

Notes on the Bembidiinae (Coleoptera, Carabidae) of Japan
XIX. *Bembidion misellum* and its Relatives from Central Japan

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Abstract *Bembidion misellum* and its relatives are enumerated. Of these, five new species are described from Central Japan under the names *Bembidion toyodai*, *B. saitoi*, *B. yatsuense*, *B. horii* and *B. rengense*.

More than fifty years ago, UÉNO (1954, p. 58) mentioned that several new species related to *Bembidion misellum* HAROLD (1877, p. 342) occur in Japan and that a long series of their specimens were needed because of the difficulty of recognition. Since then, only two species have been described: *B. ehikoense* HABU (1984, p. 35) from Kyushu and *B. ohkurai* MORITA (1992, p. 103) from Central Japan.

In 2000, TOLEDANO showed the male genital organ of *B. misellum* and pointed out that this species, *B. ohkurai* and *B. kamikochii* (JEDLIČKA, 1965, p. 143) belong to the group of *B. cnemidotum* (KRYZHANOVSKIJ *et al.*, 1995, p. 87).

The main purpose of this paper is to clarify *Bembidion misellum* and its relatives known from Central Japan.

The abbreviations used herein are the same as those explained in my previous papers. All the holotypes are preserved in the collection of the National Museum of Nature and Science, Tokyo.

I am deeply indebted to Dr. Shun-Ichi UÉNO for critical reading the manuscript of this paper. Thanks are also due to the following colleagues and friends, whose kind aid and support enabled me to complete this study: Dr. Toshio KISHIMOTO, Dr. Yoshiro KUROSA, Dr. Munetoshi MARUYAMA, Dr. Katsuyuki TERADA, Dr. Hiroyuki YOSHITOMI, Messrs. Katsumi AKITA, Kôji ARAI (=TOYODA), Yukihiro HIRANO, Katsuhiko HORI, Masaaki NISHIKAWA, Hideo OHKAWA, Masahiro SAITÔ and Takashi SHIMADA.

This study is based on an examination of approximately more than 1,000 specimens of *B. misellum* and relative new species. Most of them were collected by myself.

Diagnostic characters of B. misellum and its relatives.

Body rather small and convex, with oval or ovate elytra; colour black usually with greenish or brownish lustre.

Head moderately convex; frons with a small rounded fovea; anterior supraorbital

pore foveolate; neck wide.

Pronotum cordate and convex; apex straight or weakly arcuate, and with clearly impressed gutters (apical gutters) at the sides; median line impressed, reaching neither apex nor base; basal part punctate; apical angles obtuse and not advanced; hind angles with a carina on each side.

Elytra rather strongly convex; stria 1 impressed throughout; striae 2–7 becoming shallower towards apices; apical striole vestigial or obliterated; interval III with two dorsal pores on each side. Ventral side smooth; metasternal process bordered at median part; each sternite with a pair of setae; anal sternite provided with a pair of setae in ♂, two pair of them in ♀.

Aedeagus robust and weakly arcuate in lateral view; apical lobe short, almost straight and simply rounded at the tip in lateral view. Inner sac covered with very poorly sclerotized scales and armed with five or six components of sclerites; lamellar sclerite poorly sclerotized, though bearing moderately sclerotized ventral margin; elongate sclerite robust and heavily sclerotized; poorly sclerotized sclerite situated at the middle of aedeagus; bundle of fibres situated at the right side of elongate sclerite; one or two small sclerite(s) poorly sclerotized and situated at the ventral portion of aedeagus; ostium flag usually indistinct. Styles each with several setae at apical and subapical parts, respectively.

***Bembidion misellum* HAROLD, 1877**

[Japanese name: Nikkô-mizugiwa-gomimushi]

Bembidium misellum HAROLD, 1877, Dt. ent. Z., 21: 342; type area: Yedo.

Other references are omitted.

Additional specimens examined. 1 ♂, 3 ♀♀, Hakodate-yama, Hakodate-shi, Hokkaido, 2–XI–1973, Y. HIRANO leg.; 2 ♂♂, 1 ♀, Shirakoma-rindô, Yatsu Mts., Nagano Pref., 13–VI–1999, S. MORITA leg.; 4 ♂♂, 9 ♀♀, Inagoyu, Yatsu Mts., Nagano Pref., 15–16–VII–2006, S. MORITA leg.; 1 ♂, Mt. Sanbe-san, Shimane Pref., 6–VII–1985, S. MORITA leg.; 3 ♂♂, Shinryû-ko, Taishaku, Hiroshima Pref., 10–VII–1999, K. TERADA leg.; 1 ♂, 2 ♀♀, Hatajiki-machi, Miyoshi-shi, Hiroshima Pref., 23–IV–2006, K. TERADA leg.

Range. Southwestern part of Hokkaido; Honshu (from Aomori Prefecture to Shimane and Hiroshima Prefectures.)

Notes. This species is common in hilly and mountainous areas in Honshu, and also spreads over Hokkaido (MORITA, 1982, p. 12). I have examined more than 800 specimens. As space is limited, only several important records were given above.

***Bembidion ohkurai* MORITA, 1992**

[Japanese name: Ohkura-mizugiwa-gomimushi]

Bembidion (Peryphus) ohkurai MORITA, 1992, Ent. Rev. Japan, Osaka, 47: 103, figs. 1, 3; type locality: Mt. Amakazari-yama.

Additional specimens examined. 1 ♂, Kusukawa, Hakuba-mura, Nagano Pref., 22-IV-1990, S. WAKATSUKI leg.; 3 ♂♂, Hikarujō-yama, Toyoshina-machi, Nagano Pref., 5-VI-1995, K. HORI leg.; 1 ♀, same locality, 7-VII-1997, S. MORITA & K. HORI leg.; 2 ♀♀, Sasagamine, Mt. Myōkō-zan, Niigata Pref., 2-IX-2000, Y. KUROSA leg.

Range. Central Japan: Yamagata (MORITA, 1993, p. 322), Niigata and Nagano Prefectures.

***Bembidion toyodai* MORITA, sp. nov.**

[Japanese name: Ryōgami-mizugiwa-gomimushi]

(Figs. 1, 2, 4, 5)

Diagnosis. Body relatively large, with oval elytra; head and pronotum with dark greenish lustre; elytra with weak brownish lustre; frontal furrows with coarse punctures; eyes flat; anterior transverse impression of pronotum with many coarse punctures; elytral striae coarsely punctate; in ♀, elytral microsculpture largely vanished, but the basal parts weakly impressed by isodiametric meshes; EL/EW 1.39–1.43; aedeagus robust and weakly arcuate in lateral view; inner sac armed with six components of sclerites.

Description. L: 3.42–4.29 mm. Body relatively large. Body black; head and pronotum with dark greenish lustre; elytra with weak brownish lustre; ventral side dark brown to blackish brown; antennal segments I, II and basal part of III and legs reddish brown to brown; mandibles, palpi and the rest of antennal segments brown to dark brown.

Head moderately convex; eyes flat; PW/HW 1.28–1.32 (M 1.30) in ♂, 1.24–1.32 (M 1.27) in ♀; frontal furrows wide, parallel, plurisinuuous and with coarse punctures and wrinkles; anterior supraorbital pore situated at a little behind the mid-eye level, posterior ones at the post-eye level or a little behind that level; microsculpture vanished, but consisting of wide meshes on the neck; genae short and oblique; relative lengths of antennal segments as follows: — I : II : III : IV : V : VI : XI \cong 1 : 0.68 : 1.02 : 0.99 : 0.96 : 0.91 : 1.22.

Pronotum narrow and strongly convex; PW/PL 1.13–1.17 (M 1.15) in ♂, 1.12–1.21 (M 1.16) in ♀; anterior transverse impression shallow with many coarse punctures; PW/PA 1.27–1.40 (M 1.35) in ♂, 1.30–1.36 (M 1.32) in ♀; sides widely and moderately arcuate in front and moderately sinuate at basal 1/5 of pronotum, and then divergent or almost parallel towards hind angles; PW/PB 1.40–1.54 (M 1.46) in ♂, 1.36–1.52 (M 1.44) in ♀; PA/PB 1.01–1.15 (M 1.09) in ♂, 1.00–1.13 (M 1.09) in ♀; base weakly arcuate and oblique at the sides; basal part with coarse punctures; hind angles obtuse or

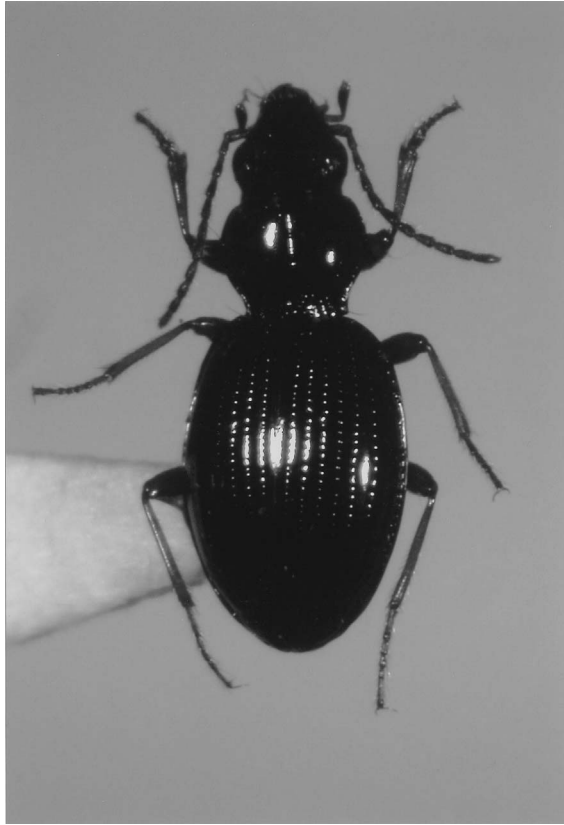
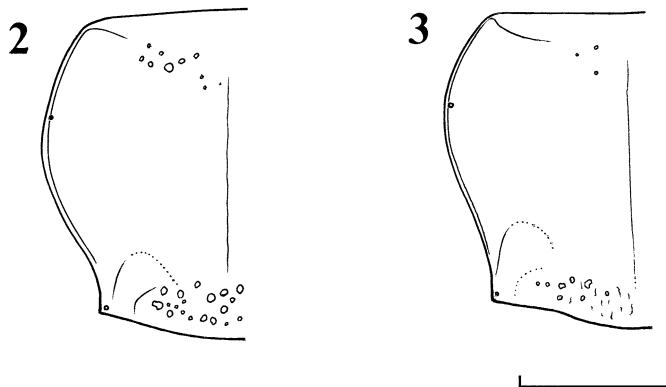
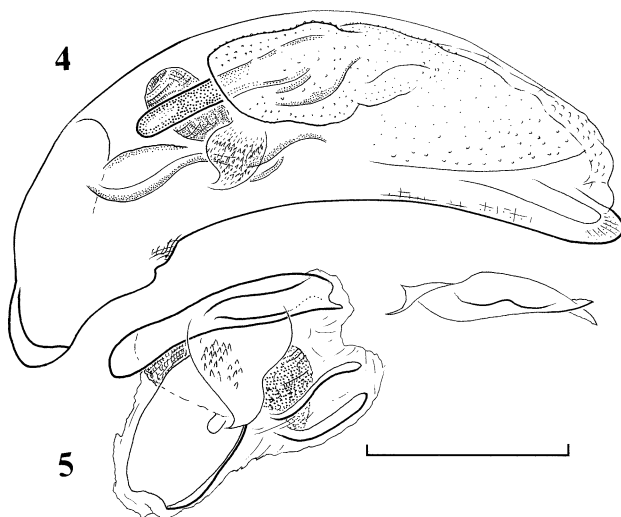


Fig. 1. *Bembidion toyodai* MORITA, sp. nov.



Figs. 2-3. Pronota of *Bembidion* spp. — 2, *Bembidion toyodai* MORITA, sp. nov.; 3, *B. saitoi* MORITA, sp. nov. (Scale: 0.5 mm.)



Figs. 4-5. Aedeagus and inner sac of *Bembidion toyodai* MORITA, sp. nov., left lateral view. — 4, Aedeagus; 5, cut open and extended inner sac. (Scale: 0.3 mm.)

right; basal foveae deep, oval and coarsely and densely punctate at the inner sides; microsculpture vanished.

Elytra oval; EW/PW 1.54–1.58 (M 1.56) in ♂, 1.50–1.56 (M 1.53) in ♀; EL/EW 1.39–1.43 (M 1.41) in ♂, 1.39–1.43 (M 1.40) in ♀; shoulders widely rounded; sides widely arcuate throughout; apex of each elytron rounded, forming a small re-entrant angle at suture; intervals weakly convex; stria 1 coarsely punctate at basal part, but the punctures become indistinct at about middle; stria 2 similar to stria 1, but the apical part is shallower; striae 3–6 strongly and coarsely punctate, but the punctures disappear at basal 5/7 of elytra; stria 7 marked with a row of fine to moderate punctures, but the punctures disappearing at basal 4/7 of elytra; scutellar striole very short, with several coarse punctures; two dorsal pores usually adjoining stria 3 or close to stria 3, rarely on the interval; anterior dorsal pore situated at basal 1/4–1/3 of elytra and posterior one at a little behind the middle to 13/20, respectively; microsculpture vanished in ♂, largely vanished but weakly impressed and consisting of isodiametric meshes on basal part in ♀. WL/EL 0.12 in 1 ♂.

Metasternal process rather narrowly bordered at the median part.

Aedeagus weakly arcuate in lateral view; apical lobe rather elongate and simply rounded at the tip in lateral view.

Inner sac covered with very poorly sclerotized scales and armed with six components of sclerites; rhombiform sclerite poorly sclerotized and situated at apical 1/3 of aedeagus; two small sclerites poorly sclerotized and situated at the ventral portion of aedeagus; ostium flag indistinct.

Left style provided with a long setae and two or three short setae at apex, and with

a short seta at subapical part; right one provided with a long seta and two short setae at apex, and with one or three short seta(e) at subapical part.

Type series. Holotype: ♂, allotype: ♀, 10-V-1997, S. MORITA leg. Paratypes: 4 ♂♂, 1 ♀, 19-XI-1996, K. TOYODA leg.; 7 ♂♂, 1 ♀, 23-XI-1996, K. TOYODA leg.; 31 ♂♂, 19 ♀♀, 10-V-1997, T. KISHIMOTO, M. MARUYAMA, S. MORITA & K. TOYODA leg.; 2 ♂♂, 2 ♀♀, 30-X-1999, K. TOYODA leg.; 1 ♂, 3 ♀♀, 31-X-1999, T. KISHIMOTO & T. SHIMADA leg.

Type locality. Kiyotaki, Mt. Ryôgami-san, Saitama Prefecture, Central Japan.

Notes. The standard ratios of body parts given in the descriptive part are those of 5 ♂♂ and 5 ♀♀. This new species is separable from *B. misellum* by having a combination of the following features: 1) body larger, 2) elytra oval and convex, 3) eyes flat and 4) robust aedeagus.

Bembidion saitoi MORITA, sp. nov.

[Japanese name: Hô'ô-mizugiwa-gomimushi]

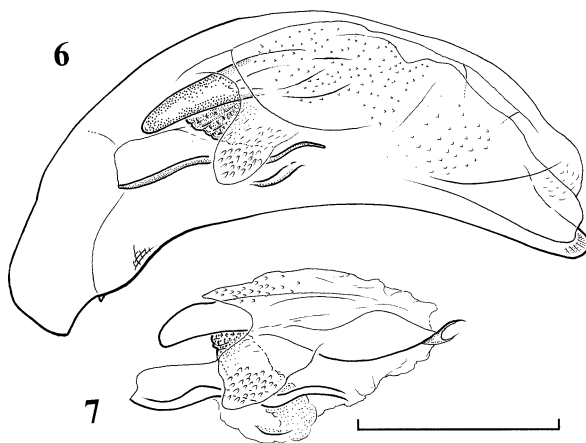
(Figs. 3, 6, 7)

Diagnosis. Body relatively small, with oval elytra; body black, with very weak brazen lustre; frontal furrows impunctate; eyes flat; anterior transverse impression of pronotum impunctate; elytral striae usually finely to moderately punctate; EL/EW 1.41–1.44; elytral microsculpture largely vanished, but consisting of isodiametric meshes on basal halves in ♀; aedeagus rather high at about middle in lateral view.

Description. L: 3.57–4.00 mm. Body relatively small with oval elytra. Body black, with very weak brazen lustre; ventral side black to blackish brown; mouth parts, antennal segments I, II, basal 1/2 of III, and basal 1/3 of IV and legs brown; mandibles, rest of antennal segments, palpi and labrum dark brown.

Head moderately convex; eyes flat; PW/HW 1.25–1.27 (M 1.26) in ♂, 1.23–1.32 (M 1.26) in ♀; frontal furrows wide, deep, plurisinuuous, impunctate and reaching the level of apical 4/5 of eye; eyes flat; anterior supraorbital pore situated at the mid-eye level, posterior ones at the post-eye level; microsculpture vanished, rarely consisting of wide meshes on the neck; genae short, oblique and very slightly convex; relative lengths of antennal segments as follows: — I : II : III : IV : V : VI : XI \approx 1 : 0.75 : 1.01 : 0.92 : 0.94 : 0.90 : 1.21 in ♂ and ♀.

Pronotum narrow and convex; PW/PL 1.14–1.18 (M 1.16) in ♂, 1.23–1.25 (M 1.24) in ♀; apex straight; anterior transverse impression shallow, rarely with two or three coarse punctures; PW/PA 1.30–1.34 (M 1.32) in ♂, 1.30–1.39 (M 1.35) in ♀; sides widely and moderately arcuate in front, and sinuate at basal 1/4, and then very weakly convergent or parallel to each other towards hind angles; PW/PB 1.38–1.44 (M 1.40) in ♂, 1.37–1.46 (M 1.42) in ♀; PA/PB 1.05–1.08 (M 1.06) in ♂, 1.01–1.09 (M 1.05) in ♀; median line finely impressed; base weakly arcuate throughout or weakly arcuate at middle and briefly oblique at the sides; basal part coarsely and sparsely



Figs. 6-7. Aedeagus and inner sac of *Bembidion saitoi* MORITA, sp. nov., left lateral view. — 6, Aedeagus; 7, cut open and extended inner sac. (Scale: 0.3 mm.)

punctate; hind angles with a weak carina on each side; basal foveae deep, oval and with rather coarse punctures; microsculpture vanished.

Elytra oval and relatively narrow; EW/PW 1.55–1.58 (M 1.57) in ♂, 1.52–1.58 (M 1.56) in ♀; EL/EW 1.41–1.43 (M 1.42) in ♂, 1.42–1.44 (M 1.43) in ♀; shoulders widely rounded; sides widely arcuate throughout; intervals very weakly convex and impunctate; striae moderately deep and finely to moderately punctate, but the punctures disappear towards apices; stria 1 finely to moderately punctate, though the punctures becoming indistinct at about middle; striae 2–4 disappear at basal 5/6 of elytra; stria 5 disappearing at basal 9/13; stria 6 disappearing at basal 7/13; stria 7 marked with a row of punctures, but disappearing at about middle; scutellar striole short, usually marked with a row of several punctures, rarely very shallowly impressed and impunctate; dorsal pores usually adjoining stria 3; in 1 ♀, the anterior dorsal pore situated on the interval of the left elytron; anterior dorsal pore situated at basal 1/4–3/10 of elytra and posterior one at a little behind the middle to 3/5, respectively; microsculpture vanished in ♂, largely vanished but consisting of isodiametric meshes on basal part in ♀. WL/EL 0.17 in 1 ♀.

Ventral side almost smooth; metasternal process rather widely bordered at the median part.

Aedeagus weakly arcuate and high at about middle in profile; viewed laterally, apical lobe rather short and simply rounded at the tip; inner sac armed mainly with five components of sclerites; ostium flag rather poorly sclerotized.

Left style provided with a long setae and two or three short setae at apex; right one provided with a long seta and one or two short seta(e) at apex and with one or two short seta(e) at subapical part.

Type series. Holotype: ♂, allotype: ♀, 7-VI-2007, M. SAITÔ leg. Paratypes: 1 ♂, 12-VII-1992, M. SAITÔ leg.; 1 ♀, 9-VII-1994, M. SAITÔ leg.; 1 ♂, 17-VII-1994, M.

SAITÔ leg.; 1 ♂, 11-X-1997, M. SAITÔ leg.; 1 ♂, 1 ♀, 7-VI-2007, M. SAITÔ leg.; 2 ♂♂, 1-VIII-2008, M. SAITÔ leg.

Type locality. Mt. Hô'ô-zan, Nirazaki-shi, Yamanashi Prefecture, Central Japan.

Notes. The standard ratios of body parts given in the descriptive part are those of 3 ♂♂ and 3 ♀♀. This new species may be easily recognized by the coloration of dorsal side, the reduced punctuation of head, pronotum and elytral striae and the shape of aedeagus.

***Bembidion yatsuense* MORITA, sp. nov.**

[Japanese name: Yatsu-mizugiwa-gomimushi]

(Fig. 8)

Diagnosis. Body relatively small, with oval elytra; colour as in *B. misellum*; frontal furrows impunctate; eyes flat; anterior transverse impression of pronotum impunctate; elytral striae coarsely punctate; in ♀, elytral microsculpture consisting of wide meshes at basal halves, but evanescent at the apical halves; aedeagus rather elongate.

Description. L: 3.42–3.86 mm. Relatively small species with oval elytra. Body black; head and pronotum with dark greenish lustre; elytra with weak brownish lustre; ventral side brown; antennal segments I, II and basal part of III, and legs reddish brown to brown; mandibles, palpi and the rest of antennal segments brown to dark brown.

Head impunctate; eyes flat; frontal furrows wide; relative lengths of antennal segments as follows: — I : II : III : IV : V : VI : XI \cong 1 : 0.73 : 1.01 : 0.96 : 0.88 : 0.90 : 1.21 in ♂ and ♀.

Pronotum strongly convex; sides moderately arcuate in front, sinuate at basal 1/7 of pronotum and then parallel to each other towards hind angles; microsculpture vanished; anterior transverse impression usually without punctures; basal foveae usually with several coarse punctures, sometimes almost smooth; hind angles right or obtuse; PW/HW 1.25–1.33 (M 1.29) in ♂, 1.28–1.39 (M 1.30) in ♀; PW/PL 1.19–1.26 (M 1.24) in ♂, 1.17–1.26 (M 1.22) in ♀; PW/PA 1.34–1.48 (M 1.38) in ♂, 1.33–1.38 (M 1.36) in ♀; PW/PB 1.37–1.50 (M 1.40) in ♂, 1.36–1.50 (M 1.43) in ♀; PA/PB 0.96–1.08 (M 1.02) in ♂, 1.00–1.09 (M 1.05) in ♀.

Elytra oval and narrow; shoulders obliquely arcuate; stria 1 rather coarsely punctate from base to basal 1/3 of elytra, but the punctures become indistinct towards apex and obliterated at apical 1/4 of elytra; stria 2 similar to stria 1, but the apical part is shallower; striae 3–6 marked with a row of rather coarse punctures, but the punctures disappear at about basal 4/5 of elytra; stria 7 as in striae 6, but the punctures disappear at about middle; dorsal pores adjoining stria 3 or close to stria 3; anterior dorsal pore situated at basal 1/5–3/10 in ♂, 1/4–3/10 in ♀, posterior one at a little before the middle to 13/20 in ♂, a little behind the middle to 13/20 in ♀; microsculpture vanished in ♂, consisting of wide meshes at basal halves, but evanescent at the apical halves in ♀; EW/PW 1.53–1.62 (M 1.57) in ♂, 1.55–1.60 (M 1.55) in ♀; EL/EW 1.38–1.45 (M

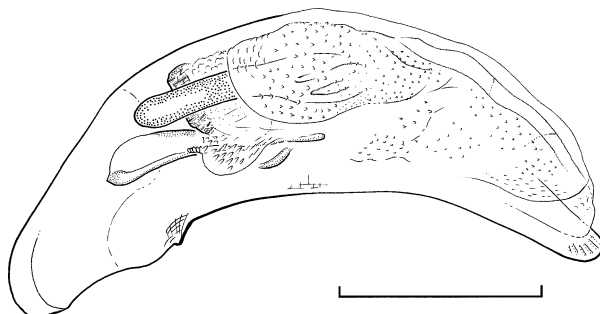


Fig. 8. Aedeagus of *Bembidion yatsuense* MORITA, sp. nov., from Shirakoma-rindô, left lateral view. (Scale: 0.3 mm.)

1.42) in ♂, 1.41–1.45 (M 1.43) in ♀. WL/EL 0.19 in 1 ♂. Ventral side as in *B. toyodai*.

Aedeagus rather elongate, weakly arcuate at about apical 1/3 in lateral view; apical lobe rather elongate and simply rounded at the tip. Each style with a long seta and two short setae at apex and a short seta at subapical part.

Type series. Holotype: ♂, allotype: ♀, Shirakoma-rindô, 13–VI–1999, S. MORITA leg. Paratypes: 3 ♀♀, Natsuzawa-kôsen, Chino-shi, 5–VII–1995, K. HORI leg.; 1 ♂, Shirakoma-ike, 30–VII–1995, H. YOSHITOMI leg.; 10 ♂♂, 10 ♀♀, Shirakoma-rindô, 13–VI–1999, S. MORITA leg.; 1 ♂, Oogawara-tôge, 2–VIII–2003, H. OHKAWA leg.; 1 ♂, Inagoyu, 15~16–VII–2006, S. MORITA leg.

Localities. Shirakoma-rindô, Shirakoma-ike, Inagoyu, Oogawara-tôge and Natsuzawa-kôsen, Yatsuga-take Mts., Nagano Pref., Central Japan.

Notes. The standard ratios of body parts given in the descriptive part are those of 5 ♂♂ and 5 ♀♀ from the Shirakoma-rindô.

This new species is closely allied to *Bembidion misellum*. It is, however, distinguished from the latter by the following points: 1) eyes flat; 2) sides of pronotum weakly sinuate; 3) elytra oval; and 4) EL/EW 1.38–1.45 in ♂ and ♀. [in *B. misellum* from Shirakoma-rindô, EL/EW 1.46, 1.48 in ♂, 1.47 in ♀].

This new species is also closely allied to small individuals of *B. toyodai*. However, it is distinguished from the latter by the following points: 1) frontal furrows, anterior transverse impression of pronotum and elytral striae with reduced punctation, 2) elytral shoulders more obliquely arcuate and 3) structure of aedeagus.

***Bembidion horii* MORITA, sp. nov.**

[Japanese name: Hida-mizugiwa-gomimushi]

(Figs. 9–11)

Diagnosis. Body relatively small; head impunctate; anterior transverse impression of pronotum usually without punctures; EL/EW 1.35–1.42; in ♀, elytral microsculpture

largely consisting of wide meshes, but vanished at the apical parts.

Description. L: 3.50–4.07 mm. Small species with oval elytra. Body black; head and pronotum with greenish lustre; elytra usually with brownish lustre; ventral side dark brown to blackish brown; antennal segments I, II and basal part of III and legs reddish brown to brown; mandibles, palpi and the rest of antennal segments brown to dark brown.

Head as in *B. yatsuense*; frontal furrows impunctate, variable in width and depth, usually deep, narrow and divergent posteriad, reaching the level a little before the post-eye, rarely rather shallow, wide or almost parallel to each other; microsculpture vanished, but the neck is impressed by isodiametric meshes; relative lengths of antennal segments as follows: — I : II : III : IV : V : VI : XI \approx 1 : 0.74 : 0.95 : 0.95 : 0.88 : 0.86 : 1.28 in ♂ and ♀.

Pronotum convex; sides widely and moderately arcuate in front, sinuate at basal 1/6–1/5 of pronotum and then parallel to each other towards hind angles; microsculpture vanished; anterior transverse impression usually without punctures, rarely with several fine punctures; basal foveae with coarse punctures; hind angles right; PW/HW 1.23–1.31 (M 1.27) in ♂, 1.24–1.31 (M 1.27) in ♀; PW/PL 1.19–1.28 (M 1.24) in ♂, 1.24–1.30 (M 1.25) in ♀; PW/PA 1.33–1.40 (M 1.35) in ♂, 1.30–1.36 (M 1.34) in ♀; PW/PB 1.38–1.41 (M 1.39) in ♂, 1.35–1.45 (M 1.39) in ♀; PA/PB 0.99–1.05 (M 1.03) in ♂, 1.00–1.11 (M 1.03) in ♀.

Elytra oval; shoulders moderately arcuate; stria 1 moderately punctate on the basal part, but the punctures become indistinct at about basal 3/4 of elytra; stria 2 similar to stria 1, but the apical part is shallower; stria 3 similar to stria 2, but the punctures disappear at basal 7/10; striae 4–6 usually marked with a row of rather coarse punctures, but the punctures disappear at basal 3/5; stria 7 marked with a row of rather fine punctures, but the punctures disappear at about middle; dorsal pores adjoining stria 3 or close to stria 3; anterior dorsal pore situated at basal 1/5–1/4, posterior one at about middle to 3/5, respectively; microsculpture vanished in ♂, largely consisting of wide meshes, but the apical parts are vanished in ♀; EW/PW 1.55–1.64 (M 1.59) in ♂, 1.53–1.60 (M 1.57) in ♀; EL/EW 1.37–1.42 (M 1.38) in ♂, 1.35–1.42 (M 1.38) in ♀; WL/EL 0.11, 0.12 in 2 ♂♂. Ventral side as in *B. toyodai*.

Aedeagus as in Fig. 9. Inner sac as in Figs. 10 and 11.

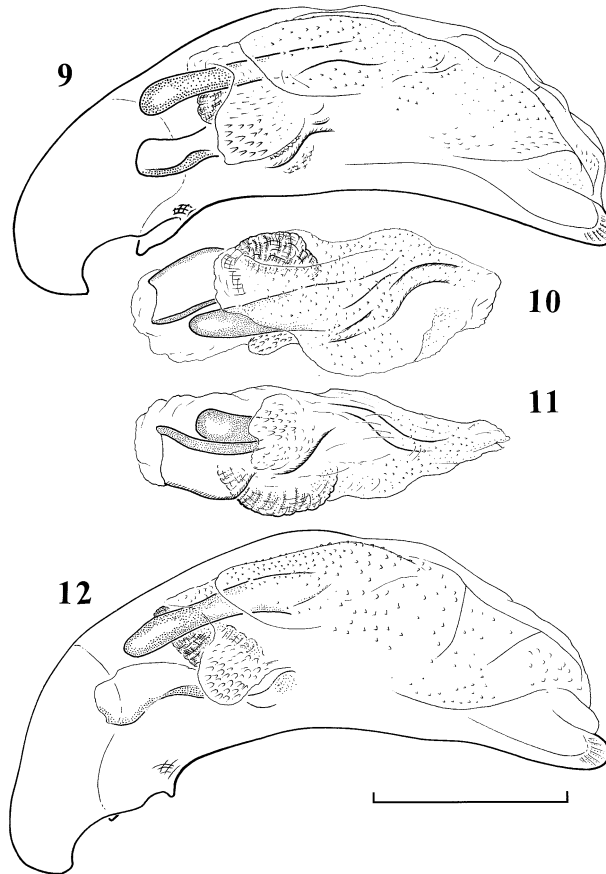
Left style with a long seta and two or three short setae at apex and rarely with a short seta at subapical part; right style with a long seta and two short setae at apex and with one or two short seta(e) at subapical part.

Type series. Holotype: ♂, allotype: ♀, 7–VII–1997, S. MORITA & K. HORI leg. Paratypes: 25 ♂♂, 22 ♀♀, 7–VII–1997, S. MORITA & K. HORI leg.; 3 ♀♀, 25–VII–1997, K. Hori leg.; 3 ♂♂, 24–VIII–1997, K. Hori leg.

Type locality. Mitsumata, Horigane-mura, Nagano Pref., Central Japan.

Further specimens examined. 2 ♀♀, Nakabusa-Spa, Nagano Pref., 6–VII–1997, S. MORITA leg.

Notes. The standard ratios of body parts given in the descriptive part are those of



Figs. 9-12. Aedeagus and inner sac of *Bembidion* spp. — 9-11, *Bembidion horii* MORITA, sp. nov., from Mitsumata; 12, *B. rengense* MORITA, sp. nov., from Renge Spa. — 9 and 12, Aedeagus, left lateral view; 10, extracted inner sac, dorsal view; 11, extracted inner sac, ventral view. (Scale: 0.3 mm.)

5 ♂♂ and 5 ♀♀.

This new species is doubtless similar to the preceding species in both external and genitalic features, and might be regarded as a geographical race of it. In this paper, however, the differences between the two are regarded as being specific rather than subspecific.

Bembidion rengense MORITA, sp. nov.

[Japanese name: Renge-mizugiwa-gomimushi]

(Fig. 12)

Diagnosis. Body relatively large; head impunctate; frontal furrows long; anterior transverse impression of pronotum without punctures; basal part of elytra wide; EL/EW 1.35–1.39; in ♀, elytral microsculpture consisting of wide meshes.

Description. L: 3.71–3.86 mm. Body black with brownish lustre; ventral side brown; antennal segments I, II, basal parts of III and IV, and legs brown; mouth parts, the rest of antennal segments and legs brown to dark brown.

Head as in *B. horii*, but the frontal furrows are deeper and longer, and reach the post-eye level; microsculpture vanished, but the neck is impressed by isodiametric meshes; relative lengths of antennal segments as follows: — I : II : III : IV : V : VI : XI \doteq 1 : 0.68 : 0.98 : 0.87 : 0.85 : 0.84 : 1.11 in ♂ and ♀.

Pronotum strongly convex; sides strongly and widely arcuate in front, sinuate at basal 1/8–3/20 of pronotum and then parallel to each other towards hind angles; microsculpture vanished; anterior transverse impression without punctures; basal foveae with coarse punctures; hind angles right; PW/HW 1.30, 1.31 in ♂, 1.29, 1.30 in ♀; PW/PL 1.23, 1.25 in ♂, 1.25, 1.28 in ♀; PW/PA 1.34, 1.41 in ♂, 1.31, 1.35 in ♀; PW/PB 1.35, 1.48 in ♂, 1.38, 1.42 in ♀; PA/PB 0.96, 1.10 in ♂, 1.02, 1.08 in ♀.

Elytra oval with wide basal part; shoulders strongly and widely arcuate; striae rather shallow and moderately punctate in ♂, weakly so in ♀; punctures on striae 1, 3 and 4 becoming indistinct at about basal 5/7 of elytra; punctures on stria 2 becoming indistinct at about basal 9/10; stria 5–7 marked with a row of punctures, but the punctures disappear at about middle; dorsal pores usually adjoining stria 3 or close to stria 3; anterior dorsal pore situated at basal 1/4–1/3, posterior one at about middle to 3/5, respectively; microsculpture largely vanished in ♂, but the apical parts vaguely impressed by isodiametric meshes; in ♀, microsculpture clearly impressed by wide or polygonal meshes; EW/PW 1.54, 1.62 in ♂, 1.55, 1.58 in ♀; EL/EW 1.35, 1.39 in ♂, 1.37, 1.38 in ♀. Ventral side as in *B. horii*.

Aedeagus as in Fig. 12. Left style with a long seta and a short seta at apex and with a short seta at subapical part; right style with a long seta and two short setae at apex and with one short seta at subapical part.

Type series. Holotype: ♂, 12–VII–2008, S. MORITA leg.; allotype: ♀, 12–VII–1975, S. MORITA leg. Paratypes: 1 ♂, 1 ♀, 2–VIII–2008, S. MORITA leg.

Locality. Renge Spa, Itoigawa-shi, Niigata Pref., Central Japan.

Additional specimens examined. 3 ♂♂, 1 ♀, Mt. Kiso-koma-ga-take, Nagano Pref., 26–VII–1986, S. MORITA leg.; 1 ♀, Mt. Kiso-koma-ga-take, 22–VII–1992, K. AKITA leg.

Notes. This new species is closely allied to the preceding. However, it is distinguished from the latter by the following points: 1) frontal furrows longer, 2) sides of pronotum more strongly arcuate, 3) elytral shoulders more arcuate, 4) elytral base wider

and 5) sides of elytra more strongly arcuate.

要 約

森田誠司：日本産ミズギワゴミムシ類の知見。XIX. ニッコウミズギワゴミムシ *Bembidion misellum* と中部地方産の近縁種。—— ニッコウミズギワゴミムシ *Bembidion misellum* とその近縁の6種を中部地方から記録，または新種として記載した。

References

- HABU, A., 1984. A new species of *Bembidion* from Kyushu, Japan (Coleoptera, Carabidae). *Ent. Rev. Japan, Osaka*, **39**: 35–37.
- HAROLD, E. V., 1877. Beiträge zur Käferfauna von Japan. (Zweite Stück.) Japanische Käfer des Berliner Königl. Museums. *Dt. ent. Z.*, **21**: 337–367.
- JEDLIČKA, A., 1965. Monographie des Tribus Bembidiini aus Ostasien (Coleoptera, Carabidae). *Ent. Abh. Mus. Tierk. Dresden*, **32**: 79–198, 1 col. pl.
- KRYZHANOVSKIJ, O. L., I. A. BELOUSOV, I. I. KABAK, B. M. KATAEV, K. V. MAKAROV & V. G. SHILENKOV, 1995. A check list of ground-beetles of Russia and adjacent lands (Insecta, Coleoptera, Carabidae). *Pensoft Series Faunistica*, **3**. 271 pp. Sofia/Moscow.
- MORITA, S., 1982. *Bembidion misellum* found in Hokkaido. (Distributional notes on bembidiine carabid 2). *Coleopt. News, Tokyo*, (60): 12. (In Japanese.)
- 1992. Notes on the Bembidiinae (Carabidae) of Japan IV. *Bembidion ohkurai* sp. nov. *Ent. Rev. Japan, Osaka*, **47**: 103–106.
- 1993. Ditto, V. Records of three species from Yamagata Prefecture. *Elytra, Tokyo*, **21**: 322.
- TOLEDANO, L., 2000. Systematic notes on the palaearctic Bembidiini with particular reference of the fauna of China (Coleoptera Carabidae). *Mem. Soc. ent. ital.*, **78**: 5–70.
- UÉNO, S.-I., 1954. The Coleoptera of Japan (16). *Shin Konchû, Tokyo*, **7** (4): 54–59. (In Japanese.)

Elytra, Tokyo, **37**(1): 39–40, May 29, 2009

New Records of *Creophilus maxillosus* (Coleoptera, Staphylinidae, Staphylininae) from Yaeyama archipelago, the Ryukyus

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A large-sized staphylinid beetle, *Creophilus maxillosus* (LINNAEUS) has wide range distribution in the Palearctic Region including Japan (SMETANA, 2004). This species is also known to

be distributed widely in Japan including the Ryukyus (SHIBATA, 1985). However, there are only records from Amami-Ôshima Is., Iheya-jima Is. and Okinawa-jima Is, northern Ryukyus. Until now, no record has hitherto been made from the Yaeyama archipelago, southern Ryukyus (SHIBATA, pers. comm.).

Recently, I had an opportunity to visit and to collect insects on Ishigaki-jima Is. and Iriomote-jima Is., the Yaeyama archipelago, and I was able to find *C. maxillosus* in the islands.

In this brief report, I would like to record it as the first records of these two Islands.

Creophilus maxillosus (LINNAEUS, 1758)

Materials examined. JAPAN: Yaeyama archipelago (in the Ryukyus). [Ishigaki-jima] 3 ♀, Ibaruma [伊原間], 8-IV-2009, S. YAMAMOTO leg; 1 ♂, Yarabu-dake [屋良部岳], 11-IV-2009, S. YAMAMOTO leg. [Iriomote-jima] 1 ♂, Kampirê-no-taki [カンピレーの滝], 4-IV-2009, S. YAMAMOTO leg. (deposited in the author's collection).

Distribution. Japan (Hokkaido, Honshu, Shikoku, Kyushu, Yaku-shima Is., Ryukyus: Amami-Ôshima Is., Iheya-jima Is., Okinawa-jima Is., Ishigaki-jima Is., Iriomote-jima Is.); Siberia, China, North Korea, South Korea, Taiwan, India, Europe, North Africa, Hawaii, North America, etc. New to Ishigaki-jima Is. and Iriomote-jima Is..

Notes. The individuals of *C. maxillosus* collected from Ibaruma, Ishigaki-jima Is. were found under a cattle carcass. It was already skeletonized, and a few fly puparia were scattered around them. I observed the staphylinid beetle not only in grassland but also in laurel forests.

The present paper reports the first record of *C. maxillosus* from the southern Ryukyus, and it suggests that this species is distributed widely throughout the Ryukyus. The species will be found from the other islands of the Ryukyus, such as Tokunoshima Is. and Yonaguni-jima Is.

In closing the paper, I wish to express my special thanks to Mr. Yasutoshi SHIBATA (Tokyo) for giving me some distributional information. I am also deeply indebted to Dr. Munetoshi MARUYAMA (Kyushu University Museum) for his critical reading and commenting on the manuscript.

References

- SHIBATA, Y., 1985. Staphylininae. In UÉNO, S.-I., Y. KUROSAWA & M. SATÔ (eds.), *The Coleoptera of Japan in Color*, 2: 289-310 [incl. pls. 51-54]. Hoikusha, Osaka. (In Japanese, with English book title.)
- SMETANA, A., 2004. Staphylininae. In LÖBL, I., & A. SMETANA (ed.), *Catalogue of Palaearctic Coleoptera*, 2: 624-698. Apollo Books, Stenstrup.