

A Revision of the Genus *Triomicrus* Sharp (Coleoptera, Staphylinidae, Pselaphinae)

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Abstract The genus *Triomicrus* Sharp (Staphylinidae, Pselaphinae) is revised. New taxa are: *T. algon* sp. nov., *T. ludificator* sp. nov., *T. punctifrons* sp. nov. and *T. rougemonti* sp. nov. from China, *T. adnexus* sp. nov., *T. factitatus* sp. nov., *T. onerosus* sp. nov. and *T. secutor* sp. nov. from Taiwan, *T. hamifer* sp. nov., *T. melini* sp. nov. and *T. sternalis* sp. nov. from Japan, and *T. vietus* sp. nov. from Vietnam. Lectotypes are designated for: *T. cavernosus* Raffray, *T. humilis* Raffray, *T. protervus* Sharp, *T. simplex* Sharp, *T. sublaevis* Raffray, and *T. seychellensis* Raffray. A key to the species is provided. The type material of *T. galloisi* Jeannel from Honshu, Japan appears to have been lost. This name cannot be applied to examined material. *Triomicrus seychellensis* Raffray does not share the diagnostic characters of *Triomicrus* and is considered *species incertae sedis*.

Keywords: Coleoptera, Staphylinidae, Pselaphinae, *Triomicrus*, taxonomy, East Asia, Seychelles.

Introduction

The genus *Triomicrus* was erected by Sharp (1883) to accommodate two Japanese species, *Triomicrus simplex* Sharp, 1883 and *Bryaxis protervus* Sharp, 1874. Raffray (1904, 1909, and 1913) described *T. cavernosus* and *T. humilis* from China, *T. sublaevis* from Japan, and *T. seychellensis* from the Seychelle archipelago, respectively. Jeannel (1958) reviewed the Japanese species and described *T. galloisi*. Finally, Nomura and Lee (1992) described *T. penicilatus* from Korea. While studying new collections it became obvious that the available data on Japanese and Chinese species lack in detail, and that these species cannot be recognized. The results of a revisional study of the group, including the descriptions of 12 new species, are given below.

The description of *Triomicrus galloisi* Jeannel is based on a single female from Kumanotaira (Honshu, Japan). The description lacks reliable diagnostic characters, and the holotype is actually not traceable (N. Berti, MNHN, pers. comm.). However, it may be just misplaced in the collection. This species is stated to possess distinct pronotal punctation, as that in *T. protervus*, but shorter body and more approximate carinae of the fourth abdominal tergite (1st tergite in Jeannel, 1958). None of the

Japanese species of *Triomicrus* we have examined may be assigned to *T. galloisi*. We refuse to designate a neotype for this species, unless the loss of the type material becomes obvious and, consequently, we do not treat *T. galloisi* below.

Triomicrus seychellensis Raffray is likely a member of a distinct group of Brachyglutini. This species is redescribed, but not included in the key. Its relationships are unknown.

Material and Methods

The study is mainly based on the collections of the Muséum d'Histoire Naturelle in Geneva, the National Science Museum in Tokyo, and the private collection of S. A. Kurbatov, Moscow. The depositories of the material and their abbreviations are as follows:

- Faculty of Agriculture, Kyushu University, Fukuoka (ELKU)
- Muséum d'Histoire Naturelle, Geneva (MHNG)
- Muséum National d'Histoire Naturelle, Paris (MNHN)
- National Science Museum, Tokyo (NSMT)
- The Natural History Museum, London (BMNH)
- Zoological Museum, University of Moscow, Moscow (ZMUM)
- Private collection of S. A. Kurbatov, Moscow (PCSK)

The measurements are in mm, and as follows: the length (L) of the head is from neck to the anterior edge of the frontoclypeus; the width (W) maximum, including eyes; the length and width of the pronotum at midline, and maximum, respectively; the length of the elytra along the suture; the width of the elytra maximum, combined; the length of the antennal segment 11 without the basal stalk; the length of the aedeagus including the larger paramere. The head punctuation refers to dorsal surface of head. The fourth abdominal tergite refers to the first exposed tergite. The interval between the tergal carinae and the tergal width is measured at the basis of the tergite, the tergal width is without margins. The third abdominal sternite refers to the first, narrow, exposed sternite.

The illustrated structures are cleared in isopropanol and mounted in Canada balsam. Morphological terms are as in Nomura (1991). The orientation and apparent shape of the parameres may be easily altered while dissection. An effort has been made to illustrate the parameres in a position considered natural.

Taxonomy

Genus *Triomicrus* Sharp

[Japanese name: Marumune-arizukamushi zoku]

Triomicrus Sharp, 1883, p. 325. Type species: *Bryaxis protervus* Sharp, by subsequent designation (Lucas, 1920).

Triomicrus Raffray, 1911, p. 110 (misspelled).

Redescription. Body pubescent, dorsal surface with or without long suberect setae. Head with vertex convex; tentorial pits situated between eyes. Frons impressed between antennal tubercles and with large fovea; frons and vertex without sulci or carinae. Frontal fovea and tentorial pits pubescent. Gular ridge smooth, well delimited, narrowed toward gular grooves. Gular grooves separated by a narrow carina. Scape cylindrical, with dorsobasal ridge. Pedicel smaller than scape, antennal segments 3 to 8 narrower than pedicel. Antennal club with segment 9 slightly larger than segment 8, segment 10 much larger than segment 9, segment 11 about as long as 3 or 4 preceding segments combined, with subapical impression covered by setae. Maxillary palpi long (Fig. 21), with segment 2 conspicuously narrowed in middle; segment 3 elongate, gradually stouter toward apex, with single apical seta; segment 4 large, shorter than segment 2, narrow basally, almost smooth. Thoracic foveae simple, not bifurcate. Pronotum convex, with three antebasal tomentose foveae, without sulci or ridges; basal edge margined by one or two rows of large punctures. Elytra each with pair of basal foveae, one epipleural fovea, entire adsutural stria, discal sulcus not reaching posterior elytral edge, and epipleural sulcus which may be reduced (absent in *T. algon*). Abdomen strongly inflexed, with two or three tergites visible in dorsal view. Abdominal tergites 4 to 6 entirely margined, each with pair of large lateral foveae; basal carinae of tergite 4 usually well developed (very small in *T. simplex*, obsolete in *T. humilis*); fourth tergite impressed between carinae, with basal fovea at inner edge of each carina. Prosternum with pair of lateral foveae and raised lateral edges. Mesosternum with median mesosternal fovea and pair of lateral mesosternal foveae. Metasternum with pair of mesocoxal and pair of metasternal foveae. Abdominal sternite 4 (first exposed) with pair of median foveae, strongly raised internal ridge forming a bridge-like structure, and large, deep laterobasal microtuberculate impressions covered by long horizontal setae. Mesocoxae subcontiguous, metacoxae distant.

Male sexual characters. Eyes larger, antennae and elytra usually slightly longer than in female. Antennal segment 11 with tubercle usually expanded and flattened dorsally (absent in *T. onerosus*). Median portion of metasternum usually modified. Abdominal sternites ventrally folded, with tip oriented anteriorly, sternites 7 and 8 connate, asymmetrical, sternite 7 bearing apical lamina. Profemora stouter, pro- and mesotrochanters with inferior edge dentate in some species, pro- and mesotibiae usually with apical denticle; metafemora curved in some species. Aedeagus with basal bulb weakly sclerotized, asymmetrical parameres, and internal sac bearing more or less sclerified denticle and/or spine-like structures.

Remarks. The group is defined by the shape of the maxillary palpi, the inflexed apex of the abdomen, and the modified male abdominal sternites 7 and 8. It is currently placed within the Iniocyphini, Natypleurina (Newton & Chandler, 1989) with which it shares the membranous basal bulb of the aedeagus. The presence of a gular

ridge, frontal and pronotal foveae, and elytral carinae and sulci suggests relationship with Brachyglutini. On the basis of abdominal characters, Ohishi (1986) placed *Triomicrus* in the same group as the Brachyglutina genera *Rybaxis* Saulcy and *Trissemus* Jeannel.

Several characters exhibit notable infraspecific variability. This concerns particularly the vertexal and pronotal punctation, the relative size of the antennal segments, the length of the elytral sulci, the length of the carinae of the first abdominal tergite and the presence of suberect setae. In male sexual characters the infraspecific variability affects the shape of the metasternal laminae (in *T. sternalis*), the size of the protibial denticle (*T. rougemonti*), the chaetotaxy and the size and the orientation of the apical lamina of the abdominal sternite 7, and the aedeagus. The larger paramere may be with, or without, a macroseta (*T. onerosus*, *T. simplex*, *T. ludificator*), and number of denticles in the internal sac may be variable. In *T. onerosus* the denticles may be absent.

Key to the Species of *Triomicrus*

- 1 Frontoclypeus partly, or entirely, rugose or rugulose 2
- Frontoclypeus smooth, or very finely punctate 7
- 2 Epipleural sulcus shortened or absent 3
- Epipleural sulcus long, reaching level of metacoxa 4
- 3 Epipleural sulcus absent *T. algon* sp. nov.
- Epipleural sulcus short, but present *T. rougemonti* sp. nov.
- 4 Pronotum entirely densely and coarsely punctate 5
- Pronotum partially, finely and sparsely punctate 6
- 5 Vertex almost as coarsely punctate as pronotum *T. vietus* sp. nov.
- Vertex much more finely punctate than pronotum *T. protervus* (Sharp)
- 6 Frons and vertex evenly very finely punctate *T. ludificator* sp. nov.
- Lateral portions of frons much more coarsely punctate than vertex
..... *T. punctifrons* sp. nov.
- 7 Male antennal segment 11 without tubercle *T. onerosus* sp. nov.
- Male antennal segment 11 with tubercle 8
- 8 Male mesotibia with small apical and large subapical denticle
..... *T. melini* sp. nov.
- Male mesotibia without subapical denticle 9
- 9 Fourth abdominal tergite without basal carinae *T. humilis* Raffray
- Fourth abdominal tergite with basal carinae 10
- 10 Fourth abdominal tergite with short basal carinae ending in anterior third of tergite *T. simplex* Sharp
- Fourth abdominal tergite with long basal carinae, extending beyond anterior third of tergite 11

- 11 Male mesotibia with small apical denticle 12
 — Male mesotibia without apical denticle 13
 12 Male antennal segment 11 with large tubercle, as long as 1/4 of the segment
 *T. cavernosus* Raffray
 — Male antennal segment 11 with small tubercle about as long as 1/6 of the seg-
 ment *T. penicilatus* Nomura & Lee
 13 Male protibiae without obvious sexual characters 14
 — Male protibiae with apical denticle 17
 14 Antennal segment 10 longer than wide *T. sublaevis* Raffray
 — Antennal segment 10 wider than long 15
 15 Male metasternum with pair of protuberances lacking setal tuft
 *T. secutor* sp. nov.
 — Male metasternum with pair of protuberances bearing tuft of setae 16
 16 Male metasternum with setal tufts oriented apically *T. factitatus* sp. nov.
 — Male metasternum with setal tufts oriented ventro-anteriorly
 *T. adnexus* sp. nov.
 17 Male protibia with large apical denticle exceeding in length width of protibia ...
 *T. hamifer* sp. nov.
 — Male protibia with small acute apical denticle, barely as long as half of protibial
 width *T. sternalis* sp. nov.

***Triomicrus penicilatus* Nomura & Lee**

Triomicrus penicilatus Nomura & Lee, 1992, p. 64.

Material examined. Holotype ♂, labelled: Kuwanum Temple, Mt. Hallasan, Chejudo, Korea/29. IX. 1990 S. Nomura leg. (ELKU).

Redescription. L 2.0. Body and appendages reddish-brown, palpi and tarsi lighter. Pubescence almost recumbent on head and pronotum, suberect and longer (L about 0.11) on elytra. Head (L/W 0.52/0.50) entirely very finely punctate. Eyes in lateral view longer than tempora. Antennae with scape and pedicel distinctly longer than wide; segments 3 and 5 even, each longer than wide, shorter than pedicel; segment 4 slightly longer than wide, shorter than segment 3; segment 6 about as long as wide, slightly shorter than segment 4; segment 7 isodiametric; segments 8 and 9 each wider than long; segment 10 slightly wider than long, segment 11 slightly longer than segments 7 to 10 combined. Pronotum (L/W 0.55/0.60) punctured as head. Elytra (L/W 0.80/0.91) finely punctate; discal sulcus extended to posterior fifth of elytral length; epipleural sulcus extended to level of anterior edge of metacoxa. Fourth abdominal tergite with basal carinae diverging, reaching second third of tergal length; interval between carinae 1/7 of tergal width.

Male sexual characters. Metasternum flattened in middle, with apical edge raised, forming transverse, strongly concave lamina. Lamina highest near metacoxae

and bearing tuft of setae obliquely oriented anteriorly. Antennal segment 11 symmetrical, subcylindrical near base, with tubercle round and prominent. Diameter of antennal tubercle about 1/7 of length of segment and larger than interval to basal edge of segment 11. Protibiae and mesotibiae stouter apically, mesotibiae with small apical denticle. Median portion of abdominal sternites 3–6 impressed, basal and apical edges of impressed areas moderately raised, lateral edges strongly raised. Abdominal sternites 7 and 8 as Fig. 30. Aedeagus as Fig. 1.

Remarks. This species may be distinguished from the other congeners with pronotum and head finely punctate by the male ultimate antennal segment with a small tubercle and by the male protibiae and mesotibiae stouter apically.

***Triomicrus algon* sp. nov.**

Holotype: ♂, China, Sichuan prov., Mt. Emei, ca 1200 m, litter, 26. IX. 1994, S. A. Kurbatov leg. (ZMUM).

Description. L 1.9. Body and appendages ochraceous, tarsi and palpi lighter. Pubescence longer (L about 0.12) and less recumbent on elytra than that on head and pronotum. Head (L/W 0.53/0.44) entirely densely punctate. Frontoclypeus densely rugose. Vertex with a median ridge slightly shorter than eye in dorsal view, situated in level of tentorial pits. Eyes in lateral view slightly shorter than tempora. Antennae with scape distinctly longer than wide; pedicel twice as long as wide; segment 3 longer than wide and as long as pedicel; segments 4 to 8 gradually shorter; segments 8 and 9 isodiametric; segment 10 almost twice as wide as 9, barely longer than wide; segment 11 about as long as segments 8 to 10 combined. Pronotum (L/W 0.49/0.51) punctured as head. Elytra (L/W 0.79/0.90) very finely punctate; discal sulcus reaching level of posterior fourth of elytral length; epipleural sulcus absent. Fourth abdominal tergite with basal carinae parallel, reaching second third of tergal length; interval between carinae 1/4 of tergal width.

Male sexual characters. Metasternum with two longitudinal median ridges raised abruptly in anterior third, becoming gradually lower posteriorly. Interval between ridges largest posteriorly. Antennal segment 11 impressed and asymmetrical anteriorly, with tubercle round, not prominent. Diameter of antennal tubercle about 1/7 of length of segment and as large as interval to basal edge of segment 11. Legs without obvious sexual characters. Abdominal sternites 7 and 8 as Fig. 29. Aedeagus as Fig. 2, L 0.37.

Distribution. China: Sichuan.

Remarks. This species may be readily distinguished by the elytra lacking epipleural sulcus.

***Triomicrus rougemonti* sp. nov.**

Holotype: ♂, China, Zhejiang prov., Tianmushan, 2. IX. 1994, G. de Rouge-

mont leg. (MHNG).

Paratypes: 3 ♂, 4 ♀, same data (MHNG, PCSK).

Description. L 1.95–2.0. Body and appendages uniformly reddish-brown, or elytra slightly lighter. Pubescence evenly long and recumbent on head, pronotum and elytra, L about 0.08–0.09. Head (L/W 0.53–0.57/0.44–0.46) with punctation mostly fine and sparse, dense and fairly coarse on lateral portions of frons, rugose on upper vertical portion of frontoclypeus and on occipital area. Lower portion of frontoclypeus densely rugulose. Eyes in lateral view slightly shorter than tempora. Antennae in male with relative size of segments almost as in *T. algon* but segments 3 to 8 somewhat shorter, segment 7 as long as wide, segment 8 isodiametric or slightly wider than long. In female, antennal segments 3 to 5 almost even, each barely longer than wide; segments 6 and 7 even, each as long as wide; segment 8 barely wider than long. Segment 9 in both sexes barely wider than long; segment 10 almost rectangular; segment 11 as long as segments 7–10 combined in male, and slightly longer than segments 8–10 combined in female. Pronotum (L/W 0.48–0.50/0.53–0.54) with punctation dense and distinct anteriorly, becoming gradually sparser and finer toward level of antebasal foveae, almost obsolete between antebasal foveae. Elytra (L/W 0.79–0.83/0.87–0.95) very finely punctate; discal sulcus reaching, or extended posteriorly, level of apical fourth of elytral length; epipleural sulcus short, reaching about mid-distance between epipleural fovea and anterior edge of metacoxa. Fourth abdominal tergite with basal carinae slightly diverging posteriad, reaching level of posterior third of tergal length; interval between carinae 1/5–1/4 of tergal width.

Male sexual characters. Metasternum simple, almost as in female, median ridges barely traceable. Antennal segment 11 flattened and slightly asymmetrical anteriorly, with tubercle large, oval, not prominent. Diameter of antennal tubercle slightly larger than 1/4 of segmental length and as large as interval to basal edge of segment 11. Protibiae with apical denticle obtuse, variably large (small in one male) (Fig. 41). Meso- and metalegs without obvious sexual characters. Abdominal sternites 7 and 8 as Fig. 23. Aedeagus as Fig. 3, L 0.27–0.29.

Distribution. China: Zhejiang.

Remarks. This species may be distinguished by the short epipleural sulcus.

Triomicrus ludificator sp. nov.

Holotype: ♂, China, Sichuan prov., Xiling Mt., 1600 m, litter, 4. VIII. 1996, S. A. Kurbatov leg. (ZMUM).

Paratypes: 11 ♂, 11 ♀, same data; 2 ♂, same data but 2000 m; 7 ♂, 8 ♀, same data but 1300 m, 30. VII. 1996; 1 ♂, same data but 1250 m, 29. VII. 1996 (MHNG, PCSK).

Description. L 1.85–1.90. Body and appendages reddish-brown, tarsi and palpi lighter. Elytra with pubescence longer (L 0.08–0.09) and more erect than that

on head and pronotum. Head (L/W 0.44–0.49/0.41–0.44) distinctly punctate near antennal tubercles, usually almost impunctate in middle and posteriorly. Frontoclypeus rugulose. Vertex evenly convex in middle or with a minute longitudinal impression. Eyes in lateral view as long as tempora in male, as 2/3 of tempora in female. Antennae with scape at least 1.5 times as long as wide, pedicel twice as long as wide, longer than scape; segments 3 to 8 evenly wide, variably long, segments 3–5 even and each about 1.5 as long as wide, or more or less uneven and barely longer than wide; segment 6 barely shorter than segment 5; segment 7 shorter than segment 6, sometimes as long as wide; segment 8 shorter than segment 7, as long as wide or slightly wider than long; segment 9 barely longer than wide upto slightly wider than long; segment 10 as long as, or longer than, wide; segment 11 as long as segments 7 or 8 to 10 combined. Pronotum (L/W 0.44–0.48/0.55–0.57) with punctuation very fine, sometimes more distinct on anterior fourth. Elytra (L/W 0.81–0.84/0.90–0.93) very finely punctate; discal sulcus extended upto or into posterior fourth of elytron, sometimes almost to apical edge; epipleural sulcus extended upto level of posterior edge of metacoxa. Fourth abdominal tergite with basal carinae slightly diverging, reaching upto mid-length of tergite; interval between carinae 1/5 to 1/4 of tergal width.

Male sexual characters. Posterior half of metasternum with two parallel median ridges, low and evenly rounded in lateral view. Antennal segment 11 slightly flattened dorsad, slightly asymmetrical. Antennal tubercle small, moderately prominent, with diameter about 1/7 of segmental length and about 2/3 of interval to basal edge of segment 11. Protrochanter obtusely angulate inferiad. Tibiae without obvious sexual characters. Abdominal sternites 7 and 8 as Fig. 28. Aedeagus as Fig. 4, L 0.36–0.39.

Distribution. China: Sichuan.

Remarks. This species may be distinguished by the rugulose frontoclypeus, in combination with the vertex and lateral portions of the frons finely punctate.

Triomicrus punctifrons sp. nov.

Holotype: ♂, China, Sichuan prov., Wolong Natur. Res., 500 m, litter, 16. V. 1994, S. A. Kurbatov leg. (ZMUM).

Paratypes: 3 ♂, 13 ♀, same data; 2 ♂, 3 ♀, same data but 1500 m, 22. V. 1994; 1 ♂, 1 ♀, same data but 900 m, 23. V. 1994; 1 ♂, 3 ♀, Sichuan prov., Mt. Emei, ca. 1400 m, litter, 22. IX. 1994; 1 ♀, data but 1400 m, 28. IX. 1994, S. A. Kurbatov leg. (MHNG, PCSK).

Description. L 1.7–2.0. Body and appendages uniformly reddish-brown, or elytra slightly lighter. Tarsi and palpi lighter. Elytral pubescence longer (L 0.11–0.12) than that on head and pronotum, suberect. Head (L/W 0.41–0.46/0.40–0.44) entirely densely punctate, or punctuation obsolete on middle portion of vertex. Frontoclypeus with coarse and dense punctures, nor rugose. Eyes in lateral view as long as, or slightly longer than, tempora in male, shorter than tempora in female. Antennae with

scape barely longer than wide; pedicel longer than wide; in male segments 3 to 5 even and longer than wide, segment 6 as long as wide, segments 7 and 8 barely wider than long in female; segment 3 as long as wide, segments 4 to 8 slightly wider than long; segments 9 and 10 in both sexes slightly wider than long; segment 11 as long as, or longer than, segments 7 to 10 combined. Pronotum (L/W 0.40–0.42/0.47–0.50) entirely covered with dense punctures. Elytra (L/W 0.70–0.79/0.78–0.85) with punctation distinct and dense on anterior fourth, becoming finer and sparser posteriorly; discal sulcus extended onto posterior fourth of elytral length; epipleural sulcus extended beyond level of anterior edge on metacoxa. Fourth abdominal tergite with basal carinae subparallel or diverging, reaching mid-length of tergite; interval between carinae as 1/8 of tergal width.

Male sexual characters. Metasternum simple. Antennal segment 11 subcylindrical and symmetrical near base, with tubercle circular, prominent. Diameter of antennal tubercle about 1/10 segmental length and as large as interval to basal edge of segment 11. Protibiae and mesotibiae each with small apical denticle. Abdominal sternites 7 and 8 as Fig. 24. Aedeagus as Fig. 5, L 0.23–0.25.

Distribution. China: Sichuan.

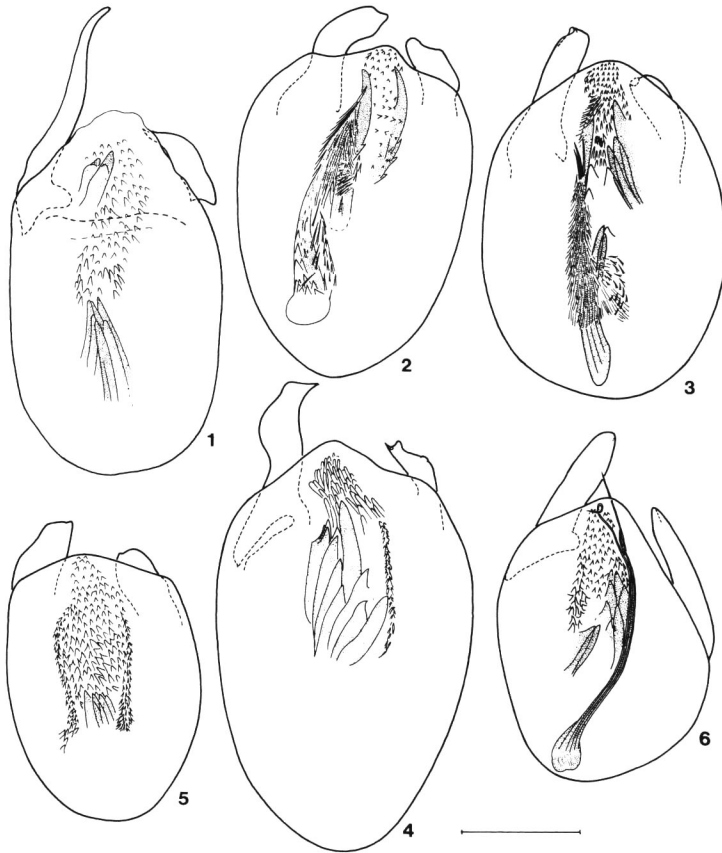
Remarks. This species is characterized by the punctation on the lateral portions of the frons and on the frontoclypeus coarser than that on the vertex.

Triomicrus secutor sp. nov.

Holotype: ♂, Taiwan, Hualien Hsien, Taroko N. P., Nanhushi Hut, 2220 m, 8. V. 1990, A. Smetana leg. [T48] (MHNG).

Paratypes: 2 ♂, Taiwan, Hualien Hsien, Taroko N. P., ridge SE Nanhushi Hut, 2700 m, 11. V. 1990 [T52], A. Smetana leg. (MHNG, PCSK); 1 ♂, Taiwan, Nantou Hsien, Houhuanshan, 3175 m, 16. V. 1990 [T59], A. Smetana leg. (PCSK); 2 ♂, Taiwan, Nantou Hsien, Houhuanshan, Kuenyang, 3050 m, 29. IV. 1990 [T30], A. Smetana leg. (MHNG); 2 ♂, Nantou Hsien, Mei Feng, 28. VII. 1989, K. Baba leg. (MHNG); 1 ♂, Taiwan, Taoyuan Hsien, Takuanshan For., 1600 m, 17. IV. 1990 [T3], A. Smetana leg. (MHNG); 1 ♂, Taiwan, Taoyuan Hsien, Shangbaleng, 23. VII. 1988, S. Nomura leg. (MHNG); 1 ♂, Taiwan, Taoyuan Hsien, Baleng (Paling) 22–24. VII. 1989, S. Nomura leg. (MHNG); 1 ♂, Shinchu Hsien, Chuton, 28. VII. 1989, K. Baba leg. (MHNG).

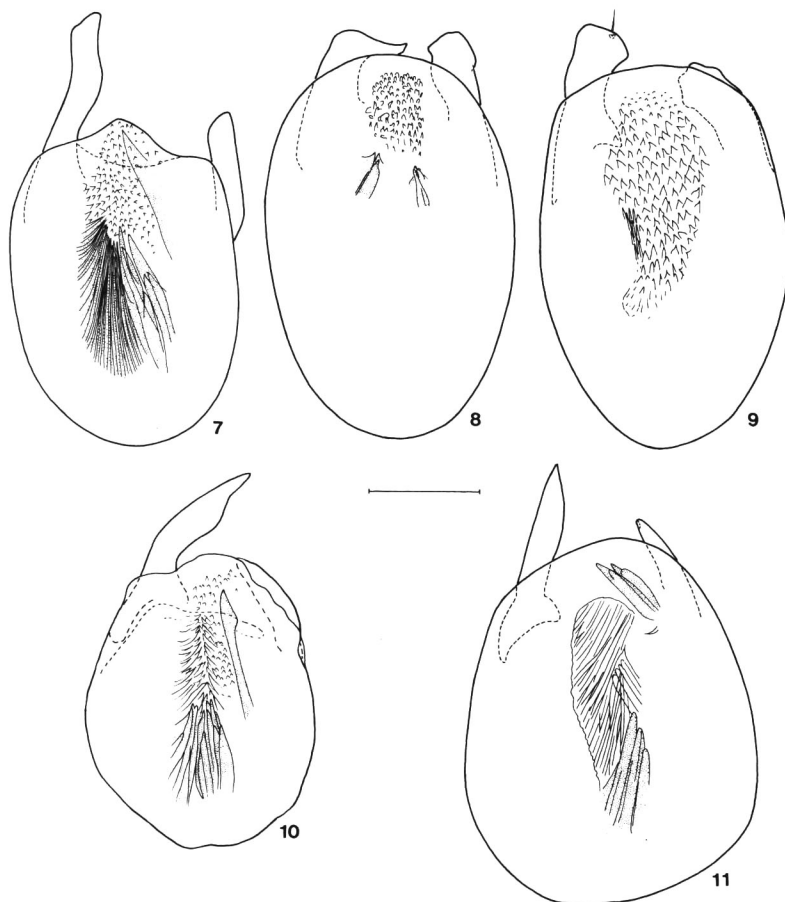
Description. L 1.7–1.9. Body reddish-brown or brown, appendages slightly lighter, tarsi and palpi distinctly lighter. Pubescence short and recumbent, that on elytra L 0.06–0.07. Head (L/W 0.39–0.47/0.37–0.42) very finely punctate, but with a few distinct punctures near antennal tubercles. Frontoclypeus extremely finely punctate, smooth between punctures. Eyes shorter than tempora in lateral view. Antennae with scape and pedicel each longer than wide; segments 3 to 5 almost even, each longer than wide, segment 4 sometimes barely shorter than segments 3 and 5, seg-



Figs. 1–6. Aedeagi of *Triomicrus* spp. in dorsal view. — 1, *T. penicilatus* Nomura & Lee; 2, *T. algon* sp. nov.; 3, *T. rougemonti* sp. nov.; 4, *T. ludificator* sp. nov.; 5, *T. punctifrons* sp. nov.; 6, *T. secutor* sp. nov. Scale bar=0.1 mm.

ment 5 sometimes barely longer than segment 3 or 4; segments 6 and 7 even, each longer than wide, shorter than segment 5; segment 8 as long as wide; segments 9 and 10 each as long as wide or slightly wider than long; segment 11 longer than segments 7 to 10 combined. Pronotum (L/W 0.41–0.46/0.44–0.49) extremely finely punctate. Elytra (L/W 0.59–0.74/0.67–0.76) extremely finely punctate; discal sulcus reaching posterior fourth of elytral length; epipleural sulcus extended beyond level of anterior edge of metacoxa. Fourth abdominal tergite with basal carinae parallel or subparallel and slightly arcuate, extended beyond tergal mid-length; interval between carinae about as 1/4 of tergal width.

Male sexual characters. Metasternum with pair of protuberances lacking setal tufts, situated in front of metacoxae, cariniform posteriorly, obtuse anteriorly. Antennal segment 11 asymmetrically impressed anteriobasally, with edge approximate to



Figs. 7–11. Aedeagi of *Triomicrus* spp. in dorsal view. — 7, *T. factitatus* sp. nov.; 8–9, *T. onerosus* sp. nov.; 10, *T. adnexus* sp. nov.; 11, *T. sublaevis* Raffray. Scale bars=0.1 mm.

stalk, tubercle small, circular, slightly prominent, or absent. Diameter of antennal tubercle about 1/10 of segmental length and slightly larger than interval to basal edge of segment 11. Legs without obvious sexual characters. Abdominal sternites 7 and 8 as Fig. 27. Aedeagus as Fig. 6, L 0.27–0.29.

Distribution. Taiwan.

Remarks. This species may be distinguished by the male metasternum with cariniform protuberances lacking setal tufts, in combination with the shape of the asymmetrical ultimate antennal segment.

Triomicrus factitatus sp. nov.

Holotype: ♂, Taiwan, Hualien Hsien, Taroko N. P., Nanhushi Hut, 2220 m, 12. V. 1990, A. Smetana leg. [T55] (MHNG).

Paratypes: 1 ♂, same data (PCSK); 1 ♂, Taroko N. P., ridge SE Nanhushi Hut, 2700 m, 11. V. 1990 [T52], A. Smetana leg. (PCSK); 1 ♂, Nantou Hsien, Meifeng, 2130 m, 12. V. 1991 [T78], A. Smetana leg. (MHNG); 1 ♂, Chiai Hsien, Yushan N. P., Ta-Ta Ghia, 2750 m, 27. IV. 1990 [T27], A. Smetana leg. (MHNG); 1 ♂, Taichung Hsien, Anmashan, 2230 m, 4. V. 1990 [T43], A. Smetana leg. (MHNG).

Description. L 1.7–1.85. Body and appendages reddish-brown, tarsi and palpi lighter. Pubescence as in *T. secutor*. Head (L/W 0.43–0.445/0.415–0.430) sparsely and extremely finely punctate, frontoclypeus almost smooth. Eyes in lateral view about as long as tempora. Antennae with scape about 1.25 times as long as wide; pedicel shorter than scape, longer than wide; segments 3 to 8 variable; segments 3 to 6 almost even or 3 slightly longer, each barely longer than wide, or 6 as long as wide; segment 7 as long as wide or slightly wider than long; segment 8 slightly wider than long; segment 9 wider than long; segment 10 distinctly wider than long; segment 11 barely longer than 7 to 10 combined. Pronotum (L/W 0.40–0.43/0.46–0.49) extremely finely punctate. Elytra (L/W 0.71–0.74/0.77–0.81) extremely finely punctate; discal sulcus extended upto posterior fifth of elytral length; epipleural sulcus extended beyond level of anterior edge of metacoxa. Fourth abdominal tergite with basal carinae diverging, almost reaching, or reaching, tergal mid-length; interval between carinae almost 1/5 of tergal width.

Male sexual characters. Metasternum with two protuberances extending to anterior metacoxal edge and each bearing a tuft of setae curved posteriorly; setal tuft oblique, oriented posteriorly, thorn-like in lateral view. Antennal segment 11 as in *T. secutor*. Diameter of antennal tubercle 1/8 of segmental length and slightly larger than interval to basal edge of segment 11. Legs without obvious sexual characters. Abdominal sternites 7 and 8 as Fig. 34. Aedeagus as Fig. 7, L 0.33–0.36.

Distribution. Taiwan.

Remarks. This species may be distinguished by the pattern of the setal tuft in male metasternum.

Triomicrus adnexus sp. nov.

Holotype: ♂, Taiwan, Pintung Hsien, Peitawushan, Kuai-Ku Hut, 2120 m, 27. IV. 1992, A. Smetana leg. [T104] (MHNG).

Description. Very similar to, and with most diagnostic characters as in, *T. factitatus*. Measurements: L 1.8; head L/W 0.43/0.43; pronotal L/W 0.44/0.47; elytral L/W 0.76/0.83; elytral setae L 0.05; aedeagal L 0.33. Antennal segments 10 and 11 notably rugose, segment 11 as long as segments 6 to 10 combined. Discal sulcus of elytra reaching to posterior fourth of elytral length. Fourth abdominal tergite with

basal carinae reaching mid-length of tergite; interval between carinae about 1/4 of tergal width.

Male sexual characters. Metasternal ridges strongly raised, laminar, each bearing tuft of setae oriented ventro-anteriorly. Antennal segment 11 flattened, impressed dorsobasally, with tubercle small, circular, moderately prominent. Diameter of antennal tubercle 1/10 of length of segment and as large as interval to basal edge of segment 11. Abdominal sternites 7 and 8 as Fig. 38. Aedeagus as Fig. 10, similar to that in *T. factitatus*.

Distribution. Taiwan.

Remarks. This new species is very similar to *T. factitatus*, but may be separated by the tufts of setae oriented ventro-anteriorly on the metasternal ridges and the male abdominal sternites 7 and 8 obviously asymmetrical.

Triomicrus onerosus sp. nov.

Holotype: ♂, Taiwan, Pingtung Hsien, Peitawushan ridge, 2800–2910 m, 28. IV. 1992, A. Smetana leg. [T105] (MHNG).

Paratypes: 2 ♂, 3 ♀, same data (MHNG, PCSK); 1 ♂, Pintung Hsien, Peitawushan, above Kuai-Ku Hut, 2750 m, 28. IV. 1992 [T107], A. Smetana leg. (MHNG); 1 ♂, above Kuai-Ku Hut, 2750 m, 22. V. 1991 [T89], A. Smetana leg. (MHNG); 2 ♀, Kuai-Ku Hut, 2325 m, 21. V. 1991 [T88], A. Smetana leg. (MHNG).

Description. L 2.15–2.35. Body and appendages brown, tarsi and palpi lighter. Pubescence as in *T. secutor*. Head (L/W 0.52–0.54/0.43–0.44), punctation, including that on frontoclypeus, extremely fine and sparse, intervals between punctures smooth. Eyes in lateral view as long as, or upto 1.5 times as long as tempora. Antennae with scape and pedicel each about 1.5 times as long as wide; segments 3 to 7 longer than wide; segment 4 barely shorter than 3, distinctly shorter than segment 5; segments 6 and 7 each as large as segment 4; segment 8 barely larger than segment 7, isodiametric or barely longer than wide; segment 9 isodiametric in female, distinctly longer than wide in male; segment 10 longer than segment 9, longer than wide (particularly in male); segment 11 not quite as long as segments 7 to 10 combined. Pronotum (L/W 0.50–0.58/0.54–0.59) extremely finely punctate. Elytra (L/W 0.83–0.89/0.85–0.87) with very fine, not well delimited punctation; discal sulcus variably long, reaching about level of posterior fourth of elytral length; epipleural sulcus extending almost to level of anterior edge of metacoxa. Fourth abdominal tergite with basal carinae variable, completely obsolete, or distinct and reaching upto mid-length of tergite; interval between carinae about 1/5 of tergal width.

Male sexual characters. Antennal segment 11 subcylindrical, slightly asymmetrical, without tubercle. Metasternum without obvious sexual characters. Pro-trochanter with an acute basal denticle. Pro and mesofemora stouter. Protibiae (Fig. 15) with acute apical denticle perpendicular to axis of tibia. Mesotibiae with acute

apical lamina. Abdominal sternites 7 and 8 as Fig. 29. Aedeagus as Figs. 8, 9, L 0.35–0.38.

Distribution. Taiwan.

Remarks. This species may be easily distinguished by the male ultimate antennal segment lacking a tubercle. In one male examined in the present study, the internal sac is inverted, and in another male, it lacks a group of sclerotized teeth.

***Triomicrus sublaevis* Raffray**

[Japanese name: Sube-marumune-arizukamushi]

Triomicrus sublaevis Raffray, 1909, p. 31; Jeannel, 1958, p. 70.

Lectotype: ♂, labelled: Japon/Harmand. Tokio, Kyoto Mus. Paris./MUSEUM PARIS 1917 COLL. A. RAFFRAY /TYPE/(red)/T. longipes A. Raffray det. /Triomicrus sublaevis R. (handwritten by Jeannel) (MNHN). Paralectotypes: 1 ♂, 1 ♀, labelled Japon/MUSEUM PARIS 1917 COLL A: RAFFRAY/T. longipes A. Raffray det. (MNHN) - by present designation.

Additional material. [Honshu: Aomori Pref.] 1 ♂, 1 ♀, Hirauchi-machi, Nakano, 28. VII. 1990, K. Furuno *et. al.* leg. (NSMT); 1 ♂, Kanita-machi, Ôhira, 28. VII. 1990, K. Furuno *et. al.* leg. (NSMT); 1 ♂, 1 ♀, Iwasaki-mura, Jûniko Lakeside, 9. VIII. 1987, S. Nomura leg. (NSMT); 4 ♂, Towadako-machi, Mt. Towarisan, 4. VIII. 1987, S. Nomura leg. (NSMT); 1 ♂, Wakinosawa-mura, Kozawa, Kuchihiro, 29. VII. 1990, K. Furuno *et. al.* leg. (NSMT); [Iwate Pref.] 2 ♂, 2 ♀, Ichinoseki City, Hagishô, Kami-Hongô, 29. VII. 1990, H. Sakayori *et. al.* leg. (NSMT); [Miyagi Pref.] 4 ♂, Akiu-machi, Futakuchi Valley, 26–29. VII. 1990, S. Nomura leg. (NSMT); [Yamagata Pref.] 1 ♂, 1 ♀, Yonezawa City, Iritazawa, Tochôri, 29. VII. 1990, H. Sakayori *et. al.* leg. (NSMT); 1 ♂, Iide-machi, Iwakura, Taketani, 31. VII. 1990, H. Sakayori *et. al.* leg. (NSMT); [Fukushima Pref.] 1 ♂, Fukushima Pref., Saigoh-mura, Manako, 30. VII. 1989, E. Terazawa leg. (MHNG); 1 ♂, Kitakata City, Ômagari, Ôtôge Pass, 30. VII. 1989, H. Sakayori *et. al.* leg. (NSMT); 1 ♂, Inawashiro-machi, Mt. Adatara, Yokomuki, 10. VII. 1985, S. Nomura leg. (NSMT); 1 ♂, 2 ♀, Inawashiro-machi, Azumasan Mountains, Ôkuragawa, 10. VII. 1985, S. Nomura leg. (NSMT); 1 ♂, Shôwa-mura, Funagahana Pass, 30. VII. 1989, K. Ishii *et. al.* leg. (NSMT); 1 ♂, Shôwa-mura, Ôashi, Akata, 30. VII. 1989, K. Ishii *et. al.* leg. (NSMT); [Gunma Pref.] 2 ♂, Matsuida-machi, Kumanotaira, nr. Karuizawa, 26. IX. 1907, under moist bark (MHNG); 2 ♂, Matsuida-machi, Usui Pass, 3. VIII. 1987, O. Nakamura leg. (NSMT); [Tochigi Pref.] 1 ♂, Ashio-machi, Shazan, 6. XI. 1986, K. Furuno leg. (NSMT); [Yamanashi Pref.] 4 ♂, 3 ♀, Nirasaki C., Aoki-kôsen, 16. VII. 1984, S. Nomura leg. (MHNG, NSMT); 6 ♂, Mt. Fuji, Aokigahara, 3. VIII. 1982, S. Naomi leg. (MHNG, NSMT); 8 ♂, 16 ♀, same locality as above, 23. VIII. 1982, S. Naomi leg. (NSMT); 2 ♂, same locality as above, 23. VIII. 1984, S. No-

mura leg. (NSMT); 2 ♂, Ashiyasu-mura, Hirogawara, 9. VII. 1982, S. Naomi leg. (MHNG, NSMT); 2 ♂, Ashiyasu-mura, Mt. Washinsumiyama, 8. VIII. 1996, S. Nomura leg. (NSMT); [Nagano Pref.] 1 ♂, Ôtaki-mura, Mt. Kiso-Ontakesan, 4. VIII. 1997, S. Nomura leg. (NSMT); [Gifu Pref.] 1 ♂, 3 ♀, Kamitakara-mura, Hirayu, 24. VIII. 1987, S. Nomura leg. (NSMT); [Mie Pref.] 7 ♂, 7 ♀, Misugi-mura, Hirakura, 8. VI. 1997, S. Nomura leg. (NSMT); [Nara Pref.] 1 ♂, 8 ♀, Totsugawa-mura, Mt. Obakodake, 7. V. 1994, S. Nomura leg. (NSMT); [Wakayama Pref.] 1 ♂, Hongû-chô, Mt. Ôtôsan, Ôsugidani, 6. V. 1994, S. Nomura leg. (NSMT); [Hyôgo Pref.] 2 ♂, Chikusa-chô, Mt. Ushiroyama, 10. V. 1997, H. Hoshina leg. (NSMT); [Kyushu: Kumamoto Pref.] 1 ♂, Mizukami-mura, Mt. Ichifusa, 13. V. 1985, S. Nomura leg. (NSMT); [Miyazaki Pref.] 1 ♂, Shiiba-mura, Ohkawauchi, 10. VI. 1989, S. Nomura leg. (MHNG). [Kagoshima Pref.] 2 ♂, 1 ♀, Koshikijima Isls., Shimo-Koshiki Is., Mt. Otake, 23. V. 1994, S. Nomura leg. (NSMT).

Redescription. L 2.0–2.1. Body and appendages reddish-brown, tarsi and palpi lighter. Pronotum, elytra and abdomen with evenly long pubescence (L about 0.10), and additional long suberect setae. Head (L/W 0.51–0.54/0.44–0.46), including frontoclypeus, very finely punctate, but with several distinct punctures behind antennal tubercles; intervals between punctures smooth. Eyes barely longer than tempora in ♂ and barely shorter than tempora in ♀, in lateral view. Antennae with scape and pedicel each longer than wide; segments 3 to 7 each as long as pedicel, or segment 6 and 7 distinctly shorter, and/or segment 5 barely longer than 4 and 6, respectively; segments 8 and 9 each as long as wide; segment 10 longer than wide (male) or as long as wide (female), segment 11 barely longer than 8 to 10 combined. Pronotum (L/W 0.49/0.53–0.55) finely (lectotype) to coarsely punctate. Elytra (L/W 0.70–0.74/0.83–0.87) with discal sulcus barely as long as 1/2 of elytral length in lectotype, longer than 3/4 of elytron in other specimens; epipleural sulcus reaching level of anterior edge of metacoxa. Fourth abdominal tergite with basal carinae subparallel, about as long as 2/3 of tergal length; interval between carinae about as 1/4 of tergal width.

Male sexual characters. Metasternum with two subparallel longitudinal laminae, each partially overlapping inner edge of metacoxa. Legs longer, simple, profemora stouter. Antennal segment 11 subcylindrical and symmetrical near base, with tubercle small, circular, prominent. Diameter of antennal tubercle about as 1/10 of segmental length, and smaller than interval to basal edge. Abdominal sternites 7 and 8 as Fig. 22. Aedeagus as Fig. 11, L 0.38–0.39.

Distribution. Japan: Honshu, Kyushu.

Remarks. This species may be separated from the other species by the well projected, large and truncate metasternal laminae and the aedeagus with a few well sclerotized spines at the left apical part and a group of long, crowded and pigmented bristles of the internal sac located on the median part of the basal capsule.

The pronotal punctuation of this species is variable from coarse as in *T. protervus* to very fine. Raffray (1909) described that the pronotum of this species is irregularly

punctate, minutely punctate in male, and strongly punctate in female. The lectotype designated in the present study has finely punctate pronotum; however, the pronotum is more or less coarsely punctate in many cases.

Triomicrus cavernosus Raffray

Triomicrus cavernosus Raffray, 1904, p. 147.

Lectotype: ♂, labelled: Nyew-tew Id. nr. Shei-pu. Walker Coll. 93.-18./MUSEUM PARIS 1917 COLL. A. RAFFRAY / TYPE (red) / *T. cavernosus* A. Raffray det. (MNHN) - by present designation.

Additional material. 1 ♂, Shanghai u. Umgeb. Sammlung Dr. Eidmann (MHNG).

Redescription. L 2.1–2.2. Body and appendages reddish-brown, palpi and tarsi lighter. Pronotum, elytra and abdomen with evenly long pubescence (0.08–0.09), and several additional longer setae. Head (L/W 0.46–0.48/0.46–0.50), including frontoclypeus, very finely punctate. Eyes large and convex, in lateral view almost twice as long as tempora. Antennae with scape and pedicel each longer than wide; segment 3 almost 1.5 times as long as wide; segments 4 and 5 even, slightly elongate; segments 5–8 gradually shorter; segment 8 barely wider than long; segments 9 and 10 each slightly wider than long; segment 11 barely shorter than segments 7–10 combined. Pronotum (L/W 0.48/0.56–0.59) very finely punctate. Elytra (L/W 0.83–0.90/0.94–0.96) very finely punctate; discal sulcus reaching level of posterior fourth of elytron; epipleural sulcus reaching posterior level of anterior edge of metacoxa. Fourth abdominal tergite with basal carinae diverging, extending to middle third of tergal length, interval between carinae about 1/5 of tergal width.

Male sexual characters. Metasternum with median depression rounded in posterior half, and delimited laterally by carina becoming stronger posteriorly. Posterior portion of each carina raised to form a narrow, hook-like lamina situated close to inner edge of metacoxa, curved for 180° and pointed anteriorly. Exposed sternites with common depression well delimited laterally by sharp carina becoming slightly wider posteriorly; anterior portion of depression about as wide as 1/3 of abdominal width. Mesotibiae with small apical denticle. Antennal segment 11 subcylindrical and almost symmetrical near base, with tubercle large, discoid, prominent. Diameter of antennal tubercle 1/4 of segmental length and longer than interval to basal edge of segment 11. Abdominal sternites 7 and 8 as Fig. 32. Aedeagus as Fig. 13, L 0.36–0.40.

Distribution. China: Zhejiang.

Remarks. The type locality is a small island, south of Shanghai. The lectotype was dissected before our study and lacks the apical abdominal sternites.

***Triomicrus hamifer* sp. nov.**

[Japanese name: Koza-marumune-arizukamushi]

Holotype: ♂, Japan: Okinawa, Koza distr., Koza (5), 2. IX. 1971, at light, B. Melin leg. (MHNG).

Paratypes: 1 ♂, Japan, Okinawa, Urasoe distr., 1 mile N Gusukuma, 14. VII. 1971, at light, G. Melin leg. (PCSK); 2 ♂, Okinawa, Nakagusuku distr., 2 miles N Kuba, 3. VI. 1971, at light, B. Melin leg. (MHNG); 1 ♂, Okinawa, Futenma distr., Futenma, 10. IX. 1971, at light, B. Melin leg. (MHNG); 1 ♂, Okinawa, Senbaru, 30. V. 1991, M. Sugiyama leg. (MHNG).

Description. This species resembles *T. cavernosus* with which it shares the male metasternal and abdominal characters. In addition, the structures of the internal sac of the aedeagi are very similar in both species. Measurements: L 2.0; head L/W 0.42–0.44/0.43–0.44; pronotal L/W 0.44–0.45/0.53; elytral L/W 0.71–0.72/0.86–0.87; elytral setae L 0.08–0.09; aedeagal L 0.35.

Distribution. Japan: Okinawa.

Remarks. *Triomicrus hamifer* may be distinguished by the following features: fourth abdominal tergite with basal carinae extended onto median third of tergal length; interval between carinae 1/6–1/7 of tergal width; antennal segments 3 to 8 slightly shorter, segment 3 less than 1.5 times as long as wide; segments 7 and 8 wider than long; segment 9 wider than that in *T. cavernosus*; segment 11 with tubercle smaller, diameter of tubercle not exceeding 1/5 of segmental length and as large as interval to basal edge of segment 11; male protibiae with long apical denticle; male mesotibiae lacking apical denticle; abdominal sternites as Fig. 31; aedeagus as Fig. 12, with internal sac bearing a single group of denticles.

***Triomicrus melini* sp. nov.**

[Japanese name: Okinawa-marumune-arizukamushi]

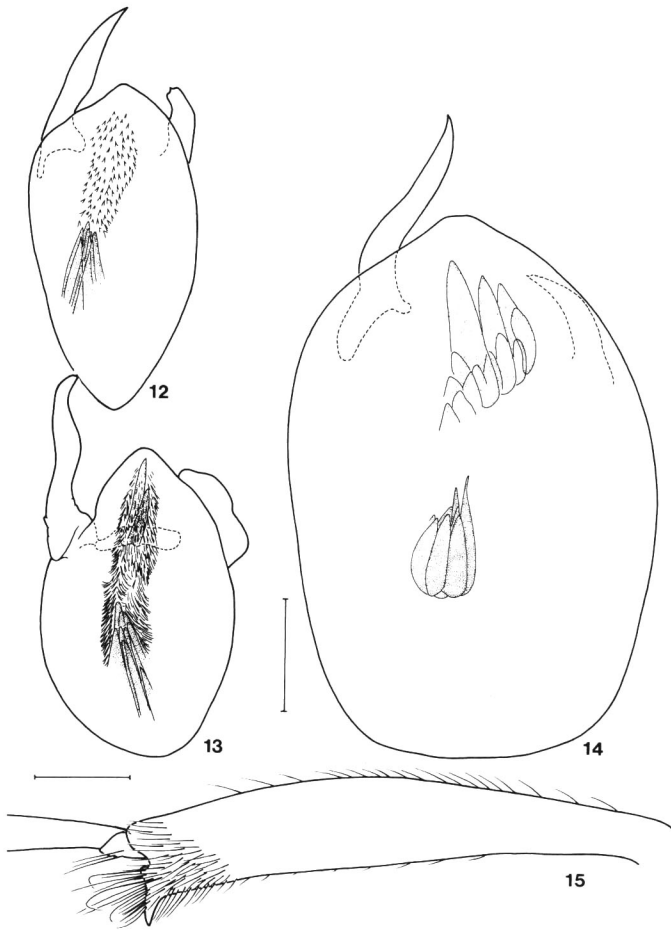
Holotype: ♂, Japan, Okinawa, Yonashiro distr., Yonashiro, 2. VIII. 1971, at light, B. Melin leg. (MHNG).

Paratype: 1 ♂, same data as holotype (MHNG).

Description. Close to *T. cavernosus* and *T. hamifer* with which it shares the structures of the abdominal sternites 7 and 8, and the aedeagal characters. Measurements: L 1.90; head L/W 0.44–0.45/0.43–0.44; pronotal L/W 0.44–0.45/0.53–0.54; elytral L/W 0.75/0.88–0.90; elytral setae L 0.09; aedeagal L 0.37.

Distribution. Japan: Okinawa.

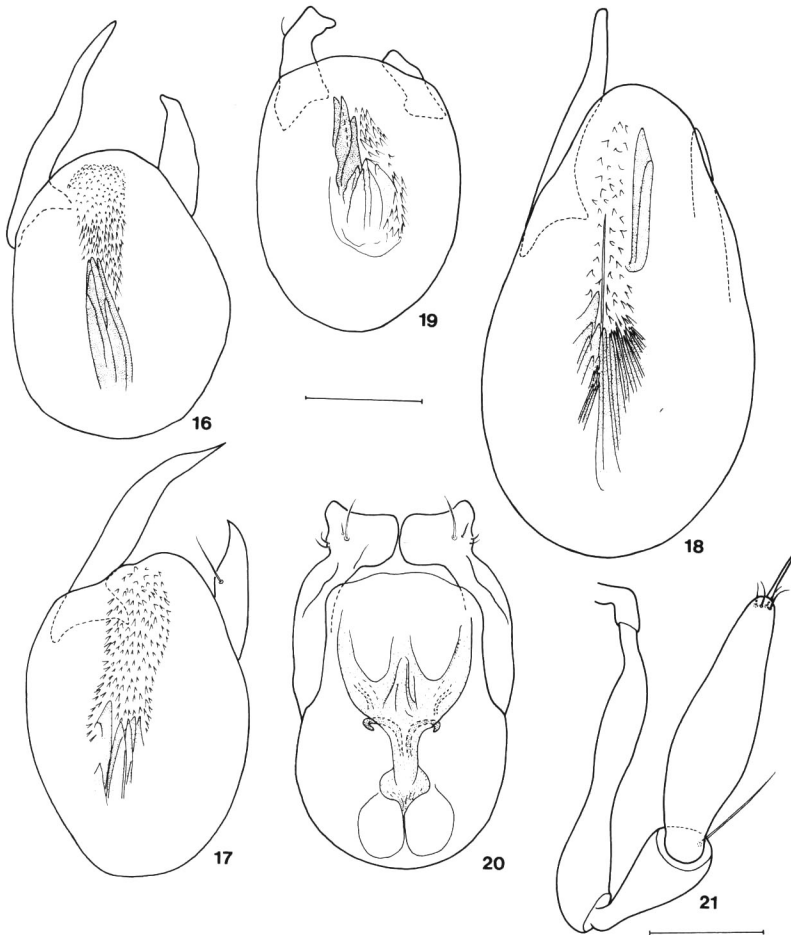
Remarks. This species may be distinguished from *T. cavernosus* by the following features: fourth abdominal tergite with interval between basal carinae about 1/7 of tergal width; metasternum simple in male; male antennal segment 11 with tubercle as that in *T. hamifer*, much larger than interval to basal edge of segment; male protib-



Figs. 12–15. *Triomicrus* spp. — 12, *T. hamifer* sp. nov., aedeagus in dorsal view; 13, *T. cavernosus* sp. nov., aedeagus in dorsal view; 14, *T. protervus* (Sharp), aedeagus in dorsal view, 15, *T. onerosus* sp. nov., male protibia, lateral view. Scale bars=0.1 mm.

iae (Fig. 39) with long apical denticle; male mesotibiae with apical denticle and large subapical denticle (Fig. 40); metafemora distinctly flattened and curved in basal half; abdominal sternites 7 and 8 as Fig. 37; aedeagus as Fig. 16, with a single group of sclerotized denticles, as that in *T. hamifer*.

It may be distinguished from *T. hamifer* by the basal carinae of the first abdominal tergite not extending beyond anterior third of the tergite, the antennal segments 3–8 slightly longer than those in *T. cavernosus*, the segment 9 narrower than that in *T. cavernosus*, the male metasternum simple, the diameter of the antennal tubercle larger than the interval to the basal edge of the segment 11, and the different shape of the male protibiae, mesotibiae, and metafemora.



Figs. 16–20. *Triomicrus* spp. — 16, *T. melini* sp. nov., aedeagus in dorsal view; 17, *T. simplex* Sharp., aedeagus in dorsal view; 18, *T. sternalis* sp. nov., aedeagus in dorsal view; 19, *T. vietus* sp. nov., aedeagus in dorsal view; 20, *T. seychellensis* Raffray, aedeagus in dorsal view; 21, *T. sternalis* sp. nov., maxillary palp. Scale bars=0.1 mm.

***Triomicrus humilis* Raffray**

Triomicrus humilis Raffray, 1904, p. 147.

Lectotype: ♀, labelled: China/Haining Walker. British Mus./*T. humilis* A. Raffray det./MUSEUM PARIS 1917 COLL. A. RAFFRAY/TYPE (red)/*Triomicrus humilis* Raffr. (MNHN) - by present designation.

Redescription. Measurements: L 1.95; head L/W 0.44/0.44; pronotal L/W 0.435/0.540; elytral L/W 0.72/0.89.

Distribution. China: Zhejiang (Haining is south of Shanghai).

Remarks. This species possesses almost the same diagnostic characters as *T. cavernosus*, including the proportions of the antennal segments. It may be distinguished by the eyes which are in lateral view barely longer than the tempora and by the fourth abdominal tergite lacking median carinae. The elytral pubescence appears to be slightly shorter than that in *T. cavernosus*.

Triomicrus simplex Sharp

[Japanese name: Tsuya-marumune-arizukamushi]

Triomicrus simplex Sharp, 1883, p. 325; Jeannel, 1958, p. 71.

Lectotype: ♂, labelled: *Triomicrus simplex* ♂ type D. S. Sanjo, Japan, 15.9.1881. Lewis (handwritten by Sharp)/Type H. T.(round, red)/Sharp Coll. 1905–313 (BMNH) - by present designation.

Paralectotypes: 1 ♀ with the same data and labels, but with handwritten ♀ and without the red type label; 2 ♂, 1 ♀ with handwritten: *Triomicrus simplex* D. S. Niigata, Japan, 15. 9. 81. Lewis and labelled: Sharp Coll. 1905–313; 1 ♀ with same data but 1881; 2 ♀ with additional label: Japan. G. Lewis. 1910–320. (all BMNH).

Additional material. 1 ♀, labelled: Nugata. 4. IX.–16. IX. 81./Japan. G. Lewis. 1910–320. [Nugata is likely misspelled Niigata]; 2 ♂, Chiba Pref., Kisarazu C., Obitsugawa-kako, 6. V. 1995, S. Nomura leg. (MHNG, NSMT); 2 ♂, 1 ♀, Chiba Pref., Kisarazu City, Kuroto, 5. V. 1996, S. Nomura leg. (NSMT); 1 ♂, Gifu Pref., Fujihashi-mura, Tokuyama Dam, 26. IV. 1992, M. Satô leg. (NSMT); 1 ♂, Tokushima Pref., Tokushima C., Nada, 14. VII. 1965, M. Sakai leg.; 13 ♂, 12 ♀, Tokushima Pref., Tokushima C., Tsuda, 11–18. IX. 1965, M. Sakai leg.; 1 ♂, Fukuoka Pref., Chikugo City, Funagoya, 4. VI. 1993, collector unknown. (NSMT); 3 ♂, Saga Pref., Kôhoku-chô, Rokkakugawa-kakô, 13. VIII. 1997, M. Nishida leg.; 5 ♂, Kumamoto Pref., Amakusa Isls, Matsushima Is., Ariake-cho (LT), 31. VII. 1994, K. Ohtsuka leg.(MHNG, NSMT).

Redescription. L 2.05–2.10 mm. Colour and pubescence as in *T. cavernosus*. Head (L/W 0.46–0.48/0.44–0.47) extremely finely punctate. Frontoclypeus smooth between extremely fine punctation. Eyes large in male, in lateral view almost twice as long as tempora, smaller in female, somewhat longer than tempora. Antennae as in *T. cavernosus*. Pronotum (L/W 0.44–0.47/0.56) extremely finely punctate. Elytra (L/W 0.71–0.79 ♀, 0.85–0.87 ♂/0.99–1.02) about 1.2 times as wide as those in *T. cavernosus*; discal and epipleural sulci as in *T. cavernosus*. Fourth abdominal tergite with basal carinae very fine, more or less reduced and not reaching second third of tergal length; interval between carinae about 1/8 of tergal width.

Male sexual characters. Metasternum simple. Exposed abdominal sternites 1–5 as in *T. cavernosus*. Antennal segment 11 slightly impressed dorsobasally, with

large, oval, prominent tubercle. Diameter of antennal tubercle 1/5 of segmental length and much larger than interval to basal edge of segment 11. Protibiae with small apical denticle. Mesotrochanter with a large denticle obliquely truncate at tip. Mesotibiae with small apical denticle. Metafemora curved. Abdominal sternites 7 and 8 as Fig. 36. Aedeagus (Fig. 17) L 0.34–0.39.

Distribution. Japan: Honshu, Kyushu.

Remarks. This species is similar and likely close to *T. cavernosus*. The type locality given by Sharp is «at Niigata». The two specimens from Sanjo were found on the same day as the specimens from Niigata, and are designated by Sharp as «Types». Sanjo is near Niigata and possibly the place where all specimens have been found.

Triomicrus protervus (Sharp)

[Japanese name: Marumune-arizukamushi]

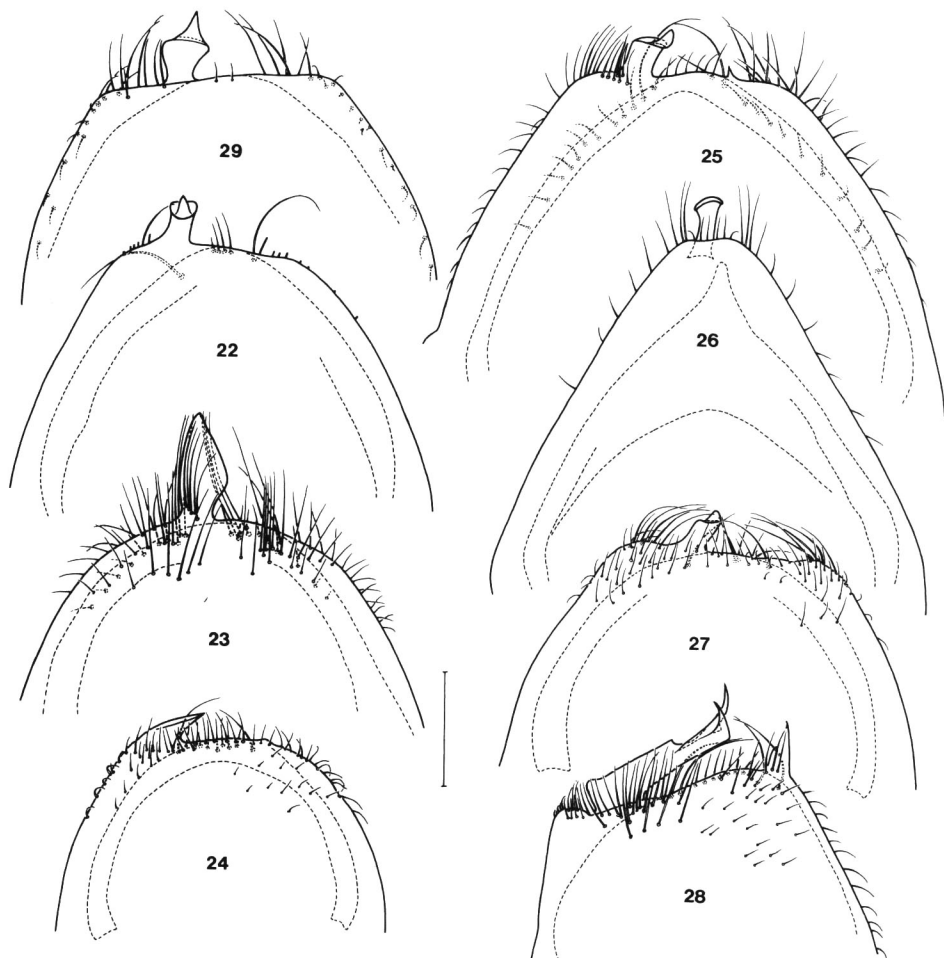
Bryaxis protervus Sharp, 1874, p. 121.

Triomicrus protervus: Sharp, 1883, p. 326; Jeannel, 1958, p. 71.

Lectotype: ♀, labelled: Japan (round yellow) *Bryaxis protervus* (handwritten) Type. D. S./Sharp Coll. 1905-313. (BMNH) - by present designation.

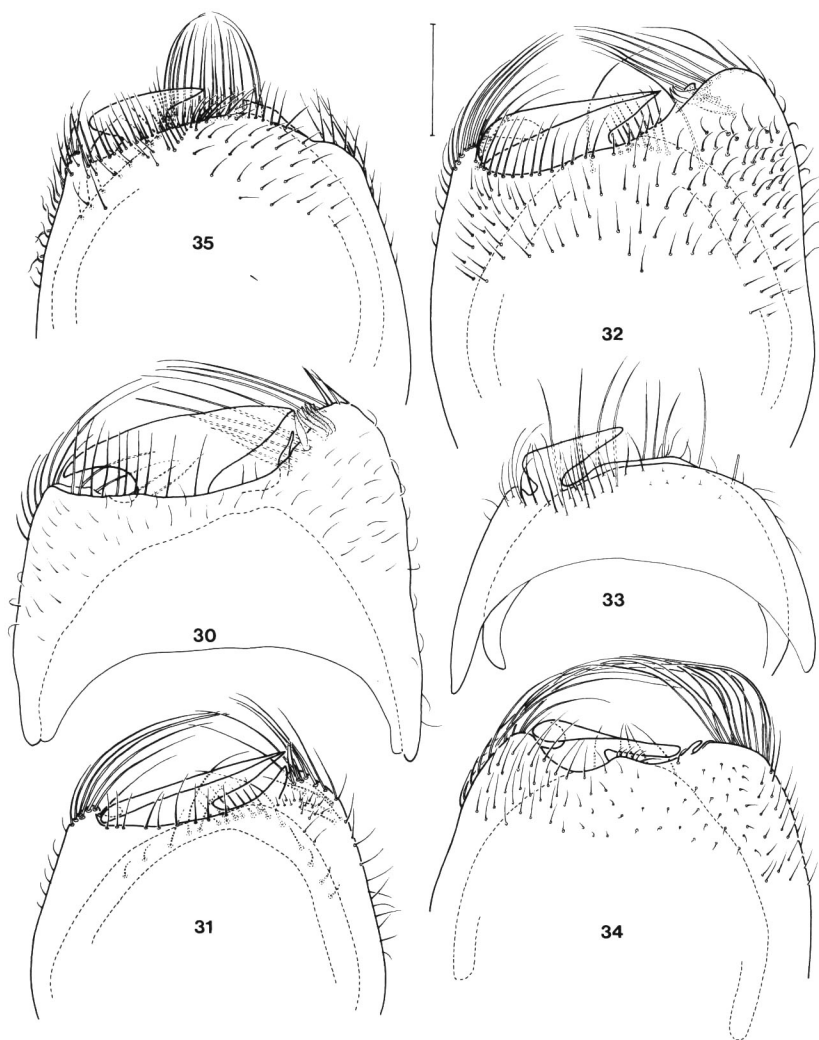
Paralectotype: ♀, labelled: Japan. G. Lewis. 1910-320./*Bryaxis protervus* (handwritten) Ind.typ. D. S. (BMNH).

Additional material of the acute form (see remarks). [Honshu: Aomori Pref.] 1 ♂, Aomori City, Hibakozawa-rindô, 15. VIII. 1992, T. Ichita leg. (NSMT); 1 ♂, Aomori City, Moya Pass, 18. VII. 1992, T. Ichita leg. (NSMT); 1 ♂, Hachinohe City, 11. IX. 1983, A. Fukuda leg. (NSMT); 1 ♂, 1 ♀, Imabetsu-machi, Tsunashirazu, 30. VII. 1987, S. Nomura leg. (NSMT); 1 ♂, Minmaya-mura, Tappi-misaki, 30. IX. 1992, S. Nomura leg. (NSMT); 1 ♂, 1 ♀, Fukaura-machi, Oirase-gawa, 8. VIII. 1987, S. Nomura leg. (NSMT); 4 ♂, 2 ♀, Towadako-machi, Tsuta Spa, 6. VIII. 1987, S. Nomura leg. (NSMT); 3 ♂, Towadako-machi, Mt. Towarisan, 4. VIII. 1987, S. Nomura leg. (NSMT); 2 ♂, 3 ♀, Ôhata-machi, Ohatagoshi-rindo, 29. VII. 1990, K. Furuno *et. al.* leg. (NSMT); [Iwate Pref.] 1 ♂, Kuji City, Yamane-machi, Magoshi, 30. VII. 1990, N. Hikita *et. al.* leg. (NSMT); 1 ♂, 2 ♀, Tôno City, Kotomo-machi, Ôhora, 30. VII. 1990, H. Sakayori *et. al.* leg. (NSMT); 2 ♂, Nishine-machi, Mt. Iwatesan, Yakebashiri, 1. X. 1992, S. Nomura leg. (NSMT); 2 ♂, 2 ♀, Shiwa-machi, Akazawa, Oriabe Pass, W slope, 30. VII. 1990, H. Sakayori *et. al.* leg. (NSMT); 1 ♂, Yamagata-mura, Hiraniwa-kôgen-iriguchi, 30. VII. 1990, E. Terazawa *et. al.* leg. (NSMT); [Miyagi Pref.] 2 ♂, Akiu-machi, Futakuchi Valley, 27–29. VII. 1990, S. Nomura leg. (NSMT); 2 ♂, 2 ♀, Zaô-machi, Zaô, 25. VI. 1983, S. Nomura leg. (NSMT); 1 ♂, 2 ♀, Shizugawa-chô, Tokura, Aramachi, 31. VII. 1989, H. Sakayori *et. al.* leg. (NSMT); 1 ♂, Tsuyama-chô, Yokoyama, Chishigai, 31. VII. 1989, H. Sakayori *et. al.* leg. (NSMT); 1 ♂, 3 ♀, Utatsu-chô, Niranohama, 31. VII. 1989, H. Sakayori *et. al.* leg. (NSMT); [Akita Pref.] 3 ♂, Mt. Chôkai, 18. VI. 1980, S. Naomi leg.



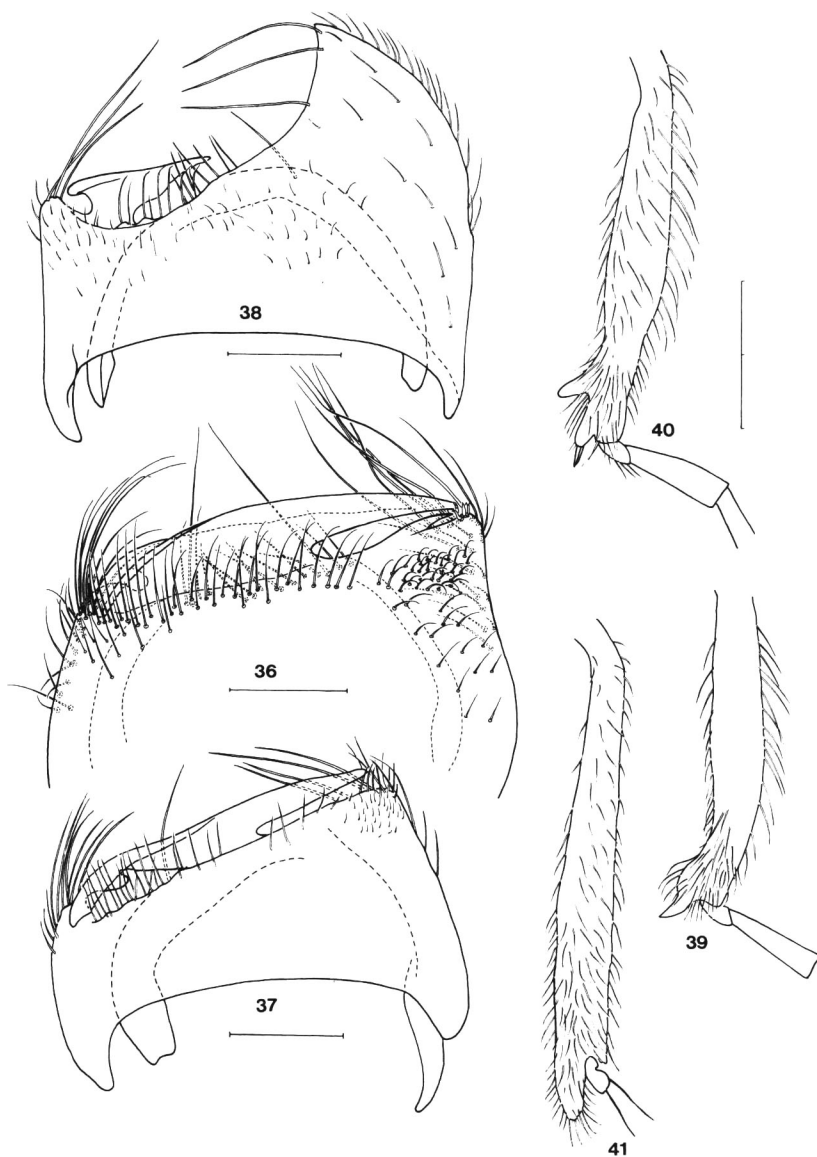
Figs. 22–29. Male abdominal sternites 7 and 8 in *Triomicrus* spp. — 22, *T. sublaevis* Raffray; 23, *T. rougemonti* sp. nov.; 24, *T. punctifrons* sp. nov.; 25, *T. protervus* (Sharp); 26, *T. sternalis* sp. nov.; 27, *T. secutor* sp. nov.; 28, *T. ludificator* sp. nov.; 29, *T. algon* sp. nov. Scale bar = 0.1 mm.

(MHNG); 1 ♂, Noshiro City, Tokiwa-rindô, Mt. Ôkurayama, 29. VII. 1990, E. Terazawa *et. al.* leg. (NSMT); 1 ♂, 1 ♀, Oga City, Oganaka, Hiraki, 28. VII. 1991, K. Ishii *et. al.* leg. (NSMT); 1 ♂, Aikawa-machi, Kamazawa, Musawagawa, 28. VII. 1991, E. Terazawa *et. al.* leg. (NSMT); 2 ♂, 2 ♀, Kami-Koani-mura, Okitaomote, Ôikari, 28. VII. 1991, E. Terazawa *et. al.* leg. (NSMT); 1 ♂, 4 ♀, Nishi-Senpoku-machi, Tsuchikawa, Kosugiyama, Okita, 29. VII. 1991, E. Terazawa *et. al.* leg. (NSMT); 1 ♂, 1 ♀, Tazawako-machi, Nyûtô Spa, 11. VIII. 1987, S. Nomura leg. (NSMT); 2 ♂, 1 ♀, Ugo-machi, Karuizawa, Ochiai, 29. VII. 1991, H. Sakayori *et. al.*

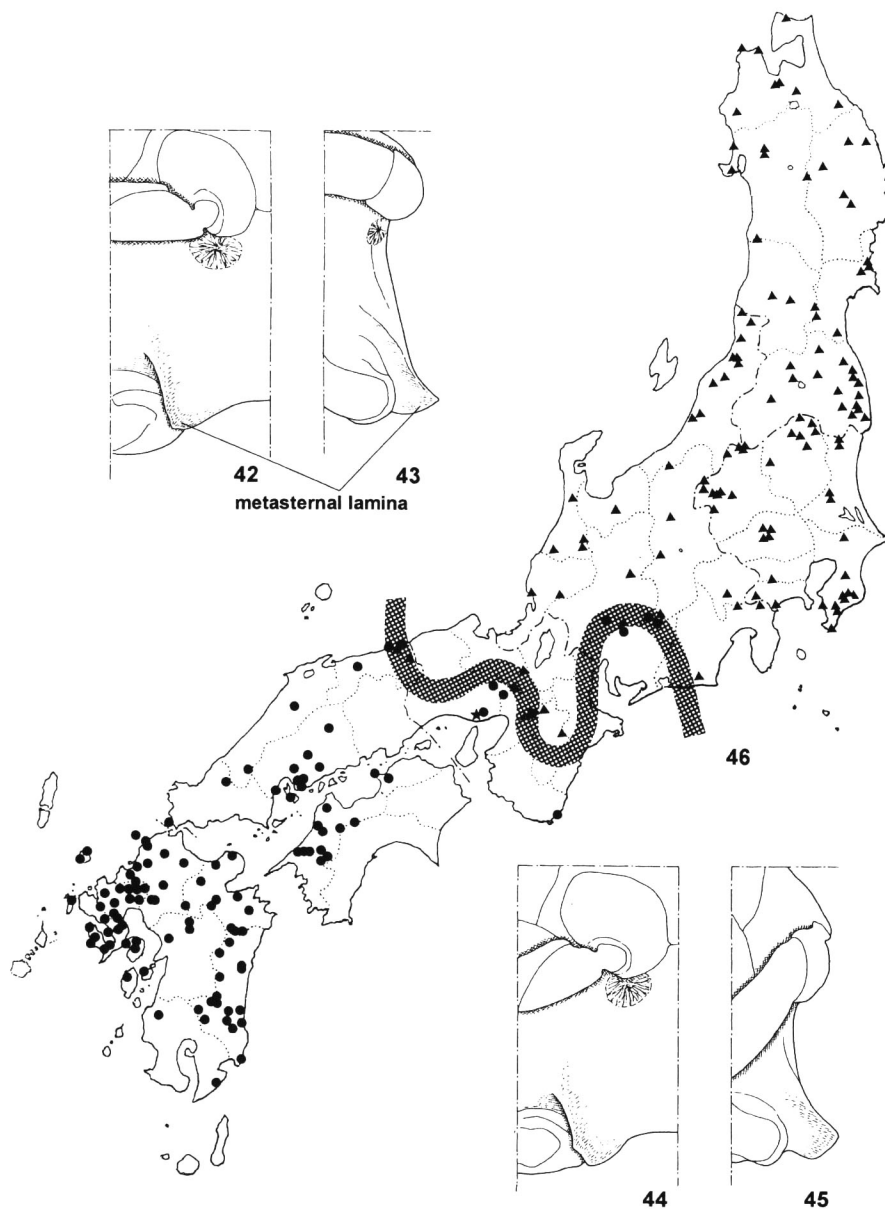


Figs. 30–35. Male abdominal sternites 7 and 8 of *Triomicrus* spp. — 30, *T. penicilatus* Nomura & Lee; 31, *T. hamifer* sp. nov.; 32, *T. cavernosus* sp. nov.; 33, *T. vietus* sp. nov.; 34, *T. factitatus* sp. nov.; 35, *T. onerosus* sp. nov. Scale bar=0.1 mm.

leg. (NSMT); [Yamagata Pref.] 2 ♂, Sagae City, Sachi, 31. VII. 1989, K. Ishii *et. al.*
 leg. (NSMT); 2 ♂, Nishikawa-machi, Mt. Gassan, Ubasawa, 14. VIII. 1987, S. Nomura
 leg. (NSMT); 3 ♂, 4 ♀, Yusa-machi, Mt. Chôkaisen, 5. VII. 1985, S. Nomura
 leg. (NSMT); [Fukushima Pref.] 1 ♂, Iwaki City, Miwa-machi, Gôdo, 30. VII. 1989,
 E. Terazawa *et. al.* leg. (NSMT); 2 ♂, 1 ♀, Ten-ei-mura, Hatori Dam, 30. VII. 1989,
 H. Sakayori *et. al.* leg. (NSMT); 2 ♂, 3 ♀, Shimogô-machi, Toaka, 30. VII. 1989, K.

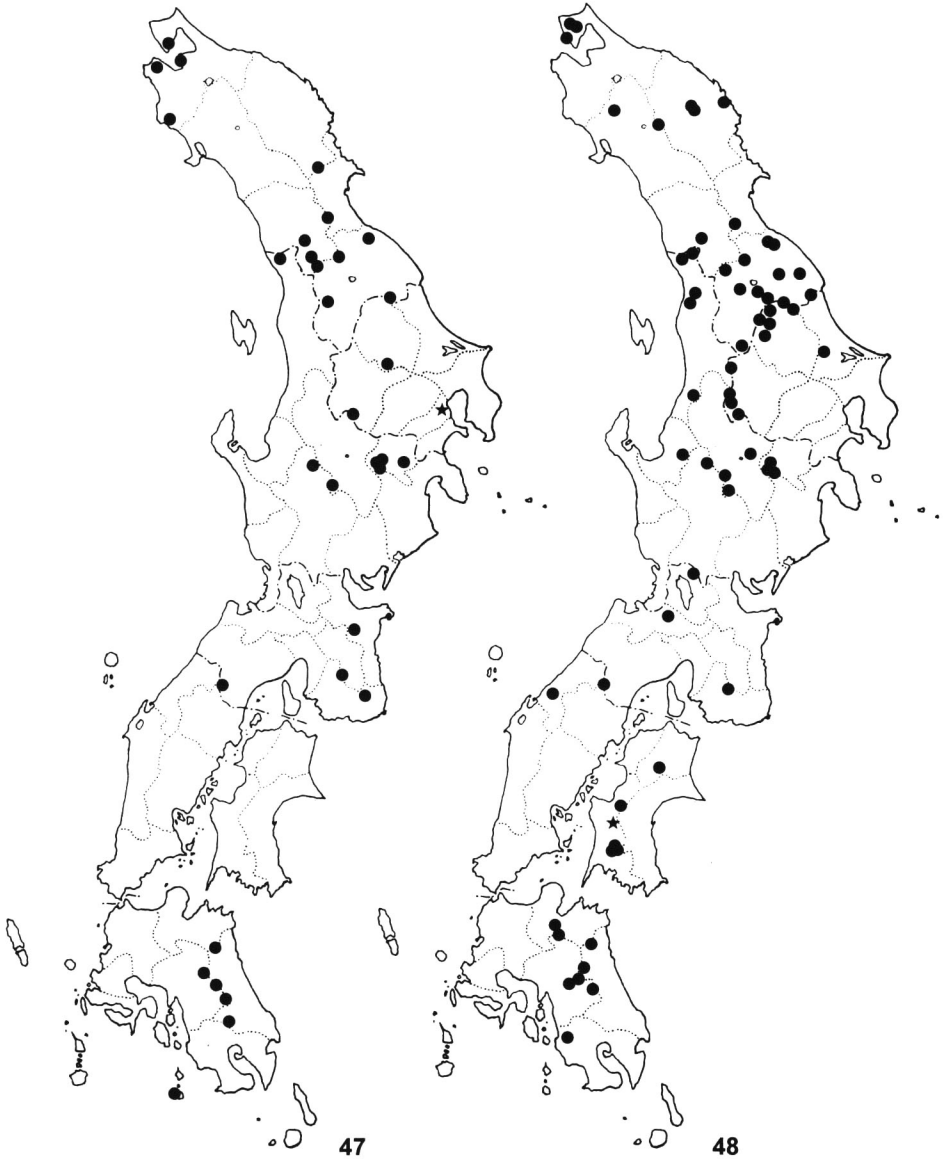


Figs. 36–41. *Triomicrus* spp. — 36, *T. simplex* Sharp, male abdominal sternites 7 and 8; 37, *T. melini* sp. nov., male abdominal sternites 7 and 8; 38, *T. adnexus* sp. nov., male abdominal sternites 7 and 8; 39–40, *T. melini* sp. nov., male protibia (39) and mesotibia (40), lateral view; 41, *T. rougemonti* sp. nov., male protibia, lateral view. Figs. 36–38, scale bars=0.1 mm; figs. 39–41, scale bar=0.2 mm.



Figs. 42–46. Two geographical variations of *Triomicrus protervus* (Sharp) in Japan and their distribution. 42–43, acute form male from Mt. Jōzan, Fukui Pref., meso- and metasterna in ventral (42) and lateral (43) views; 44–45, truncate form male from Mt. Mikusayama, Osaka Pref., ditto in ventral (44) and lateral (45) views; 46, distribution of the two variations (black star shows the type locality; black triangles indicate the localities of the acute forms; black circles indicate the localities of the truncate forms; grey line delimits a possible borderline of these two variations). Many records in the Japanese local literature are included in the distribution map.

Ishii *et. al.* leg. (NSMT); 1 ♂, Inawashiro-machi, Mt. Aizu-Bandaisan, alt. 650 m, 29. VIII. 1992, K. Ogata leg. (NSMT); 1 ♂, 4 ♀, Nishigô-mura, Habuto, Manako, 30. VII. 1989, H. Sakayori *et. al.* leg. (NSMT); 6 ♂, 11 ♀, Nishigô-mura, Tsuruyû, Takasuke, 30. VII. 1989, H. Sakayori *et. al.* leg. (NSMT); 1 ♂, 1 ♀, Funahiki-machi, Niitate, Magariyama, 30. VII. 1989, H. Hashimoto *et. al.* leg. (NSMT); [Gunma Pref.] 7 ♂, Joh-Shin-Etsu Kogen Nat. Park, Shiga Kogen, Mt. Kurofu, 2100 m, 19. VII. 1980, I. Löbl leg. (MHNG); 3 ♂, 4 ♀, Haruna-machi, Mt. Harunasan, Matsuzawa Pass, 27. VII. 1996, S. Nomura leg. (NSMT); 2 ♂, 2 ♀, Matsuida-machi, below Usui Pass, 750–900 m, 20–25. VII. 1980, I. Löbl leg. (MHNG); 5 ♂, Tsumagoi-mura, 4 km SW Tsumagoi, 1050 m, 18. VII. 1980, I. Löbl leg. (MHNG); 1 ♂, 2 ♀, Matsuida-machi, Kumanotaira, 19. VIII. 1996, S. Nomura leg. (NSMT); 5 ♂, 16 ♀, Naganohara-machi, Hayashi, 17. VI. 1990, H. Sakayori *et. al.* leg. (NSMT); 3 ♂, 7 ♀, Naganohara-machi, Maruiwamukai, 17. VI. 1990, H. Sakayori *et. al.* leg. (NSMT); 2 ♂, 14 ♀, Naganohara-machi, Kamiyubara, 29. IV. 1990, H. Sakayori *et. al.* leg. (NSMT); 1 ♂, Naganohara-machi, Sugao Pass, 29. IV. 1990, H. Sakayori *et. al.* leg. (NSMT); 7 ♂, 7 ♀, Naganohara-machi, Shiroyawazawa, 29. IV. 1990, H. Sakayori *et. al.* leg. (NSMT); 2 ♂, 4 ♀, Naganohara-machi, Dôïwa, 24. IX. 1991, H. Sakayori *et. al.* leg. (NSMT); 1 ♂, 5 ♀, Naganohara-machi, Kôrinnotaki, 18. XI. 1990, H. Sakayori *et. al.* leg. (NSMT); 1 ♂, 4 ♀, Naganohara-machi, Kaize, 18. XI. 1990, H. Sakayori *et. al.* leg. (NSMT); 5 ♂, 10 ♀, Naganohara-machi, Hiuchibana, 29. IV. 1990, H. Sakayori *et. al.* leg. (NSMT); 1 ♂, 1 ♀, Naganohara-machi, Ogura, 29. IV. 1990, H. Sakayori *et. al.* leg. (NSMT); 1 ♂, Minakami-machi, Mt. Tanigawadake, Machigasawa, 27. VII. 1996, S. Nomura leg. (NSMT); [Tochigi Pref.] 1 ♂, Nikko City, Chûzenji Lakeside, 28. VI. 1982, S. Naomi leg. (NSMT); 2 ♂, 2 ♀, Shiobara-machi, Senryûkyô Valley, 13. X. 1997, S. Nomura leg. (NSMT); [Ibaraki Pref.] 1 ♂, Makabe-machi, Mt. Ashioyama, 11. XII. 1997, S. Nomura leg. (NSMT); 2 ♂, 3 ♀, Tsukuba City, Mt. Tsukubasan, 11. XII. 1997, S. Nomura leg. (NSMT); [Chiba Pref.] 1 ♂, Ichihara City, Yôrô Valley, 22. V. 1990, T. Takeda leg. (NSMT); 1 ♂, 1 ♀, Kamogawa City, Mt. Awa-Takayama, 27. IV. 1997, S. Nomura leg. (NSMT); 4 ♂, 2 ♀, Kamogawa City, Mt. Mineoka-Asama, 27. IV. 1997, S. Nomura leg. (NSMT); 1 ♂, 1 ♀, Kimitsu City, Mt. Kiyosumiyama, Fudagô, 20. IV. 1989, S. Naomi leg. (NSMT); 3 ♂, 1 ♀, same locality as above, 18. VII. 1991, S. Naomi leg. (NSMT); 1 ♂, Futtsu City, Mt. Nokogiriyama, 12. V. 1996, S. Nomura leg. (NSMT); 1 ♂, Inbamura, Ôba, 30. X. 1989, T. Takeda leg. (NSMT); 1 ♂, Nagara-machi, Mt. Gongenmori, 20. V. 1990, T. Takeda leg. (NSMT); 1 ♂, Ôtaki-machi, Kaisho, 5. IV. 1990, T. Takeda leg. (NSMT); 3 ♂, 6 ♀, Chikura-machi, Mt. Takatsukayama, 29. IV. 1996, S. Nomura leg. (NSMT); 1 ♂, 1 ♀, Amazu-Kominato-machi, Mt. Kiyosumiyama, Furukawa-Yomogi, 27. IV. 1997, S. Nomura leg. (NSMT); 1 ♂, 1 ♀, Amatsu-Kominato-machi, Yomogi, 13. V. 1990, T. Takeda leg. (NSMT); [Saitama Pref.] 1 ♂, Ranzan-machi, Mt. Shioyama, 2. VIII. 1996, K. Toyoda leg. (NSMT); [Tokyo Pref.] 1 ♂, 2 ♀, Hachiôji City, Mt. Takaosan, Hikagezawa, 20. IV. 1997, S. Nomura leg.



Figs. 47–48. Distribution of *Triomicrus* in Japan. 47, *T. sublaevis* Raffray; 48, *T. sternalis* sp. nov. Many records in the Japanese local literature are included in the distribution map.

(NSMT); [Kanagawa Pref.] 2 ♂, 1 ♀, Manazuru-machi, Manazuru, 26. X. 1985, S. Nomura leg. (NSMT); 2 ♂, 2 ♀, Hakone-machi, Miyagino, 25. X. 1985, S. Nomura leg. (NSMT); 3 ♂, 4 ♀, same locality as above, 10. X. 1991, S. Nomura leg. (NSMT); [Yamanashi Pref.] 1 ♂, 1 ♀, Mt. Fujisan, Aokigahara, 29. VIII. 1987, S.

Nomura leg. (NSMT); 23 ♂, Ôizumi-mura, Kiyosato, 19. VII. 1984, S. Nomura leg. (NSMT); 1 ♂, 1 ♀, Ôizumi-mura, Jigokudani, 8. VII. 1982, S. Naomi leg. (NSMT); [Shizuoka Pref.] 3 ♂, 2 ♀, Mishima City, Yamanaka-Shinden, 8. VI. 1996, S. Nomura leg. (NSMT); 1 ♂, Gotenba City, Mt. Fujisan, Tarôbô, 10. X. 1991, S. Nomura leg. (NSMT); 1 ♂, Daitô-machi, Mt. Ogasa, 24. X. 1985, S. Nomura leg. (NSMT); [Nagano Pref.] 2 ♂, Neba-mura, Odonâ, 28. X. 1985, S. Nomura leg. (NSMT); 1 ♂, 1 ♀, Kiso-mura, Mizukizawa, 4. VIII. 1997, S. Nomura leg. (NSMT); [Toyama Pref.] 1 ♂, 5 ♀, Ôyama-machi, Fukusawa, 200 m, 29. VII. 1980, I. Löbl leg. (MHNG); [Ishikawa Pref.] 2 ♂, Oshimizu-machi, Mt. Hodatsu, 1. XII. 1992, I. Togashi leg. (NSMT); [Fukui Pref.] 1 ♂, Ikeda-machi, Mt. Kanakusadake, 20. VI. 1982, M. Saito leg. (NSMT); 1 ♂, Ota-chô, Shiroyama, 26. IV. 1981, M. Saito leg. (NSMT); [Aichi Pref.] 1 ♂, Seto City, Jôkôji, 2. X. 1993, T. Hozumi leg. (NSMT); [Gifu Pref.] 2 ♂, 8 km SE Osaka-machi, alt. 750 m, 1. VIII. 1980, I. Löbl leg.; [Osaka Pref.] 2 ♀, Mino-o City, Katsuoji, 9. V. 1974, K. Sawada leg. (MHNG); 1 ♂, Higashi-Osaka City, Hiraoka Kôen, 8. V. 1993, Y. Nishikawa leg. (NSMT); 2 ♂, 3 ♀, Takatuki City, 10. X. 1973, K. Sawada leg. (MHNG); [Kyoto Pref.] 2 ♂, 1 ♀, Kyoto, 7–8. VIII. 1980, C. Besuchet leg. (MHNG); 7 ♂, 13 ♀, Kyoto City, Sakyô-ku, Yaseyûen, 4. VIII. 1980, C. Besuchet leg. (MHNG, PCSK); 1 ♂, 1 ♀, Kyoto City, Daimonji, 10. VI. 1973, K. Sawada leg.; 2 ♂, Kyoto City, Kibune, 10. VI. 1973, K. Sawada leg. (MHNG); 1 ♀, Kyoto City, Mt. Hiei, 10. VII. 1972, K. Sawada leg. (MHNG); [Nara Pref.] 11 ♂, Nara City, Nara Park, 27–31. VII and 8. VIII. 1980, I. Löbl & C. Besuchet leg. (MHNG); 3 ♂, 3 ♀, Kawakami-mura, Kitamatagawa, 3. V. 1994, S. Nomura leg. (NSMT); [Tottori Pref.] 1 ♂, Mt. Daisen, 3–5. VI. 1980, S. Naomi leg. (MHNG); 1 ♂, Tottori City, Hamasaka-jinja, 20. XII. 1991, N. Tsurusaki leg. (NSMT); 1 ♂, 2 ♀, Kokufu-machi, Sugano, 7. VI. 1984, S. Nomura leg. (NSMT).

Additional material of the truncate form (see remarks). [Honshu: Aichi Pref.] 1 ♂, Toyota City, Mt. Sanageyama, 21. IV. 1991, T. Hozumi leg. (NSMT); 1 ♂, Inuyama City, Mt. Hongûsan, 11. V. 1986, T. Hozumi leg. (NSMT); 2 ♂, Inatake-machi, Mennoki Pass, 16. VI. 1985, T. Hozumi leg. (NSMT); 1 ♂, same locality as above, 13. VIII. 1990, S. Nomura leg. (NSMT); 1 ♂, same locality as above, 13. VIII. 1990, S. Nomura leg. (NSMT); 1 ♂, same locality as above, 19. V. 1991, T. Hozumi leg. (NSMT); [Osaka Pref.] 1 ♂, Ikeda City, Todoromi, 25. V. 1985, S. Nomura leg. (NSMT); 1 ♂, Higashi-Osaka City, Mt. Ikomayama, Kuragari Pass, 11. IV. 1993, Y. Nishikawa leg. (NSMT); 1 ♂, Nose-machi, Mt. Mikusayama, 17. XII. 1992, Y. Sawada leg. (NSMT); 1 ♂, same locality as above, 23. I. 1993, Y. Sawada leg. (NSMT); [Wakayama Pref.] 1 ♂, 4 ♀, Kii-Ôshima Is., Kashiwadani, 5. V. 1994, S. Nomura leg. (NSMT); [Hyôgo Pref.] 1 ♂, 2 ♀, Kôbe City, Mt. Mayasan, 12. V. 1997, H. Hoshina leg. (NSMT); [Tottori Pref.] 1 ♂, 2 ♀, Tottori City, Mt. Kyûshôzan, 20. XII. 1991, N. Tsurusaki leg. (NSMT); 1 ♂, 2 ♀, Tottori City, Ouchidani, 22. XI. 1991, N. Tsurusaki leg. (NSMT); 1 ♂, 2 ♀, Tottori City, Momodani-jinja, 14. III. 1992, N. Tsurusaki leg. (NSMT); 1 ♂, 1 ♀, Daisen-chô, Mt. Hôki-Daisen, 10. VI.

1986, S. Nomura leg. (NSMT); [Shimane Pref.] 1 ♂, Tonbara-chô, Tsunoi, Shishidani, 17. XI. 1989, S. Fukui leg. (NSMT); 1 ♂, Hikimi-chô, Ura-Hikimi Valley, 6. VI. 1988, S. Nomura leg. (NSMT); [Yamaguchi Pref.] 3 ♂, 2 ♀, Atô-chô, Tokusa, 24. IV. 1988, S. Nomura leg. (NSMT); [Shikoku: Kagawa Pref.] 2 ♂, 4 ♀, Kotohira, 15. VIII. 1980, C. Besuchet leg. (MHNG); 4 ♂, 7 ♀, Takuma-chô, Mt. Shiunzan, A. Takamatsu leg. (NSMT); [Ehime Pref.] 10 ♂, 13 ♀, Matsuyama, Shiroyama, 10. VIII. 1980, I. Löbl & C. Besuchet leg. (MHNG, PCSK); Ehime, via Mt. Ishizuchi, 1000 m, 10. VIII. 1980, I. Löbl leg. (MHNG); 9 ♂, 25 ♀ (MHNG, PCSK), Ishizuchi N. Park, Omogo, 700 et 900 m, 12. VIII. 1980, I. Löbl & C. Besuchet leg. (MHNG); 7 ♂, Ishizuchi NP, Mt. Kamegamori, 1650 m, 15. VIII. 1980, *Abies*, moss, *Sasa* (dwarf bamboo) litter, S. & J. Peck leg. (MHNG); 3 ♂, 9 ♀, Ishizuchi NP, Omogo valley, 700 m, 18–25. VIII. 1980, moss & fungi & log litter, worm temperate forest, S. & J. Peck leg. (MHNG); 4 ♂, Saijô City, Mt. Iyo-Fuji, 11. VI. 1997, H. Hoshina leg. (NSMT); 3 ♂, 1 ♀, Hôjô City, Mt. Takanawasan, 16. VIII. 1995, H. Hoshina leg. (NSMT); 3 ♂, 1 ♀, same locality as above, 3. X. 1995, H. Hoshina leg. (NSMT); 1 ♂, 4 ♀, same locality as above, 14. VI. 1997, H. Hoshina leg. (NSMT); 3 ♂, 6 ♀, Kuma-chô, Mt. Saragamine, 13. VI. 1997, H. Hoshina leg. (NSMT); 1 ♂, 1 ♀, Omogo-mura, Omogo Valley, 15. VI. 1981, S. Naomi leg. (NSMT); 1 ♂, 2 ♀, same locality as above, 17. VIII. 1995, H. Hoshina leg. (NSMT); 4 ♂, 3 ♀, same locality as above, 10. VI. 1997, H. Hoshina leg. (NSMT); 2 ♂, Oda-chô, Mt. Odamiyama, Masagoya, 11. V. 1993, E. Yamamoto leg. (NSMT); 1 ♂, same locality as above, 2. V. 1994, N. Tsurusaki leg. (NSMT); 1 ♂, same locality as above, 1. VIII. 1995, E. Yamamoto leg. (NSMT); 1 ♂, Oda-chô, Mt. Odamiyama, Koyayama, 12. X. 1995, E. Yamamoto leg. (NSMT); 2 ♂, 1 ♀, same locality as above, 7. VII. 1994, E. Yamamoto leg. (NSMT); 1 ♂, 2 ♀, Oda-chô, Mt. Odamiyama, alt. 800 m, 19. VII. 1993, M. Sakai leg. (NSMT); 2 ♂, 1 ♀, Oda-chô, Mt. Odamiyama, Buna forest, 12. VIII. 1993, E. Yamamoto leg. (NSMT); 4 ♂, 2 ♀, same locality as above, 2. IX. 1993, E. Yamamoto leg. (NSMT); 3 ♂, 2 ♀, same locality as above, 27. IX. 1993, E. Yamamoto leg. (NSMT); 1 ♂, 2 ♀, Oda-chô, alt. 400 m, 23. IX. 1994, E. Yamamoto leg. (NSMT); 1 ♂, 7 ♀, same locality as above, 11. VII. 1995, E. Yamamoto leg. (NSMT); 4 ♂, 4 ♀, Hirota-mura, Tamatani, Tamamorimishima-jinja, 12. V. 1993, E. Yamamoto leg. (NSMT); 1 ♂, Nagahama-chô, Shirataki, 15. VI. 1997, H. Hoshina leg. (NSMT); 2 ♂, 3 ♀, Uchiko-chô, Michô-jinja, 4. V. 1993, E. Yamamoto leg. (NSMT); 2 ♂, 13 ♀, Uchiko-chô, Shiromawari, 9. VII. 1995, E. Yamamoto leg. (NSMT); 2 ♂, Nomura-chô, Rakan-ana Caveside, 11. X. 1990, S. Nomura leg. (NSMT); [Kyushu: Fukuoka Pref.] 1 ♂, 1 ♀, Kitakyushu City, Yamada-ryokuchi, 28. V. 1989, S. Nomura leg. (NSMT); 1 ♂, Fukuoka City, Kashii-gû, 8. III. 1986, S. Nomura leg. (NSMT); 1 ♂, 1 ♀, Fukuoka City, Mt. Aburayama, 22. VII. 1983, H. Harada leg. (NSMT); 1 ♂, 1 ♀, Fukuoka City, Mt. Kanayama, 27. III. 1983, S. Nomura leg. (NSMT); 1 ♂, same locality as above, 9. IV. 1985, S. Nomura leg. (NSMT); 1 ♂, 7 ♀, Fukuoka City, Magaribuchi, 26. IV. 1985, S. Nomura leg. (NSMT); 3 ♂, 3 ♀, Kurume City, Mt. Kôrasan,

Kabutoyama, 19. XI. 1996, S. Nomura leg. (NSMT); 2 ♂, Kurume City, Kôra-taisha Shrine, 19. XI. 1996, S. Nomura leg. (NSMT); 5 ♂, 7 ♀, Nôgata City, Mt. Fukuchiyama, 21. IV. 1985, S. Nomura leg. (NSMT); 2 ♂, 1 ♀, same locality as above, 11. VI. 1995, H. Hoshina leg. (NSMT); 1 ♂, same locality as above, 25. IX. 1995, H. Hoshina leg. (NSMT); 2 ♂, 3 ♀, same locality as above, 23. X. 1995, H. Hoshina leg. (NSMT); 3 ♂, 6 ♀, same locality as above, 30. X. 1995, H. Hoshina leg. (NSMT); 1 ♂, same locality as above, 13. XI. 1995, H. Hoshina leg. (NSMT); 3 ♂, 3 ♀, same locality as above, 27. XI. 1995, H. Hoshina leg. (NSMT); 2 ♂, 6 ♀, same locality as above, 4. XII. 1995, H. Hoshina leg. (NSMT); 5 ♂, 5 ♀, same locality as above, 8. IV. 1997, H. Hoshina leg. (NSMT); 1 ♂, 4 ♀, same locality as above, 30. VII. 1997, H. Hoshina leg. (NSMT); 1 ♂, 2 ♀, Amagi City, Mt. Koshosan, 16. VI. 1985, S. Nomura leg. (NSMT); 1 ♂, Munakata City, Mt. Jôyama, 8. III. 1986, S. Nomura leg. (NSMT); 2 ♂, 6 ♀, Nakagawa-machi, Tsukushi-Yabakei, 27. XI. 1994, S. Nomura leg. (NSMT); 1 ♂, Hisayama-machi, Inunaki Pass, 8. XII. 1995, H. Hoshina leg. (NSMT); 1 ♂, 1 ♀, Chikuzen-Ôshima Is., 25. I. 1993, H. Kojima leg. (NSMT); 1 ♂, Okagaki-machi, 16. VI. 1988, collector unknown (NSMT); 3 ♂, 4 ♀, Yabe-mura, Mt. Shakagatake, 25. IX. 1994, S. Nomura leg. (NSMT); 1 ♂, Soeda-machi, Mt. Hikosan, 22. VII. 1997, H. Hoshina leg. (NSMT); [Saga Pref.] 3 ♂, 5 ♀, Taku City, Nishitaku-machi, Ike, 18. V. 1997, S. Nomura leg. (NSMT); [Nagasaki Pref.] 2 ♂, Hirado City, Mt. Yasumandake, 7. X. 1997, S. Nomura leg. (NSMT); 2 ♂, 4 ♀, Saikai-chô, Mt. Kokuzôsan, 18. V. 1997, S. Nomura leg. (NSMT); 4 ♂, 2 ♀, Ôseto-chô, Tsuganeotoshino-taki, 5. VII. 1996, S. Nomura leg. (NSMT); 7 ♂, 5 ♀, Sotome-chô, Iwaseto Valley, 18. V. 1997, S. Nomura leg. (NSMT); 1 ♂, 4 ♀, Higashi-Sonogichô, Ryûtôsen Waterfall, 6. X. 1997, S. Nomura leg. (NSMT); 1 ♂, 2 ♀, Moriyama-chô, Mt. Hoshinoharu, 16. V. 1997, S. Nomura leg. (NSMT); 8 ♂, 13 ♀, same locality as above, 6. X. 1997, S. Nomura leg. (NSMT); 5 ♂, 5 ♀, Mt. Taradake, Kinsenji, 16. IV. 1994, S. Nomura leg. (NSMT); 2 ♂, Tabira-chô, 5. VI. 1992, H. Kojima leg. (NSMT); 1 ♂, Iki Is., Ashibe-chô, Mt. Mendake, 2. VII. 1996, S. Nomura leg. (NSMT); 1 ♂, 1 ♀, Iki Is., Ashibe-chô, Sumiyoshi-jinja, 2. VII. 1996, S. Nomura leg. (NSMT); [Kumamoto Pref.] 1 ♂, 1 ♀, Kikuchi City, Kikuchi Valley, 17. V. 1997, S. Nomura leg. (NSMT); 3 ♂, 1 ♀, Ueki-machi, 10. IV. 1981, S. Naomi leg. (NSMT); 1 ♂, 5 ♀, Kyokushi-mura, Mt. Kuradake, 17. V. 1997, S. Nomura leg. (NSMT); 1 ♂, 3 ♀, Mifune-machi, Nanataki, 25. VI. 1994, S. Nomura leg. (NSMT); 12 ♂, Mizukami-mura, Mt. Ichifusa, 13. V. 1985, S. Nomura leg. (NSMT); 1 ♂, 2 ♀, same locality as above, 27. VI. 1993, S. Nomura leg. (NSMT); 1 ♂, 1 ♀, Amakusa Isls., Sumoto-chô, Oidake-jinja, 3. VII. 1994, S. Nomura leg. (NSMT); 2 ♂, 3 ♀, Amakusa Isls., Reihoku-machi, Kurosome, 3. VII. 1994, S. Nomura leg. (NSMT); [Ôita Pref.] 2 ♂, 1 ♀, Taketa City, Mt. Sobosan, 23. VII. 1983, S. Nomura leg. (NSMT); 4 ♂, 6 ♀, same locality as above, 17. V. 1986, S. Nomura leg. (NSMT); 3 ♂, 1 ♀, Kunimi-chô, Takedatsu-jinja, 7. XII. 1991, S. Nomura and T. Nakamura leg. (NSMT); 3 ♂, Kujû Mountains, Mt. Kurodake, 2. IX. 1982, S. Nomura leg. (NSMT); 2 ♂, same locality

as above, 29. IV. 1985, S. Nomura leg. (NSMT); 2 ♂, same locality as above, 16. IX. 1985, S. Nomura leg. (NSMT); 1 ♂, 3 ♀, same locality as above, 3. VIII. 1997, S. Nomura leg. (NSMT); 1 ♂, Kujû Mountains, Makinoto Pass, 1. IV. 1993, S. Urushiyama leg. (NSMT); 1 ♂, Kujû, 2. VII. 1968, K. Kanmiya leg. (NSMT); 4 ♂, 3 ♀, Notsu-machi, Nakayama, 28. XI. 1990, S. Sasaki leg. (NSMT); 1 ♂, 7 ♀, Yamaguni-machi, Shin-Yabakei Valley, 30. III. 1985, S. Nomura leg. (NSMT); [Miyazaki Pref.] 4 ♂, 12 ♀, Takachiho-chô, Takachiho Valley, Onino-Iwaya, 3. XII. 1994, S. Nomura leg. (NSMT); 1 ♂, Gokase-chô, Mt. Shiraiwasan, 26. VII. 1996, T. Ueno and H. Gotô leg. (NSMT); [Kagoshima Pref.] 1 ♂, Miyanojô-chô, Mt. Shibisan, 22. XII. 1991, S. Nomura leg. (NSMT); 2 ♂, 1 ♀, Takayama-chô, Mt. Hoyoshidake, 19. III. 1994, S. Nomura leg. (NSMT).

Redescription. L 2.05–2.4. Body brown or reddish-brown, head and pronotum sometimes darker than elytra, abdomen and appendages, tarsi and palpi light. Pubescence short and recumbent, elytral setae about 0.07. Head (L/W 0.50–0.52/0.43–0.47) entirely covered with dense and fairly coarse punctures, middle of vertex sometimes with fine and sparse punctures. Frontoclypeus finely microsculptured between punctures. Eyes in lateral view as long as tempora in male, shorter than tempora in female. Antennae with scape and pedicel each longer than wide; segment 3 as long as, or almost as long as, pedicel; segment 4 shorter than segment 3, longer than wide; segment 5 longer than segment 4, as long as or longer than segment 3; segments 6 and 7 each shorter than segment 4, barely longer than wide; segments 8 and 9 each as long as wide, or slightly wider than long; segment 10 as long as wide in some females, or longer than wide in males and some females; segment 11 not quite as long as segments 7 to 10 combined. Pronotum (L/W 0.46–0.56/0.52–0.61) entirely covered with coarse and dense punctures. Elytra (L/W 0.71–0.84/0.86–0.96) with discal sulcus reaching or extending onto posterior fourth of elytral length; epipleural sulcus extended beyond level of anterior edge of metacoxa. Fourth abdominal tergite with basal carinae diverging, extending to or almost to level of posterior third of tergal length; interval between carinae 1/6 or almost 1/6 of tergal width.

Male sexual characters. Metasternum with two median laminae near metacoxa. Laminae pointed or truncate at apex (see remarks). Mediobasal portion of third abdominal sternite bearing long setae oriented posteriorly. Antennal segment 11 slightly flattened dorsoventrally, almost symmetrical near base, with tubercle small, circular, prominent. Diameter of antennal tubercle 1/10 of length of segment, much smaller than interval to basal edge of segment. Legs without obvious sexual characters. Abdominal sternites 7 and 8 as Fig. 25. Aedeagus as Fig. 14, L 0.44–0.56.

Distribution. Japan: Honshu, Shikoku, Kyushu.

Remarks. This species is similar to *T. vietus* and *T. sublaevis* in having coarsely punctate head and pronotum. It is separated from the former by the large body and long and slender legs, and from the latter by the longer distance from meso- to metacoxae, and the aedeagus lacking pigmented and crowded bristles at the median part.

An evident geographical variation occurs in the metasternal laminae of this species. The male of one form has a pair of metasternal lamina sharply pointed at apex, which is called “acute form” in the present study (Figs. 42 and 43). The other form has those truncate at apex, called “truncate form” (Figs. 44 and 45). The acute form is distributed in the eastern part of Honshu, namely from Tottori Pref. to Aomori Pref. On the other hand, the truncate type occurs in the western part of Honshu, Shikoku and Kyushu. The borderline of these forms is possibly running through Tottori, Hyôgo, Kyoto, Osaka, Nara, Mie and Aichi Prefectures (Fig. 46). The type locality “Kobe” is situated in the area of the truncate form according to this map. Therefore, the female lectotype is assumed to belong to the truncate form.

Triomicrus sternalis sp. nov.

[Japanese name: Togari-marumune-arizukamushi]

Holotype: ♂, Japan, Ehime, Ishizuchi N. Park, Omogo, 700 m, 12. VIII. 1980, I. Löbl leg. (MHNG).

Paratypes: 1 ♂, Aomori Pref., Mayogatai, 26–28. VI. 1980, S. Naomi leg. (MHNG); 3 ♂, Aomori Pref., Towadako-machi, Mt. Towarisan, 4. VIII. 1987, S. Nomura leg. (NSMT); 2 ♂, 1 ♀, Aomori Pref., Ôhata-machi, Ôhatagawa, 29. VII. 1990, K. Furuno *et. al.* leg. (NSMT); 1 ♂, Aomori Pref., Ôhata-machi, Ishiyama, 29. VII. 1990, K. Furuno *et. al.* leg. (NSMT); 1 ♂, Aomori Pref., Sai-mura, Hotokegaura, 29. VII. 1990, K. Tsurumi *et. al.* leg. (NSMT); 1 ♂, Iwate Pref., Kawai-mura, Yoshibe-zawa, 1050 m, 12. VIII. 1991 [J 49], A. Smetana leg. (MHNG); 1 ♂, 2 ♀, Iwate Pref., Kamaishi City, Ryôishi-machi, Mizuumi, 30. VII. 1990, K. Furuno *et. al.* leg. (NSMT); 1 ♂, Iwate Pref., Ôsako-machi, Mt. Hayachinesan, Pk. Yakushidake, 17. VII. 1985, S. Nomura leg. (NSMT); 1 ♂, Miyagi Pref., Zaô-machi, Zaô, 25. VI. 1983, S. Nomura leg. (NSMT); 1 ♂, Miyagi Pref., Kurikoma-machi, Komanoyu Spa, 21. VI. 1983, S. Nomura leg. (NSMT); 1 ♂, 2 ♀, Akita Pref., Tashiro-machi, Chôkei Pass, S-slope, 27. VII. 1991, K. Furuno *et. al.* leg. (NSMT); 2 ♂, 1 ♀, Akita Pref., Tazawako-machi, Nyutô Spa, 11. VIII. 1987, S. Nomura leg. (NSMT); 4 ♂, 2 ♀, Yamagata Pref., Iide-machi, Iwakura, Taketani, 31. VII. 1989, H. Sakayori *et. al.* leg. (NSMT); 1 ♂, 2 ♀, Fukushima Pref., Aizu-Wakamatsu City, Andô Pass, 30. VII. 1989, H. Sakayori *et. al.* leg. (NSMT); 5 ♂, 4 ♀, Fukushima Pref., Kitakata City, Ômagari, Ôtôge Pass, 30. VII. 1989, H. Sakayori *et. al.* leg. (NSMT); 1 ♂, Fukushima Pref., Ten-ei-mura, Hatori Dam, 30. VII. 1989, H. Sakayori *et. al.* leg. (NSMT); 1 ♂, Fukushima Pref., Hinoemata-mura, Bunadaira, 20. VIII. 1987, O. Nakamura leg. (NSMT); 1 ♂, Fukushima Pref., Inawashiro-machi, Mt. Adatara, Yokomuki, 10. VII. 1985, S. Nomura leg. (NSMT); 1 ♂, 1 ♀, Fukushima Pref., Nishigô-mura, Habuto, Manako, 30. VII. 1989, H. Sakayori *et. al.* leg. (NSMT); 1 ♂, 1 ♀, Niigata Pref., Mt. Myôkô, Sasagamine, 14–15. VI. 1980, S. Naomi leg. (MHNG); 2 ♂, 1 ♀, Gunma, Tsumagoi-mura, 4 km SW Tsumagoi, 1050 m, 18. VII. 1980, I.

Löbl leg. (MHNG); 1 ♀, Gunma, Joh-Shin-Etsu Kogen Nat. Park, Shirane, 1500 m, 22. VII. 1980, I. Löbl leg. (MHNG); 2 ♂, Gunma Pref., Minakami-machi, Mt. Tani-gawadake, Machigasawa, 27. VII. 1996, S. Nomura leg. (NSMT); 1 ♂, Tochigi, Nikko Nat. Park, Chuzenji, 1350 m, 14. VII. 1980, I. Löbl leg. (MHNG); 1 ♂, 3 ♀, Tochigi Pref., Kuriyama-mura, Yunishigawa, Shiratakizawa, 8. X. 1995, SAST leg. (NSMT); 2 ♂, 5 ♀, Tochigi Pref., Kuriyama-mura, Hyûga, Ishiyaki Tunnel, 7. VI. 1996, SAST leg. (NSMT); 10 ♂, 5 ♀, Tochigi Pref., Nasu-machi, Mt. Nasudake, 3. VI. 1994, S. Naomi leg. (NSMT); 2 ♂, 2 ♀, Tochigi Pref., Nasu-machi, Mt. Nasudake, Ômaru, 13. X. 1997, S. Nomura leg. (NSMT); 1 ♂, Ibaraki Pref., Makabemachi, Mt. Ashioyama, 11. XII. 1997, S. Nomura leg. (NSMT); 3 ♂, 3 ♀, Yamanashi Pref., Nirasaki City, Aoki-kôsen, 16. VII. 1984, S. Nomura leg. (NSMT); 1 ♂, Yamanashi Pref., Ashiyasu-mura, Hirogawara, 9. VII. 1982, S. Naomi leg. (NSMT); 3 ♂, Yamanashi Pref., Ashiyasu-mura, Mt. Washinosumiyama, 8. VIII. 1996, S. Nomura leg. (NSMT); 5 ♂, 1 ♀, Nagano Pref., Chino City, Kitayama, 19. VIII. 1996, S. Nomura leg. (NSMT); 4 ♂, 3 ♀, Nagano Pref., Karuizawa-machi, Mt. Asama, Mine-no-chaya, 19. VIII. 1996, S. Nomura leg. (NSMT); 1 ♂, Nagano Pref., Ôtaki-mura, Ontake-kôgen, 4. VIII. 1997, S. Nomura leg. (NSMT); 1 ♂, 1 ♀, Nagano Pref., Nagawa-mura, Nomugi Pass, 4. VIII. 1997, S. Nomura leg. (NSMT); 6 ♂, 2 ♀, Toyama Pref., Kaminikawa, Arimine, 1150 m, 29. VII. 1980, I. Löbl leg. (MHNG, PCSK); 1 ♂, 10 ♀, Gifu Pref., Kamitakara-mura, Hirayu, 24. VIII. 1987, S. Nomura leg. (NSMT); 4 ♂, same locality as above, 24. VIII. 1987, S. Nomura leg. (NSMT); 2 ♂, Shiga Pref., Ibuki-chô, Mt. Ibukiyama, 5. VI. 1997, S. Nomura leg. (NSMT); 3 ♂, 3 ♀, Kyoto Pref., Keihoku-chô, Sasari Pass, 26. V. 1985, S. Nomura leg. (NSMT); 1 ♂, 1 ♀, Wakayama Pref., Ryûjin-mura, Mt. Gomadan, 22. V. 1987, S. Naomi leg. (NSMT); 1 ♂, Hyôgo Pref., Chikusa-chô, Mt. Ushiroyama, 10. V. 1997, H. Hoshina leg. (NSMT); 1 ♂, 4 ♀, Tottori Pref., Daisen-chô, Mt. Hôki-Daisen, 22. V. 1985, S. Nomura leg. (NSMT); 2 ♂, 1 ♀, Tokushima Pref., Higashi-Iyayama-mura, Mt. Tsurugisan, 15. X. 1980, S. Naomi leg. (NSMT); 1 ♂, same locality as above, 13. VIII. 1995, H. Hoshina leg. (NSMT); 3 ♂, 7 ♀, Ehime Pref., same data as holotype (MHNG, PCSK); 1 ♂, 2 ♀, same data but 900 m (MHNG); 2 ♂, 4 ♀, Ehime, Ishizuchi N. Park, Mt. Ishizuchi, 1550 m, 13. VIII. 1980, I. Löbl leg. (MHNG); 3 ♂, 2 ♀, same data but 13–14. VIII. 1980, C. Besuchet leg. (MHNG); 3 ♂, 12 ♀, Ehime, via Mt. Ishizuchi, 1000 m, 14. VIII. 1980, I. Löbl leg. (MHNG); 4 ♂, Ishizuchi NP, Mt. Kamegamori, 1650 m, 15. VIII. 1980, *Abies* & moss litter w/fungi, litter, S. & J. Peck leg. (MHNG); 1 ♂, 4 ♀, Ishizuchi NP, Mt. Kamegamori, 1650 m, 15. VIII. 1980, *Abies*, moss, (dwarf bamboo) litter, S. & J. Peck leg. (MHNG); 1 ♂, Ishizuchi NP, Tsuchigoya, 1400 m, 11–18. VIII. 80, log & stump litter w/fungi & moss, Ber. *Fagus-Abies* forest, S. & J. Peck leg. (MHNG); 4 ♂, Ishizuchi NP, Tsuchigoya, 1400 m, 11–18. VIII. 1980, Malaise trap-trough *Fagus-Abies* forest, S. & J. Peck leg. (MHNG, BMNH); 1 ♂, Ishizuchi NP, Tsuchigoya, 1400 m, 16. VIII. 1980, log & moss litter, S. & J. Peck leg. (MHNG); 2 ♂, 3 ♀, Ishizuchi NP, Mt. Tsutsujo, 1600 m,

14. VIII. 1980, *Betula-Fagus* logs stump & moss litter, S. & J. Peck leg. (MHNG); 1 ♂, Ishizuchi NP, Omogo Valley, 700 m, 18–25. VIII. 1980, mini-carrion traps, mixed warm temperate forest, S. & J. Peck leg. (MHNG); 1 ♂, Ehime Pref., Saijô City, Mt. Iyo-Fuji, 11. VI. 1997, H. Hoshina leg. (NSMT); 1 ♂, Ehime Pref., Oda-chô, Mt. Odamiyama, Masagoya, 3. VIII. 1996, I. Okamoto leg. (NSMT); 1 ♂, Ehime Pref., Oda-chô, Mt. Odamiyama, Koyayama, 12. X. 1995, E. Yamamoto leg. (NSMT); 1 ♂, Ehime Pref., Oda-chô, Mt. Odamiyama, Hontani, 4. VI. 1989, E. Yamamoto leg. (NSMT); 1 ♂, 5 ♀, Ehime Pref., Oda-chô, Mt. Odamiyama, Buna forest, 2. IX. 1993, E. Yamamoto leg. (NSMT); 2 ♂, same locality as above, 26. IX. 1993, E. Yamamoto leg. (NSMT); 5 ♂, 1 ♀, Kumamoto Pref., Izumi-mura, Mt. Shiratori, 5. IV. 1987, S. Nomura leg. (NSMT); 1 ♂, Kumamoto Pref., Mizukami-mura, Mt. Ichifusa, 13. V. 1985, S. Nomura leg. (NSMT); 2 ♂, Ôita Pref., Kujû Mountains, Mt. Kurodake, 2. IX. 1982, S. Nomura leg. (NSMT); 5 ♂, 8 ♀, same locality as above, 29. IV. 1985, S. Nomura leg. (NSMT); 3 ♂, same locality as above, 16. IX. 1985, S. Nomura leg. (NSMT); 1 ♂, Ôita Pref., Kujû Mountains, Daisen-rindô, 3. VI. 1983, Y. Abe leg. (NSMT); 4 ♂, 4 ♀, Miyazaki Pref., Gokase-chô, Mt. Shiraiwasan, 3. VIII. 1996, T. Ueno leg. (NSMT); 1 ♂, Kagoshima Pref., Miyanojô-chô, Mt. Shibisan, 22. XII. 1991, S. Nomura leg. (NSMT).

Description. L 1.9–2.2. Body dark brown or dark reddish-brown, appendages slightly lighter, tarsi and palpi distinctly lighter. Pubescence recumbent, almost even on head, pronotum and elytra, L about 0.09 on elytra. Punctuation variable (see remarks). Head (L/W 0.49–0.52/0.42–0.47) with frontoclypeus smooth between very fine punctuation. Eyes in lateral view as large as tempora in male, shorter than tempora in female. Antennae with scape and pedicel each longer than wide; segment 3 longer than wide, about as long as pedicel in male, shorter than pedicel in female; segment 4 barely shorter than segment 3, longer than wide, segment 5 as segment 3; segments 6 and 7 even, shorter than segment 5, slightly longer than wide or as long as wide; segments 8, 9 and 10 each as long as wide in male, slightly wider than long in female; segment 11 almost as long as segments 7 to 10 combined. Pronotal L/W 0.44–0.51/0.52–0.56. Elytra (L/W 0.74 ♀–0.83 ♂/0.85–0.90) with punctuation very fine and not well delimited; discal sulcus extending onto posterior fourth of elytral length; epipleural sulcus extending beyond level of anterior edge of metacoxa. Fourth abdominal tergite with basal carinae subparallel, reaching or almost reaching posterior third of tergal length, interval between carinae 1/6–1/7 of tergal width.

Male sexual characters. Metasternum simple. Protrochanters with inferior edge angulate. Protibiae bearing an acute apical denticle. Meso- and metalegs without obvious sexual characters. Antennal segment 11 symmetrical and subcylindrical near base, with tubercle fairly large, prominent, circular to oval. Diameter of tubercle as large as 1/6–1/7 of length of segment 11, smaller than interval to basal edge of segment. Abdominal sternites 7 and 8 as Fig. 26. Aedeagus as Fig. 18, L 0.37–0.42.

Distribution. Japan: Honshu, Shikoku, Kyushu.

Remarks. This new species is easily distinguished by the abdominal sternites 7 and 8 sharply projected, and the relatively smooth metasternum without laminae nor any modification.

The punctuation of the head and pronotum of this species varies geographically. It is coarse and dense, and sometimes fine on the middle portion of the vertex in the specimens from western part of Honshu, Shikoku and Kyushu, while it is very fine and sparse in the specimens from the central and eastern part of Honshu. However, these two forms are not clearly separated as the two forms of *T. protervus*. Specimens with coarse, fine, and intermediate punctuation may occur in a single population, as that from Mt. Shiranesan, Yamanashi Pref., central Honshu.

Triomicrus vietus sp. nov.

Holotype: ♂, N. Vietnam, Vinh Phu Prov., Mt. Tam Dao, 950 m, 26. IX. 1995, S. Nomura leg. (NSMT).

Paratypes: 2 ♀, same data as holotype (NSMT, MHNG).

Description. L 1.7–1.8. Body and antennae reddish-brown, femora and tibiae slightly lighter, palpi and tarsi distinctly lighter. Pubescence short and recumbent on head and pronotum, suberect, L about 0.10 on elytra. Head (L/W 0.40–0.45/0.39–0.44) entirely coarsely and densely punctate, middle of vertex sometimes smooth; puncture intervals mostly much smaller than puncture diameters. Eyes in lateral view as long as (♂), or slightly shorter than (♀), tempora. Antennae with scape and pedicel each slightly longer than wide; segments 3–7 almost even, each about as long as wide; segment 8 as long as or slightly shorter than segment 7, slightly wider than long; segment 9 as long as segment 8, distinctly wider than long; segment 10 about as long as wide or transverse; segment 11 as long as or longer than segments 8–10 combined. Pronotum (L/W 0.41–0.42/0.49–0.51) with punctuation still coarser than that on head. Elytra (L/W 0.70–0.75/0.77–0.85) finely punctate; discal sulcus extending onto posterior fifth of elytral length; epipleural sulcus reaching level of posterior edge of metacoxa. Fourth abdominal tergite with basal carinae slightly arcuate and diverging, reaching mid-length of tergite; interval between carinae about 1/7 of tergal width.

Male sexual characters. Metasternum slightly impressed in middle, with two parallel ridges becoming gradually lower and wider toward metasternal foveae. Mesotibiae with small apical denticle. Antennal segment 11 symmetrical and subcylindrical near base, with tubercle large, round, raised, overlapping basal edge of segment. Diameter of antennal tubercle about 1/5 of segmental length. Abdominal sternites 7 and 8 as Fig. 33. Aedeagus as Fig. 19, L .0.28.

Remarks. This species shares the coarse punctuation on head and pronotum with *T. protervus*. It may be easily distinguished by the male antennal tubercle overlapping the basal edge of the ultimate antennal segment.

?Triomicrus seychellensis Raffray

Triomicrus seychellensis Raffray, 1913, p. 133.

Lectotype: ♂, labelled: Co-type (round yellow)/Silhouette, 1908 Seychelles Exp./Seychelle Inlands Percy Sladen Trust Expedition 1913. - 170./*Triomicrus seychellensis*. n. sp. Type Raffray (handwritten) - by present designation.

Redescription. L. 1.2. Body reddish-brown, extremely finely punctate, appearing smooth, with sparse, short, recumbent pubescence. Head (L/W 0.27/0.32) with frons flattened in middle, barely inflexed, without foveae. Anterior frontal edge subangulate. Antennal tubercles very low. Frontoclypeus rounded, almost vertical. Vertex slightly convex. Tentorial pits smooth, situated slightly behind level of anterior eye edge. Eyes small, prominent, with 8 ommatidia. Tempora rounded, longer than eyes. Gular ridge well delimited, slightly narrowed toward gular fovea. Antennae with scape and pedicel evenly long, cylindrical, pedicel notably slender than scape; segments 3 to 7 elongate, evenly wide; segment 3 almost as long as pedicel; segments 4 and 5 even, shorter than segment 3; segments 6 and 7 even, shorter than segment 5; segment 8 about as long as wide, shorter and wider than segment 7; segment 9 barely wider than long; segment 10 much wider than long; segment 11 about 1.5 times as long as wide and slightly longer than segments 7 to 10 combined. Maxillary palpi elongate; segment 2 curved, evenly slender in basal half, thickened toward apex, at apex almost as wide as segment 3; segment 3 about as long as wide; segment 4 about as long as segment 2, about 3 times as long as wide, widest before mid-length, gradually and slightly narrowed from widest point toward apex and toward base. Pronotum (L/W 0.32/0.37) moderately vaulted dorsally, strongly narrowed anteriorly and posteriorly, with three minute antebasal foveae; base margined by stria, lateral and anterior margins not margined. Elytra (L/W 0.49/0.56) evenly rounded and strongly narrowed toward base, with entire adsutural striae, without discal and epipleural sulci and lacking foveae. Mesocoxae approximate, metacoxae distant. Prosternum with pair of lateral, tomentose foveae, lateral edges not raised. Mesosternum with median and pair of lateral, tomentose foveae. Metasternum with pair of mesocoxal and pair of metasternal tomentose foveae. Abdomen moderately inflexed, with 4 visible tergites in dorsal view. Abdominal tergites lacking foveae; tergites 4 to 6 margined, tergite 4 without basal carinae. Edge of abdominal sternite 3 bearing row of long, horizontal setae. Abdominal sternite 4 deeply impressed along basal edge, flattened in middle, with large lateral impression. Tibiae slender, slightly curved.

Male sexual characters. Mesotrochanters with minute denticle. Mesotibiae with slender apical denticle. Abdominal sternite 8 with large, sharply delimited, deep, oval impression. Aedeagus (Fig. 20) L 0.32, symmetrical, strongly sclerotized. Parameres inflexed apically and widened. Internal sac complex.

Distribution. Seychelles.

Remarks. The description of *T. seychellensis* is based on two specimens, one

of which was located in the BMNH. This species differs from other members of *Triomicrus* by numerous characters, such as the maxillary palpi with the segment 2 evenly slender in basal half, the lack of the elytral foveae and sulci, the male abdominal sternites not folded ventrally, the male sternites 7 and 8 not connate, and the aedeagus having strongly sclerotized basal bulb and well developed, symmetrical parameres. The species possesses characters of both Brachyglutini and Tanypleurini, as defined by Jeannel (1959), the name Tanypleurini being replaced by Iniocyphini. However, Iniocyphini appears to be ill-founded (Löbl, 1994), and the relationships of *T. seychelensis* are unknown. In absence of better knowledge of the group we prefer to keep the latter species in *Triomicrus*, as species incertae sedis.

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References

- Jeannel, R., 1958. Révision des Psélaphides du Japon. *Mém. Mus. natn. Hist. nat., Paris*, (A), **18**: 1–138.
- Jeannel, R., 1959. Révision des Psélaphides de l'Afrique intertropicale. *Annls. Mus. r. Congo Belge*, (Série in 8°), **75**: 1–742.
- Löbl, I., 1994. *Awas giraffa* sp. n. (Coleoptera, Staphylinidae, Pselaphinae) from Malaysia and the classification of Goniacerinae. *Revue suisse Zool.*, **101**: 685–697.
- Newton, A. F., Jr. & D. S. Chandler. 1989. World catalogue of the genera of Pselaphidae (Coleoptera). *Fieldiana Zool.*, (N. S.), (53): i–iv + 1–93.
- Nomura, S., 1991. Systematic study on the genus *Batrisoplisus* and its allied genera from Japan (Coleoptera, Pselaphidae). *Esakia, Fukuoka*, (30): 1–462.
- Nomura, S. & C. E. Lee. 1992. A revision of the family Pselaphidae (Coleoptera) from Chejudo Island, Korea. *Esakia, Fukuoka*, (32): 59–80.
- Ohishi, H., 1986. Consideration of internal morphology for the taxonomy of Pselaphidae. *Spec. Bull. Jpn. Soc. Coleopterol., Tokyo*, (2): 111–130.
- Raffray, A., 1904. Genera et catalogue des Psélaphides. *Ann. Soc. ent. Fr.*, **73**: 1–400.
- Raffray, A., 1909. Nouvelles espèces de Psélaphides. *Ann. Soc. ent. Fr.*, **78**: 15–52.
- Raffray, A., 1911. Pselaphidae. In S. Schenkling (ed.), *Coleopterorum Catalogus*. pars 27. 222 pp. W. Junk, Berlin.
- Raffray, A., 1913. Coleoptera, Pselaphidae, de l'Archipel de Seychelles. *Trans. Linn. Soc. London*, (Zoology), **16**: 117–138, pl. 10.
- Sharp, D., 1874. The Pselaphidae and Scydmaenidae of Japan. *Trans. ent. Soc. London*, **1874**: 105–130.
- Sharp, D., 1883. Revision of the Pselaphidae of Japan. *Trans. ent. Soc. London*, **1883**: 291–331.

