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Lathrobium japonicum and its new relatives (Coleoptera, Staphylinidae) from the Kuril Islands

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Abstract The brachypterous members of the staphylinid genus *Lathrobium* from the Kuril Islands are dealt with. *Lathrobium japonicum* Bernhauer is redescribed and its male genital organ is illustrated for the first time. Two new subspecies of *Lathrobium japonicum* are described under the names *L.* (s. str.) *japonicum kunashirense* and *L.* (s. str.) *japonicum konoi*. Two new species of this species-group are described under the names *L.* (s. str.) *minakawai* and *L.* (s. str.) *oharai*.

Key words: Coleoptera, Staphylinidae, *Lathrobium*, new species, new subspecies, the Kuril Islands

Lathrobium japonicum Bernhauer (1907, p. 384) was described from the Island of Iturup of the southern Kurils as the first brachypterous species of the genus from the Kuril Archipelago. Since then, a species of the same species-group was reported as *Lathrobium* sp. 2 by Naomi *et al.* (2000, p. 109) based on a specimen obtained on the Island of Paramushir of the northern Kurils. A specimen of the same group was obtained on the Island of Paramushir also by Dr. A. Saitô in the course of the Biological expedition of the Natural History Museum and Institute, Chiba, to the Kamchatcka Peninsula and the North Kuril Islands in 1996. Additional specimen obtained on the same island was found in the Kôno collection at the National Science Museum (Nat. Hist.), Tokyo. Besides, a short series of brachypterous *Lathrobium* was collected in the southern Kurils by the biological survey of the International Kuril Island Project (IKIP) in 1996 and 1997. These specimens of the group of *L. japonicum*, ten specimens in total, are taxonomically studied together with the lectotype of *L. japonicum* which is preserved in the collection of the Field Museum of Natural History, Chicago.

After a careful study, it became clear that the so-called *Lathrobium japonicum* should be classified into three subspecies, two of which are new, and two species also new to science. In the present paper, *Lathrobium japonicum* is redescribed and its male genital organ is illustrated for the first time, and two new subspecies of *L. japonicum* and two new species of the same species-group will be described.

***Lathrobium* (s. str.) *japonicum japonicum* Bernhauer**

[Figs. 1–8, 9–11]

Lathrobium japonicum Bernhauer, 1907, Verh. zool.-bot. Ges. Wien, 57: 384.

Lathrobium (s. str.) *japonicum*: Gusarov, 1991, Vestn. Leningr. Univ. Biol., (3): 8.

Other references are omitted.

Body length: 6.2 mm (from front margin of head to apex of 6th abdominal segment); 4.1 mm (from front margin of head to elytral apices).

Body elongate, parallel-sided and somewhat depressed above; brachypterous. Colour reddish brown and moderately shining, with maxillary palpi and legs yellowish brown, antennae brownish red, latero-basal areas of head and near posterior area of pronotum more or less darkened.

Male (lectotype). Head subquadrate, somewhat elevated medially, slightly longer than broad (length/width=1.05), widest near the middle and slightly more distinctly narrowed posteriad than anteriad; lateral sides gently arcuate; surface sparsely, somewhat coarsely and setiferously punctured, the punctures becoming much closer in latero-posterior parts, and covered with microscopic coriaceous ground sculpture; eyes nearly flat, their longitudinal diameter about one-third as long as postocular part. Antennae somewhat slender, not reaching the middle of pronotum and not thickened towards the apical segment, two proximal segments polished, 3rd subopaque, the remainings opaque, 1st segment robust,

strongly dilated apicad, more than twice as long as broad, 2nd to 11th equal in width to one another, 2nd constricted at the base, 1.4 times as long as broad, remarkably shorter (2ns/1st = 0.47) and distinctly narrower (2nd/1st = 0.71) than 1st, 3rd elongate, almost twice as long as broad, apparently longer than 2nd (3rd/2nd = 1.43) but distinctly shorter than 3rd (4th/3rd = 0.70), 5th to 10th equal in length to one another, each somewhat longer than broad (length/width = 1.20) but slightly shorter than 4th (each of 5th to 10th/4th = 0.86), 11th fusiform, much longer than broad (length/width = 1.80) and about 1.5 times as long as 10th, subacuminate at the tip.

Pronotum moderately elevated medially, widest just behind anterior angles and distinctly narrowed posteriad, apparently longer than broad (length/width = 1.17), distinctly longer (pronotum/head = 1.23) and somewhat broader (pronotum/head = 1.10) than head, lateral sides almost straight except near anterior and posterior angles, anterior margin broadly though slightly emarginate at the middle, posterior margin nearly truncate, anterior angles obtuse and not visible from above, posterior ones narrowly rounded; surface sparingly covered with much coarser punctures than those on head except for a narrow smooth space through the length of pronotum. Scutellum small and subtriangular, provided with a few obscure punctures on the surface. Elytra slightly dilated posteriad and somewhat depressed above, very slightly longer than broad (length/width = 1.02), a little longer (elytra/pronotum = 1.04) and distinctly broader (elytra/pronotum = 1.20) than pronotum, lateral sides slightly arcuate, posterior margin apparently emarginate at the middle, posterior angles broadly rounded; surface densely, roughly and superficially punctured. Legs relatively short, profemur strongly thickened, though abruptly constricted near the apex and excavated on the inner face in apical half, so that the basal part of the excavation forms a blunt subtriangular tooth; meso- and metafemora normal; protibia somewhat dilated apicad and hollowed in basal half on the inner face and provided with five or so transverse rows of yellowish comb-like setae within the hollow; meso- and metatibiae simple; 1st to 4th protarsal segment strongly widened; meso- and metatarsi thin.

Abdomen elongate, gradually dilated from 3rd to 6th segments, each tergite transversely depressed along the base, covered with dense, extremely fine and superficial punctures and fine brownish pubescence, 7th to apical segments missing.

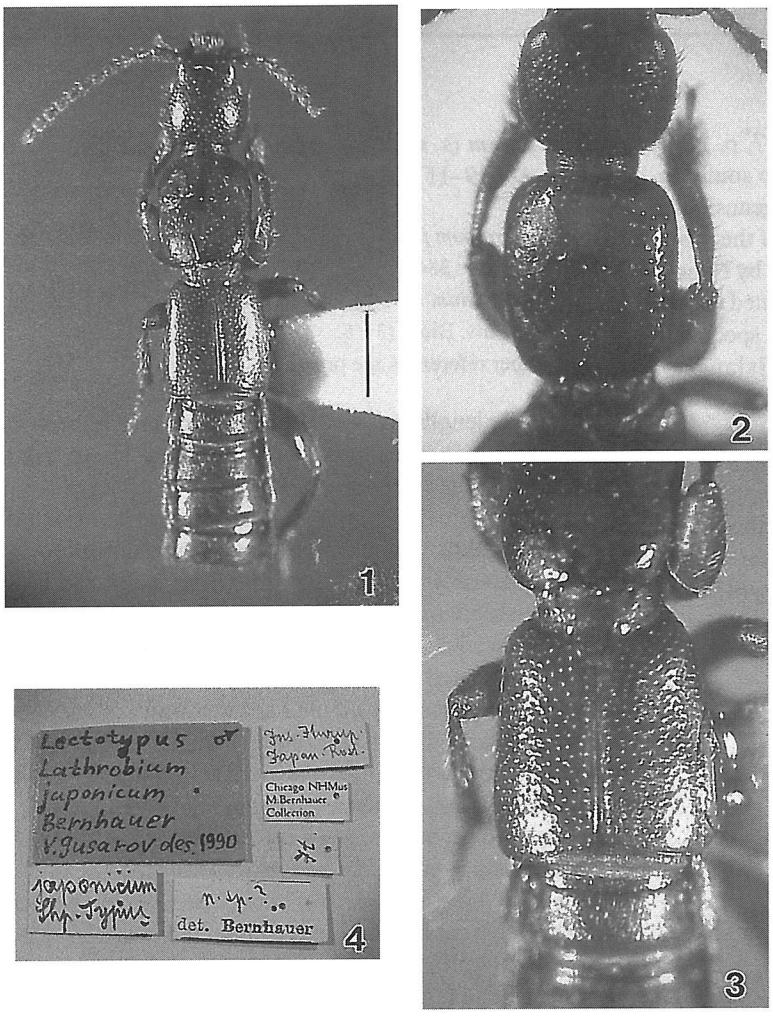
Genital organ elliptical and almost symmetrical, moderately sclerotized except for ventral side of median lobe which is membraneous. Median lobe distinctly shorter than fused paramere, widest at basal fourth and more strongly narrowed apicad than basad, bearing a weakly sclerotized ventral piece which is gradually narrowed towards the relatively broad and subtruncated apex.

Fused paramere as broad as median lobe, gently narrowed basad in basal two-thirds though abruptly so in apical third, apex divided into two small lobes by a minute apical excision, and provided with a short longitudinal carina in front of the excision as seen from dorsal side.

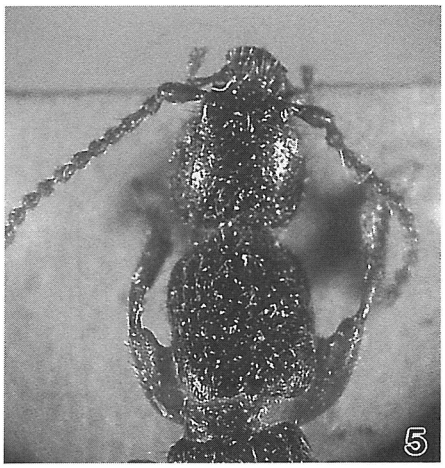
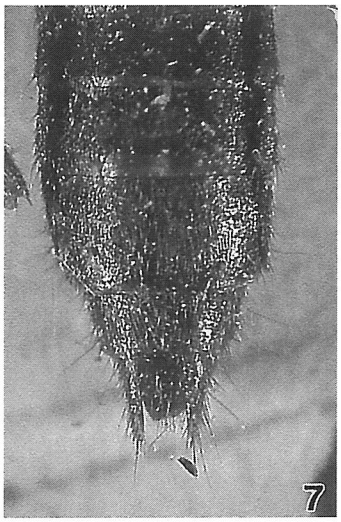
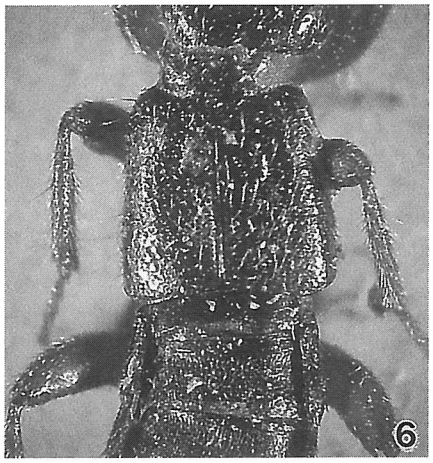
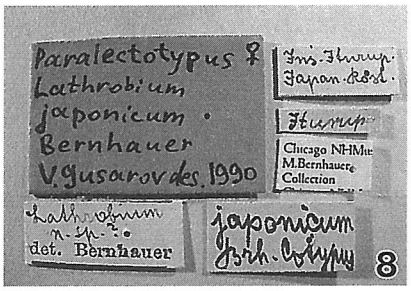
Female (paralectotype). Similar in general apearance to male, but different from it in the 8th abdominal sternite some what produced posteriad and narrowly rounded at the apex, and the 7th abdominal sternite is simple.

Specimens examined. Type series: 1 ♂ (lectoytpe), 1 ♀ (paralectotype), Ins. Iturup, Japan.

Distribution. Southern Kurils (Iturup Is.)



Figures 1–4. Lectotype of *Lathrobium* (s. str.) *japonicum japonicum* Bernhauer deposited in the collection of the Field Museum of Natural History, Chicago; havitus (1), head and pronotum (2), elytra (3), and labels (4). Scale: 1.0 mm (1).

Figures 5–8. Paralectotype of *Lathrobium* (s. str.) *japonicum japonicum* Bernhauer: head and pronotum (5), elytra (6), last four abdominal sternites (7), and labels (8).

***Lathrobium* (s. str.) *japonicum kunashirense* subsp. nov.**
[Figs. 12–14]

Body length: 9.5 mm (from front margin of head to anal end; abdomen extended); 3.9 mm (from front margin of head to elytral apices).

The present new subspecies is similar in external features to the nominotypical subspecies from the Island of Iturup, but differs from the latter in the following points: head almost as long as broad and slightly narrowed anteriad, surface more sparingly and less coarsely punctured; elytra more distinctly dilated posteriad than in the nominotypical subspecies and more superficially punctured on the surface; 8th abdominal sternite deeply excised in a U-shape at the middle of posterior margin and strongly, longitudinally depressed in front of the excision, each side of the depression clearly raised, and surface of the depression provided with a fine obscure longitudinal smooth line at the middle, 7th sternite arcuately emarginate at the middle of posterior margin and depressed in the shape of a horseshore before the emargination, surface of the depression coarsely asperate except for a glabrous longitudinal median space; 6th sternite subtruncate at the middle of posterior margin and weakly semicircularly depressed in front of the subtruncated part.

Male genital organ also similar in configuration to that of the nominotypical subspecies, but differs from it in the following details: a little broader as a whole, median lobe relatively short, ventral sclerotized piece shorter than that of the nominotypical subspecies and apparently narrowed towards the apex which is narrowly rounded, the apical projection of fused paramere much smaller and much more distant from the apex as seen from lateral side.

Type series. Holotype: ♂, IKIP: [IT-97-EMS-003] Russia: Kuril Iss.: Kunashir Is., 40° 15.52'N, 147° 55.41'E, about 4 km east of Kitovyiby road enviorns of Podoshevka river, 29-VII-1997, E. M. Sayenko leg. The holotype is deposited in the collection of the Hokkaido University Museum.

Distribution. Southern Kurils. (Kunashir Is.).

Bionomics. The type specimen was obtained by hand picking from wet leaf litter of vegetation, bamboo and *Petasites* sp., along a river bank near abandoned fish hatchery at an altitude of 1,130–1,140 m.

Etymology. The subspecific epithet of the present new subspecies is given after the type locality "Kunashir Island".

***Lathrobium* (s. str.) *japonicum konoi* subsp. nov.**
[Figs. 15, 17–19]

Lathrobium sp. 2: Naomi *et al.*, 2000, Nat. Hist. Res., Spec. Iss., (7): 109.

Body length: 8.1 mm (holotype; abdomen extended), 5.6 mm (allotype) (from front margin of head to anal end); 3.4 mm (holotype), 3.2 mm (allotype) (from front margin of head to elytral apices).

Male and female. The present new subspecies is similar in general appearance to the preceding subspecies, *L. japonicum kunashirense*, but is distinguishable from it by the following points: head narrower and more distinctly narrowed anteriad than in the preceding subspecies, posterior angles much more angulate, surface more coarsely and more numerously punctured, pronotum more distinctly narrowed posteriad, lateral sides gently arcuate in the whole length, surface more sparingly punctured except for a longitudinal smooth median space; elytra more densely and much more superficially

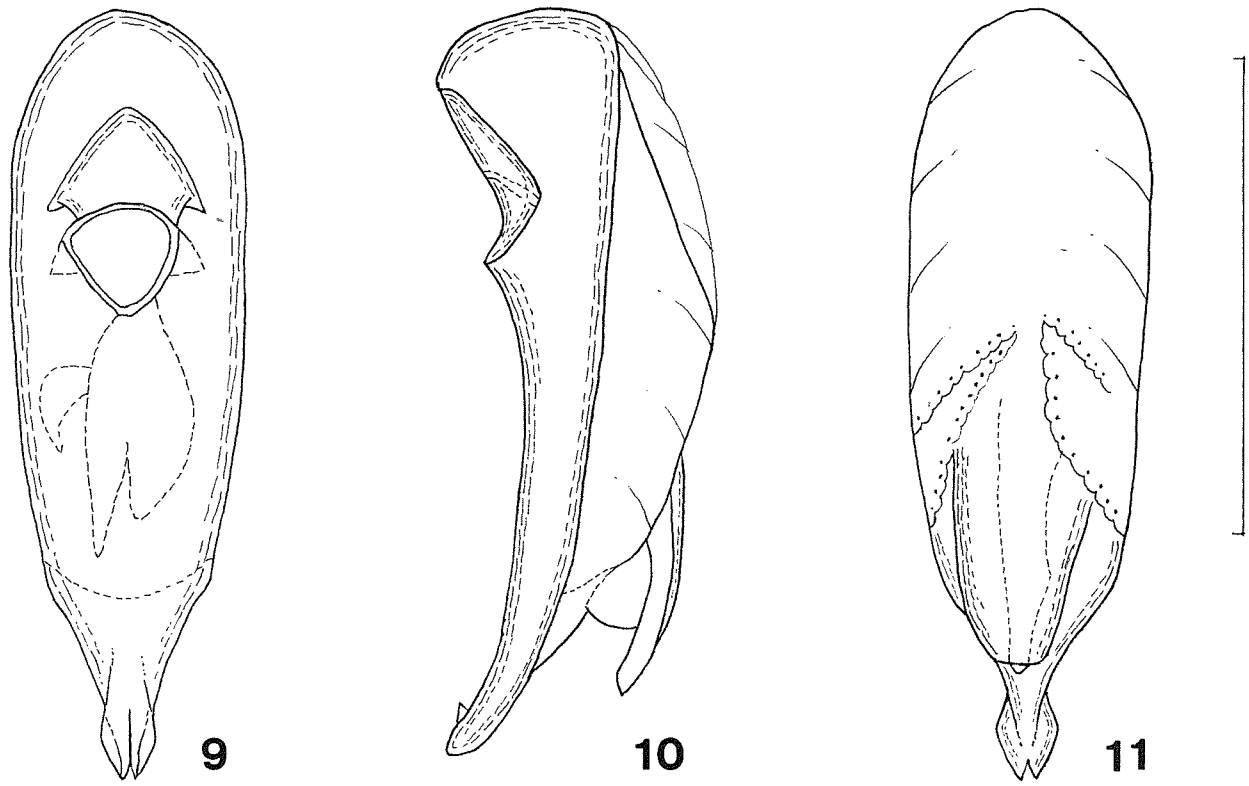
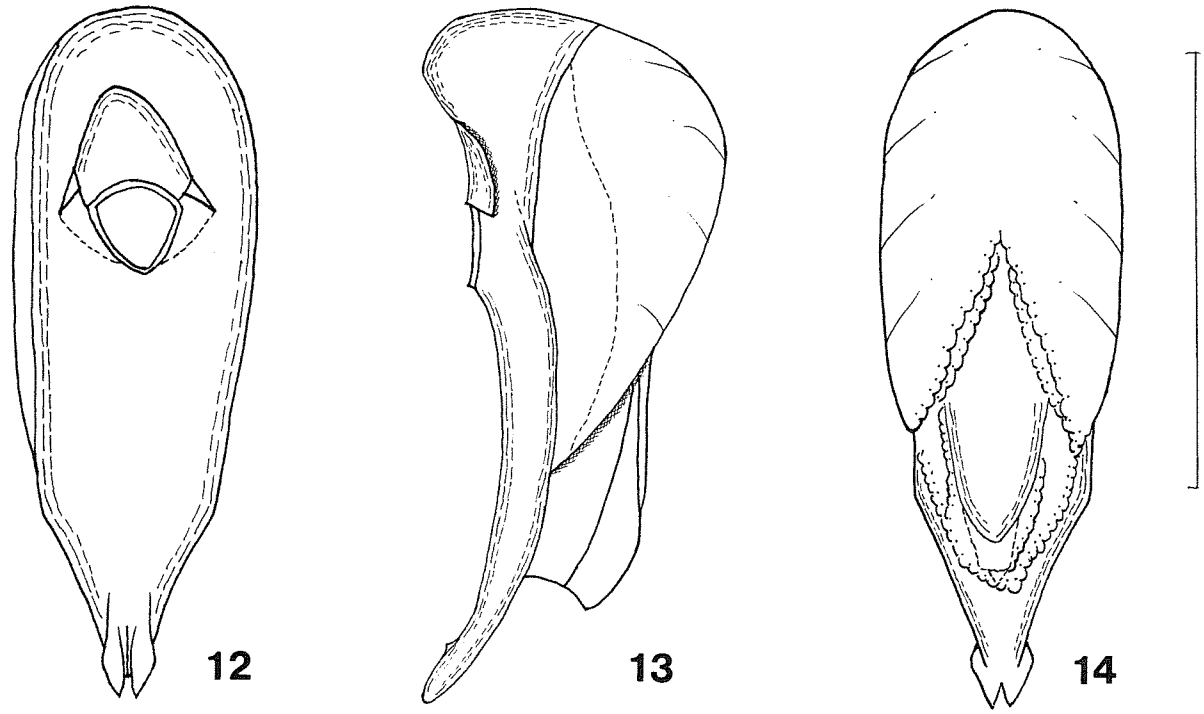


Figure 9–11. Male genital organ of *Lathrobium* (s. str.) *japonicum japonicum* Bernhauer; dorsal view (9), lateral view (10), and ventral view (11). Scale: 1.0 mm.

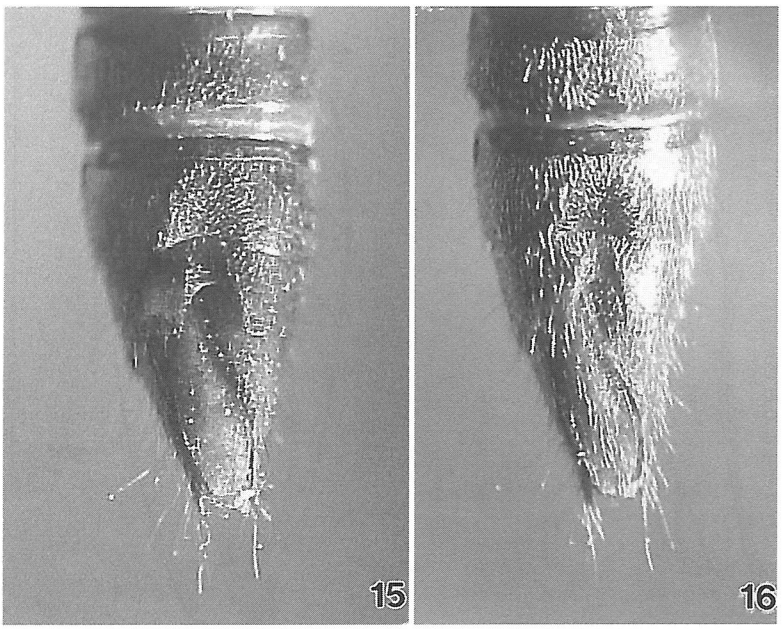


Figures 12–14. Male genital organ of *Lathrobium* (s. str.) *japonicum kunashirense* subsp. nov.; dorsal view (12), lateral view (13), and ventral view (14). Scale: 1.0 mm.

punctured on the surface; 8th abdominal sternite more broadly excised than in the preceding subspecies at the middle of posterior margin.

Male genital organ also similar in configuration to that of the preceding subspecies, but somewhat different from it in the following details: median lobe with ventral sclerotized piece more elongate and gradually narrowed towards the apex which is more broadly rounded; fused paramere with a minute projection relatively distant from the apex as in the preceding subspecies though much more acutely pointed at the tip.

Type series. Holotype: ♂, Kashihara-Iwôzan, Paramushir Is., Kuril Iss., 21-VII-1941, H. Kôno & S. Sumimiya leg. (NSMT-I-C38234); allotype: ♀, Severo-



Figures 15–16. Last four abdominal sternites in the male of *Lathrobium* (s. str.) spp.; *L.* (s. str.) *japonicum konoi* subsp. nov. (15), and *L.* (s. str.) *minakawai* sp. nov. (16).

Kuril'sk, Paramushir Is., Kuril Iss., Russia, 11 to 25-VII-1997, T. Komai leg. (CBM-ZI 83533).

The holotype is deposited in the collection of the National Science Museum (Nat. Hist.), Tokyo, and the allotype is preserved in the collection of the Natural Histroty and Institute, Chiba.

Distribution. Northern Kurils (Paramushir Is.).

Remarks. The present new subspecies was previously recorded as *Lathrobium* sp. 2 by Naomi *et al.* (2000, p.109).

Bionomics. Unknown.

Etymology. This subspecies is dedicated to the late Dr. Hiromichi Kôno, who collected the holotype.

***Lathrobium* (s. str.) *minakawai* sp. nov.**
[Figs. 16, 20–22]

Body length: 6.9–7.3 mm (from front margin of head to anal end); 3.7–3.9 mm (from front margin of head to elytral apices).

Male and female. Closely similar in general appearance to *L. japonicum japonicum*, but can be distinguished from it by the following points: head slightly more strongly narrowed anteriad, lateral sides more weakly arcuate, surface more sparingly and finely punctured; pronotum nearly oblong, slightly narrowed posteriad, lateral sides almost straight, surface more densely and much more coarsely punctured than in head; elytra relatively long, a little longer than broad (length/width = 1.08) and equal in length to though somewhat broader than pronotum (elytra/pronotum = 1.19), posterior margin more strongly emarginate at the middle, surface more densely and much more superficially punctured; abdomen somewhat dilated from 3rd to 7th segment, and then abruptly narrowed towards the apical end, 8th sternite deeply excised in the form of U at the middle of posterior margin and longitudinally depressed in front of the excision, surface of the depression granulate except for the globular medio-apical area, 7th sternite much more shallowly emarginate at the middle of posterior margin than in 8th sternite and distinctly, semicircularly depressed before the emargination, surface of the depression provided with an obscure smooth line along the middle, both sides of which are somewhat granulate, 6th sternite slightly depressed at the middle in front of posterior margin.

Genital organ closely similar in general appearance to those of the other members of the *L. japonicum* group, but different from them in the following points: median lobe much more elongate and distinctly longer than fused paramere, with ventral sclerotized piece elliptical, almost parallel-sided in about the middle, though gently narrowed both anteriad and posteriad, and bluntly pointed at the apex.

Type series. Holotype: ♂, [IKIP:IT-97-NM-015] Russia: Kuril Iss.: Iturup Is.; 45°20.04'N: 147°59.80'E; Eastern side of Chirip Peninsula, inland coastal margin of Konsarvnaya bay, 30-VII-1997, N. Minakawa leg.; allotype: ♀, [IKIP:IT-97-NM-006] Russia: Kuril Iss.: Iturup Is., 45°15.87'N; 147°55. 71'E; about 4 km east of Kitovyiby road, near abandoned fish hatchery, 29-VII-1997, N. Minakawa leg. Paratype: 1♂, same data as for the holotype. The holo- and allotypes are deposited in the collection of the Hokkaido University Museum, and a paratype (♂) is preserved in the collection of the Laboratory of Insect Resources, Tokyo University of Agriculture.

Distribution. Southern Kurils (Itrup Is.).

Bionomics. The holo- and paratypes were obtained from hand picked litter in wild plants, including *Petasites, Sasa, Alnus* and *Salix*, at 1 km from bank of a creek running into bay, stream dried up 300 m upstream from shore (1,440–1,500 m alt.). Allotype was obtained by beating riparian vegetation, including *Petasites, Sasa* and *Salix*, near abandoned fish hatchery environs of Podoshevka River at an altitude of 1,150–1,330 m.

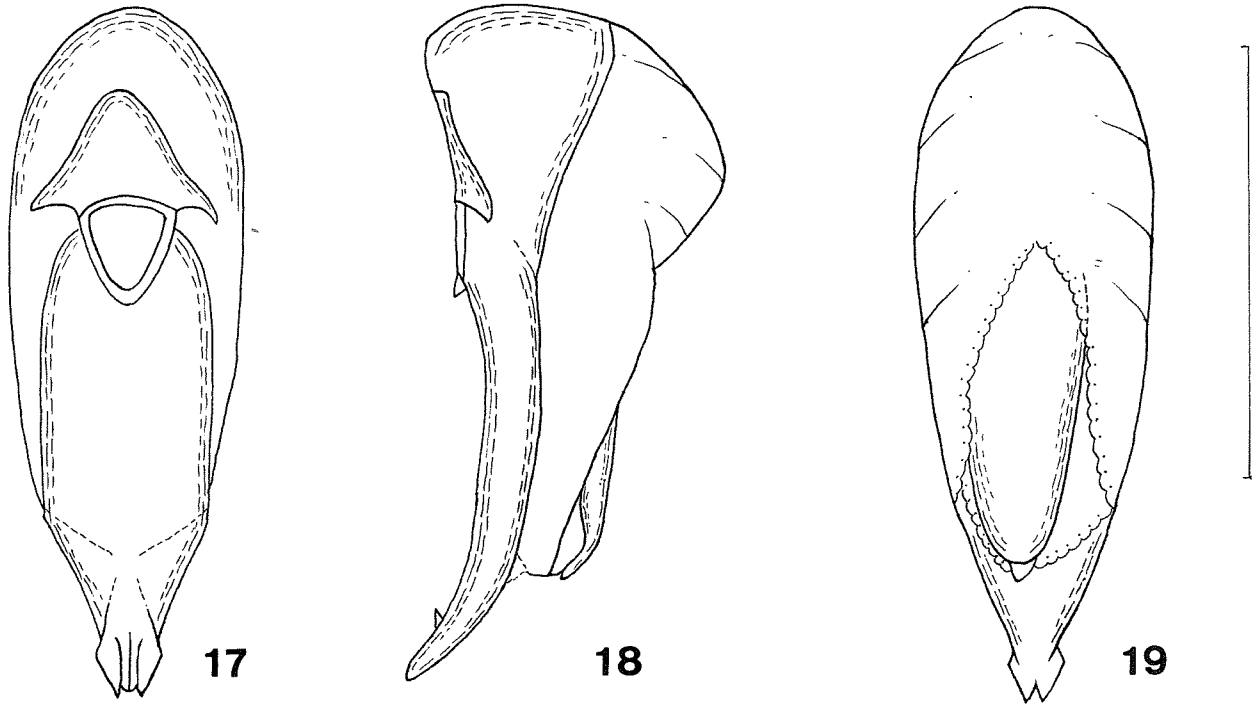
Etymology. The specific epithet of this new species is given after N. Minakawa, who collected the type series.

***Lathrobium* (s. str.) *oharai* sp. nov.**
[Figs. 23–27]

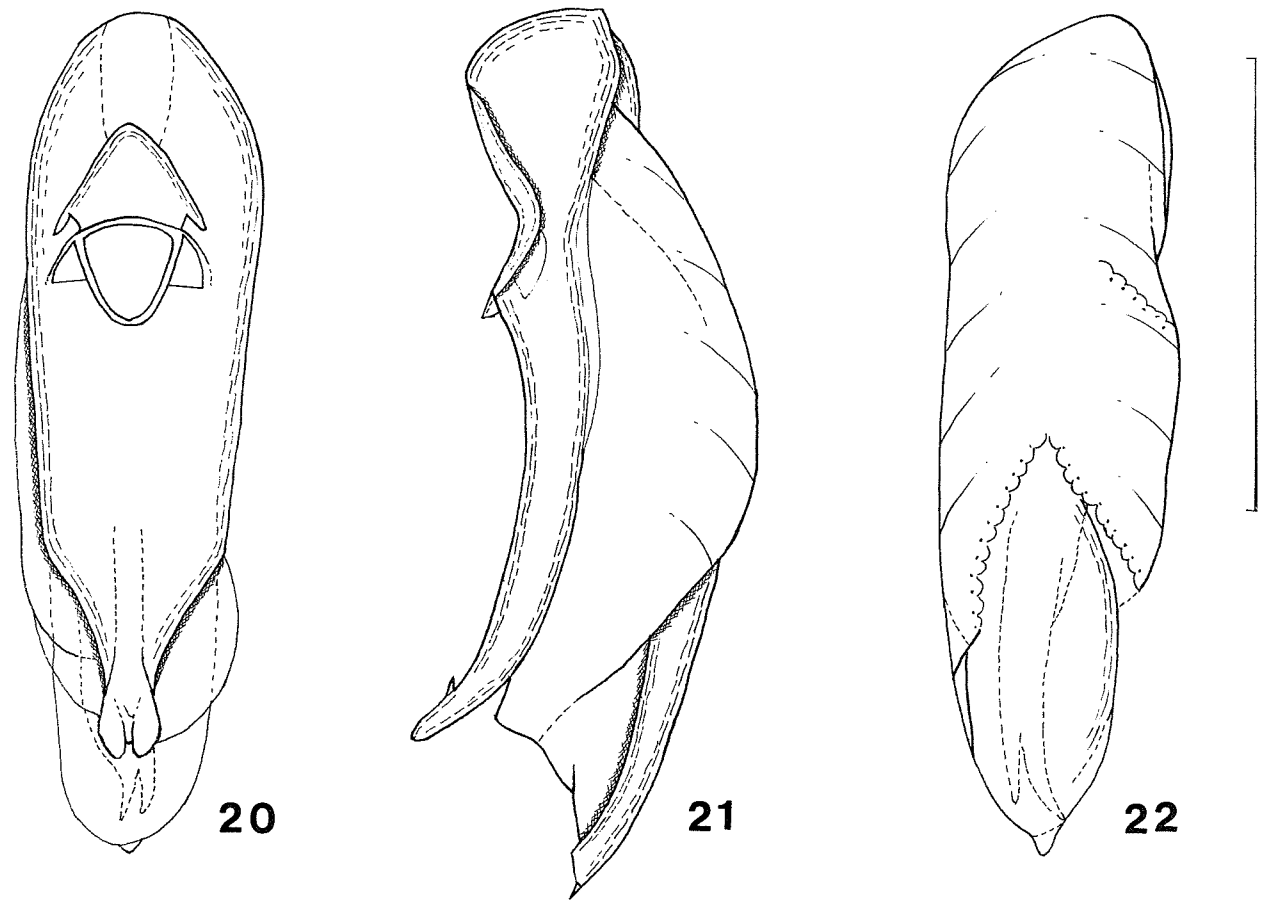
Body length: 6.9–7.3 mm (from front margin of head to anal end); 3.8–3.9 mm (from front margin of head to elytral apices).

The present new species somewhat resembles the preceding in body size and facies, but can be easily distinguished from them by different configuration of head and longer elytra.

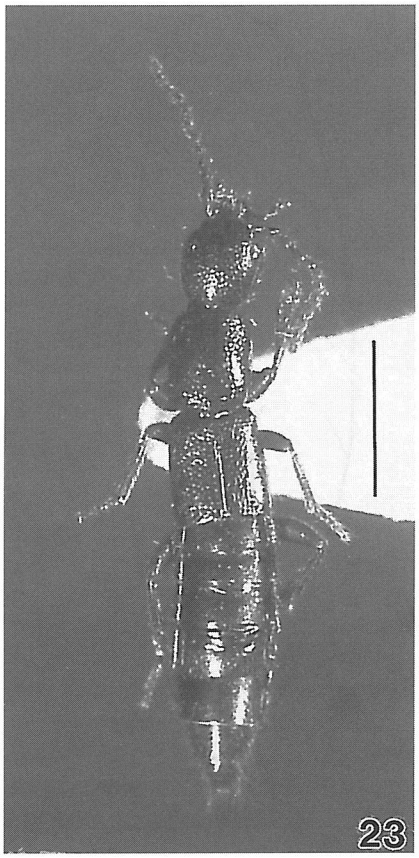
Body elongate and subparallel-sided. Colour blackish and moderately shining, with mouth parts,

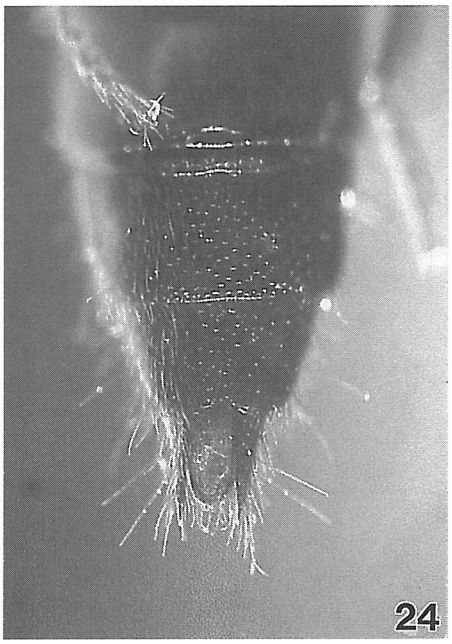


Figures 17–19. Male genital organ of *Lathrobium* (s. str.) *japonicum konoi* subsp. nov.; dorsal view (17), lateral view (18), and ventral view (19). Scale: 1.0 mm.



Figures 20–22. Male genital organ of *Lathrobium* (s. str.) *minakawai* sp. nov.; dorsal view (20), lateral view (21), and ventral view (22). Scale: 1.0 mm.





Figures 23–24. *Lathrobium* (s. str.) *oharai* sp. nov.; habitus (23), and last three abdominal sternites in the male (24). Scale: 1.0 mm (23).

antennae and legs reddish brown.

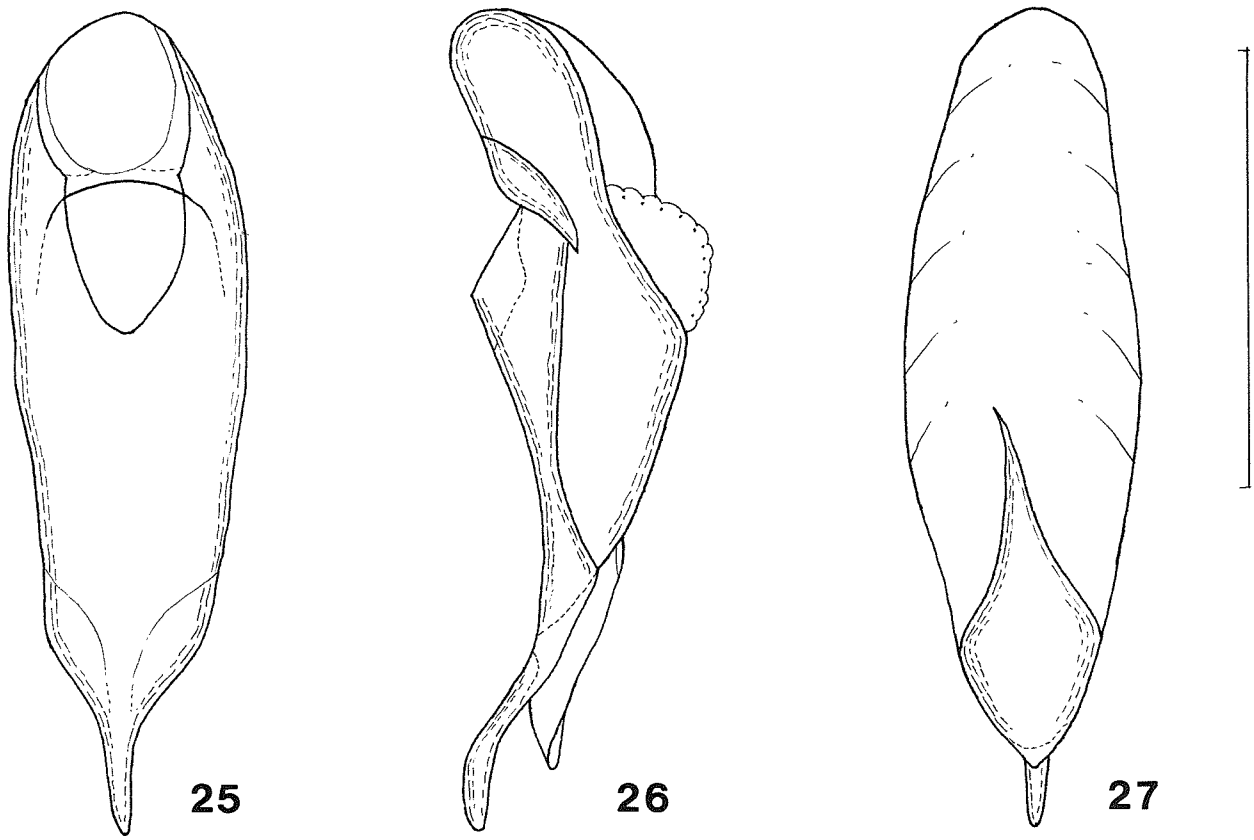
Male. Head subtrapezoidal, somewhat dilated anteriad and a little convex medially, distinctly longer than broad (length/ width = 1.13), widest just behind eyes and gently narrowed posteriad, lateral sides nearly straight in anterior two-thirds though clearly arcuate in posterior third, frontal area between antennal tubercles flattened and glabrous; surface moderately closely, distinctly and setiferously punctured, the punctures becoming much sparser and stronger in medio-frontal part and covered with extremely fine coriaceous ground sculpture visible under high magnification; eyes relatively small, their longitudinal diameter about one-third as long as postocular part. Antennae elongate, extending a little beyond the middle of pronotum and not thickened apicad, 5th to 10th segments more or less moniliform, two proximal segments polished, the remainings opaque; 1st segment robust, strongly dilated apicad and more than twice as long as broad, 2nd constricted at the base, about 1.5 times as long as broad, though remarkably shorter (2nd/1st = 0.57) and a little narrower (2nd/1st = 0.83) than 1st, 3rd to 11th equal in width to one another, 3rd conspicuously longer than broad (length/width = 1.89), slightly longer (3rd/2nd = 1.06) but slightly narrower (3rd/2nd = 0.90) than 2nd, 4th a little longer than broad (length/width = 1.44), but distinctly shorter than 3rd (4th/3rd = 0.74), 5th to 10th equal in length to one another, each somewhat longer than broad (length/width = 1.33), but slightly shorter than 4th (each of 5th to 10th/4th = 0.09), 11th fusiform, twice as long as broad and 1.5 times as long as 10th, subacuminate at the tip.

Pronotum suboblong and elevated medially, distinctly longer than broad (length/width = 1.24), distinctly longer (pronotum/head = 1.18) and somewhat broader (pronotum/head = 1.08) than head; lateral sides almost straight except near anterior and posterior angles, anterior margin gently rounded, posterior margin subtruncate, anterior angles obtuse and not visible from above, posterior ones narrowly rounded; surface more numerously and more coarsely punctured than in vertexal area of head, and covered with fine brownish pubescence except for a narrow smooth median space. Elytra nearly oblong and depressed above, apparently longer than broad (length/width=1.17), somewhat longer (elytra/pronotum=1.08) and a little broader (elytra/pronotum=1.14) than pronotum; lateral sides nearly straight, posterior margin broadly emarginate at the middle, posterior angles narrowly rounded; surface densely and superficially punctured and covered with pubescnce similar to that on pronotum. Legs moderately long and relatively slender; profemora and protibiae similar in structure to those of the preceding species.

Abdomen elongate, almost parallel-sided from 3rd to 7th segments, and then abruptly narrowed towards the anal end; 3rd to 7th tergites each closely, finely and superficially punctured and covered with fine brownish pubescence, 8th tergite somewhat more sparingly punctured than the preceding tergites; 8th sternite shallowly and subtriangularly emarginate at the middle of posterior margin and narrowly longitudinally depressed at the middle before the emargination, surface of the depression glabrous; 7th sternite simple or slightly flattened at the middle before posterior margin.

Genital organ elliptical and slightly asymmetrical, moderately sclerotized except for membraneous ventral side of median lobe. Median lobe distinctly shorter than fused paramere, widest at the middle and gently narrowed both basad and apicad; ventral sclerotized piece widest at apical third, abruptly and strongly narrowed in basal two-thirds, and gently narrowed towards the pointed tip in apical third. Fused paramere relatively broad and long elliptical, though abruptly and strongly narrowed in apical part which is prolonged like a spearhead as seen from dorsal side.

Female. Resembles the male in general appearance,



Figures 25–27. Male genital organ of *Lathrobium* (s. str.) *oharai* sp. nov.; dorsal view (25), lateral view (26), and ventral view (27). Scale: 1.0 mm.

but differs from it in the 8th strenite gently rounded at the middle of posterior margin.

Type series. Holotype: ♂, allotype: ♀, URUP, Kuril Arch. Russia, [IKIP-UR-96-MO-049D], 45°39.04'N, 149°28.78'E, 21-VIII-1996, M. Ôhara leg. Paratypes: 1 ♂, 1 ♀, same data as for the holotype. The type specimens are deposited in the collection of the Hokkaido University Museum, except for a paratype (♂) preserved in the collection of the Laboratory of Insect Resources, Tokyo University of Agriculture.

Distribution. Central Kurils (Urup Is.).

Bionomics. All the specimens were obtained from grassland under coniferous trees, *Alnus maximowiczii*, at about 2 km in land from Tetyava Bay.

Etymology. This new species is named after Prof. Masahiro Ôhara, who kindly supplied me with the specimens of the type series used in this study.

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