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## New Myrmecophilous Coleoptera in Nepal and Japan (Histeridae & Staphylinidae)

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**ABSTRACT** The present contribution is a report of a new taxon of the Chlamydopsinae in Japan, consisting of *Boreochlamydus ohtanii* n. g. et n. sp., and two new taxa of the Aleocharinae from Nepal and Japan, which include *Lomechusa throughtensis* n. sp., and *Lomechusa hosodai* n. sp. The Chlamydopsinae of Histeridae seem to be new to the coleopterous fauna in the Palaearctic region. A brief concept of the genera *Lomechusa* and *Atemeles* is also given.

**KEY WORDS** Taxonomy/Chlamydopsinae/*Lomechusa*/Nepal/Japan

Myrmecophilous or termitophilous beetles are of particular interest not only in their habitats, but also in the host-parasite interactions directly affecting their own, as well as host phylogenies and their coevolution. In my short experience in the field, the chance to find out these beetles in ant's nest is rare in such a temperate zone as Japan. Fortunately, I have examined a series of examples of the myrmecophilous beetle species through the courtesy of my colleagues. It is noteworthy that the presence of the species of the subfam. Chlamydopsinae might be their first report for the Palaearctic region, and that the Nepalese *Lomechusa throughtensis* n. sp. found at an altitude of 4,400 m would be the highest occurrence record known to the genus. The type specimens of the species are deposited in the collection of T. Shibata unless otherwise noted and in the collection of the author (KS).

### Family Histeridae Subfamily Chlamydopsinae

The subfamily Chlamydopsinae have hitherto been known only from the Australian region. The dominant genus *Chlamydopsis* Westwood, 1869, comprises ca. 20 species and is restricted to the southern Australia and Tasmania, and a few to New Guinea. A close inspection reveals that the Japanese *Boreochlamydus* n. g. is similar to *Chlamydopsis* in many respects. There is a vast disjunction between both taxa beyond the zoogeographical regions. An appropriate reason of this disjunction is unknown as yet, but the fact may be partly due to our insufficient information of the myrmecophilous histerid fauna of the southeast Asia, and of the realm of Wallacea in particular.

#### *Boreochlamydus*, new genus

Type species. *Boreochlamydus ohtanii* K. Sawada, new species

Diagnosis. Body thick. Head being vertical in repose, retractable in the

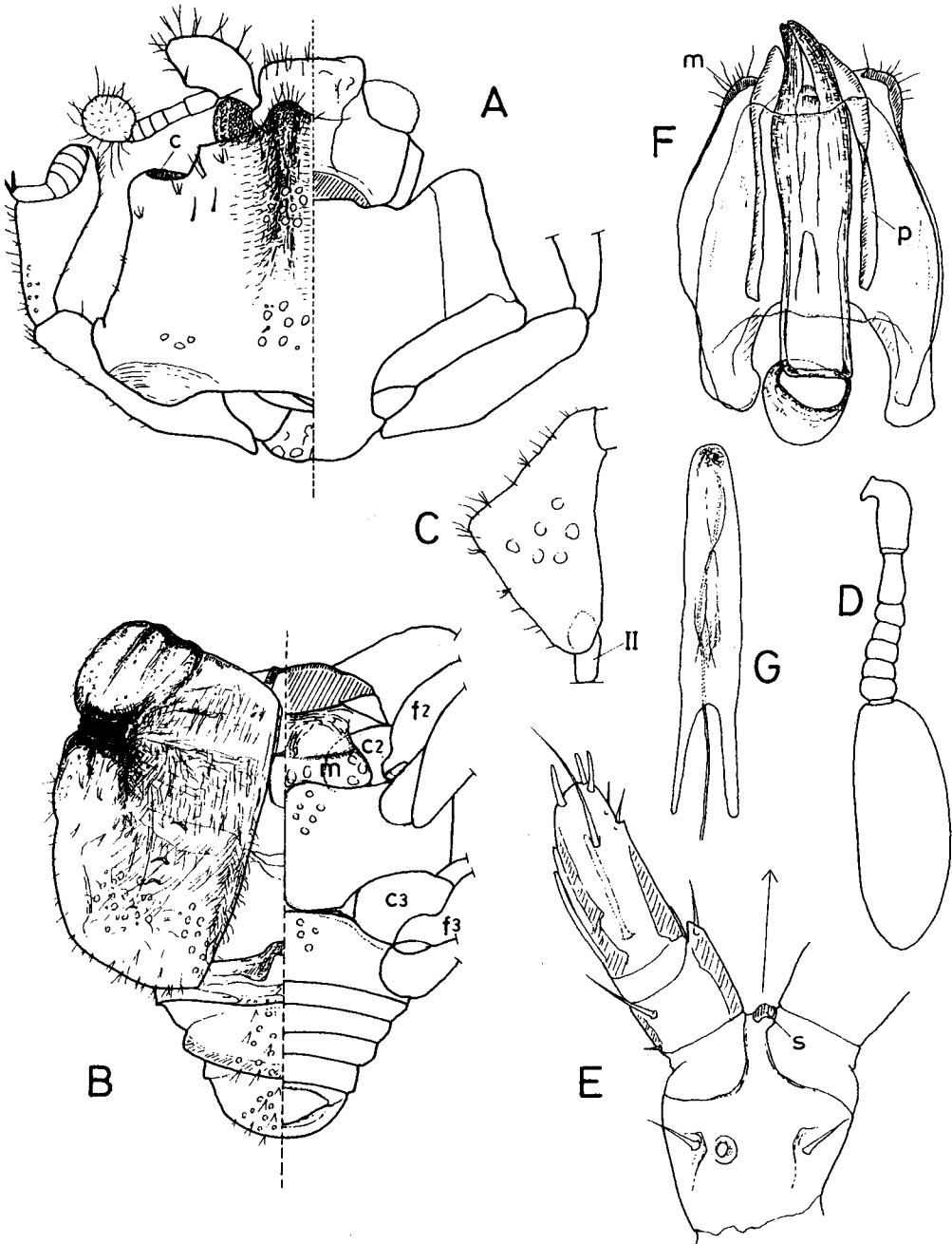


Fig. 1. *Boreochlamydes ohtanii* K. Sawada, new genus & new species. A. head & pronotum (left & right; in dorsal & ventral views); B. elytron and abdomen; C, D. antenna; E. prementum & right labial palpus; F. male genitalia; G. median lobe. c2. c3. meso- & metacoxae; f2. f3. meso- & metafemora; m. mesosternal plate; s. median sclerite of prementum; p. prolongation of sternite VIII.

pronotum, nearly rectangular and without carinae or sutures. Antennae (Figs. 1C, D) are nine-segmented; scape incassate, nearly triangular in outline, club lacking both annuli or sutures. Prosternum (Fig. 1A) flat above and without striae. Mesosternum (Fig. 1B) forms the transverse, rectangular plate whose lateral part is extending over the mesocoxa. Metasternum (Fig. 1B) is broad, with coarse punctures as well. Pronotum (Fig. 1A) is declivous antero-externally and then remarkably raised to form the longitudinal thickening in the middle. The anterior face of pronotum is with the cavity which is capable of receiving the antennal flagellum in repose. Elytra (Fig. 1B) are highly modified; the elytral basal half is deeply concaved, whereas the remaining posterior half is strongly convex, the humeral region makes a large, arched callosity whose back have an excavated space, the space is provided with the tuft of short, golden trichome. Maxillary palpus short, three-segmented; galea and lacinia densely ciliated throughout. Labial palpus (Fig. 1E) relatively short, only two-segmented; segment I short, II about twice as long as I. Prementum weakly sclerotized, with a pair of setal pores and one real pore in the middle (always?). Glossa and its derivatives are not developed, but a small median sclerite (s) is present in the specimen examined.

Etymology. *Boreochlamydes* is derived from the Greek (& Latin) "boreas" for north, and "chlamys" for a large mantle of wool, often gold, and is referable also to *Chlamydopsis* Westwood.

Remarks. As the elytral arched callosities with short trichomes and as the simple prosternum without striae the present new genus could be considered as a near relative of the Australian *Chlamydopsis* Westwood, 1869. Although the buccal structure of the cited genus may be not described and figured as yet, *Boreochlamydes* n. g. has 3-segmented maxillary palpus plus 2-segmented labial palpus and is lacking a real glossa as mentioned above. Besides, the gross feature of elytra is similar to *Eucurtia* Mjöberg, 1912 but elytral long hair-like trichome is absent and the sternal structure is different in the new genus.

***Boreochlamydes ohtanii* K. Sawada, new species** (Figs. 1. A-G)

Material examined. Holotype (♂), in ant's nest, Mt. Sobo, Ooita Pref., central Kyushu, Japan. leg. N. Ohtani, 2 V, 1967. Allotype (♀), in the colony of ant under stone, Mt. Gozaisyo, Mie Pref., central Honshu, Japan. leg. N. Ohtani, 26 V, 1966. Paratype (♂), the same data as holotype (KS).

Description. ♂: Length ca. 1.80 mm. Body dark brown and shining. Head, pronotum and antennal scape coarsely punctate to rugulose and with distinct body setae which are usually bifurcate from their basis. Antennal scape (Fig. C) large, thick, triangularly projecting in the outer margin and is vertical in repose lateral to the head. pedicel (Fig. D) being geniculate, twice as long as wide; segment III a little shorter and narrower than II; IV to VIII apparently broader than long and gradually increasing in width, club is elliptical, a little longer than pedicel plus flagellum (7:7.15). Pronotum is distinctly raised in the middle to form the median thickening which is shallowly carinate back, shortly protruded beyond the anterior

margin of pronotum and is becoming flattened posteriorly. The arched callosity on the humeral region is roughly costate and setose behind. The depressed part of the elytral base is nearly glabrous excepting a few punctures scattered. Abdomen with two apical tergites exposed. Legs moderately long; tibiae dilated in the middle. Segment I of labial palpus has 3 setae (Fig. E) in which the basal-most setula might be designated to  $\alpha$  as in Aleocharinae of Staphylinidae, II with some 6 setae; one long, spiniform seta located at distal one-third, two others are spatulate and situated on the outer margin and a similar seta placed on the inner surface of the segment, in addition two remaining setulae may be seen just before the apex. In male genitalia (Fig. F) parameres 0.58 mm long, in the ventral view they are gradually dilated distally and then converging to each apex. Basal piece is small, ovate in outline. Median lobe (Fig. G) narrowly elongate, quite obtuse at apex and deeply bifurcate at the base; copulatory piece is not detected. Tergite IX being membranaceous leaving narrow, sclerotized posterior margin (m in Fig. F). Sternite VIII is entirely membranaceous and with a pair of well sclerotized prolongation (p) which is lateral to the parameres.

♀: Sexual characters; paired coxites are developed, oblong and with the anterior margin nearly truncate, thickened and clearly incised in the middle.

Etymology. Named after Mr. Norio Ohtani, the discoverer of the species.

Remarks. That the pronotal median thickening is a little projecting anteriorly, the elytral arched callosity is provided with rough carinae back, and the nearly straight parameres of male genitalia whose apices are touched together is the features peculiar to the present new species.

#### References

- Arnett, R. H., 1963. *The Beetles of the United States*, 1112 pp. Washington.  
 Bickhardt, H., 1916. Family Histeridae, In Wytzman, P. (ed.) *Genera Ins.* 302 pp.  
 Hatch, M. H., 1962. The beetles of the Pacific Northwest, Pt. III, Pselaphidae & Diversicornia I. *Univ. Wash. Publ. Biol.* 16. 503 pp.  
 Kryzhanovskiy, O. L. & A. H. Reichardt, 1976. Sphaeritidae, Histeridae, & Synteliidae. *Fn. USSR* 5 (4): 1-434. Leningrad.  
 Ōhara, M., 1989. Notes on six histerid beetles from Southern Asia (Coleoptera: Histeridae), *Ins. Matsum.*, N. S. 42: 31-46.  
 Sharp, D & F. A. G. Muir, 1912. *The comparative anatomy of the male genital tube in Coleoptera.* 169 pp. London.

### Family Staphylinidae Subfamily Aleocharinae

#### Genus *Lomechusa* Gravenhorst, 1806

Type species. *Lomechusa emarginata* (Paykull, 1789) (*Atemeles*).

The macrochaetotaxy of the mouth-parts and the abdominal tergites used in my previous works of the other aleocharine staphylinid beetles does not apply to the species of *Lomechusa* Grav. and *Atemeles* Stephens, 1832 for reason of the presence of multisetosis and apparent disorder of macrosetal loci and number. Temporarily

the author adopted relative characters, some of which appeared in Lohse 1973, etc. Further revised study is to be needed.

*Lomechusa throngensis* K. Sawada, new species (Fig. 2 A-H)

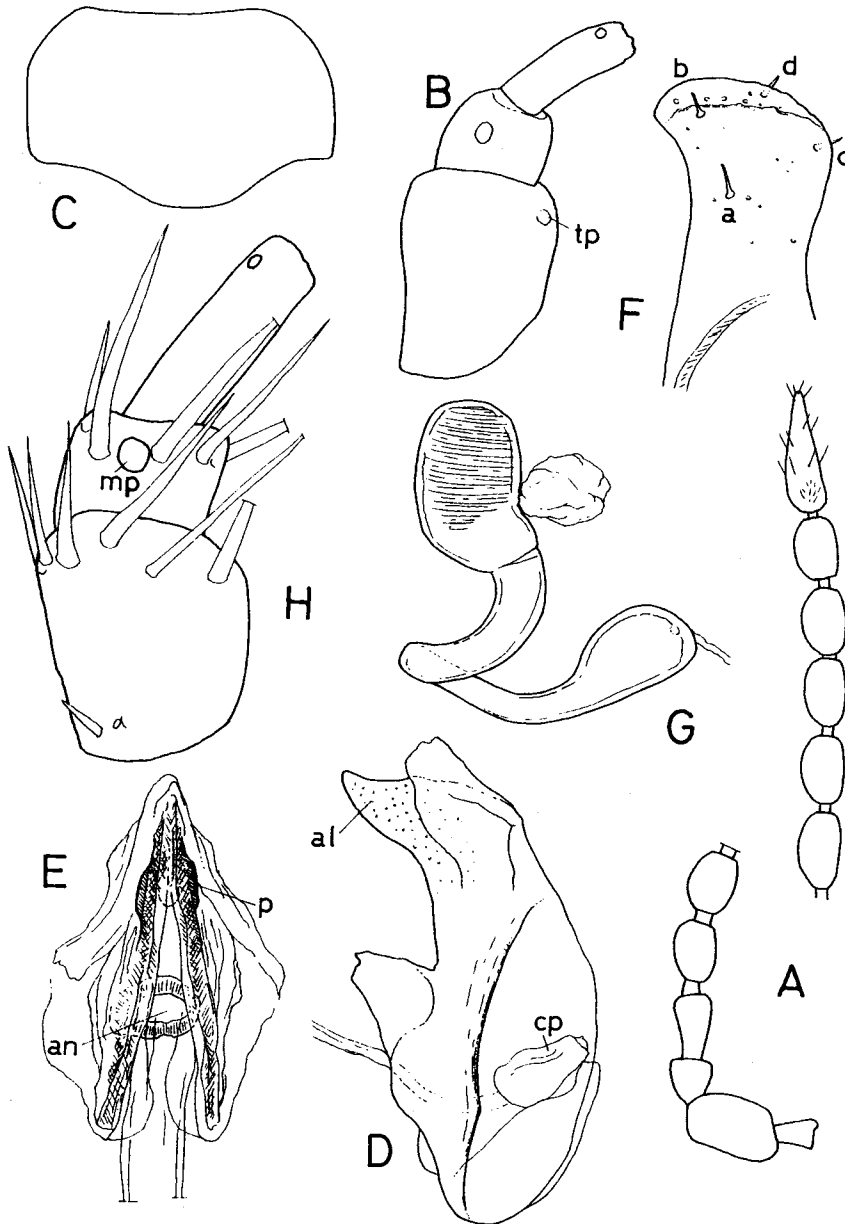


Fig. 2. *Lomechusa throngensis* K. Sawada, new species. A. antenna; B. right labial palpus (setae omitted) ; C. pronotum; D. median lobe of genitalia (in lateral view); E. copulatory piece; F. distal segment of left lateral lobe; G. spermatheca. *L. minor* Reitter, 1887, holotype ♂ ; H. right labial palpus.

Material examined. Holotype (♂), allotype (♀) & 8 paratypes, in which 2 paratypes (KS), from the colony of *Formica* cf. *sanguinea* Latr. Thorong Pass (4,400 m alt.), Nepal, leg. Y. Hama, 7 V, 1983.

Description. ♂: Length up to 4.5 mm (pronotum 0.95 mm long × 1.40 mm wide; elytra 1.00 mm × 2.45 mm). Body dark reddish brown and shining; head for the most part, and the raised lateral margins of pronotum quite dull due to the presence of the coriaceous microsculpture. Body stout. Head depressed in the middle to the antennal insertions. Antenna (Fig. A) long and slender; scape is the largest, oblong; pedicel, the smallest, about as long as wide, segment III clearly elongate, lightly constricted basally, IV to X narrowly ovate, XI slender, fully as long as two preceding united. Labrum short, with ca. 20 pairs of long setae. Pronotum (Fig. C) nearly rectangular in outline, with the posterior corner which is not produced behind but well defined. The disc fairly excavated along the raised lateral margins and nearly glabrous; there is an obsolete broad depression before the posterior margin. Elytral back is strongly swollen and with fine, rather dense punctures all over. Abdomen with the trichomes rather poorly developed as a whole; tergite IV devoid of the tufted setae on each side, VIII shallowly emarginate behind. Legs long; each femur a little stouter than tibia and furnished only with a few yellowish setae at apex; all tibiae fairly cylindrical, becoming suddenly constricted at the basis to form a short, curved stalk. Maxillary palpus four-segmented; segment II stout, curved, a little longer than III; both galea and lacinia densely ciliated. Labium markedly multisetiferous and with numerous long, coarse setae whose apices are often truncated or forked. Ratio of labial palpal segments I - III as 1.0 : 0.33 : 0.66 (Fig. B). Glossa broad, subtruncate in front. Prementum broad, with 1 setal and ca. 5 large and small real pores in addition to several stout setae. In aedeagus (Fig. D) median lobe is 0.85 mm long; in lateral view the apical lobe (*al*) is broad, ending in a bluntly pointed apex, ventrally the apical lobe is broadly arcuate, whereas the dorsal margin is sinuate so that the apex is slightly raised upward. Copulatory piece (Fig. E) is narrowly elongate and triangularly pointed at the apex and with membranaceous, more or less costate foldings (*p*) on the corpus. Lateral lobe is well developed and with the large, curved apodeme on the velum, distal segment (Fig. F) broad, elongate, and gently constricted in the middle; four principle setae are converted to the similarly short, minute setulae, in which a is posterior to the level of *c*.

♀: Sexual character. Spermatheca (Fig. G) is fairly contorted, bursa stout, oblong and devoid of umbilicus within, duct abruptly dilated apically.

Etymology. The specific *throngensis*, derived from a local name in Nepal, where the new species occurs.

Remarks. In the form of labial palpus *Lomechusa throngensis* n. sp. is similar to *L. minor* Reitter 1887 from Tibet, but in the latter species labial palpal segment II is fairly broad and III is subequal to I in length. The ratio of labial palpal segments I - III (Fig. H) as 1.0 : 0.41 : 0.91. To my regret the antennae leaving the basal segments were lost in the holotype specimen examined. Very slender antennae

and the reduced major setae of the lateral lobe of aedeagus are the features peculiar to the present new species.

*Lomechusa hosodai* K. Sawada, new species (Fig. 3 A-I)

Material examined. Holo (♂) -, allo (♀) -, & 19 paratypes, in which 3 paratypes (KS), from ant's nest, Mt. Hoozan, Yamanashi Pref., central Japan, leg. K. Hosoda, IX-X, 1988.

Description. ♂: Length ca. 4.80 mm (pronotum 1.00 mm long × 1.60 mm wide; elytra 0.95 mm × 1.46 mm). Body reddish brown and shining; head for the most

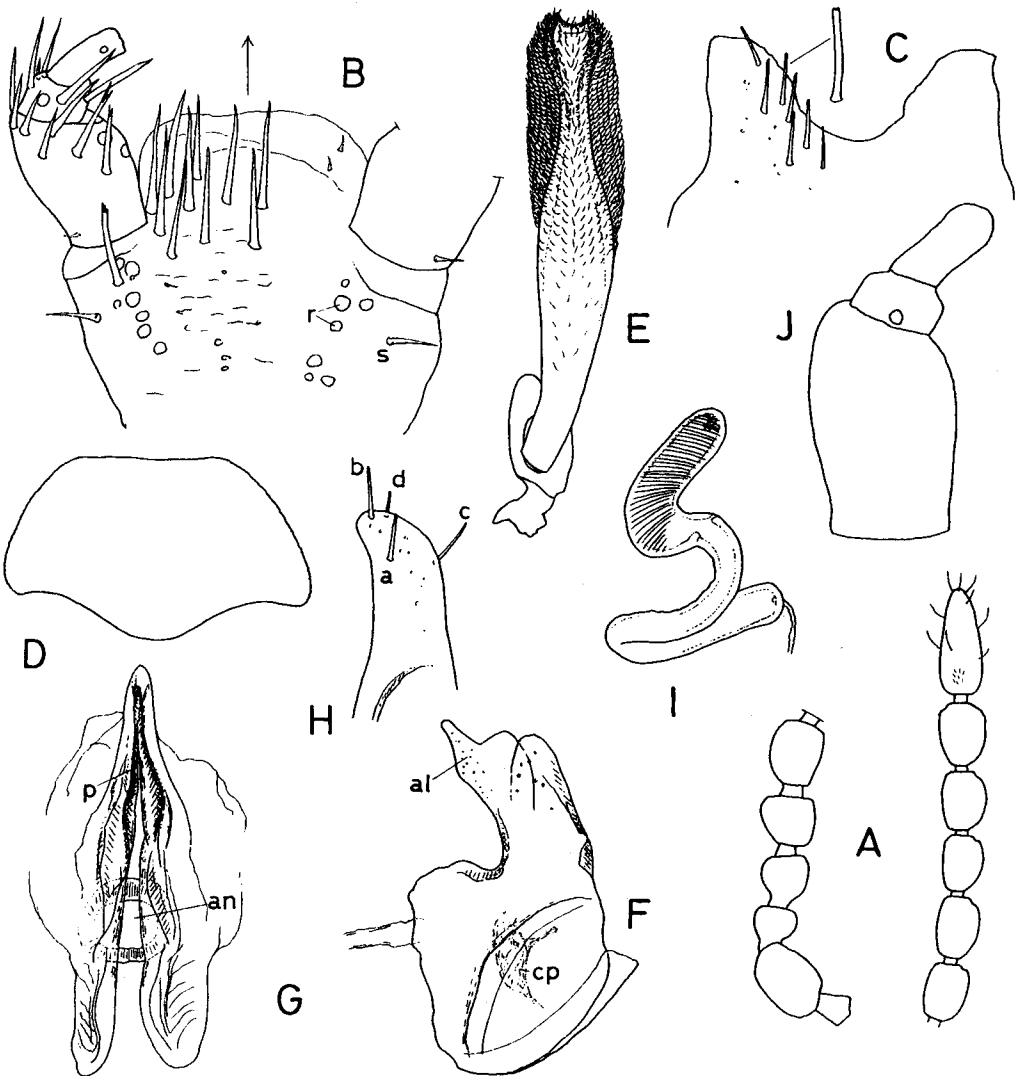


Fig. 3. *Lomechusa hosodai* K. Sawada, new species. A. antenna; B. right labial palpus & glossa; C. mentum; D. pronotum; E. metafemur (in dorsal view); F. median lobe (in lateral view); G. copulatory piece; H. distal segment of left lateral lobe; I. spermatheca. *L. mongolica* Wasmann, 1896, holotype ♀; J. right labial palpus (Setae omitted).



part and the pronotal lateral raised margins quite dull by the presence of coriaceous microsculpture. Body is thick ventrally and rather flattened above. Head broadly depressed in the middle. Antenna (Fig. A) hardly dilated towards the extremity; scape thicker than others, oblong; pedicel, the smallest and moniliform; segments III to V increasing in width, different to each other, V similar to scape in width; VI to X nearly oblong, XI broad, shorter than two preceding together. Pronotum (Fig. D) rather abruptly narrowed anteriorly, the lateral margin is thick and raised as usual, its posterior corner is bluntly produced behind so that the posterior margin is lightly sinuate inside the corners. A small, well defined median depression is usually present before the anterior margin. The pronotal disc is broadly flattened above and with several coarse, setigerous punctures scattered. Elytral back only convex above and closely densely, finely punctured. Abdomen tends to be physogastric; the tergal trichomes characteristically developed like the gold braid of a military officer, the emargination of tergite VIII is fairly deep and arcuate in full length. All legs long; femora are stout, much thicker than tibiae and are becoming strongly constricted in the distal fourth, where there are densely covered with long, golden setae (Fig. E). In labium the labial palpus (Fig. B) is three-segmented, short, the ratio of each segment as 1.0:0.33:0.56. Prementum broad, multisetiferous and laterally with some 7 large and small pores plus 1 setal pore, glossa is broad, truncate, with an indication of emargination in the middle. Mentum (Fig. C) deeply inscised forming the broad lateral corners. Median lobe of aedeagus (Fig. F) is 0.77 mm long, in lateral view the apical lobe (*al*) is narrow and elongate at the apex and its lower margin is lightly concaved; the corpus is fairly thick and flattened below. Copulatory piece (Fig. G) is narrowly elongate and triangularly pointed at the apex and with the edged foldings (*p*), annellus (*an*) situated behind the middle of the corpus. The distal segment of lateral lobe (Fig. H) rather slender, rounded at the apex and lightly outcurved; among four major setae *a*, *b* are similarly long, *c*, *d* wide apart.

♀: Sexual character. Spermatheca (Fig. I) is twisted; bursa narrowly elongate, curved, with a short umbilicus, duct is only widened posteriorly.

Etymology. Named after Mr. Kozo Hosoda, the discoverer of the species.

Remarks. The fact that the apical part of all femora have distinct pilosity, and spermatheca is contorted in shape indicates that the new species has a close affinity with *L. mongolica* Wasmann 1896. But in the holotype specimen of *L. mongolica* examined the labial palpus (Fig. J) is with the ratio of segments I-III as 1.0:0.21:0.43, showing shorter segment III in relation to I, and the pronotum is nearly rectangular in shape and the antennal segment XI is much slender and longer than in *L. hosodai* n. sp.

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References

- Fenyès, A., 1918-1921. Coleoptera, Staphylinidae, Aleocharinae. In Whytsman. P., (ed.) *Genera Ins.*, 453 pp. Pasadena.
- Blackwelder, R. E., 1952. The generic names of the beetle family Staphylinidae, with an essay on genotypy. *Smith. Inst. U. S. N. Mus. Bull.* 200: 483 pp. Washington.
- Lohse, G. A. 1973. In Freude, H., K. W. Harde, & G. A. Lohse. *Die Käfer Mitteleuropas*, Bd. 5. Staphylinidae II, 15-19 (Schistogenini-Aleocharini): 221-292. Krefeld.
- Palm, T., 1972. Svensk Insektfauna 9. Coleoptera Staphylinidae, Aleocharinae. (*Aleunota-Tinotus*) H. 7: 300-467. Stockholm.
- Schilow, W. F., 1977. Taxonomische Bemerkungen über die kurzflügler der Gattung *Atemeles* aus der UdSSR, *Reichenb.* Bd 16, Nr. 34: 323-326.
- 1977. Eine neue Art myrmecophiler Käfer aus der Tadshkischen SSR, *Dtsch. Ent. Z.*, N. F. 24, H. IV-V: 371-372.

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