

Description of a New Species of *Ariotus* (Coleoptera, Aderidae) allied to *A. takedai*, from Honshu, Central Japan

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Abstract: *Ariotus spinitibialis* M. Saitô, new species is described from Honshu, Central Japan. This new species is closely related to *Ariotus takedai* M. Saitô & Young, 2015, differing from the latter in several respects, but notably by the presence of a pair of tibiale spines in male.

Keywords: Taxonomy, new species, Coleoptera, Aderidae, *Ariotus*, East Palearctic Region, Honshu island, Japan

Introduction

M. Saitô & Young (2015) described *Ariotus takedai*, a genus previously not recorded from Japan. The senior author noticed that some specimens of *A. takedai* from Shiga Prefecture included small specimens, and had an opportunity to examine them more closely. As a result those turned out to be a new species, leading to the present paper describing the new species. It is very interesting that the two closely related two species were collected together.

Materials and methods

Morphological abbreviations used herein are as follows: L—body length (length from frons to elytral apices); W—body width (across humeral region); FW—width across frons (distance between eyes); ED—compound eye diameter; AnW—distance between antennal insertions; CL—clypeal length; CW—clypeal width; PL—pronotal length; PW—pronotal width; HW—head width including compound eyes; EW—elytral width; EL—elytral length; MtiL—length of metathoracic tibia; Mta1stL—length of 1st metathoracic tarsomere; AL—aedeagal length; BpL—basal piece length; PmL—length of parameres. The average values of measurements are given in parenthesis after the range.

Exact label data are cited for each type specimen. Individual lines on labels are separated by a single slash (/), and individual labels are separated by a double slash (//). The holotype and paratypes are glued to cardboard plates. Type specimens of the newly described species are provided with additional red labels with the following printed text: “*Ariotus* / *spinitibialis* sp. nov. / HOLOTYPE, ♂ [or] PARATYPE, ♂ [or] ♀ / des. Masahiro SAITÔ, 2025 / トゲアシナガニセクビボソムシ”.

The entomological collection codes for specimen depository are noted below and elsewhere in the text:

(NSMT)—National Museum of Nature and Science, Tsukuba, Japan

(WIRC)—Wisconsin Insect Research Collection, USA

(MSC)—Collection of M. Saitô, Fukui, Japan

Systematic part

Ariotus spinitibialis M. Saitô, sp. nov. (Figs 1–6)

[Japanese name: Togeashi-naga-nisekubibosomushi]

Type locality: Japan, honshu island, Shiga Prefecture, Ôtsu-shi, Onryo-ji, alt. 109 m.

Type material: Holotype (Fig. 1): ♂, Onryo-ji, alt. 109 m, Ôtsu-shi, Shiga Pref., 16.VI.2014, S. Nakagawa leg (NSMT). Paratypes: 2♂♂, same locality and collector as the holotype, 2.VI.2013 (MSC, WIRC); 1♂, same locality and collector as the holotype, 6.VI.2014 (MSC); 1♂, same locality and collector as the holotype, 12.VI.2014 (MSC); 2♂♂, same locality and collector as the holotype, 15.VI.2014 (2♂♂, MSC; 1♂, MSC); 1♂1♀, same data as the holotype (1♂, MSC; 1♀, NSMT); 2♂♂ (MSC, WIRC), 1♀ (MSC), same locality and collector as the holotype, 19.VI.2014; 1♂ (MSC), same locality and collector as the holotype, 23.VI.2014.

Description:

Male: Body elongate, subparallel-sided, L/W 2.74–3.07 (2.69, n = 5), moderately convex dorsally, rather shining with weak silky luster due to double pubescence; legs and antennae densely covered with fine pubescence, antennal pubescence longer and darker than that on legs. Dorsal surface (Fig. 1) entirely dark yellowish-brown, with mouthparts and legs yellowish-brown except metathoracic femora dark brown; antennae brownish-black except 2nd antennomere yellowish-brown. Ventral surface entirely dark yellowish-brown, densely covered with fine yellowish-white pubescence. Elytra yellowish-brown.

Head oblong-ovate in dorsal view, rather sparsely punctate. Frons smooth, weakly swollen at the antennal insertions, FW/ED 1.64–2.00 (1.77, n = 5), AnW/FW 0.75–0.80 (0.78, n = 5); frontoclypeal suture complete. Vertex to occiput smooth and protruding. Occiput moderately rounded. Eyes ovate, slightly protruding. Clypeus rectangulate, CL/CW 0.29–0.43 (0.39, n = 5), coarsely punctate; anterior margin straight; frontoclypeal furrow complete, slightly curved inwardly. Terminal maxillary palpomere (Fig. 4) right-angled triangular; aboral margin about 1.6 times as long as (n = 1) adoral margin; apical margin about 1.1 as long as (n = 1) aboral margin, apical margin slightly arched. Antennae (Fig. 2) stout, filiform, extending beyond the hind angles of pronotum by the length of the apical four antennomeres; inner distal angles of antennomeres 4–10 weakly projecting; distal half of 11th spindle-shaped, apex acuminate; relative lengths of each antennomere from base to apex (n = 1): 0.72, 0.44, 1.00, 0.94, 1.00, 1.00, 1.06, 0.84, 0.83, 0.83, 1.39; relative length to width of each antennomere (n = 1): 1.30, 0.89, 1.80, 1.70, 1.64, 1.64, 1.58, 1.45, 1.25, 1.36, 2.27.

Pronotum hexagonal, PW/PL 1.06–1.20 (1.14, n = 5), PW/HW 0.91–0.96 (0.94, n = 5), PW/W 0.66–0.68 (0.67, n = 5), widest posteriorly the anterior angle, distinctly, straightly narrowing toward the apical margin and slightly parallel towards the base from the widest point, not margined laterally, anterior angles protruding in triangularly gibbous; hind angles rounded; basal margin weakly sinuate; disc uneven, rather sparsely punctate. Scutellum trapezoidal, truncate apically, coarsely punctate.

Elytra elongate, with lateral margins weakly rounded to subparallel, widest behind the middle, broadly rounded apically to suture; EL/EW 1.79–1.87 (1.83, n = 5); disc densely, coarsely punctate with shallowly triangular depressions from humeri towards suture.

Ventral surface of thorax coarsely punctate except for posterior half of the mesosternum. Abdominal sternites finely punctulate; 5th sternite weakly depressed mesally, rounded apically.

Legs slender. MtiL/EL 0.35–0.38 (0.36, n = 5) and MtiL/EW 0.64–0.71 (0.66, n = 5). Mta1stL/MtiL 0.45–0.50 (0.47, n = 5), relative lengths of metathoracic tarsomeres 2–4 to 1st metatarsomere (n = 1): 1.00, 0.29, 0.13, 0.43; inferior edge of each prothoracic tibia (Fig. 5) with a well developed spine at mid-length; inferior edge of each metathoracic femur (Fig. 6) with a brush of long stout yellowish-white setae along apical third, and a row of short pubescence along inside of the setal brush toward the base.

Aedeagus (Fig. 3) elongate and slender, AL/EL about 0.2 (n = 1), AL/AW about 0.4 (n = 1). Parameres elongate, slender, parallel-sided and narrowing apical 2/5 in dorsal view, downwardly curved and turned forward apically in lateral view; tip swells into a small spherical shape; PmL/BpL about 3.7 (n = 1).

Female: Similar to male, but inferior edge of each metathoracic femur without setal brush along the apical third, and inferior edge of each prothoracic tibia without a well developed spine at mid-length; L/W 2.89–2.96 (2.93, n = 3); EL/EW 1.72–1.74 (1.73, n = 3); FW/ED 1.40–2.43 (2.00, n = 3); AnW/FW 0.72–1.00 (0.82, n = 3); PW/HW 0.95–0.98 (0.96, n = 3); PW/W 0.65–0.66 (0.65, n = 3). Relative lengths of each antennomere from base to apex (n = 1): 0.80, 0.53, 1.00, 0.70, 0.63, 0.63, 0.67, 0.60, 0.43, 0.47, 1.17; relative length to width of each antennomere (n = 1): 1.60, 1.14,

3.00, 1.75, 1.46, 1.46, 1.43, 1.20, 0.76, 0.82, 1.75. Fifth sternite widely rounded apically. $Mta1stL/MtiL$ 0.38–0.47 (0.44 $n = 3$), relative lengths of each metathoracic tarsomere from base to apex ($n = 1$): 1.00, 0.25, 0.14, 0.43.

Measurements ($n = 9$ ♂♂, 2 ♀♀ in mm). L: ♂ 3.35–4.30 (3.98), ♀ 3.70–4.40 (4.10); W: ♂ 1.28–1.55 (1.36), ♀ 1.28–1.50 (1.40).

Distribution: Shiga Prefecture, Honshu, Japan.

Bionomy: Unknown.

Collection circumstances: Type specimens were captured by beating the tall leafy bush of the laurel forest. The ratio of numbers of each species collected, *A. takedai* : *A. spinitibialis* = 20–30 : 1.

Etymology: This specific epithet is derived from the Latin- meaning “a spine or thorn”, in reference to the characteristic prothoracic tibiae.

Differential diagnosis: This species is distinguished from *A. takedai* M. Saitō & Young as follows in male: 1) inferior edge of each prothoracic tibia with a well developed spine (lacking in *A. takedai*); 2) abdominal sternites without setal tuft (abdominal sterna 1–2 with linear setal tufts mesally in *A. takedai*); 3) apex of aedeagus narrowing apically with tip produced into a small, elongate-oval process in dorsal view (apex of aedeagus sub-rhombic with tip rounded in dorsal view in *A. takedai*), and in female: 1) anterior angles of pronotum more sharply projected (roundly projected in *A. takedai*). Particularly diagnostic is the pair of small spines at the mid-length of the prothoracic tibiae. This character separates the new species from other members of the genus (cf. Casey 1895; Schwarz 1878; Werner 1990; excluding *A. pruinus* (Casey 1895) from Arizona (US) because described by a specimen believed to be female).

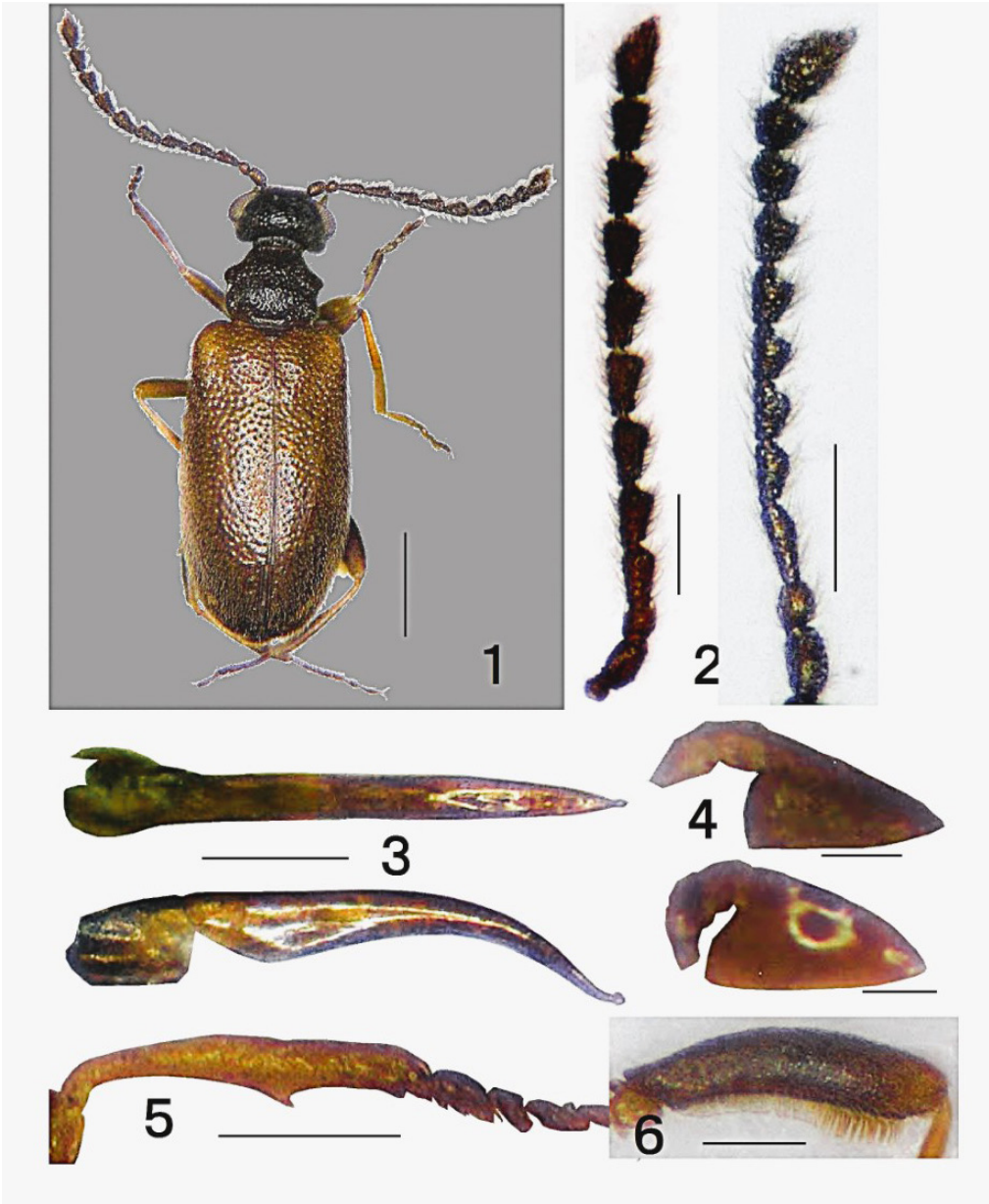
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References

- Casey T. L. (1895): Coleopterologica Notices. VI. Annals of the New York Academy of Sciences, 8: 435–838.
M. Saitō & D. K. Young (2015): Descriptions of a new species of *Ariotus* (Coleoptera, Aderidae) and a new genus and species of Aderidae from Honshu, Central Japan, with a key to the genera of Japanese Aderidae. Elytra, Tokyo, (n. ser.) 5: 453–462.
Schwarz E. A. (1878): The Coleoptera of Florida. Proceedings of the American Philosophical Society, 17: 353–472.
Werner F. G. (1990): Revision of the Aderidae of Eastern North America. Journal of the New York entomological Society, 98(2): 187–232.

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Figs 1–6: *Ariotes spinitibialis* M. Saitô, sp. nov.: 1, Habitus (holotype), dorsal view; 2, antenna, left: male, right: female; 3, aedeagus, above: dorsal view, below: lateral view; 4, maxillary palp, above: male, below: female; 5, prothoracic tibia, male; 6, metathoracic femur, male. Scale: 1.0 mm for 1; 0.2 mm for 2, 3, 5, 6; 0.05 mm for 4.