

A Small New Species of the Genus *Malthodes* (Coleoptera, Cantharidae) from Eastern Honshu, Japan

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Abstract A new cantharid beetle collected from eastern Honshu, Japan is described under the name of *Malthodes kubo* sp. nov. This new species has female-biased sex ratio.

Introduction

Mr. KUBO collected a very small cantharid beetle at the Nôkendô-ryokuchi of Yokohama in 2001. This individual was collected by sweeping canopy of lower altitude forest. That sort of method for collecting cantharid beetles was seldom tried at the time. Only two species of such small cantharid beetles have hitherto been known, that is, *Malthodes minutopygus* WITTMER, 1954 and *M. simplipygus* WITTMER, 1954 from the four main islands of Japan. The specimen collected by Mr. KUBO appears to have a close relationship with these species. Since the sex of the specimen was a female, however, I was unable to determine its taxonomic position at that time. Since then, Mr. KUBO repeatedly tried to obtain additional specimens by the same collecting method at the same place and adjacent areas. Consequently, several new specimens were collected but all of them were unfortunately regarded as females. Later, this cantharid beetle was also collected in the Bôsô Peninsula which is situated across the Uraga Straights from the first locality. Here again, all the specimens obtained were females. Judging from these facts, I once considered that this cantharid beetle might be parthenogenetic, though, I was finally able to find one male specimen in the material of Mr. KUBO collected in the Bôsô Peninsula in a 2007. After my detailed examination, this cantharid beetle should be regarded as a new species belonging to the genus *Malthodes* to be described in the present paper.

Before going further, I wish to express my cordial thanks to Mr. Kôichi KUBO, Yokohama for his kind offer of invaluable specimens collected after his painstaking efforts. I am also much indebted to Mr. Shôichi IMASAKA, Kurume and the late Dr. Masataka SATÔ for their kind offer of additional specimens for comparative studies of morphological characters.

Material and Methods

Method of examining the male genitalia and terms for them are followed TAKAHASHI (2002).

The abbreviations used in this paper are as follows. HW – width of head; PW – width of pronotum; PL – length of pronotum; EW – width of elytra; EL – length of elytra.

Type depositories. The holotype designated in this paper is deposited in the collection of the Kanagawa Prefectural Museum of Natural History, Odawara. The paratypes are preserved in my private collection.

Malthodes kubo sp. nov.

[Japanese name: Kubo-kurochibi-jōkai]

(Figs. 1–4, 7)

Male. Body almost brownish black; mouth parts except for the terminal segments of labial and maxillary palpi, fore and mid coxae and trochanters yellowish brown; hind coxa and all legs dark testaceous; mandibles and claws testaceous.

Head barely rectangular, rather closely covered with small punctures; frons and clypeus provided with relatively long hairs; eyes rather prominent; interocular distance 3.11 times as wide as diameter of eye. Mandibles simple in shape though very slightly serrate at the anterior inner half. Gula lustrous and hardly punctate; gular sutures clearly visible. Antennae filiform and obviously long, slightly exceeding the ends of elytra; comparative lengths of each segment from base to apex as follows: 1.66 : 1.13 : 1.00 : 1.36 : 1.61 : 1.59 : 1.59 : 1.54 : 1.43 : 1.36 : 1.84.

Pronotum barely rectangular, widest near anterior angles; anterior margin nearly straight, basal one slightly projected outwards, lateral ones almost straight; anterior angles rounded, posterior ones largely rounded; PW/HW 0.85, PW/PL 1.40; surface closely covered with small punctures in elevated areas, with rather small one on the remainder; disc elevated except for lateral sides; lateral sides slightly depressed on frontal and basal areas. Scutellum trapezoidal, very broad and short. Elytra rather slender though abbreviated, wider than pronotum, shorter than abdomen; EW/PW 1.44, EL/EW 2.02. All claws simple, somewhat swollen at bases.

Ninth tergite rather short and narrow, obviously narrower than eighth tergite, nearly parallel-sided in dorsal view; tenth tergite distinctly short and narrow, nearly trapezoidal in dorsal view (Figs. 2, 3). Ninth sternite short and rather broad, widest near posterior end, rather abruptly narrowed anteriorly beyond middle; posterior margin roundly emarginate (Fig. 4). Male genitalia barely obtriangular. Basal piece typically cordate; posterior margin deeply emarginate. Dorsal lobe of penis broad, gradually dilated posteriorly before basal two-thirds, then extremely narrowed; apical portion slender and bilobed; dorsal aspect broadly concave. Penis drop-shaped, provided with long terminal hair (Fig. 7).

Length: 2.0 mm; breadth: 0.6 mm.

Female. Similar to male, but body somewhat wider, eyes relatively smaller, antennae shorter than in male; PW/HW 1.06–1.07, PW/PL 1.38–1.41; EW/PW 1.20–1.28, EL/EW 1.38–1.41.

Length: 1.8–2.1 mm; breadth: 0.5–0.6 mm.

Type series. Holotype: ♂, Mt. Kiyosumi-yama to Asabunki, Kamogawa-shi, Bōsō Peninsula, Chiba Pref., 30–VI–2007, K. KUBO leg. Paratypes: 1 ♀, same data as for the holotype; 1 ♀, Nōkendō-ryokuchi, Yokohama-shi, Kanagawa Pref., 12–VI–2001, K. KUBO leg.; 7 ♀♀, Tomioka-sōgō-kōen, Yokohama-shi, Kanagawa Pref., 4–VI–2002, K. KUBO leg.

Distribution. Eastern Honshu, Japan.

Remarks. The present new species can be distinguished from other related species by the character states given in the following key.

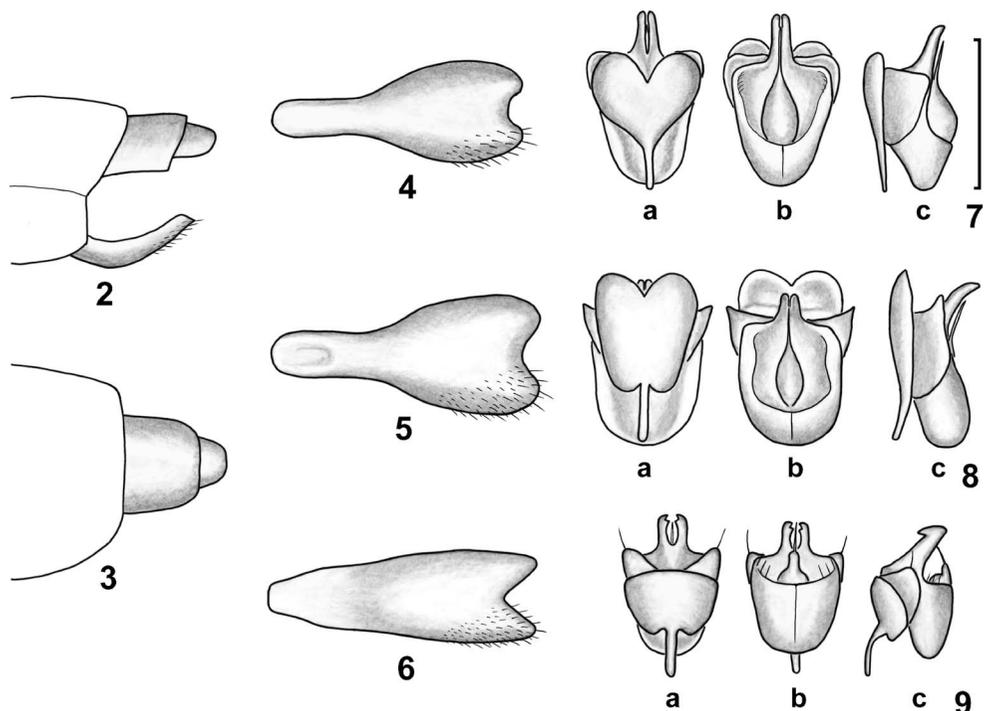
The present new species has extremely female-biased sex ratio. To obtain male specimens, Mr. KUBO tried to sweep on canopy of lower altitude forest for a long time, but only one male has been collected until now. The total number of female specimens available exceed the number of female paratypes designated above.



Fig. 1. Habitus of *Malthodes kuboi* sp. nov., holotype, male.

Key to the Species of *Malthodes kuboi* and its close relatives of Japan

1. Eyes distinctly large; interocular distance less than 1.5 times as wide as diameter of eye. Sternite 9 apparently notched on posterior margin, gradually narrowed anteriorly (Fig. 6). Basal piece of male genitalia with posterior margin nearly straight (Fig. 9).*M. simplipygus* WITTMER
- Eyes relatively small; interocular distance more than 2.5 times as wide as diameter of eye. Sternite 9 roundly emarginate on posterior margin, rather abruptly narrowed anteriorly beyond middle. Basal piece of male genitalia with posterior margin distinctly emarginate.2
2. Sternite 9 relatively broad (Fig. 5). Basal piece of male genitalia barely leaf-shaped; posterior margin rather shallowly emarginate; posterior angles of inner basal piece angulate (Fig. 8).*M. minutopygus* WITTMER
- Sternite 9 relatively narrow (Fig. 4). Basal piece of male genitalia typically heart-shaped; posterior margin deeply emarginate; posterior angles of inner basal piece rounded (Fig. 7).*M. kuboi* sp. nov.



Figs. 2-9. Apical portions of male abdomen and genitalia of *Malthodes* spp. — 2-4, 7, *M. kuboi* sp. nov.; 5, 8, *M. minutopygus* Wittmer from Suhara, Gifu Pref.; 6, 9, *M. simplipygus* Wittmer from Mt. Kôrasan, Fukuoka Pref. — 2, Ninth and 10th tergites and 9th sternite in lateral view; 3, 9th and 10th tergites in dorsal view; 4-6, 9th sternite in ventral view; 7-9, male genitalia. — a: Ventral view; b: dorsal view; c: lateral view. (Scales: 0.25 mm.)

要 約

高橋和弘：本州東部産の小型の *Malthodes* 属（コウチュウ目ジョウカイボン科）の1新種。——千葉県鴨川市産の標本に基づき、ジョウカイボン科の1新種クボクロチビジョウカイ *Malthodes kuboi* sp. nov. を記載した。本種は、日本産 *Malthodes* 属の中では、*M. minutopygus* WITTMER および *M. simplipygus* WITTMER に近縁であるが、雄の第9腹板や雄交尾器の構造で区別できる。本種は、生息地においてかなりの頻度で実施された調査によって、多くの雌個体が採集されているにもかかわらず、現時点で知られる雄個体は、holotype に指定した1個体のみであることから、ひじょうに片寄った性比をもつ種であると考えられる。

References

- TAKAHASHI, K., 2002. Three new species and a new subspecies of the genus *Malthodes* (Cantharidae, Coleoptera) from eastern Honshu, Japan. *Jpn. J. sys. Ent.*, Matsuyama, 8: 273-280.
 WITTMER, W., 1954. Zur Kenntnis der *Malthodes* Japans (Col. Cantharidae) 18. Beitrag zur Kenntnis der palaearktischen Malacodermata. *Mushi, Fukuoka*, 26: 47-52, 1 pl.

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