense transverse wrinkles at the ventral side; apical half rather flat, apex subtruncate in dorsal view, apical lobe extremely short; left paramere wide, ovate; right paramere club-shaped in apical half, densely pubescent, the pubescence being relatively long. Styluses of female genitalia wide at basal half, narrow and spinous at apical half, with the foramen at about middle; inner spine long and curved, outer ones shorter than the inner and different in thickness, the apical one being stouter than the proximal.

Distribution. Japan - Ryukyus. Formosa. China.

Notes. This species resembles *E. rufipes* HELLER, 1921 from the Philippines, but may be distinguishable from the latter by having longer pronotum which is only a little wider than long.

Specimens examined (all the following examples were obtained by myself). 4♀♀, 24-IV-1980, Takeda, Ishigaki Is., Okinawa Pref.; 1♂, 2♀♀, 26-IV-1980, Uebaru, Ishigaki Is., Okinawa Pref.; 2♂♂, 2♀♀, 7-VI-1976, Sonai, Iriomote Is., Okinawa Pref.; 8♂♂, 2♀♀, 9-VI-1976, Oh-hara, Iriomote Is., Okinawa Pref.; 1♀, 2-VI-1976, Sonai, Yonaguni Is., Okinawa Pref.

Key to the Genera of Japanese Panagaeni**

- 1 (6) At least fore tarsal segment 1 widely enlarged and provided beneath with adhesive hairs in male.
- 2 (3) Only 1 fore tarsal segment enlarged in male (fig. 5, c); elytra immaculate *Peronomerus*
- 3 (2) Fore tarsal segments 1 and 2 enlarged in male; elytra maculate.
- 4 (5) Head peculiarly prolonged *Tinoderus*
- 5 (4) Head normal. *Panagaeus*
- 6 (1) Fore tarsal segments hardly or not enlarged in male, adhesive hairs either present or absent.
- 7 (8) Fore tarsal segments 1-4 very slightly or hardly enlarged in male, adhesive hairs present; elytra maculate. *Microcosmodes*
- 8 (7) Fore tarsal segments not enlarged at all in male, adhesive hairs absent.

** Also refer to HABU, 1978, Ent. Rev. Japan, 32: 75, figs. 21-26.

- 9 (12) Tarsal segment 4 moderately emarginate at apex, not bilobed (fig. 5, b).
 10(11) Elytra maculate. *Craspedophorus*
 11(10) Elytra immaculate. *Trichisia*
 12(9) Tarsal segment 4 deeply emarginate and bilobed.
 13(14) Tarsal segment 4 shallowly bilobed; elytra maculate. *Dischissus*
 14(13) Tarsal segment 4 deeply bilobed (fig. 5, a); elytra immaculate.
 *Euschizomerus*

摘 要

- 1) これまで、*Peronomerus* 属として扱われてきたオキナワケブカゴミムシ *insularis* SCHÖNFELD を、雄の前跗節の形態的特徴に基づいて *Trichisia* 属に移し、本種と混同されていたセダケブカゴミムシ(新称) *Euschizomerus liebecki* JEDLIČKA とともに再記載した。
 2) 日本産ケブカゴミムシ族 Panagaeini の属の検索表をつくった。

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