

## A New *Ptomaphagus* (Coleoptera, Leiodidae, Cholevinae) from Nagano Prefecture, Central Japan

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**Abstract** A new cholevine leiodid beetle species, *Ptomaphagus gonbe* sp. nov., is described from Nagano Prefecture, Central Japan. This new species is to be the second representative from Honshu where is regarded as the northernmost area of the distributional range of the genus in question.

The cholevine genus *Ptomaphagus* PORTEVIN, 1914 is presently contained near 100 species, which are mostly small-sized beetle having a strange shape of the median lobe of male genitalia depending on species in spite of a uniform appearance. They are chiefly known to occur in the Oriental Region, but their distributional range reaches the southeastern part of the Palaearctic Region.

In the Japanese Archipelago, six species belonging to the genus *Ptomaphagus* have already been described to date (HAYASHI, 1969; NAKANE, 1982; PERREAU, 1996; HOSHINA & SUGAYA, 2003). *Ptomaphagus takaosanus* NAKANE, 1982 is the only known species to inhabit on the Island of Honshu, where is regarded to be the northernmost area of the distributional range of its genus, because the congeners are limited in distribution to the south of the Qinling Mountains–Huaihe River Line (Latitude 32°North) in central China (WANG & ZHOU, 2015).

As reflected this interesting location of Honshu, it has emerged through our reexamination that several undescribed species have so far been intermixed frequently in specimens determined as *P. takaosanus*. One of such species will be described as new in the present paper.

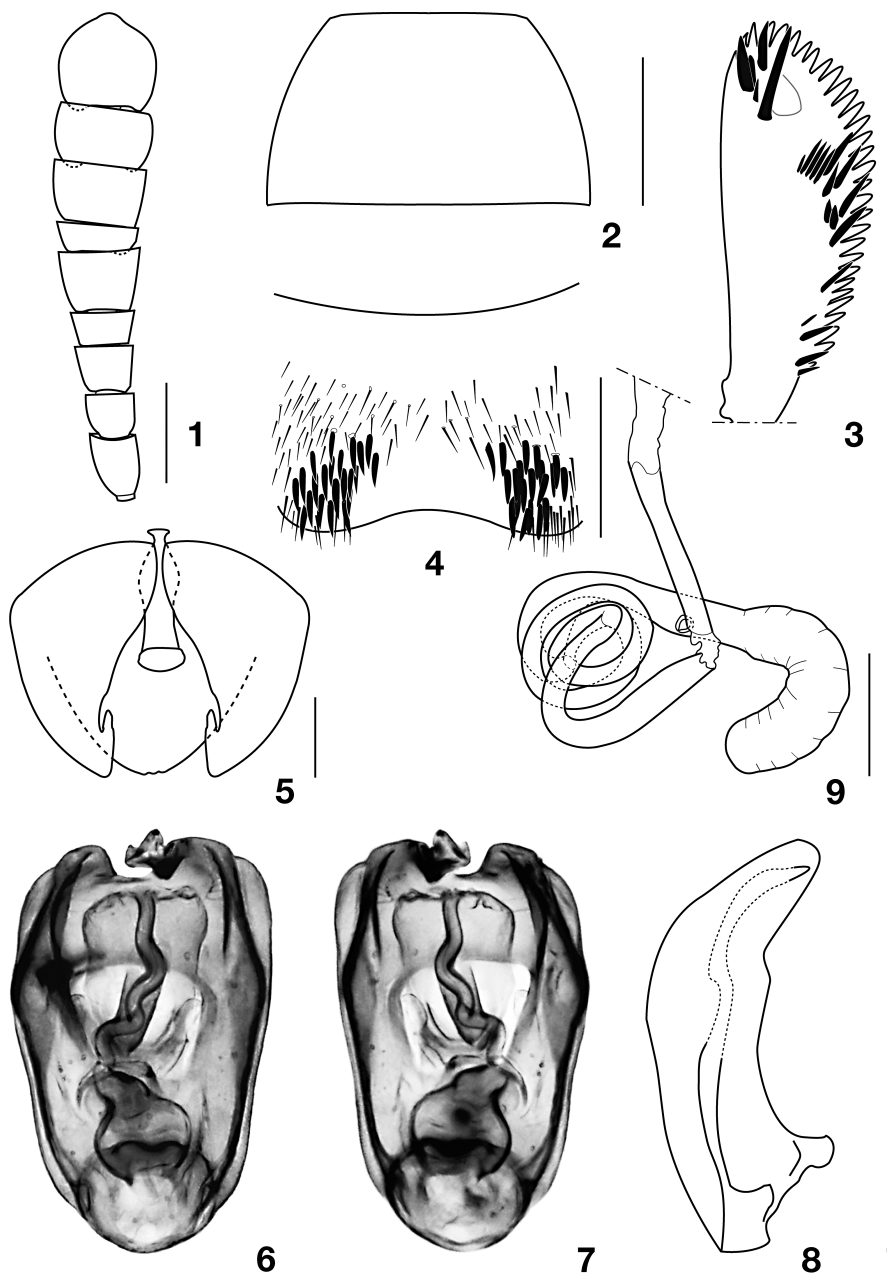
The abbreviations used herein are as follows: AL – length of the median lobe of male genitalia; HL – length of head measured from the apical margin of clypeus to occipital end; HW – greatest width of head; PL – maximum length of pronotum; PW – greatest width of pronotum; EL – length of elytron measured from the shoulder to the apex; EW – greatest width of elytra; MNHA – Museum of Nature and Human Activities, Hyôgo. Body length of the specimen is the total of HL+PL+EL. Dimensions are measured in millimeters. GSI Maps (GEOSPATIAL INFORMATION AUTHORITY OF JAPAN, 2013; <http://maps.gsi.go.jp>) were used to find coordinates for the localities.

*Ptomaphagus gonbe* M. NISHIKAWA et Y. HAYASHI, sp. nov.

[Japanese name: Gonbê-oninise-chibishidemushi]

(Figs. 1–9)

**Description.** Length 2.43–2.58 mm, width 1.05–1.15 mm. Dimensions of different body parts in the holotype: HL 0.43, HW 0.75, PL 0.68, PW 1.1, EL 1.4 and EW 1.15. Habitus elliptical, convex above. Color dorsally bicolorous: head and pronotum blackish brown and elytra reddish brown; mouth-parts and antennae yellowish; legs reddish brown though tarsal combs of short spines are black



Figs. 1–9. *Ptomaphagus gonbe* M. NISHIKAWA et Y. HAYASHI, sp. nov., from Nagano Pref., Central Japan. — 1, Outline of right antenna (antennomeres III–XI); 2, outline of pronotum; 3, left protibia, showing spinal arrangement on ventral side; 4, middle portion of ventrite VIII; 5, genital segment; 6, male genitalia, dorsal view; 7, same, ventral view; 8, same, outline of median lobe and paramere, lateral view (appendage and setae are omitted); 9, spermathica and spermathical duct, ventral view. Figures are based on the holotype except for fig. 9. Hairs are omitted in figs. 1–3 and 5. (Scales: 0.1 mm for figs. 1 and 3–9; 0.5 mm for fig. 2.)

and protarsomeres are yellowish. Dorsal surface of pronotum, scutellum, elytra, epipleura and femora with transverse or oblique strigations, almost clothed with moderately long, whitish yellow, adpressed hairs.

**M a l e.** Head evenly convex, gentry strigate on dorsal surface, with anterior margin straight, widest just behind eyes, HW/HL 1.58–1.74. Labrum trapezoidal. Maxillary palpus with the ultimate palpomere very slender, conical, ca. 1.2 times as long as the penultimate one. Eyes normal. Antennomeres I–II distinctly longer than wide, III feebly longer than wide, IV–V and VII feebly wider than long, VI and VIII–X transverse, VII twice as long as VIII, which is 2.3–2.6 times as long as wide, IX–X similar in size, and XI ovoidal, almost as long as wide, obtusely rounded at the apex (Fig. 1). Dimensions (length : width) of antennomeres of the holotype: I, 0.12 : 0.06; II, 0.1 : 0.05; III, 0.06 : 0.05; IV, 0.04 : 0.05; V, 0.04 : 0.06; VI, 0.03 : 0.06; VII, 0.06 : 0.08; VIII, 0.03 : 0.08; IX, 0.06 : 0.09; X, 0.06 : 0.09; XI, 0.1 : 0.09.

Pronotum (Fig. 2) transverse, trapezoidal, moderately convex, widest at base, PW/PL 1.62–1.65; anterior margin almost straight; anterior angles obtuse; sides gently arcuate; posterior margin with gentle posterolateral emarginations; posterior corners hardly projected backward. Surface transversely strigate; interstices among strigae almost equal in width to those on elytra.

Elytra oval, moderately convex, widest behind shoulders: EW/PW 1.01–1.05, EL/PL 2.06–2.19, EL/EW 1.22–1.31; sides arcuate, each with somewhat truncate apex. Surface distinctly strigate, the strigae obliquely running to sutural stria. Hind wings fully developed.

Legs with protibia spatulate, relatively narrow, widest at about apical 1/3. Spinal arrangement on ventral side of protibia as shown in Fig. 3. Protarsomeres expanded in basal three tarsomeres: the first tarsomere 0.73 times as wide as protibia. Profemora wider than protibiae. Mesotibiae slightly arcuate outward. Metatibiae with two spurs in inner side of the apical end.

Abdomen with ventrite VII simple. Ventrite VIII (Fig. 4) shallowly depressed semicircularly in posterior middle, laterally arranged some subacute spines in the depression, which is smooth and glabrous in surface, posteriorly well emarginate. Genital segment (Fig. 5) wider than long, with genital plates not anteriorly elongate at anterior inner corners; spiculum gastrale relatively thick, outwardly prolonged 1/10 of its length from anterior margins of genital plates, truncate at the anterior end, elliptically protuberant at the posterior end; tergum relatively wide, rather sclerotized along apical margin though unsclerotized at the apex.

Aedeagus (Figs. 6–8) robust, ovoidal, AL/EL 0.29. Median lobe asymmetrical, deeply emarginate trapezoidally in middle part of apical margin, with sides ridged inwardly in apical halves of ventral side, the ridges each expanded innerlaterally along apical margin: the right apical expansion simple, and the left apical expansion dorsoventrally produced a bilobate appendage at the innerlateral end, the dorsal lobe smaller, subtriangular, the ventral lobe larger, subtrapezoidal, the appendage slightly expanded also in base of ventral side, the expansion rounded, notched at the middle; ligulae divided in apical halves, each with crinkly apical margin and somewhat sclerotized basal margin in ventral view; in lateral view, median lobe thick, strongly bent ventrad in apical 1/3, uneven in ventral margin, thick and rounded at the apex, with fine setae in preapical and middle parts. Parameres long, each reaching to apical margin of median lobe, in ventral view, slender and firmly attached to median lobe in basal halves, becoming wider and seemingly fused to the ridge of median lobe in apical halves. Flagellum of endophallus twisted, thick and long, closely annulate, parallel with an apically slender longitudinal piece located in middle portion of median lobe, and basally connected with a gourd-shaped chamber.

**F e m a l e.** Similar to male in general appearance, except for protarsi and abdominal ventrite VIII simple and elytral apices more or less rounded separately. Proportions of body parts: PW/PL

1.57, EW/PW 1.05, EL/PL 2.07 and EL/EW 1.26. Female genitalia with a pair of styli each longitudinally subrectangular, feebly projected roundly at the inner apical corner, bearing five long setae in apical part. Spermatheca (Fig. 9) C-shaped, loosely annulate; spermathecal duct divided in sclerotized two parts by membranous short section, the basal part almost straight, the apical part mostly spiral, with a valve like structure visible in front of spermatheca; orifice to vagina unsclerotized.

*Type series.* Holotype (MNHA: B1-654058): ♂, Gonbe'e Tôge [= Gonbê-tôge Pass, ca. 35.8723°N 137.8570°E], Ina-shi, Nagano Pref., Honshu, Central Japan, 30.VIII.1997, Y. HAYASHI leg. (right antennomeres III–XI, left protibia and tarsus, pygidium, ventrite VIII, left metatibia and tarsus, genital segment, and male genitalia are on slide). Paratypes: 1 ♂ (MNHA: B1-654056), Tobira-kôsen Spa [36.1842°N 138.0865°E], Matsumoto-shi, Nagano Pref., Honshu, Central Japan, 13.IX.1995, Tateo ITO leg.; 1 ♀ (MNHA: B1-654055), same data as for the holotype (left antenna and spermathecal apparatus are on slide).

*Distribution.* Japan (Honshu).

*Etymology.* The specific name is derived from a history of the Pass where becomes to be the type locality.

*Remarks.* The present new species is similar to *Ptomaphagus takaosanus* NAKANE (NAKANE, 1982) in the ovoidal or the fist formed aedeagal shape of male genitalia, and in having the posteriorly emarginate semicircular depression laterally with some spines in the middle of the ventrite VIII of abdomen (Cf. PERREAU, 1996: fig. 19). But, this new species is diagnostically differentiated from *P. takaosanus* by antennomere VII is twice as long as VIII (*P. takaosanus*: antennomere VII is three times as long as VIII, according to the original description), and by the left apical expansion of median lobe having a bilobate appendage at the innerlateral end (*P. takaosanus*: the left apical expansion is simple).

Other different character states of the new species such as the spinal arrangement on ventral side of protibia (Fig. 3), the shape of spermatheca and the number of bent of spermathecal duct (Fig. 9) seem to be diagnostically available for the classification among congeners, but they do not mention here, since it is needed an accumulation of additional examinations to conclude their taxonomic value further in the congeners at least inhabiting to Japan.

The new species is presently known to occur only in the montane zone (ca. 1,150–1,500 m in elevation) of the Kiso and the Chikuma Mountains, central Honshu. The paratype specimen from Tobira-kôsen was likely to be extracted from the soil and debris of a litter layer together with *P. takaosanus* (T. ITO, in personal communication), accordingly, the new species seems to be a litter dweller as with most other congeners (GNASPINI, 1998: table 3) and these two species co-occur in there. However, the distributional range of the new species may possibly be limited than that of *P. takaosanus*, judging from localities of the congeneric specimens examined from Honshu.

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## 要 約

西川正明・林 靖彦:長野県産オニセチビシデムシ属(鞘翅目タマキノコムシ科チビシデムシ亜科)の1新種. ———— 長野県で採集されたオニセチビシデムシ属の一種を新種と認め, 日本の本州から2番目に発見された種としてゴンベエオニセチビシデムシ *Ptomaphagus gonbe* sp. nov. と命名して記載した. この新種は, タカオオニセチビシデムシ *Ptomaphagus takaosanus* NAKANE に類似するが, 触角節および雄交尾器の形状で識別される.

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