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# On the Taxonomy of the Genus *Agathidium* (Coleoptera: Leiodidae) in the Ryukyus, Japan

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**Abstract.** A new species, *Agathidium (Agathidium) ushijimai* sp. nov., is described from Okinawa Is., the Ryukyus, Japan. *A. (Neoceble) kyotoense* Angelini et De Marzo, 1990 and *A. (Microceble) nomurai* Hoshina, 1998 are recorded for the first time from Okinawa Is. Two keys to the Ryukyuan species of the subgenera *Neoceble* and *Agathidium* of the genus *Agathidium* are given. As a result of this study, the number of Ryukyuan species of the genus *Agathidium* becomes twelve.

## Introduction

The genus *Agathidium* Panzer, 1797 belongs to the tribe Agathidiini of the family Leiodidae and consists of about 600 species worldwide (Newton, 1998). Hoshina (1998) recorded ten species of *Agathidium* from the Ryukyus, Japan, with descriptions of eight new species. However, no other species have been discovered from the Ryukyus later. In Okinawa Is. belonging to the Ryukyus, three wingless species, *A. (Macroceble) narusawae* Hoshina, 1998, *A. (Agathidium) fujisakiae* Hoshina, 1998, and *A. (A.) okinawaense* Hoshina, 1998 have been known to occur (Hoshina, 1998).

Recently, I examined some specimens of *Agathidium*, collected from Okinawa Is., the Ryukyus. My careful examination showed those specimens have fully development hind wings and include one new species and two known species, *A. (Neoceble) kyotoense* Angelini et De Marzo, 1990 and *A. (Microceble) nomurai* Hoshina, 1998, which have not been recorded from Okinawa Is. In this paper, I add three species to the fauna of Okinawa Is. of the genus *Agathidium* with a description of a new species.

The holotype designated in this study is deposited in the collection of the Museum of Nature and Human Activities, Hyōgo (MNHA). Paratypes are preserved in the author's collection.

Before going further, I wish to express my sincere gratitude to Mr. Hiroshi Makihara (Forestry and Forest Products Research Institute, Japan) who gave me an opportunity to examine valuable specimens.

**Key to species of the subgenus *Neoceble* of the genus *Agathidium* in the Ryukyus**

1. Body less than 2 mm in length; the 9th antennal segment extremely larger than 7th and 8th. . . . . *Agathidium (Neoceble) kyotoense* Angelini et De Marzo  
 - Body more than 2 mm; the 9th segment moderately larger than 7th and 8th. . . . . 2
2. The seventh antennal segment wider than long. . . . . *A. (N.) cribratum* Portevin  
 - The seventh segment longer than wide. . . . . *A. (N.) longicornis* Portevin

**Key to species of the subgenus *Agathidium* of the genus *Agathidium* in the Ryukyus**

1. Elytra with sutural striae (Fig. 1); hind wings normal. . . . . 2  
 - Elytra without sutural striae; hind wings absent. . . . . 3
2. The median lobe of aedeagus constricted apically and round at the apex. . . . .  
 . . . . . *Agathidium (Agathidium) amamiense* Hoshina  
 - The median lobe with a simple apex (Fig. 5). . . . . *A. (A.) ushijimai* sp. nov.
3. Dorsum reddish brown or brown. . . . . 4  
 - Dorsum dark brown or black. . . . . 6
4. Head widest at temple. . . . . *A. (A.) aikanae* Hoshina  
 - Head widest at eyes. . . . . 5
5. The median lobe of aedeagus curved U-shapedly at the base. . . . .  
 . . . . . *A. (A.) fujisakiae* Hoshina  
 - The median lobe folded at the base. . . . . *A. (A.) ishigakiense* Hoshina
6. The 3rd antennal segment about 2.1 times as long as 2nd. . . . . *A. (A.) okinawaense* Hoshina  
 - The 3rd segment about 1.2 times as long as 2nd. . . . . *A. (A.) saigo* Hoshina

**Taxonomy*****Agathidium (Neoceble) kyotoense* Angelini et De Marzo, 1990**

(Japanese name: Kyôto-maru-tamakinokomushi)

*Agathidium (Neoceble) kyotoense* Angelini et De Marzo, 1990: 79; Angelini, 1995: 136;  
 Angelini & De Marzo, 1998: 126; Angelini & Cooter, 1999: 226; Hoshina, 2000: 70;  
 Angelini, 2003: 407; Perreau, 2004: 190.

Distribution. Japan (Honshu, Shikoku, Kyushu, the Ryukyus) and Taiwan

Specimens examined. 2 ♀, Oku, Okinawa Is., Okinawa Pref., 13. vi. 2002, H. Itô leg.; 1 ♀, 8. viii. 2002, same data as the former except for the date; 1 ♀, 21. viii. 2003, same data as the former except for the date.

Remarks. This species is recorded for the first time from the Ryukyus.

***Agathidium (Agathidium) ushijimai* Hoshina, sp. nov.**

(Japanese name: Ushijima-maru-tamakinokomushi)

(Figs. 1-6)

Male and female. Coloration. Dorsum almost concolorous, brown or dark reddish brown; 1st, 6th, 7th, 8th, and basal 3/5 of 11th segments of antennae brown; 2nd-5th and apical 2/5 of 11th segments light brown; 9th and 10th segments dark brown; legs brown with light brown tarsi; meso-metasterna and venter brown.

Measurement of holotype: Body 3.0 mm in length; head 0.78 mm in length (from base to apical margin of labrum) and 1.1 mm in width; pronotum 1.1 mm in length and 1.6 mm in width; elytra 1.4 mm in length and 1.6 mm in width.

Head widest at eyes (Fig. 1), about 1.3 times as wide as long, simply narrowed from eyes to apex along lateral margins, very minutely punctate, and smooth; length and width of head about 0.69 times and about 0.68 times as long as those of pronotum, respectively; eyes slender, about 4.1 times as long as wide, and located at about apical 2/5 of lateral margins; clypeus almost straight on anterior margin (Fig. 2); clypeal line absent; antennae elongate; 1st to 5th and 11th segments of antennae longer than wide; 6th segment about as long as wide; others wider than long (Fig. 3); 3rd segment about 1.4 times as long as 2nd; 9th segment a little smaller than 10th; 11th segment robust; relative lengths of antennal segments from 2nd to 11th segments as follows: 2.3: 3.3: 1.6: 1.8: 1.8: 1.5: 1.4: 2.8: 2.5: 4.5.

Pronotum about 1.5 times as wide as long, widest at about half of lateral margins, almost as wide as and about 0.75 times as long as elytra, simply curved along lateral and posterior margins in dorsal view (Fig. 1), very minutely punctate, and smooth.

Scutellum smooth and almost impunctate.

Elytra about 1.1 times as wide as long, widest at about apical 2/5 of lateral margins, very minutely punctate, smooth, and with weak humeral angles in lateral view (Fig. 2); sutural stria shallow, and present in about apical 2/5 of elytra (Fig. 1).

Mesosternum almost glabrous, impunctate, and microreticulate; metasternum almost

glabrous, impunctate, microreticulate, and with a femoral line distinct and fully developed; venter densely pubescent, impunctate, and microreticulate.

Hind wings fully developed.

Male. Tarsal formula in 5-5-4; aedeagus slender in general; median lobe strongly curved and bluntly pointed at apex in lateral view (Fig. 4), and not pointed at apex in ventral view (Fig. 5); each paramere bearing two apical setae, curved in an arc, pointed at apex in lateral view (Fig. 4), and almost straight and pointed at apex in ventral view (Fig. 5).

Female. Tarsal formula in 5-4-4. Spermatheca as shown in Fig. 6.

Body length: 2.7-3.0 mm.

Distribution. Japan: the Ryukyus (Okinawa Is.).

Type series. Holotype, ♂, Oku, Okinawa Is., Okinawa Pref., 4. ix. 2003, H. Itô leg. (MNHA). Paratypes, 1♂1♀, 13. vi. 2002, same data as holotype except for the date; 1♂, 22. viii. 2002, same data as holotype except for the date; 1♀, 18. ix. 2003, same data as holotype except for the date.

Remarks. The present new species can be easily distinguished from two species belonging to subgenus *Agathidium*, *A. (A.) fujisakiae* Hoshina, 1998 and *A. (A.) okinawaense* Hoshina, 1998, by having elytral sutural striae and hind wings. *A. (A.) ushijimai* sp. nov. is similar to *A. (A.) amamiense* Hoshina, 1998, but be separated from it by having a median lobe with a simple apex in ventral view (Fig. 5). In contrast, *A. (A.) amamiense* has the median lobe constricted apically and round at apex.

Etyymology. This new species is dedicated to General Mitsuru Ushijima (1887-1945) who died on the battlefield in Okinawa Is.

### ***Agathidium (Microceble) nomurai* Hoshina, 1998**

(Japanese name: Tokara-maru-tamakinokomushi)

*Agathidium (Microceble) nomurai* Hoshina, 1998: 143; Angelini, 2003: 445; Perreau, 2004: 189.

Distribution. Japan: the Ryukyus (Tokara Group and Okinawa Is.).

Specimens examined. Holotype, ♂, Takarajima Is., Tokara Group, Kagoshima Pref., 25. iii. 1992, S. Nomura leg. Paratype, 1♂, Nakanoshima Is., Tokara Group, Kagoshima Pref., 28. iv. 1987, S. Nomura leg. 1♂, Ginama, Okinawa Is., Okinawa Pref., 10. x. 2002, H. Itô leg.; 1♀, Oku, Okinawa Is., Okinawa Pref., 9. iv. 2002, H. Itô leg.

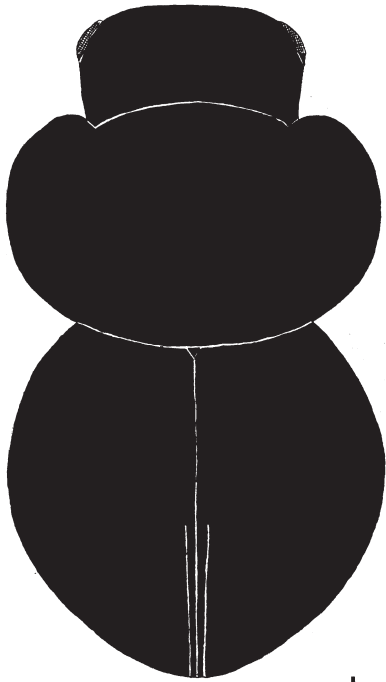
Remarks. This species is recorded for the first time from Okinawa Is.

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## Explanations of Figures

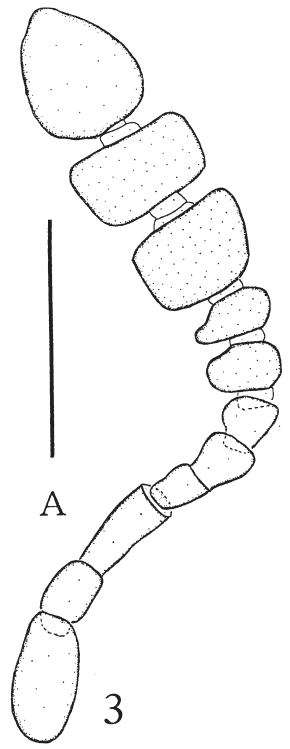
Figs. 1-6, *Agathidium (Agathidium) ushijimai* sp. nov. 1, body, dorsal view. 2, body, lateral view. 3, antenna. 4, aedeagus, lateral view. 5, aedeagus, ventral view. 6, spermatheca. Scale A: 1 mm for Figs. 1 and 2 and 0.1 mm for Fig. 6. Scale B: 1 mm for Figs. 3 and 4. Scale C: 0.5 mm for Fig. 5.



1

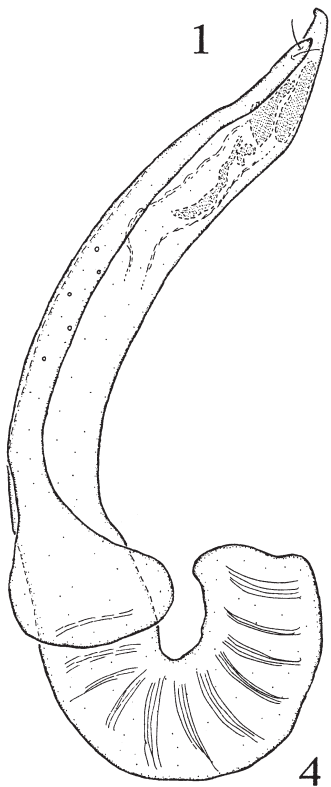


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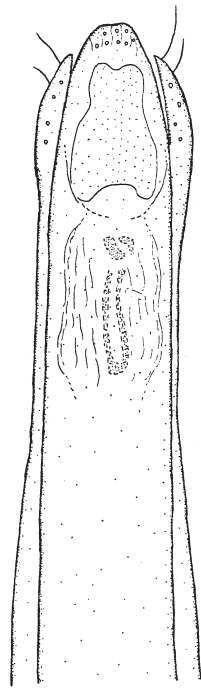
A

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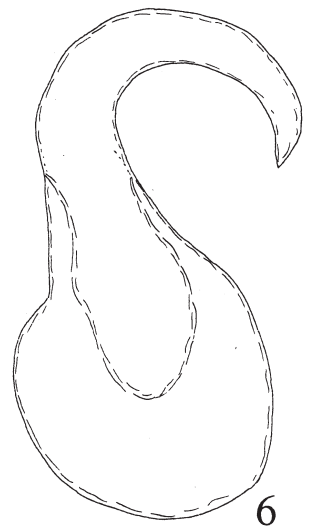
B

4



C

5



6