

## A New *Metacolpodes* (Coleoptera, Carabidae) from the Izu Islands off Central Honshu, Japan

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**Abstract** A new platynine carabid beetle, *Metacolpodes takakuwai* MORITA, sp. nov. is described from the Izu Islands off central Honshu, Japan.

Looking into a lot of carabids collected by some friends of mine from the Izu Islands off central Honshu, Japan, I found a long series of the platynine species. Although they look like a common species, *Metacolpodes buchanani* (HOPE) (1831, p. 21), their male genitalia are greatly different from those of the previously known form. Therefore, this paper is intended to show the result of my study.

The abbreviations used herein are as follows: — L – body length, measured from apical margin of clypeus to apices of elytra; HW – width of head, measured between eyes; PW – greatest width of pronotum; PL – length of pronotum, measured along the mid-line; PA – width of pronotal apex; PB – width of pronotal base; EW – greatest width of elytra; EL – greatest length of elytra; TL – length of metatarsus; M – arithmetic mean.

Before going further, I wish to express my deep gratitude to Dr. Masatoshi TAKAKUWA for critically reading the original manuscript of this paper. My thanks are also due to Dr. Toshio KISHIMOTO, Dr. Masatoshi TAKAKUWA and Messrs. Kôji ARAI, Hiroshi FUJITA, Toshihiko NAKAMURA and Masahiro NISHI for supplying me with the important material.

Hearty thanks are also due to Messrs. Kôji ARAI and Hiromu KAMEZAWA for their kind help. Without their cooperation, I could not have undertaken this study.

*Metacolpodes takakuwai* MORITA, sp. nov.

[Japanese name: Mikura-morihirata-gomimushi]

(Figs. 1–8)

*Description.* L: 11.10–13.29 mm. Body relatively large and moderately convex. Head, ventral side, labrum and mandibles brown; pronotum blackish brown to dark brown, but the reflexed sides are lighter; elytra blackish brown with deep greenish lustre; appendages brown, but the apices of femora are blackish brown.

Head moderately convex, and very sparsely and finely punctate; eyes strongly convex; frontal furrows linear, finely impressed, parallel to each other in front, abruptly and strongly divergent posteriorly, and reaching the level a little before the anterior supraorbital pore on each side; frons with vague and irregular wrinkles near a pair of anterior supraorbital pores; a pair of anterior supraorbital pores situated at the level of basal 1/3 of eyes; a pair of posterior supraorbital pores situated a little behind post-eye level; neck rather long; genae short, oblique and very weakly arcuate; PW/HW 1.27–1.36 (M 1.31) in ♂, 1.30–1.35 (M 1.32) in ♀; vertex moderately convex; neck constriction distinct; microsculpture weakly impressed, composed of isodiametric meshes on frons and vertex, and of wide meshes on neck; labrum transverse with almost straight or weakly emarginate apical margin; mentum tooth wide,

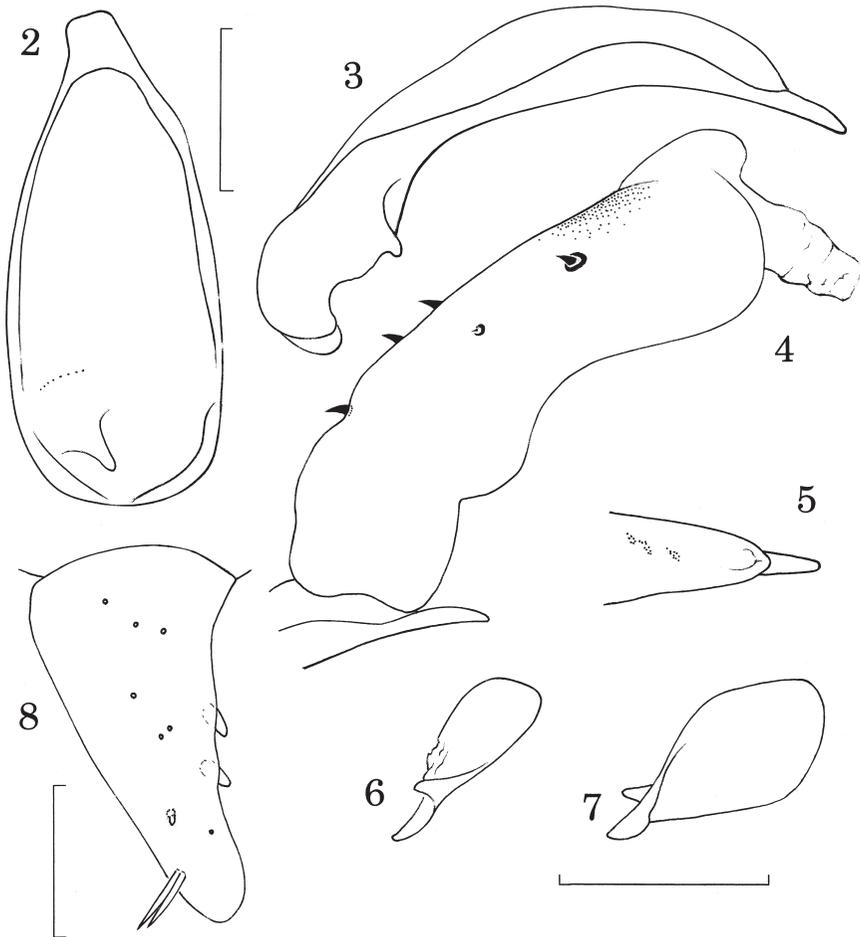


Fig. 1. *Metacolpodes takakuwai* sp. nov. from Mikura-jima Is.

moderately porrect and widely rounded or very weakly emarginate at the tip; penultimate segment of maxillary palpus about as long as terminal segment; penultimate segment of labial palpus about as long as terminal segment, and with two setae at about the middle; antennae long, reaching basal 1/3 of elytra; relative lengths of antennal segments as follows: — I : II : III : IV : V : VI : XI  $\cong$  1 : 0.43 : 1.19 : 1.13 : 1.12 : 1.09 : 1.07 in ♂,  $\cong$  1 : 0.43 : 1.17 : 1.17 : 1.14 : 1.10 : 1.01 in ♀.

Pronotum rather wide, moderately convex and widest at basal 3/5; PW/PL 1.16–1.30 (M 1.23) in ♂, 1.23–1.29 (M 1.25) in ♀; PW/PA 1.52–1.63 (M 1.56) in ♂, 1.52–1.61 (M 1.55) in ♀; PW/PB 1.27–1.35 (M 1.31) in ♂, 1.25–1.35 (M 1.29) in ♀; PA/PB 0.80–0.86 (M 0.84) in ♂, 0.82–0.84 (M 0.83) in ♀; apex weakly emarginate, and clearly bordered throughout; apical angles moderately produced and widely rounded at the tips; sides rather moderately arcuate in front, moderately so at the widest part, then weakly sinuate at basal 1/5, and convergent towards hind angles; reflexed lateral sides rather wide throughout, with deep gutters; microsculpture weakly impressed, composed of fine transverse meshes or lines on the disc, and of wide or isodiametric meshes on the base; anterior transverse impression obliterated or vestigial; posterior transverse impression vaguely impressed; median line clearly impressed, thin and not reaching apex nor base; base widely and weakly arcuate at median part and weakly oblique at the sides; a pair of anterior marginal setae inserted at the widest part; hind angles obtuse, each with a seta at the tip; microsculpture clearly impressed, composed of fine transverse meshes.

Elytra elongate, moderately convex and widest at about the middle; EW/PW 1.60–1.80 (M 1.70) in ♂, 1.56–1.68 (M 1.63) in ♀; EL/EW 1.70–1.89 (M 1.83) in ♂, 1.81–1.89 (M 1.86) in ♀; basal part wide, each with shallow depression at basal parts of intervals V and VI; shoulders moderately round-



Figs. 2–8. *Metacolpodes takakuwai* sp. nov. from Mikura-jima Is. — 2, Genital segment; 3, aedeagus, left lateral view; 4, apical part of aedeagus in left lateral view, showing everted inner sac; 5, apical part of aedeagus, dorsal view; 6, right paramere, left lateral view; 7, left paramere, left lateral view; 8, apical styli in ♀. Scale: 1 mm for 2–7; 0.1 mm for 8.

ed; sides very weakly arcuate from shoulders to basal 1/3 and slightly divergent, and moderately arcuate posteriorly, each with wide and shallow preapical emargination; apical parts slightly emarginate; apices dentate on each side, and separated from each other; basal border weakly and posteriorly arcuate between median part and the level of stria 5 on each side; striae shallow, and vaguely crenulate, very finely punctate, or almost smooth; scutellar striole very long, situated on interval I, free at apical end, shallow, impunctate, and adjoining basal border; three dorsal pores situated on interval III, the first pore adjoining stria 3 and the remaining two pores adjoining stria 2; the first pore situated between basal 1/5 and 1/4, the second one between a little before the middle and the middle, and the third one between basal 3/4–4/5; microsculpture strongly impressed, composed of fine transverse meshes; intervals very weakly convex to almost flat, and impunctate; marginal series composed of 19–24 pores; microsculpture composed of fine transverse lines or meshes; epipleuron very wide in basal part, and becoming narrower towards apex, without inner plica. Hind wings developed.

Gula and ventral sides of genae almost smooth or finely and transversely wrinkled; ventral side smooth; anal sternite wide, with a pair of setae in ♂, two pairs of setae which are aligned in ♀.

Legs rather slender; in ♂, protarsi almost smooth on dorsal side; in ♀, basal three protarsi longitudinally bisulcate on dorsal side; in ♂ and ♀, tarsus 4 rather deeply bilobed in protarsus, deeply so in mesotarsus, and shallowly emarginate at apex in metatarsus; in ♂ and ♀, basal three mesotarsi longitudinally bisulcate, though basal four metatarsi are longitudinally so; TL/HW 1.41–1.53 (M 1.49) in ♂, 1.29–1.36 (M 1.33) in ♀.

Genital segment elongate; handle short and wide, though variable in the shape.

Aedeagus elongate, weakly arcuate at basal 1/3, and very weakly so towards apex in lateral view; ventral surface weakly convex (not concave) at subapical part; basal part not large with narrow sagittal aileron; dorsal side widely occupied by membranous part; dorsal margin of left wall emarginate at subapical part in left lateral view; apical lobe elongate and almost straight or very weakly arcuate in lateral view, and gradually narrowed towards apex in dorsal view; apex narrowly rounded in dorsal view.

Right paramere elongate with elongate basal part; left one larger than the right.

Inflated inner sac elongate, prolonged forwards, inclined to the right side of aedeagus; basal part (near apical orifice of aedeagus) voluminous; dorsal side of subapical part covered with minute spinules; apical part with a lobe in dorsal side; surface usually with one to six peg-shaped sclerites, rarely without sclerite.

Apical styli in ♀ robust, with three short and robust spines on both sides.

*Type series.* Holotype: ♂, Sato, Mikura-jima Is., 4–7.VII.2010, M. TAKAKUWA leg. Paratypes: 2 ♂♂, 4 ♀♀, Sato, Mikura-jima Is., 26.VI.2002, T. SHIMADA leg.; 1 ♂, Sato, Mikura-jima Is., 12–14.VI.2010, T. KISHIMOTO leg.; 4 ♂♂, Sato, Mikura-jima Is., 20.VII.2010, M. TAKAKUWA leg.; 2 ♂♂, 2 ♀♀, Sato, Mikura-jima Is., 11–15.VII.2011, H. FUJITA leg.; 4 ♀♀, Sato–Kawada, Mikura-jima Is., 18–19.VI.2011 H. FUJITA leg.; 1 ♂, Sato–Inane, Mikura-jima Is., 20.VII.2010, M. TAKAKUWA leg.; 2 ♂♂, Borozawa, Mikura-jima Is., 12.VI.2010, M. Takakuwa & T. KISHIMOTO leg.; 1 ♀, Borozawa, Mikura-jima Is., 4.VII.2010, M. TAKAKUWA leg.; 1 ♂, Mikura-jima Is., 22.V.1994, KOMORI leg.; 1 ♀, Nangou, Mikura-jima Is., 18.V.1999, D. NOTSU leg.; 1 ♂, Nangou, Mikura-jima Is., 3–6.VII.2010, M. AOKI leg.; 3 ♂♂, 2 ♀♀, Nangou, Mikura-jima Is., 19.VII.2010, M. TAKAKUWA leg.; 3 ♂♂, 1 ♀, Torio, Mikura-jima Is., 14.VI.2010, T. KISHIMOTO leg.; 1 ♀, Sato–Borozawa, Mikura-jima Is., 5–6.VIII.2011, H. FUJITA leg.; 2 ♂♂, Sueyoshi, Hachijō-jima Is., 19.VII.1985, I. HIRAI leg.; 3 ♂♂, 2 ♀♀, Kashitate, Hachijō-jima Is., 15.VI.2010, T. KISHIMOTO leg.; 4 ♂♂, Nakanogou, Hachijō-jima Is., 16.VI. 2010, T. KISHIMOTO leg.

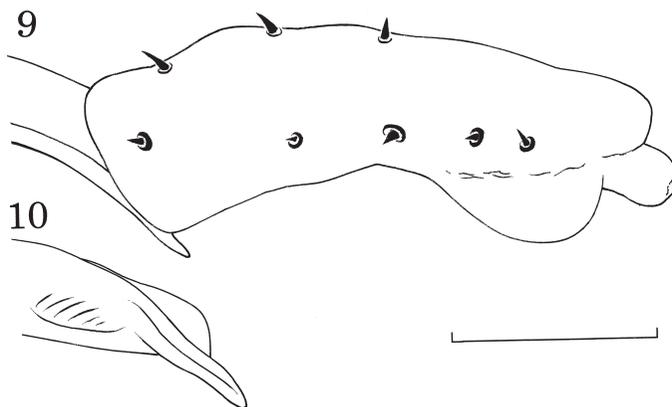
*Localities.* Mikura-jima Is. and Hachijō-jima Is., the Izu Islands off central Honshu, Japan.

*Depository of the holotype.* The holotype is deposited in the Department of Zoology, the National Museum of Nature and Science, Tsukuba.

*Specimens dissected and measured.* Standard ratios of body parts shown in the descriptive part are those of five males and three females from Mikura-jima Is. The genitalia of seven males were dissected, of which the inner sacs of four specimens were everted. Unfortunately, the inflated inner sacs of two specimens were broken due to the strong air pressure of a syringe.

*Notes.* Judging from the body shape and coloration, this new species is very closely allied to *Metacolpodes buchanani* (HOPE) (1831, p. 21). It is, however, distinguished from the latter by the following points: 1) body slightly larger, 2) colour darker on dorsal side, 3) genae longer, 4) eyes less convex, 5) elytral shoulders more rounded, and with shallower depression, 6) elytral preapical emargination deeper, and 7) aedeagal apical part weakly convex in ventral view (cf. HABU, 1978, p. 130).

The body length and standard ratios of body parts of five males and two females from Hachijō-ji-



Figs. 9–10. *Metacolpodes buchanani* (HOPE). — 9, Apical part of aedeagus in left lateral view, showing everted inner sac in Amami-Ōshima specimen; 10, apical part of aedeagus, obliquely ventral view in Aoga-shima specimen. Scale: 1 mm.

ma Is. are as follows:— L: 10.14–11.71 mm; relative lengths of antennal segments as follows: — I : II : III : IV : V : VI : XI  $\cong$  1 : 0.40 : 1.13 : 1.12 : 1.08 : 1.16 : 1.02 in ♂,  $\cong$  1 : 0.45 : 1.20 : 1.22 : 1.12 : 1.11 : 1.09 in ♀; PW/HW 1.26–1.35 (M 1.30) in ♂, 1.33, 1.28 in ♀; PW/PL 1.20–1.30 (M 1.25) in ♂, 1.26, 1.24 in ♀; PW/PA 1.46–1.56 (M 1.53) in ♂, 1.51, 1.52 in ♀; PW/PB 1.27–1.33 (M 1.31) in ♂, 1.29, 1.29 in ♀; PA/PB 0.84–0.87 (M 0.85) in ♂, 0.85, 0.85 in ♀; EW/PW 1.69–1.75 (M 1.72) in ♂, 1.75, 1.67 in ♀; EL/EW 1.73–1.76 (M 1.74) in ♂, 1.75, 1.78 in ♀; TL/HW 1.29–1.36 (M 1.32) in ♂, 1.55 in ♀. Unfortunately, the material from the island now at hand is not adequate for scrutinizing the variation of this species.

*Specimens compared.* *Metacolpodes buchanani* (HOPE): 2 ♂♂, 1 ♀, Aoga-shima Is., Tokyo, 6–8. VIII.1982, T. NAKAMURA leg.; 2 ♂♂, same locality, 1982, M. MATSUBARA leg.; 1 ♂, Nishinakagachi, Amami-shi, Amami-Ōshima Is., Kagoshima Pref., 4.I.2015, M. NISHI leg.

This species is widely distributed in East Asia, and Oregon (MALKIN *et al.*, 1953) and Hawaii (LIEBHEER *et al.*, 2000) of the United States of America. The records from the latter two areas are due to accidental introduction. The presence of the depression of aedeagal ventral side is the most important character for the identification. Therefore, the genitalia of all males were dissected. Unfortunately, I was unable to evert the inner sac of Aoga-shima specimens.

*The body length and standard ratios of body parts of specimens of Aoga-shima Is.* L: 10.71–11.71 mm; relative lengths of antennal segments as follows:— I : II : III : IV : V : VI : XI  $\cong$  1 : 0.46 : 1.20 : 1.15 : 1.10 : 1.08 : 1.10 in ♂,  $\cong$  1 : 0.46 : 1.18 : 1.20 : 1.10 : 1.06 : 1.07 in ♀; PW/HW 1.24–1.27 (M 1.25) in ♂, 1.28 in ♀; PW/PL 1.23–1.26 (M 1.25) in ♂, 1.25 in ♀; PW/PA 1.46–1.54 (M 1.50) in ♂, 1.54 in ♀; PW/PB 1.29–1.35 (M 1.30) in ♂, 1.31 in ♀; PA/PB 0.84–0.90 (M 0.87) in ♂, 0.85 in ♀; EW/PW 1.63–1.68 (M 1.65) in ♂, 1.61 in ♀; EL/EW 1.76–1.80 (M 1.78) in ♂, 1.77 in ♀; TL/HW 1.25–1.32 (M 1.30) in ♂, 1.55 in ♀.

*Description of inner sac of Metacolpodes buchanani.* Inner sac without peg-shaped sclerite in Aoga-shima specimens; inflated inner sac elongate, prolonged forwards, slightly inclined to the right side of aedeagus in Amami-Ōshima specimen; basal part (near apical orifice of aedeagus) voluminous; apical part with a lobe in dorsal side; surface with eight peg-shaped sclerites, situated at the left side of inner sac.

*Derivation of specific epithet.* The specific name is dedicated to Dr. Masatoshi TAKAKUWA, col-

lector of the type series.

## 要 約

森田誠司：伊豆諸島産オオアオモリヒラタゴミムシ属（鞘翅目オサムシ科）の1新種。—— 伊豆諸島御蔵島および八丈島で採集されたヒラタゴミムシ類の1種を新種と認め、ミクラモリヒラタゴミムシ *Metacolpodes takakuwai* sp. nov. と命名記載した。この新種は、各地に広く分布するオオアオモリヒラタゴミムシ *M. buchanani* (HOPE) に近縁であるが、陰茎先端部下面のくぼみが欠如することで明瞭に識別される。さらに興味深いことに、両島の南に位置する青ヶ島からは、オオアオモリヒラタゴミムシが分布することが明らかになった。

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