

Four Species of the Genus *Leptoglyphus* from Japan (Coleoptera, Bothrideridae)

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Abstract In addition to two known species of the genus *Leptoglyphus*, two more new species were found from Japan. One of them is described here under the name of *Leptoglyphus tanakai* sp. nov., which was formerly identified as *L. orientalis* SHARP. A large number of specimens of true *L. orientalis* were collected in the southern part of Japan. The other new species is described here as *L. kubotai* sp. nov.

Two species of the genus *Leptoglyphus* have hitherto been known from Japan: *Leptoglyphus vittatus* SHARP and *L. orientalis* SHARP. The former is very rare species only known from Kyushu and its adjacent islands, while the latter is often found in central part of Japan. However, my identification of the latter species was found to be a mistake and it should be described as a new species. On the other hands, number of specimens of true *L. orientalis* were collected from Shimo-Koshiki Island and Yaku Island. Another unknown species was also found in Yaku Island. Thus, a total of four species of *Leptoglyphus* were ascertained from Japan and are described below.

Leptoglyphus vittatus SHARP

(Figs. 1–6)

Leptoglyphus vittatus SHARP, 1885, 75; SASAJI, 1997, 114, fig. 4; AOKI, 2009 a, 4, fig. 6; 2009 b, 106, Fig.

Body length: 3.2–3.5 mm.

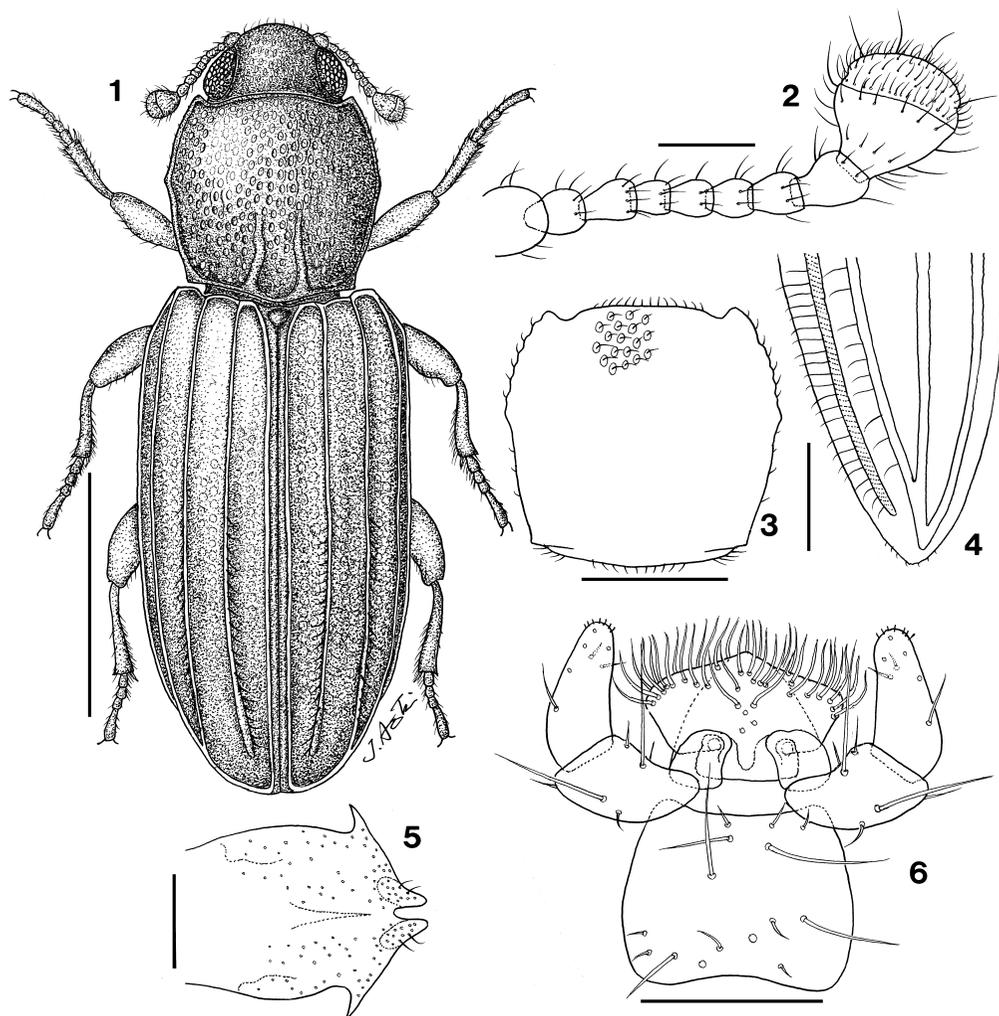
Color: Castaneous or dark reddish brown.

Head. Eyes large, separated by 1.5 times diameter of single eye. Antennae (Fig. 2) 9-segmented; relative widths of segments: I > II > III = IV = V = VI = VII < VIII < IX; terminal segment IX forming distinct club divided by transverse line into two parts, with small constriction.

Pronotum nearly as long as wide, its L/W 0.97; lateral margins with weak angularity a little in front of middle (Figs. 1 and 3); anterior corners distinctly projecting anteriorly; posterior corners nearly right angled. Prosternal disc densely covered with oval foveolae, each with short decumbent seta.

Elytra nearly twice as long as broad, distinctly wider than pronotum (about 1.2 times wide), lateral margins gently swollen; elytral carina II ending shortly before reaching apical border of elytron; III and IV jointed together apically and jointed again more apically with V (Fig. 4); carinae II and III bearing long setae (Fig. 4). Even intervals with double rows of punctures.

Ventral side. Prosternal process with dilated apex. Labial mentum (Fig. 6) a little wider than long, with concave anterior and posterior margins, bearing 4 long and 8 short setae in asymmetrical position; segment II of labial palp with 2 long and 4 short setae; segment III with 1 long and 2 short setae. Prementum with angulate anterior margin, densely beset with thick setae. Male genitalia peculiar in shape, with a pair of short horn-like processes on apex and a pair of sharp and



Figs. 1-6. *Leptoglyphus vittatus* SHARP. — 1, Habitus; 2, antenna (right side); 3, outline of pronotum; 4, apical part of elytron (right side); 5, apical part of male genitalia; labium; 6, labium. (Scale bars: 1 mm for Fig. 1; 0.5 mm for Fig. 3; 0.3 mm for Fig. 4; 0.1 mm for Figs. 2, 5 and 6).

curved spines laterally (Fig. 5).

Legs. Tibiae, segments I and II densely bearing setae on ventral side; segment III narrower than I and II, bearing only a few setae.

Material examined. 1 ex., Teuchi, Shimo-Koshiki Island, Kagoshima Prefecture, West Japan, 17-V-1994, T. UENO leg.; 1 ex., Ohko Rindo, Yakushima Island, Kagoshima Prefecture, Southwestern Japan, 27-XI-2002, Y. KUBOTA leg.

Leptoglyphus tanakai sp. nov.

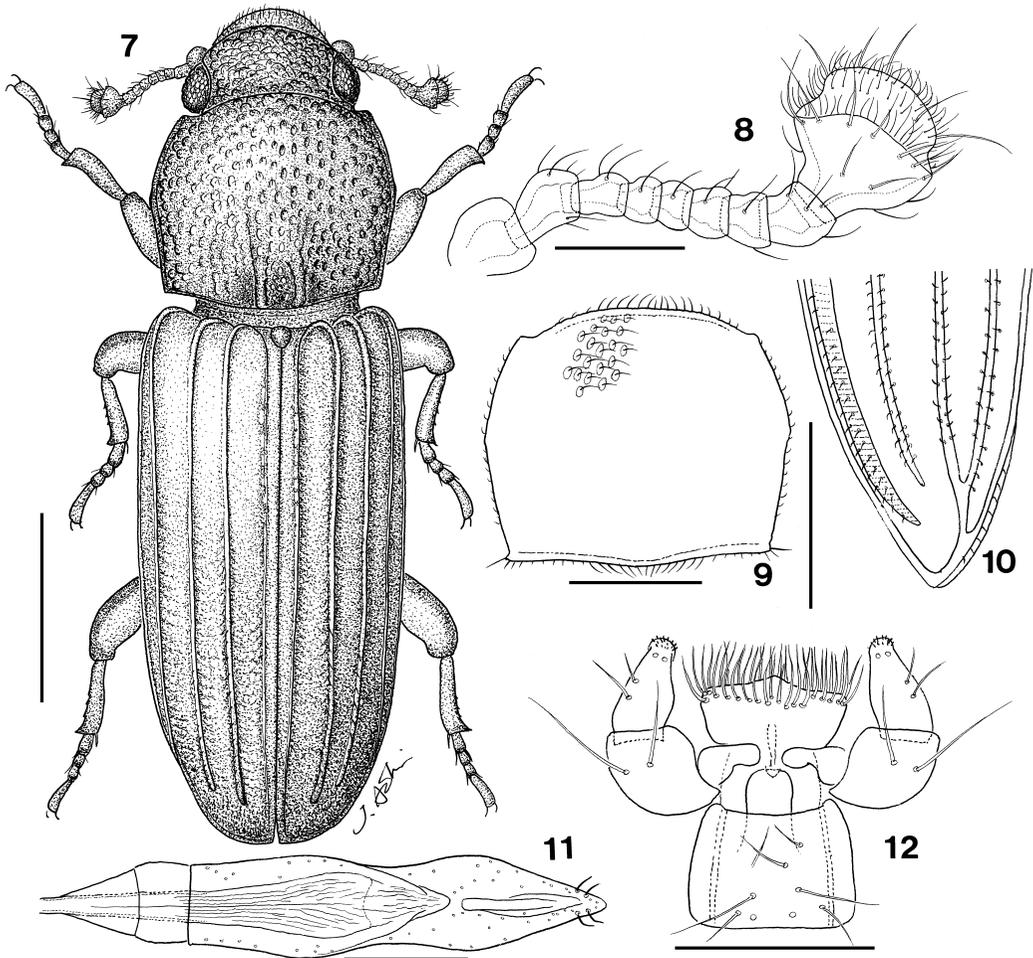
(Figs. 7–12)

Leptoglyphus orientalis: AOKI & HIRANO, 2008, 1, figs. 1–3; AOKI, 2009 b, 104, fig.

Body length: 1.85–2.50 (av. 2.18) mm.

Color: Body castaneous; pronotal margins and edges of elytral carinae black.

Head. Anterior clypeal margin straight; clypeus and frons with sharply pointed erect setae; vertex with decumbent setae. Eye separated by 1.9 times diameter of eye. Antennae (Fig. 8) 9-segmented; relative widths of segments: $I > II > III = IV = V < VI = VII < VIII < IX$; terminal segment IX forming distinct club divided by transverse line into two portions, larger basal portion with a few setae and smaller apical portion densely covered with long and short setae and constricted laterally.



Figs. 7–12. *Leptoglyphus tanakai* sp. nov. — 7, Habitus; 8, antenna (right side); 9, outline of pronotum; 10, apical part of elytron (right side); 11, male genitalia; 12, labium. (Scale bars: 0.5 mm for Fig. 7; 0.3 mm for Figs. 9 and 10; 0.1 mm for Figs. 8, 11 and 12).

Pronotum rather broad (Fig. 9), slightly wider than long, its L/W 0.88–1.00 (av. 0.97), with nearly straight anterior margin and weakly convex lateral margins gently and smoothly curved, widest in front of middle, showing very inconspicuous angularity; anterior corners never projecting anteriorly, posterior corners nearly right angled. Pronotal disc densely covered with oval foveolae each with long decumbent seta, almost twice as long as foveola.

Elytra nearly twice as long as broad, slightly swollen at middle or a little posteriorly, its L/W 1.89–2.14 (av. 2.48); elytron with six carinae; carina II strongest and carina IV weakest; carinae II and III ending shortly before reaching apical border (III shorter than II); carinae IV and V joined together apically (Fig. 10) and reaching apex of elytron; carina II only slightly more raised apically than other portion, bearing minute setae. Even intervals with double rows of punctures, each with minute seta.

Ventral side. Prosternal process with dilated apex, constricted lateral margins and anterior margin distinctly concave medially. Middle coxal cavities separated by 1/3 of cavity diameter; surface of mesosternum and metasternum except on smooth median part covered with oval foveolae, each with fine seta. Ventrites showing surface structure similar to that of metasternum; intercoxal process of ventrite I very broad and trapezoid, wider than half width of ventrite; ventrite I twice as broad as ventrite V. Labial mentum becoming a little wider posteriorly; second and third segments of labial palp each with two setae (Fig. 12). Male genitalia (Fig. 11) lanceolate, with two pairs of setae at apex.

Legs. Femora with a pair of lobe-shaped appendages on ventroapical end. Tarsi parallel-sided, with truncated rectangular apex.

Holotype: Mt. Wakakusa, Nara City, Nara Prefecture, Central Japan, 15–III–2009, T. SAITO leg.; 7 paratypes (including 1 ♂ and 1 ♀), the same data as holotype; 1 paratype, Mt. Wakakusa, Nara City, Nara Prefecture, Central Japan, 13–III–2005, T. SAITO leg.; 4 paratypes (including 1 ♀), Sasayakinokomichi, Kasugano-chô, Nara City, Nara Prefecture, Central Japan, 13–III–2005, T. SAITO leg.; 2 paratypes, Nara Park, Takahata-chô, Nara City, Nara Prefecture, Central Japan, 19–II–2005, T. SAITO leg.; 1 paratype, Near Kasuga-Taisha, Takahata-chô, Nara City, Nara Prefecture, Central Japan, 17–I–2009, T. SAITO leg.; 1 paratype, Asebi, Nara Park, Nara City, Nara Prefecture, Central Japan, 28–I–2006, I. TANAKA leg. Holotype (NSMT-I-C 200200) and 3 paratypes (NSMT-I-C 200201–200203) are deposited in the collection of National Museum of Nature and Science, Tokyo.

Remarks. AOKI and HIRANO (2008) and AOKI (2009) made an error in identifying this species from Central Japan as *Leptoglyphus orientalis* GROUVELLE. Another species surely considered as true *L. orientalis* was collected later in the southwestern part of Japan and described below. Thus, the species from Central Japan was described above as a new species.

Leptoglyphus orientalis GROUVELLE

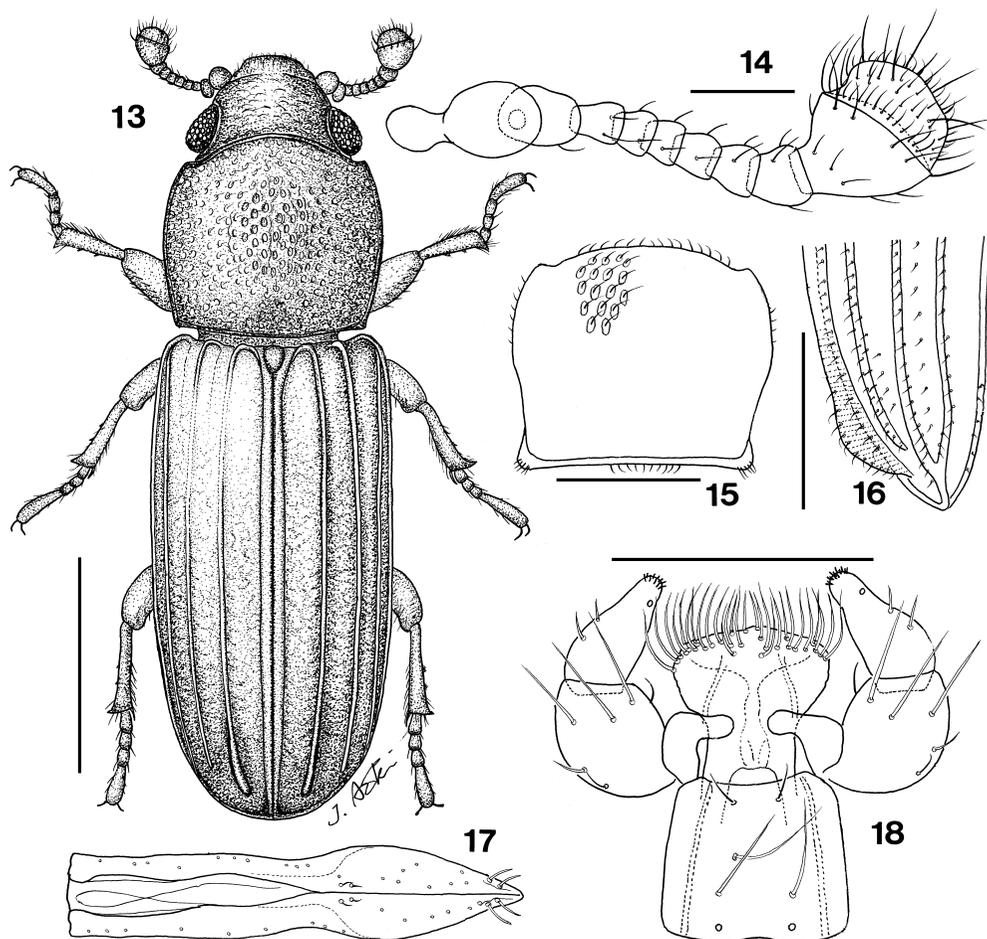
(Figs. 13–18)

Leptoglyphus orientalis GROUVELLE, 1906, 117.

Body length: 1.70–1.95 (av. 1.83) mm.

Color: Body castaneous; pronotal margins and apical parts of elytral carinae dark-colored.

Head. Anterior clypeal margin straight; eyes separated by twice diameter of eye. Antennal club divided into two parts, apical portion weakly constricted basally (Fig. 14); Other features as in the preceding species, *L. tanakai*.



Figs. 13–18. *Leptogyphus orientalis* GROUVELLE. — 13, Habitus; 14, antenna (right side); 15, outline of pronotum; 16, apical part of elytron (right side); 17, male genitalia; 18, labium. (Scale bars: 0.5 mm for Fig. 13; 0.3 mm for Figs. 15 and 16; 0.1 mm for Figs. 14, 17 and 18).

Pronotum rather broad (Fig. 15), slightly wider than long, its L/W 0.90–0.98 (av. 0.95), with slightly convex anterior margin and weakly convex lateral margins, showing very inconspicuous angularity at level a little in front of middle point; anterior corners only feebly projecting, posterior corners nearly right angled. Prosternal disc densely covered with oval foveolae, each with shorter decumbent seta shorter than twice length of foveola.

Elytra nearly twice as long as broad, mostly parallel-sided, its L/W 1.96–2.09 (av. 2.02); elytron with six carinae; carina II strongest and carina IV weakest; carinae II and III ending shortly before reaching apical border of elytron; apical part of carina II strongly raised and thickened, bearing rather long setae; carina III also weakly thickened apically, with rather long setae; carinae IV and V joined together apically just before reaching apical border (Fig. 16). Even intervals with double rows of punctures; minute setae arranged in rows along carinae and rows of punctures.

Ventral side. Prosternal process with dilated apex, constricted lateral margins and straight

anterior margin only slightly concave medially. Middle coxal cavities close to each other, separated by 1/5 of cavity diameter; surface of mesosternum and metasternum except on smooth median part sparsely covered with irregular-shaped oval foveolae, each with fine seta. Intercostal process of ventrite broad and trapezoid, far wider than ventrite V; ventrite I wider than twice breadth of ventrite V. Labial mentum with straight lateral margins a little diverging posteriorly; second segment of labial palp strongly large and swollen, with three long and three short setae; third segment with two short setae. Male genitalia lanceolate, with two pairs of thick setae.

Legs. Similar to those of the preceding species.

Material examined: 3 exs., Mt. Toimo-dake, Yakushima Island, Southwestern Japan, 13–IV–2010, Y. KUBOTA leg.; 10 exs., the same place, 26–V–2010; 3 exs., the same place, 29–VI–2010, Y. KUBOTA leg.; 1 ex., Ikoino-mori, Kuskawa, Yakushima Island, Southwestern Japan, 11–VI–2010, Y. KUBOTA leg.; 67 exs., Sesenoura, Shimo-Koshikijima Island, Kagoshima Prefecture, Southwestern Japan, 4–X–2009, J. AOKI leg.; 3 exs., Kawanagano, Satsuma-Sendai, Kagoshima Prefecture, Southwestern Japan, 9–V–2008, Y. HIRANO leg.

Distribution. Sumatra, Java and Japan (new record).

Remarks. Two Japanese species of *Leptoglyphus*, the central Japanese species and the southwestern Japanese species, both are very similar to *L. orientalis*. However, the latter species recently found from Japan is more close to *orientalis*, because it is more in accordance with original description of *orientalis* in the following two points: (1) some erect setae in apical part of elytral carinae (in parte apicali carinarum aliquis pilis eretis) and (2) body length 1.5–2 mm. The known distribution of *orientalis* is in tropical area, Sumatra and Java, and it is more reasonable to identify the southwestern Japanese species collected in subtropical area as *orientalis* than to do so the central Japanese species collected in warm-temperate area in Japan, which is described here as a new species.

Leptoglyphus kubotai sp. nov.

(Figs. 19–24)

Body length: 2.10–2.20 (av. 2.16) mm.

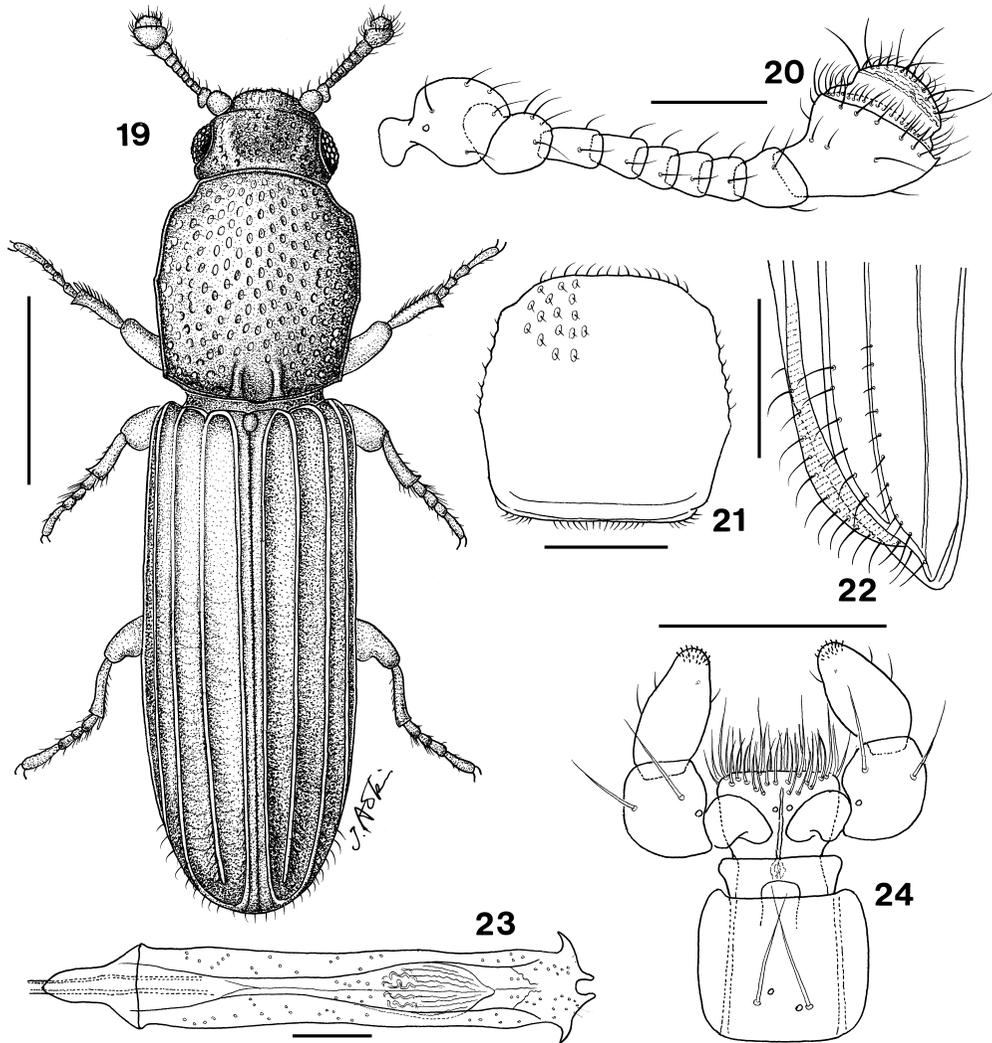
Color: Body and legs castaneous; pronotal margin, basal and apical parts of elytra and apical portion of femora dark-colored.

Head. Eyes separated by 2.0–2.5 × diameter of eye. Antennal club divided into two parts, apical portion constricted basally (Fig. 20); ratio in width of antennal segments: I > II > III = IV = V = VI = VII < VIII < IX. Other features as in *L. tanakai*.

Pronotum rather narrow, a little longer than wide (Fig. 21), its L/W 1.06–1.17 (av. 1.15), with weakly convex anterior margin; pronotum widest at middle part, showing feeble angularity on each side; anterior corners never projecting, but cut obliquely, posterior corners inconspicuously angled. Pronotal disc covered with elongate oval foveolae, each with short fine seta nearly as long as foveola.

Elytra more than twice as long as broad, ratio of length to width 2.16–2.33 (av. 2.25); elytron with six carinae; carina II strongest and carina IV weakest; carina II almost reaching apical border and more or less raised and thickened apically; carina III joined to carina IV apically and then again joined to V to reach apical border of elytron; apical 1/3 of carinae II, III and IV bearing long erect setae (Fig. 22). Even intervals with double rows of large punctures.

Ventral side. Prosternal process with delated apex, constricted lateral margins and anterior



Figs. 19–24. *Leptogyphus kubotai* sp. nov. — 19, Habitus; 20, antenna (right side); 21, outline of pronotum; 22, apical part of elytron (right side); 23, male genitalia; 24, labium. (Scale bars: 0.5 mm for Fig. 19; 0.3 mm for Figs. 21 and 22; 0.1 mm for Figs. 20, 23 and 24).

margin weakly concaved medially. Middle coxal cavities close together, separated by $1/5$ – $1/8$ of cavity diameter; surface of mesosternum and metasternum except on smooth median part sparsely covered with very elongate oval foveolae, each with short fine seta. Intercostal process of ventrite I broad and trapezoid, far wider than half of ventrite width; vantrite I less than twice breadth of ventrite V. Labial mentum with parallel lateral margins; second and third segments of labial palp with two and three setae, respectively. Male genitalia peculiar in shape, apex with a pair of short horns rounded at tip and a pair of sharp and curved spines laterally (Fig. 23).

Holotype (sex undetermined): Mt. Toimo-dake, Yakushima Island, Southwestern Japan. 29–VI–2010, Y. KUBOTA leg.; 2 paratypes (including 1 ♀), Mt. Toimo-dake, Yakushima Island, Southwestern Japan, 21–III–2010, Y. KUBOTA leg.; 1 paratype (♂), the same place. 13–IV–2010,

Y. KUBOTA leg.; 2 paratypes (including 1 ♂), the same place, 26-V-2010, Y. KUBOTA leg.; 3 paratypes (including 1 ♂ and 2 ♀), the same place, 29-VI-2010, Y. KUBOTA leg.; 1 paratype, Ikoino-Ie, Kusugawa, Yakushima Island, Southwestern Japan, 11-VI-2010, Y. KUBOTA leg.; 1 paratype, Issou, Yakushima Island, Southwestern Japan, 4-XII-2011, Y. KUBOTA leg.; 1 paratype, Hinoyama Rindo, Miyakejima Island, Izu Islands, Central Japan, 3~23-VIII-2005, H. MAKIHARA leg. Holotype (NSMT-I-C 200204) and 2 paratypes (NSMT-I-C 200205, 200206) are deposited in the collection of National Museum of Nature and Science, Tokyo.

Key to Four Japanese Species of the Genus *Leptoglyphus*

- 1(2) Elytral carinae II strongly elevated apically, provided with short setae; lateral margins of pronotum smooth. Southwestern Japan (Kyushu, Shimo-Koshiki Island and Yakushima Island). *L. orientalis* GROUVELLE
- 1(2) Elytral carinae II not or weakly elevated apically.
- 3(4) Apical half of elytral carinae II with short setae; lateral margins of pronotum nearly smooth, only slightly angulate. Central Japan. *L. tanakai* sp. nov.
- 4(3) Apical half of elytral carinae II with long setae; lateral margins of pronotum more or less distinctly angulate.
- 5(6) Pronotum as long as wide or a little wider than long, with anterior corners distinctly produced; elytra twice as long as broad (L/W=2.00). Southwestern Japan (Kyushu, Shimo-Koshiki Island and Yakushima Island). *L. vittatus* SHARP
- 6(5) Pronotum longer than wide, with anterior corners obliquely cut, without anterior projections; elytra longer than twice the breadth (L/W=2.24-2.25). Body length 2.10-2.16 mm. Southwestern Japan (Yakushima Island) and Central Japan (Miyake Island). *L. kubotai* sp. nov.

Acknowledgement

The new species *Leptoglyphus tanakai* was collected by Mr. Isamu TANAKA (Nara City) for the first time in Nara City and later collected also by Mr. Takumi SAITO (Amagasaki City). They kindly offered a large number of specimens for my study. Mr. Yoshinori KUBOTA (Yakushima Island) made thorough investigation in wide areas of Yakushima Island and succeeded in collecting a large number of colydiid beetles including *Leptoglyphus orientalis* and *L. kubotai*. Hence the names of the two species are dedicated to Mr. I. TANAKA and Mr. T. KUBOTA. Mr. Yukihiro HIRANO gave me specimens of *L. orientalis* collected in Kyushu. I express my heartfelt thanks to them.

要 約

青木淳一：日本産ミスジホソカタムシ属の4種（コウチュウ目ムキヒゲホソカタムシ科）。——日本に産するミスジホソカタムシ属 *Leptoglyphus* にはミスジホソカタムシ *L. vittatus* SHARP および タナカホソカタムシ *L. orientalis* GROUVELLE の2種が知られていたが、南西日本から真の *orientalis* と断定される種（ミナミミスジホソカタムシ、新称）が採集され、奈良県を中心とする中部日本に生息するタナカホソカタムシは *orientalis* ではなく、新種とすべきものであることが判明し、タナカミスジホソカタムシ *Leptoglyphus tanakai* sp. nov. として記載した。また、南西日本からはさらに別種の新種が発見され、ホソミスジホソカタムシ

Leptogyphus kubotai sp. nov. と命名し記載した。結局、日本には4種が分布することになり、これら4種を図示・記載するとともに、検索表を示した。

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