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# Taxonomic Study on the Subfamily Osoriinae (Coleoptera, Oxytelidae) from Japan, I*

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**Abstract** This is the first part of a revision of the subfamily Osoriinae of Japan. A key to the Japanese genera of the subfamily is given, and the two genera *Osorius* LATREILLE and *Atopocnemius* BERNHAUER are dealt with. The latter genus is discovered for the first time from Japan. Description of a new species, *Atopocnemius nomurai*, is presented.

In the family Oxytelidae (NAOMI, 1985), the Osoriinae form a large subfamily composed of about 60 genera. They are distributed in all zoogeographical regions, but almost all of the members are restricted to the subtropical and tropical areas.

From Japan, SHARP (1874) first described a new species, *Osorius angustulus*. After that, SHARP (1889) added two new species, *Osorius taurus* and *O. microps*. As the latter species was transferred to the genus *Mimogonus* FAUVEL by BERNHAUER and SCHUBERT in 1911, two genera and three species of the subfamily Osoriinae have hitherto been recorded from Japan.

In the present study, I intend to revise the Japanese Osoriinae which are composed of four genera and six species in all. In this first paper, a definition of this subfamily and a key to the genera are given, and the two genera, *Osorius* LATREILLE and *Atopocnemius* BERNHAUER are dealt with. Description of a new species *Atopocnemius nomurai* is also presented, together with illustrations of important characters.

## Subfamily **Osoriinae**

Osorini ERICHSON, 1840, Gen. spec. staph., p. 753.

Osoriini BERNHAUER & SCHUBERT, 1911, Coleopt. Cat., (29): 141; Cameron, 1920, Trans. ent. Soc. Lond., p. 348; NOTMAN, 1925, Proc. U. S. natn. Mus., **67**: 2; CAMERON, 1930, Fn. Brit. India, Coleopt. Staph., **1**: 289; SCHEERPELTZ, 1931, S.-B. Akad. Wiss. Wien, I, (140): 369; SCHEERPELTZ, 1933, Coleopt. Cat. Suppl., (129): 1127; COIFFAIT, 1981, Senckenb. biol., **62**: 136; COIFFAIT, 1984, Ent. basil., **9**: 118.

Osoriinae PORTEVIN, 1929, Encycl. ent., (A), **12** (1): 408; FAGEL, 1955, Expl. Parc natn. Upemba, Miss. WITTE, (39): 3; FAGEL, 1959, Expl. Parc natn. Garamba, Miss. SAEGER, (12): 3; FAGEL, 1969, Mus. roy. Afr. centr., Terv. Belg. Ann. 8°, Sci. zool., (173): 1; COIFFAIT, 1978, Ent. basil.,

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3: 113; COIFFAIT, 1979, Fn. Madagascar, 51: 7.

This subfamily is characterized by the following points: 1) Body cylindrical and elongate, 2) head large, not or scarcely constricted behind the middle, 3) posterior walls of tentorium fused mesially, with anterior and dorsal arms reduced or absent, 4) gular sutures confluent, 5) fore coxae about as long as fore femora, and 6) abdomen not marginate, without paratergites.

The species in this subfamily are collected under bark, in decayed trees, and also in leaf litter.

### Key to the Genera of the Subfamily Osoriinae from Japan

1 (4) Pronotum moderately or weakly narrowed posteriorly; fore tibiae with setiferous denticles along outer margins.

2 (3) Antennae with 9th and 10th segments each globular, about as long as broad; tarsal formula 5–5–5 ..... *Osorius* LATREILLE.

3 (2) Antennae with 9th and 10th segments each transverse; tarsal formula 4–4–4 .. ..... *Atopocnemius* BERNHAUER.

4 (1) Pronotum parallel-sided in anterior 3/4, then abruptly constricted at base; fore tibiae with hairs and/or spinules along outer margins.

5 (6) Pronotum with a pair of large foveae inside the basal constrictions; parameres of male genitalia fused into a median stalk ..... *Mimogonus* FAUVEL.

6 (5) Pronotum without foveae; parameres of male genitalia separated ..... ..... *Saegerius* FAGEL.

## Genus *Osorius* LATREILLE

*Osorius* LATREILLE, 1829, Règne anim., 4: 438. (Type species: *Osorius brasiliensis* GUÉRIN-MÉNEVILLE, designated by GUÉRIN-MÉNEVILLE, 1830.)

See BERNHAUER & SCHUBERT (1911) and SCHEERPELTZ (1933) for synonymy.

Body medium in size (5.3–8.5 mm), elongate, cylindrical, shiny.

Head (Fig. 1 A, B) large, about as long as pronotum. Eyes small. Antennae (Fig. 1 D) strongly geniculate, 11-segmented, 1st segment slender, and at least 6th to 10th moniliform. Labrum trapezoidal, anterior margin sparsely haired, and straight or shallowly widely emarginate (Fig. 1 F). Mandibles (Fig. 1 G, H) very robust, inner margins uneven, with small teeth; mandibular prosthecae small, yellow. Maxillae (Fig. 1 E) moderately sclerotized; lacinia elongate, with inner margin sparsely spinous; galea spinous at apical part; maxillary palpus 4-segmented, 4th segment longer than 3rd. Labium (Fig. 1 C) with submentum trapezoidal, with a pair of hairs; mentum elongate-trapezoidal, anterior and posterior corners rounded, with a reverse V-shaped groove; prementum with a pair of very long setae; ligula fused into a plate with pointed apex; labial palpus 3-segmented, 3rd segment narrower and shorter than 2nd.

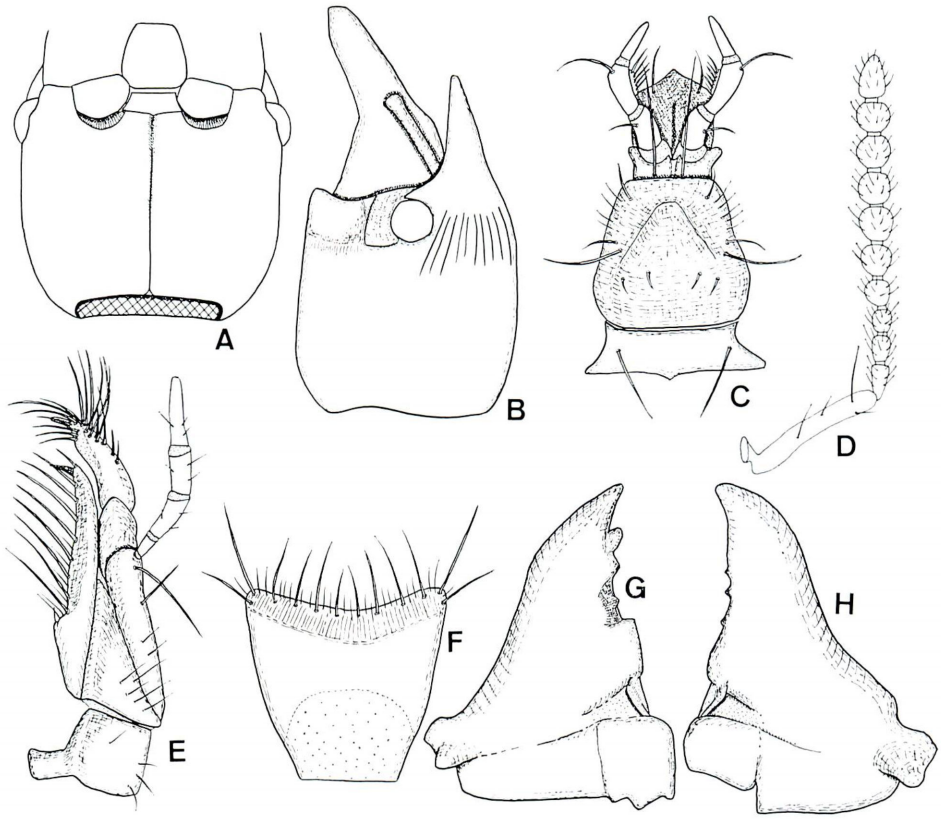


Fig. 1. *Osorius taurus* SHARP. A, Head in ventral view; B, head in lateral view; C, labium; D, antenna; E, maxilla; F, labrum; G, right mandible; H, left mandible.

Prothorax (Fig. 2 A) large, narrowed posteriorly, anterior foramen about as broad as pronotum; pronotum weakly marginate at sides; hypomera protruding behind fore coxae, pointed; prosternum large, with prosternal process pointed at apex. Mesothorax (Fig. 2 B) with mesonotum subtriangular, postnotum developed; mesepisterna, mesepimera and prepectus present; mesosternum narrow, with intercoxal process pointed and separated from metathoracic intercoxal process; mid coxal cavities ovoidal, deep, contiguous and situated mesially. Metathorax (Fig. 2 B) with elongate metepisterna and metepimera; metasternum broad, long, with anterior intercoxal process pointed. Metendosternite (Fig. 2 C) Y-shaped, with anterior arm branched near the middle of furcal arm.

Elytra parallel-sided; elytral epipleura distinct, broad, invisible from above. Legs robust; fore tibia weakly curved inward, outer margin bearing a row of setiferous denticles on anterior 2/3, inner margin finely ciliate; mid tibia broadened apically, outer margin with setiferous denticles; hind tibia with a row of setae along outer margin, without denticles; tarsal formula 5–5–5.

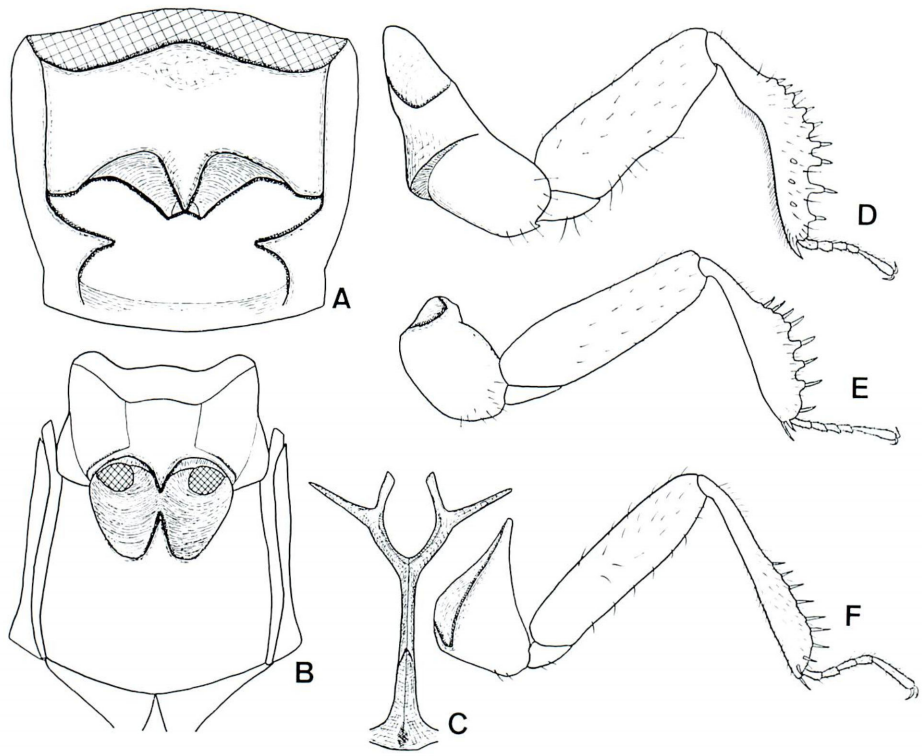


Fig. 2. *Osorius taurus* SHARP. A, Prothrax in ventral view; B, meso- and metathoraces in ventral view; C, metendosternite; D, fore leg; E, mid leg; F, hind leg.

Abdomen (Fig. 3 A) elongate, cylindrical, spiracles absent in 2nd to 7th segments and reduced in 8th; 3rd sternum (Fig. 3 C) with a basimedian longitudinal keel.

*Male.* Eighth sternum (Fig. 3 D) weakly sinuate in apical margin; 9th tergum (Fig. 3 E) composed of a pair of separated plates, without ventral struts; 9th sternum absent. Genitalia (Fig. 3 G–K) with median lobe bulbous in ventral view; parameres absent.

*Female.* Ninth tergum (Fig. 3 F) composed of a pair of plates which are larger than in male; 9th sternum reduced into a pair of small plates or absent. Spermatheca spherical (Fig. 3 B) or ovoidal.

*Remarks.* This genus is allied to *Neosorius* FAGEL, 1959 and *Indosorius* COIFFAIT, 1978, but is distinguishable from them by the mesothoracic intercoxal process detached from the metathoracic one and the parameres of the male genitalia absent.

### *Osorius taurus* SHARP

(Figs. 1–2, 3A–I)

*Osorius taurus* SHARP, 1889, Ann. Mag. nat. Hist., (6), **3**: 411; BERNHAUER & SCHUBERT, 1911, Coleopt.

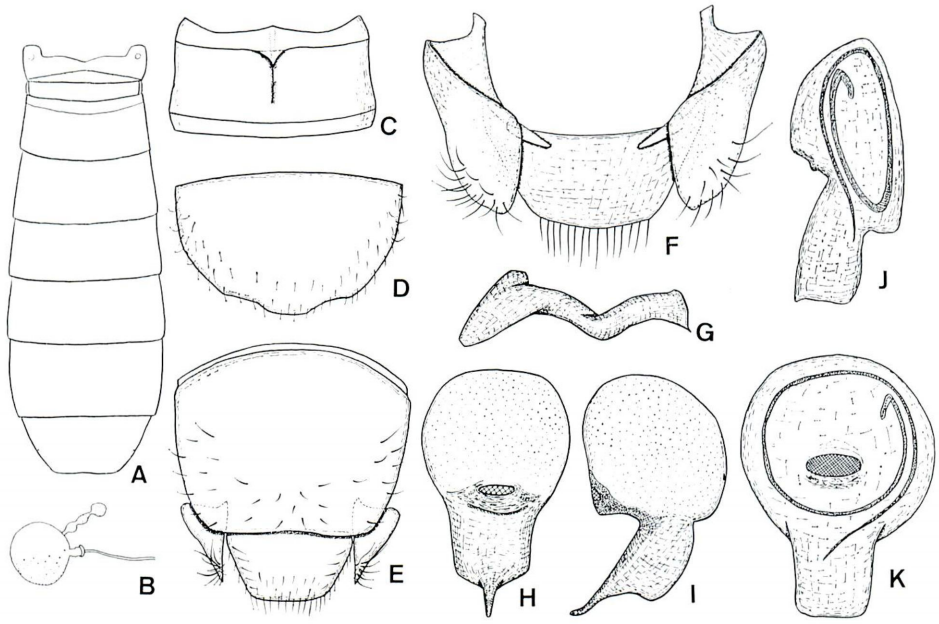


Fig. 3. A–I, *Osorius taurus* SHARP; J–K, *O. angustulus* SHARP. A, Abdomen in dorsal view; B, spermatheca; C, 3rd abdominal sternum in ventral view; D, 8th abdominal sternum in male; E, 8th to 10th abdominal terga in male; F, 9th to 10th abdominal segments in female; G, internal armature of male genitalia; H, K, male genitalia in ventral view; I, J, male genitalia in lateral view.

Cat., (29): 145; ADACHI, 1950, Icon. Ins. Japon., p. 992; SAKAGUTI & SAWADA, 1955, Col. Ill. Ins. Jap. Coleopt., p. 51; ADACHI, 1957, J. Tôyô Univ., (11): 193; NAKANE, 1963, Icon. Ins. Jap. Col. nat. ed., **2**: 84; SHIBATA, 1976, Annual Bull. Nichidai Sanko, (19): 169; WATANABE, 1985, Coleopt. Japan Col., Osaka, **2**: 276.

Body length: 7.1–8.5 mm.

Body reddish brown to blackish; antennae, mouth parts and legs reddish.

Head a little narrower than pronotum, frons with a pair of horns projecting horizontally and anteriorly, pointed apically; surface roughly striolate, sparsely pubescent, with a median longitudinal smooth space on anterior 3/4 of head, and with a pair of curved setae on outer basal parts of horns, occipital region very smooth. Eyes small, moderately convex, about 0.4 times as long as temporal regions. Antennae (Fig. 1 D) reaching the middle of pronotum, 1st segment slender, about as long as 2nd to 6th taken together, 2nd a little longer than 3rd, 5th to 10th moniliform, subequal in width to one another, 11th a little narrower than 10th.

Pronotum broader than long, trapezoidal, narrowed posteriorly, side margins sinuate just before impressed posterolateral corners, impressed areas very narrow; surface strongly coarsely punctured, with a median longitudinal smooth space. Mesoscutellum subtriangular, smooth, shiny.

Elytra longer than pronotum, side margins gently rounded; surface sparingly coarsely punctured, with sparse and suberect hairs.

Abdomen broadened posteriorly, strongly punctured, 3rd to 6th segments haired as on elytra, hairs on 7th and 8th longer than those on preceding segments.

*Male.* Genitalia (Fig. 3 G–I) strongly sclerotized in apical half; median lobe bulbous at basal part, constricted near the middle, curved ventrally before the middle, with apex thin and pointed; parameres completely absent.

*Specimens examined.* 46 exs. collected from Tokyo (Mt. Takao), Kanagawa Pref. (Monomi Pass), Hyôgo Pref. (Otomizu Valley), Wakayama Pref. (Mt. Ôtô), Ôita Pref. (Shin'yabakei; Mt. Kurodake, Kujû), Nagasaki Pref. (Nomozaki; Mt. Mayu, Shimabara; Kamigotô Isls.; Tsushima Is.), Saga Pref. (Imari C.), Kumamoto Pref. (Amakusa-chô; Gokanoshô; Hitoyoshi C.; Mt. Ichifusa), Miyazaki Pref. (Iwato), Kagoshima Pref. (Mt. Eboshi; Mt. Kirishima; Sata Cape).

*Distribution.* Japan (Honshu, Shikoku, Kyushu, Tsushima Is., Yakushima Is.).

*Remarks.* This species is allied to *Osorius rugicollis* KRAATZ, 1859, but is separable from the latter by the head with the outer basal parts of horns smooth and the pronotum strongly and coarsely punctured.

### *Osorius angustulus* SHARP

(Fig. 3 J–K)

*Osorius angustulus* SHARP, 1874, Trans. ent. Soc. Lond., p. 89; BERNHAUER & SCHUBERT, 1911, Coleopt. Cat., (29): 143; ADACHI, 1950, Icon. Ins. Japon., p. 992; SAKAGUTI & SAWADA, 1955, Col. Ill. Ins. Jap. Coleopt., p. 51; ADACHI, 1957, J. Tôyô Univ., (11): 193; NAKANE, 1963, Icon. Ins. Jap. Col. nat. ed., **2**: 84; SHIBATA, 1976, Annual Bull. Nichidai Sanko, (19): 169; WATANABE, 1985, Coleopt. Japan Col., Osaka, **2**: 276.

Body length: 4.6–6.0 mm.

Body reddish brown to blackish; frons and elytra reddish to reddish brown; antennae, mouth parts and legs yellowish red to reddish.

Head a little narrower than pronotum, frons narrowed anteriorly, deflected before antennal insertions, with anterior margin straight and irregularly crenulate; surface irregularly rugose, sparsely covered with suberect hairs on anterior 4/5 of head, but a median longitudinal space sparsely punctured and weakly elevated, occipital region smooth. Eyes small, moderately convex, about a half as long as temporal regions. Antennae with 1st segment slender, constricted near the middle, a little longer than 2nd to 5th taken together, 3rd longer than 4th, 6th to 10th moniliform, 11th longer than 10th, pointed.

Pronotum shorter than elytra, transverse, narrowed posteriorly, with side margins gently rounded in anterior 2/3, weakly sinuate near posterolateral corners; surface sparsely coarsely punctured, except for a median longitudinal space which is smooth and weakly elevated. Mesoscutellum U-shaped, smooth, very shiny. Elytra a little longer than pronotum, sparsely punctured and pubescent.

Abdomen broadened posteriorly, broadest at basal margin of 7th segment; surface

sparsely punctured and haired, hairs yellowish, suberect.

*Male.* Genitalia (Fig. 3 J–K) moderately sclerotized; median lobe at basal part circular in ventral view and flat dorsally in lateral view, constricted just before basal orifice, apical part about 0.4 times as broad as basal one and truncate, internal armature whip-shaped; parameres absent.

*Specimens examined.* 84 exs. collected from Ibaragi Pref. (Mt. Hanazono), Kanagawa Pref. (Monomi Pass), Tokyo (Mt. Takao), Kyoto (Kibune), Fukuoka Pref. (Mt. Hiko; Mt. Tachibana; Hakozaki, Fukuoka C.), Saga Pref. (Mt. Tara; Mt. Seburi; Ryûmon Valley), Nagasaki Pref. (Nomozaki, Shimabara; Mt. Mayu; Mt. Iwaya; Hirado Is.; Kamigotô Isls.), Kumamoto Pref. (Kikuchi Valley; Hitoyoshi C.; Amakusa Is.), Okinawa Pref. (Mt. Omoto, Ishigaki Is.).

*Distribution.* Japan (Hokkaido, Honshu, Shikoku, Kyushu, Tsushima Is., Ishigaki Is.).

*Remarks.* This species is allied to *Osorius peguanus* BERNHAUER, 1914, but is separable from the latter by the pronotum weakly and narrowly impressed at the posterolateral corners and the elytra sparsely punctured.

## Genus *Atopocnemius* BERNHAUER

*Atopocnemius* BERNHAUER, 1914, Verh. zool.-bot. Ges. Wien, **64**: 92; NOTMAN, 1925, Proc. U. S. natn. Mus., **67**: 2; SCHEERPELTZ, 1933, Coleopt. Cat. Suppl., (129): 1137. (Type species: *Atopocnemius moultoni* BERNHAUER, by monotypy.)

Body small, elongate, shiny.

Head (Fig. 4 A) large, narrower than pronotum. Eyes small. Antennae geniculate, 11-segmented, gradually broadened apically. Labrum transverse, with anterior margin rounded. Mandibles (Fig. 4 C) robust, each bidentate at apex, with a large blunt tooth near the middle; mandibular prosthecae absent. Maxillae (Fig. 4 B) sclerotized; lacinia elongate, with side margin sparsely setous; galea with 5 or 6 setae, outer and inner side margins sinuate; maxillary palpus 4-segmented, 3rd transverse, 4th large, about 4 times as long as 3rd, pointed. Labium (Fig. 4 D) with mentum bisinuate at apical margin, with two pairs of setae; prementum with a pair of very long setae; ligula composed of a broad plate, anterior margin rounded, with a pair of setae at sides; labial palpus 3-segmented, 3rd segment about 2.5 times as long as 2nd.

Prothorax (Fig. 4 A) large, pronotum clearly marginate laterally; hypomerosternal suture absent; hypomera strongly projecting behind fore coxae, pointed; prosternum transverse, with a minute protrusion in the middle of anterior margin. Mesothorax with mesepisterna fused to mesosternum; mesepimera present, mesothoracic intercoxal process pointed, mid coxal cavities separated, situated mesially. Metathorax with metepisterna partially fused with metepimera; metasternum large, with anterior intercoxal process pointed. Metendosternite Y-shaped.

Elytra subparallel-sided; elytral epipleura distinct, broad. Legs robust; fore

tibia broadened apically, setaceous, with U-shaped emargination on outer margin; mid tibia weakly broadened apically, with two setiferous denticles and 6 to 10 spines on outer margin; hind tibia slender, sparsely setous on outer margin; tarsal formula 4-4-4.

Abdomen broad, 3rd sternum with a basimedian longitudinal keel.

*Male.* Eighth sternum weakly sinuate in apical margin; 9th tergum composed of a pair of small and separated plates, without ventral struts; 9th sternum absent; 10th tergum small, truncate. Genitalia composed of median lobe and a pair of parameres.

*Remarks.* This genus is allied to *Baculopsis* CAMERON, 1929, but is distinguished from the latter by the antennae geniculate and the fore tibiae with the U-shaped emarginations on the outer margins. This is the first record of the genus from Japan.

### ***Atopocnemius nomurai*** sp. nov.

(Fig. 4)

Body length: 2.6–3.2 mm.

Body dark brown to black; antennae, mouth parts, legs, mesoscutellum, elytra along suture and posterior margins of abdominal segments reddish to reddish brown; surface very shiny, almost glabrous.

Head (Fig. 4 A) narrower than pronotum, frons narrowed anteriorly, deflected in front of antennal insertions, with anterior margin straight; surface finely sparsely punctured, with 3 or 4 pairs of erect hairs. Eyes relatively flat, minutely faceted, about a half as long as temporal regions. Antennae reaching near the middle of pronotum, 1st segment about as long as 2nd to 7th taken together, 2nd a little longer than 3rd, 3rd to 10th gradually broadened apically, 7th to 10th each distinctly transverse, 11th about twice as long as 10th, pointed.

Pronotum as broad as elytra, trapezoidal, broadest near anterior margin, weakly narrowed posteriorly; surface moderately punctured, punctures composed of larger and smaller ones, with two pairs of small foveae, one pair near anterior margin and the other near basal margin. Mesoscutellum triangular, smooth, very shiny. Elytra a little broader than long, weakly asperous, with a pair of shallow grooves along suture.

Abdomen gently broadened posteriorly, sparsely with fine and obscure punctures.

*Male.* Genitalia (Fig. 4 E–F) weakly sclerotized at base; median lobe at base bulbous in ventral view and relatively flat in lateral view, curved ventrally before basal orifice, pointed at apex, with a pair of plates on apical surface of median lobe, internal armatures twig-shaped; parameres separated, short, tapering apically, not reaching apex of median lobe.

Holotype, 1 ex., (Type No. 2580, Kyushu Univ.), Mt. Yuidake, Amami-Ôshima Is., Kagoshima Pref., 10. viii. 1984, S. NOMURA leg. Paratypes, 4 exs., same data as holotype; 1 ex., Yamatoson, Amami-Ôshima Is., Kagoshima Pref., 30. v. 1963, H.

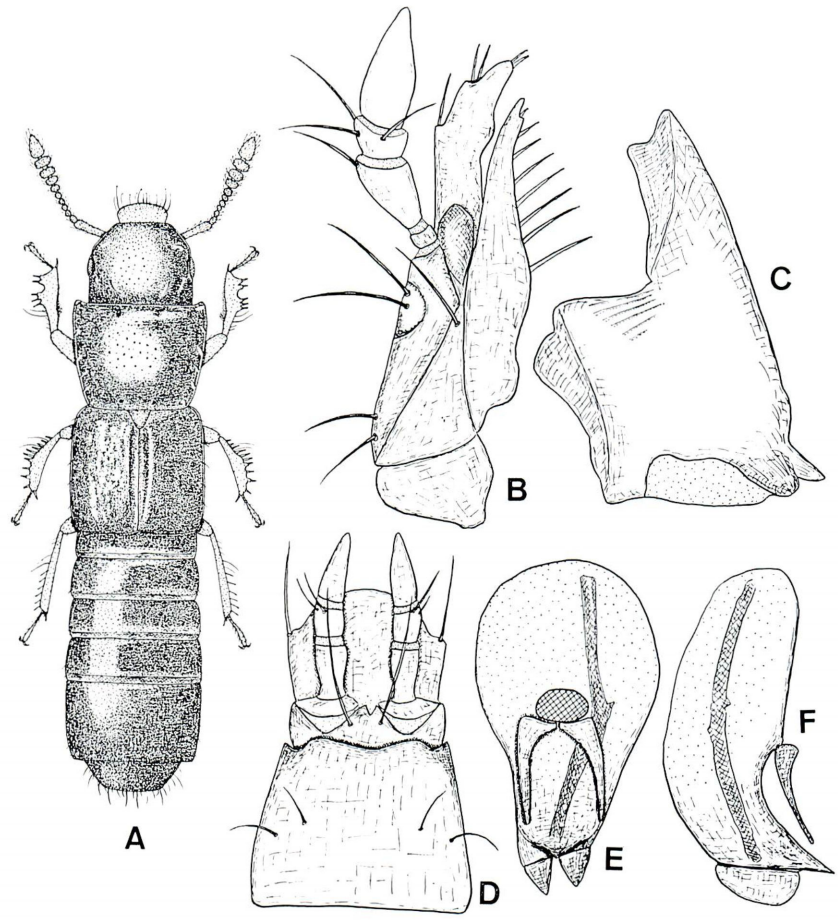


Fig. 4. *Atopocnemius nomurai* sp. nov. A, Whole body; B, maxilla; C, left mandible; D, labium; E, male genitalia in ventral view; F, male genitalia in lateral view.

YAMAZAKI leg.

*Distribution.* Japan (Amami-Ôshima Is.).

*Remarks.* This new species is related to *Atopocnemius moultoni* BERNHAUER, 1914, and *A. quadrifoveatus* CAMERON, 1929, but is separable from them by the pronotum weakly narrowed posteriorly and the abdomen covered only with sparse punctures.

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## 摘　　要

本論文は，日本産ツツハネカクシ亜科の分類学的研究の第1報である．日本産の属への検索表を作成し，*Osorius* LATREILLE および *Atopocnemius* BERNHAUER の2属の分類を行った．このうち，後者は日本から初めて記録される属である．また，1新種 *Atopocnemius nomurai* の記載を行った．