Two New *Yukihikous* (Coleoptera, Carabidae) from Central Japan

Seiji MORITA

Higashi-gotanda 5–19–7, Shinagawa-ku, Tokyo, 141–0022 Japan

**Abstract**

Two new platynine carabid beetles, *Yukihikous montanus* MORITA, sp. nov., and *Y. ohkawai* MORITA, sp. nov., are described from two different mountains in Yamanashi Prefecture, Central Japan.

The purpose of this paper is to describe two new platynine carabid species collected from Yamanashi Prefecture, Central Japan.

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; EB—width of basal part of elytra; EW—greatest width of elytra; EL—greatest length of elytra; WL—greatest length of hind wing; TL—length of metatarsus; M—arithmetic mean; NSMT—National Museum of Nature and Science, Tsukuba.

Before going further, I wish to express my deep gratitude to Dr. Shun-Ichi ÜENO of the National Museum of Nature and Science, Tsukuba, for critically reading the original manuscript of this paper. My thanks are also due to Dr. Yûki IMURA, Dr. Takashi KURIHARA, Messrs. Masaki ISHIGURO, Hideo OHKAWA and Naoki TODA for supplying me with important material. Hearty thanks are also due to Mr. Ichiro Onisio for his kind help.

Without their cooperation, I could not have undertaken this study.

*Yukihikous montanus* MORITA, sp. nov.

[Japanese name: Yanbushi-akahirata-gomimushi]

(Figs. 1, 3)

**Diagnosis.** Body wide and flat, with trapezoidal pronotum; head narrow and moderately convex, PW/HW 1.74–1.89; neck long and narrow; pronotum with wide apex, PW/PA 1.58–1.74; elytra elongate, EL/EW 1.58–1.78; aedeagus weakly arcuate or very weakly bent at basal 2/3, with rather short apical lobe and narrow sagittal aileron.

**Description.** L: 10.70–11.71 mm. Body wide and flat. Colour brown, shiny, but the head is slightly darker; appendages brown.

Head elongate, moderately convex, and sparsely and finely punctate; PW/HW 1.74–1.86 (M 1.79) in ♂, 1.77–1.89 (M 1.80) in ♀; eyes small and weakly convex; frontal furrows variable in depth, usually rather shallow, parallel to each other in front, divergent posteriad and reaching the ante-eye level; two pair of supraorbital pores lying on lines slightly divergent posteriad, though a pair of anterior or supraorbital pores variable in position, usually situated between basal 1/3–3/7, rarely at mid-eye level; a pair of posterior supraorbital pores apart from the post-eye level; vertex moderately convex with several oblique wrinkles; neck long and narrow; neck constriction vague or shallow, with oblique wrinkles; genae weakly convex, longer than eyes; microsculpture clearly impressed, composed of po-
Seiji Morita

lygonal meshes; labrum transverse, with the apical margin bisinuate; penultimate segment of maxillary palpus shorter than the apical segment; penultimate segment of labial palpus longer than the apical segment; antennae long, reaching the level a little before the elytral middle; relative lengths of antennal segments as follows: — I : II : III : IV : V : VI : XI ≈ 1 : 0.40 : 0.87 : 0.91 : 0.94 : 0.90 : 0.90 in ♂, 1 : 0.41 : 0.89 : 0.99 : 0.95 : 0.91 : 0.90 in ♀.

Pronotum trapezoidal, flat and widest at base in ♂, usually widest at base or basal 1/3–1/2 in ♀; PW/PL 1.32–1.36 (M 1.34) in ♂, 1.26–1.38 (M 1.32) in ♀; PW/PA 1.62–1.74 (M 1.69) in ♂, 1.58–1.68 (M 1.63) in ♀; PW/PB 1.00–1.01 (M 1.00) in ♂, 1.00–1.05 (M 1.01) in ♀; PA/PB 0.58–0.62 (M 0.60) in ♂, 0.60–0.66 (M 0.62) in ♀; apex weakly to moderately emarginate at median part, moderately so at the sides; apical angles rather strongly produced, rounded at the tips; sides weakly arcuate from apical angles to basal 2/3, and usually almost parallel to each other or very weakly divergent towards hind angles in ♂, usually weakly arcuate from apex to basal 1/3 or halves, and very weakly so towards base, or very weakly sinuate at basal 1/5 in ♀ (measured along the median line); reflexed lateral sides rather wide in front, becoming wider from basal halves to hind angles, and with deep gutters; anterior transverse impression obliterated or vestigial; posterior transverse impression vaguely impressed; median line clearly impressed, thin and very close to apex and base; base widely and weakly emarginate at median part, oblique or transverse at the sides; anterior marginal seta inserted at about basal 3/4, rarely with an additional seta on one side; hind angles right to sharp with obtuse or narrowly rounded tips and one seta on each side; microsculpture clearly impressed, composed of fine transverse meshes.

Elytra flat, elongate and widest at basal 1/3–3/7 in ♂, usually at about the middle, rarely at basal 1/3 in ♀; EW/PW 1.28–1.42 (M 1.33) in ♂, 1.28–1.40 (M 1.33) in ♀; EL/EW 1.58–1.67 (M 1.63) in ♂, 1.58–1.78 (M 1.67) in ♀; basal part wide, EB/PB 1.04–1.11 (M 1.08) in ♂, 1.06–1.12 (M 1.08) in ♀; shoulders square and obtuse at the tips; sides weakly arcuate from shoulders to about basal 7/10, moderately arcuate posteriori with wide and very shallow preapical emargination on each side, and

Figs. 1–2. Yukihikous spp. — 1, Yukihikous montanus Morita, sp. nov.; 2, Y. ohkawai Morita, sp. nov.
then rather truncated at apical part; apex obtuse, not dentate, separated from each other; basal border weakly and posteriorly arcuate between median part and the level of stria 5 on each side and almost transverse or weakly and anteriorly arcuate at the sides; scutellar striole short, situated on interval I, free at apical end, very weakly crenulate, and usually adjoining basal border, rarely free at base; intervals very weakly convex to almost flat, and impunctate or microscopically and sparsely punctate; marginal series composed of 16–17 pores; microsculpture composed of fine transverse meshes; epipleuron very wide and weakly rugose in basal part, and becoming narrower from basal 1/4 to apex, without inner plica. WL/EL 0.21 in ♀.

Gula and ventral sides of genae strongly and transversely rugose; mesepisterna, sternite I usually finely and sparsely punctate; anal sternite VI with a pair of seta in ♂, two pair of setae which are alined in ♀.
Legs rather slender within the members of the genus *Yukihikous*; protibiae weakly bent inwards at basal 7/10 in ♀, almost straight in ♂; tarsi longitudinally strigose on dorsal surface; tarsomere 1 as long as tarsomeres 2 and 3 combined in metatarsi; tarsomere 4 rather deeply bilobed in protarsus, deeply so in mesotarsus, and deeply emarginate at apex in metatarsus; TL/HW 1.65–1.73 (M 1.70) in ♀, 1.62–1.78 (M 1.67) in ♂; in ♀, basal three protasomeres with adhesive appendages on the ventral surface.

Genital segment elongate, parallel to each other at the sides and with very short handle.

Aedeagus elongate, widest at a little before the middle, weakly arcuate throughout or very weakly bent at basal 2/3 in lateral view, and moderately sclerotized; basal part large with narrow sagittal aileron; dorsal side widely occupied by membraneous part; viewed dorsally, apical lobe moderately elongate with simply rounded apex.

Right paramere wider than the left one, with regularly arcuate apical margin; left paramere elongate with elongate basal part, and regularly and narrowly arcuate apical margin.

Inflated inner sac elongate, almost straight and prolonged forwards; basal part voluminous and large, becoming thinner towards apex, and covered with very minute spinules from base (near apical orifice of aedeagus) to basal 5/8; subapical part covered with moderately sclerotized spinules and several small sclerites; apical part membraneous and almost smooth.


**Locality.** Mt. Yanbushi-dake, Hayakawa-chō, Yamanashi Prefecture, Central Japan.

**Notes.** Judging from the body shape, this new species is very closely allied to *Yukihikous dracocephalus* (SASAKAWA) (2006, p.50) known from Mt. Rýtô-san in Shizuoka Prefecture. It is, however, distinguished from the latter by the following points: 1) body wide and flat, 2) head narrow and moderately convex; PW/HW 1.74–1.89; neck narrow and long, 4) pronotum flat with wide apex; PW/PA 1.58–1.74; apex deeply emarginate; reflexed lateral sides wide, with deep gutters; hind angles right to sharp or obtuse or narrowly rounded tips, 5) elytra elongate, EL/EW 1.58–1.78, and 6) aedeagus weakly arcuate throughout or very weakly bent at basal 2/3 in lateral view with rather short apical lobe and narrow sagittal aileron.

Standard ratios of body parts shown in the descriptive part are those of 4 males and 8 females.

Unfortunately, the apex of inner sac was broken by stronger air pressure by a syringe as shown in Fig. 3-f.

**Specimens compared.** *Yukihikous dracocephalus* (SASAKAWA): 2 ♂♂, 2 ♀♀, Mt. Rýtô-san, Shizuoka Prefecture, 27–VI–2007, M. ISHIKURO leg. Head ovoid with short and wide neck; pronotum with anterior marginal seta, including additional setae situated at basal 3/5–17/20; elytra widest at a level a little before the middle; elytral interval III usually with three dorsal pores, sometimes with one or two pore(s) on each side; the first pore situated at basal 1/4 and adjoining stria 3; the second pore situated at about the middle and adjoining stria 2, rarely on the interval; the third pore situated at basal 3/4–4/5 and adjoining stria 2 or lacking; in ♂, basal three protasomeres with adhesive appendages on the ventral surface. Aedeagus gently arcuate in lateral view, with rather long apical lobe and rather large sagittal aileron.

According to the original description, aedeagal apical part is very weakly bent at the subapical part and sagittal aileron is lacking (SASAKAWA, 2006, Fig. 3-D).

The body length and standard rations of body parts of two males and two females are as follows:
New Yukihikous from Central Japan

Yukihikous ohkawai Morita, sp. nov.

[Japanese name: Yamashi-akahirata-gomimushi]

(Figs. 2, 5)

Diagnosis. Body small, convex and robust; colour dark brown to blackish brown; neck wide; head and pronotum rather strongly wrinkled; apex of pronotum wide, PW/PL 1.36–1.46; elytral interval III usually with one ordinary pore on each side; metatarsus short, TL/HW 0.99–1.18; in ♂, basal three protarsomeres with adhesive appendages which are rather vestigial; aedeagus robust, very weakly bent at basal 3/5 in lateral view, without sagittal aileron; genital segment rather wide.

Description. L: 9.71–11.43 mm. Body rather small and convex. Colour dark brown to blackish brown; head usually darker than pronotum and elytra; appendages brown.

Head ovoid, moderately convex, with convex and relatively small eyes; frontal furrows variable in depth and width, usually linear, deep and moderately divergent posteriad, becoming shallower and narrower, and reaching the level of the anterior supraorbital pores on each side, and with deep furrows at outer side and sometimes with fine punctures or wrinkles; frons usually with transverse or oblique wrinkles, rarely smooth; lateral grooves very deep, straight and reaching the post-eye level or beyond that level on each side; anterior supraorbital pore usually situated at basal 1/3 of eyes, sometimes a little behind the mid-eye level, posterior one apart from the post-eye level; surface moderately convex, and sparsely and finely punctate, and usually with shallow wrinkles, rarely almost smooth; PW/HW 1.49–1.56 (M 1.52) in ♂, 1.48–1.61 (M 1.53) in ♀; genae weakly convex, longer than eyes, and strongly wrinkled; microsculpture not sharply impressed, though partially consisting of polygonal meshes on the neck; neck wide, short and strongly wrinkled; neck constriction indistinct; labrum transverse, with the apical margin bisinuate; mentum tooth moderately produced and bifid at apex; palpi slender; penultimate segment of maxillary palpus about as long as apical segment; penultimate segment of labial palpus with two long setae at about middle of inner side and one short seta at apex; antennae rather stout, not particularly long, reaching basal 1/3 of elytra; relative lengths of antennal segments as follows: — I : II : III : IV : V : VI : XI = 1 : 0.41 : 0.83 : 0.82 : 0.78 : 0.77 : 0.79 in ♂, 1 : 0.45 : 0.83 : 0.77 : 0.77 : 0.78 in ♀.

Pronotum rather flat and widest at about basal 3/5–7/10 in ♂ (measured along the median line), 13/20 in ♀; apex almost straight or weakly emarginate, with moderately emarginate sides; PW/PL 1.19–1.31 (M 1.23) in ♂, 1.23–1.31 (M 1.26) in ♀; sides slightly and widely arcuate in front, very shallowly sinuate at basal 1/7–1/4 (measured along the median line) and then almost parallel to each other or very weakly divergent towards hind angles and partially crenulate at basal halves; base shallowly emarginate at median part, and weakly oblique at the sides; PW/PA 1.36–1.44 (M 1.41) in ♂, 1.33–1.46 (M 1.39) in ♀, PW/PB 1.08–1.16 (M 1.11) in ♂, 1.01–1.16 (M 1.11) in ♀, PA/PB 0.75–0.81 (M 0.79) in ♂, 0.69–0.85 (M 0.80) in ♀; apical angles strongly produced and narrowly rounded.
at the tips; hind angles almost right to sharp; anterior pair of marginal setae usually inserted at a little before the widest part, rarely at that part; posterior ones a little before and inside hind angles; anterior transverse impression obliterated; median line impressed and usually close to margins, or sometimes between anterior and posterior transverse impressions; basal foveae usually shallow, linear at the bottom, rugose at inner sides; microsculpture not clearly impressed and composed of fine transverse meshes; surface vaguely and sparsely wrinkled; basal part usually longitudinally wrinkled at middle.

Elytra elongate, weakly convex and widest at about middle or a little before the middle; EW/PW 1.18–1.25 (M 1.22) in ♂, 1.19–1.28 (M 1.25) in ♀; EL/EW 1.60–1.71 (M 1.63) in ♂, 1.59–1.70 (M 1.62) in ♀; shoulders square, though corners are narrowly rounded; base wide, EB/PB 1.10–1.17 (M 1.12) in ♂, 1.11–1.19 (M 1.15) in ♀.
New Yukihikous from Central Japan

1.13) in $\sigma^p$, 1.01–1.18 (M 1.09) in $\varphi$; sides weakly arcuate from shoulders to basal 4/5, and moderately so from basal 4/5 to the level before preapical emargination, which is widely and shallowly emarginate; apical parts truncate; apices slightly separated from each other; apex moderately rounded; scutellar striole very short, situated on interval I, and adjoining basal border which is weakly arcuate or straight; striae smooth and deep; basal pore absent; one ordinary dorsal pore situated between middle and basal 13/20 on interval III on each side, and adjoining stria 2, rarely lacking on one side or both sides; additional pore rarely present on one side, situated at 13/20 and 3/4, respectively; intervals weakly convex; microsculpture not sharply impressed, composed of transverse meshes; inner plica visible; epipleuron rough, very wide from shoulder to basal 1/3 of elytron, and then gradually narrowed towards apex; marginal series composed of 15–17 pores; two apical pores present on each side and weak, inner pore situated near apex of stria 1, outer one situated near apex of stria 2 or on interval III; a subapical pore present on each side, not weak and situated on stria 7 or adjoining the inner part of stria 7 or close to the stria. WL/EL 0.20 in $\sigma^p$, 0.24 in $\varphi$.

Gula and ventral sides of genae strongly and irregularly rugose; mesosternum, mesepisternum and metaepisternum moderately and sparsely punctate; anal sternite VI with a pair of setae in $\sigma^p$, two pair of setae which are alined in $\varphi$.

Legs rather robust; protibiae almost straight, rarely very weakly bent inwardly at apical 1/4; tarsi longitudinal strigose on dorsal surface; tarsomere 1 shorter than tarsomeres 2 and 3 combined in mesotarsi; tarsomere 4 rather deeply bilobed in protarsus, deeply so in mesotarsus, and deeply emarginate at apex in metatarsus; TL/HW 0.99–1.18 (M 1.10) in $\sigma^p$, 1.00–1.17 (M 1.09) in $\varphi$; in $\sigma^p$, basal three protosomeres with adhesive appendages which are rather vestigial.

Genital segment rather wide, elongate, and variable in the outline near handle, being weakly emarginate or weakly arcuate, and with very short handle.

Aedeagus elongate, robust, moderately sclerotized, very weakly bent at basal 3/5 in lateral view; basal part large without sagittal aileron; dorsal side widely occupied by membraneous part; viewed dorsally, apical lobe rather elongate with simply rounded apex.

Left paramere wider than the right one, with rather narrowly and regularly arcuate apical margin; right paramere elongate with regularly and narrowly arcuate apical margin.

Inflated inner sac elongate, probably almost straight and prolonged forwards; basal half voluminous and large, becoming thinner towards apex; surface between base to subapical part covered with very minute and poorly sclerotized spinules; subapical part covered with moderately sclerotized spinules; apical part membraneous and almost smooth.


Locality. Mt. Amari-yama, Nirasaki-shi, Yamanashi Prefecture, Central Japan.

Notes. The presence or absence of adhesive appendages on protosomeres in male is pronounced between the two genera, $Ja$ (S. Uêno, 1955, p. 61) and Yukihikous (HABU, 1978, p. 101). Though this species exhibits rather vestigial adhesive appendages, I placed it in the latter, for the time being.

Judging from the shape of body form, this new species appears closely related to Yukihikous mi-nobusanus HABU (1978, p. 103). It is, however, distinguished from the latter by the following points: 1) colour dark brown to blackish brown, 2) body smaller, 3) head and pronotum more strongly wrinkled, 4) apex of pronotum wider, PW/PA 1.36–1.46, 5) elytral interval III usually with one ordinary pore on each side, 6) in $\sigma^p$, adhesive appendages of protosomeres rather vestigial, 7) metatarsus shorter, TL/HW 0.99–1.18, 8) aedeagus weakly bent at basal 3/5 in lateral view, and 9) genital segment

New Yukihikous from Central Japan
rather wide.

In order to evert the aedeagal inner sac, the air pressure by a syringe is used. Unfortunately, the inner sac was broken by stronger pressure, and to make matters worse, it was deformed by air pressure of hair drier (cf. Morita, 2007, p. 407). However, it seems that the structure of the inner sac may not suffice for the recognition of a specific taxon, because the inner sac of this species is certainly very similar to that of the former new species, though they are widely different in both external and genitalic configuration.


The diagnostic features of this species are as follows: — body large (L: 12.14–12.57 mm). Head usually almost smooth. Pronotum widest at a little behind the middle to the level of basal 13/20. Elytra widest at a little before the middle; interval III usually with two or three ordinary pores on each side; the first dorsal pore situated at basal 1/5–1/4, the second one between the middle and 3/5, the third one at 7/10–4/5, respectively. Metatarsus long; in ♂, basal three protasomers with adhesive appendages which are conspicuous. Aedeagus weakly bent at about middle with narrow apical lobe; left paramere rather wide. Genital segment elongate and with very short handle.

The standard ratios of body parts of one male and four females are as follows: — PW/HW 1.63 in ♂, 1.52–1.67 (M 1.59) in ♀; PW/PL 1.29 in ♂, 1.19–1.33 (M 1.25) in ♀; PW/PA 1.47 in ♂, 1.39–1.50 in ♀; PW/PB 1.03 in ♂, 1.01–1.07 in ♀; PA/PB 0.70 in ♂, 0.70–0.74 (M 0.72) in ♀; EW/PW 1.19 in ♂, 1.24–1.29 (M 1.27) in ♀; EL/EW 1.63 in ♂, 1.59–1.65 (M 1.64) in ♀; EB/PB 1.04 in ♂, 1.07–1.19 (M 1.10) in ♀; TL/HW 1.30 in ♂, 1.26–1.35 (M 1.30) in ♀; relative lengths of antennal segments as follows: — 1: II: III: IV: V: VI: XI ≅ 1: 0.45: 0.93: 0.92: 0.87: 0.83: 0.82 in ♂, 1: 0.42: 0.85: 0.90: 0.81: 0.78: 0.78 in ♀.

References


Manuscript received 13 September 2012; revised and accepted 5 October 2012.