

Notes on Pselaphinae (Coleoptera: Staphylinidae) of the Sakhalin Region, Russia

Заметки об ощупниках (Coleoptera: Staphylinidae) Сахалинской области

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KEYWORDS: Coleoptera, Staphylinidae, Pselaphinae, Russian Far East, Sakhalin, new species, new synonymy.

КЛЮЧЕВЫЕ СЛОВА: Coleoptera, Staphylinidae, Pselaphinae, Дальний Восток России, Сахалин, новые виды, новая синонимия.

ABSTRACT: The article provides descriptions of four species new to science: *Ramussia captiosum* sp.n. (Sakhalin), *Ramussia lovtsovae* sp.n. (Sakhalin), *Ramussia svetlanae* sp.n. (Kunashir), *Leptoplectus perperus* sp.n. (Sakhalin, Kunashir). Japanese species *Batraxis kawaharai* Maruyama et Sugaya, 2004 first recorded in Russia. The following synonymy is established: *Leptoplectus illex* Kurbatov, 1992 = *Leptoplectus similis* Kurbatov, 1991, **syn.n.**; *Rybaxis korolevi* Kurbatov, 1984 = *Rybaxis nigrescens* Jeannel, 1958, **syn.n.**; *Trissemus pseudalienus* Kurbatov, 1990 = *Trissemus alienus* (Sharp, 1874), **syn.n.**

РЕЗЮМЕ: В статье приводятся описания 4-х новых для науки видов: *Ramussia captiosum* sp.n. (Сахалин), *Ramussia lovtsovae* sp.n. (Сахалин), *Ramussia svetlanae* sp.n. (Кунашир), *Leptoplectus perperus* sp.n. (Сахалин, Кунашир). Японский вид *Batraxis kawaharai* Маруяма et Sugaya, 2004 впервые отмечен на территории России. Установлена следующая синонимия: *Leptoplectus illex* Kurbatov, 1992 = *Leptoplectus similis* Kurbatov, 1991, **syn.n.**; *Rybaxis korolevi* Kurbatov, 1984 = *Rybaxis nigrescens* Jeannel, 1958, **syn.n.**; *Trissemus pseudalienus* Kurbatov, 1990 = *Trissemus alienus* (Sharp, 1874), **syn.n.**

Introduction

Until recently, the Pselaphinae fauna of the Sakhalin Island was practically unknown. The author's trips to the southern part of the island in 2011 and especially in 2021 allowed to collect 17 species of this taxon. Among them there are several species new to science; their descriptions are given below. The studies of two newly discovered on Sakhalin (and described below) species

of the genus *Ramussia* Kurbatov, 1991 showed the variability of some characters of this genus and made it possible to describe another species from Kunashir Island with a previously unclear taxonomic affinities. One species from Japan was first recorded for the territory of Russia. The three species previously described by the author are synonymized.

Material and Methods

The following acronyms of different museums and private collections are used in this article (relevant curators are listed in parentheses): MHNG — Muséum d'histoire naturelle, Geneva (G. Cuccodoro); MNHN — Muséum national d'histoire naturelle, Paris (A. Taghavian); NHM — Natural history museum, London (M. Barklay); PCSK — private collection of S. Kurbatov, Moscow; ZIN — Zoological Institute, Russian Academy of Science, St. Petersburg (A. Kirejtshuk); ZMUM — Zoological Museum, University of Moscow (A. Gusakov).

Measurements are defined as follows: body length is measured from the anterior outline of the head (i.e. apical margin of labrum) to the apex of the abdomen; length and width of body parts always imply maximum values; for instance, head length is measured from the clypeal margin to the middle of the occipital margin, head width is the distance between the outer outlines of eyes, length of elytra is measured along the elytral suture, and width of elytra is the maximum width of both elytra taken together. Abdominal tergites and sternites are numbered according to Chandler [2001] in Arabic (visible position) and Roman (morphological position) and are counted from tergite 1 (IV) and sternite 1 (III).

The aedeagi and other body parts illustrated here were mounted in Canada balsam on acetate slides, and drawn using a drawing tube mounted on a Zeiss Axio-scope compound microscope. All pictures were modified and grouped using Adobe Photoshop CC.

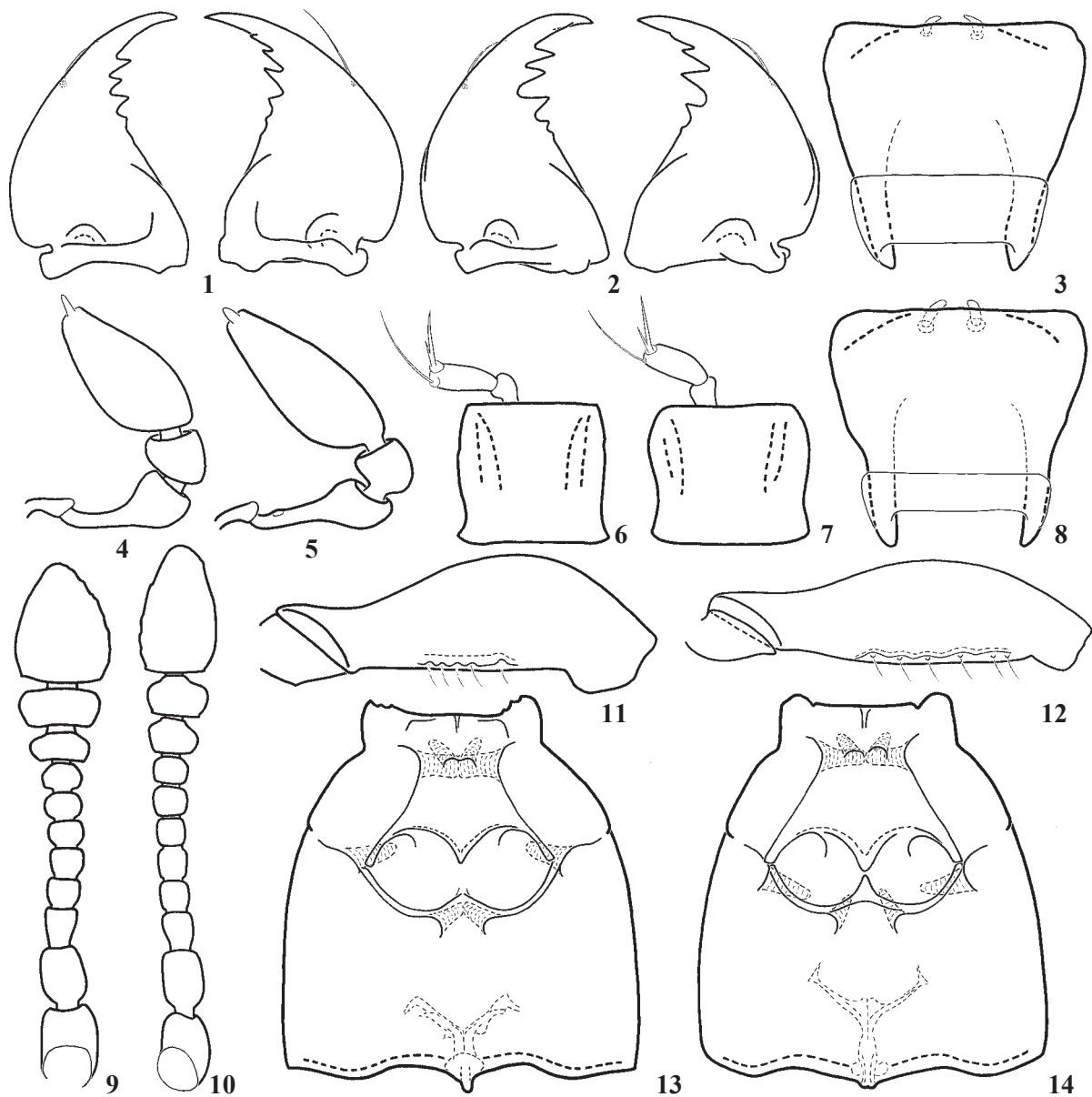
Taxonomy and nomenclature

Genus *Ramussia* Kurbatov, 1991

Schülke and Smetana [2015: 385, 392] changed the gender of *Ramussia* Kurbatov, 1991, from neuter to feminine, in the framework of the Catalogue of Palaearctic

Coleoptera. *Ramussia* was based on a single new species, *R. parabile* Kurbatov, 1991. Though its gender has not been specified originally, according to the ICZN, 1999, Art. 30.2.3. it indicated by the gender of adjectival species-group name originally included. Schülke and Smetana (l. c.) have possibly based their change on the following Art. 30.2.4 of the ICZN, which is not applicable in this case. Thus, original spelling *Ramussia parabile* (gender neuter) is correct.

As to the previously ungiven etymology of *Ramussia*, the name is formed from letters used in the words "Russia", "USSR", "Amur" and "Ussuri" to produce a sound similar to that of the closely related *Ramecia* Casey, 1893 (an anagram for America).



Figs 1–14. Details of the *Ramussia* spp: 2, 5, 7–8, 10–11, 14 — *R. parabile*; 1, 3–4, 6, 9, 12–13 — *R. lovtsovae* sp.n.; 1–2 — mandibles; 3, 8 — labrum; 4–5 — maxillary palpi; 6–7 — mentum with labial palpi; 9–10 — antennae; 11–12 — profemora; 13–14 — metaventrite.

Рис. 1–14. Детали строения *Ramussia* spp: 2, 5, 7–8, 10–11, 14 — *R. parabile*; 1, 3–4, 6, 9, 12–13 — *R. lovtsovae* sp.n.; 1–2 — мандибулы; 3, 8 — верхняя губа; 4–5 — нижнечелюстные щупики; 6–7 — подбородок с нижнегубными щупиками; 9–10 — антенны; 11–12 — передние бёдра; 13–14 — метавентрит.

Ramussia captiosum Kurbatov, sp.n.

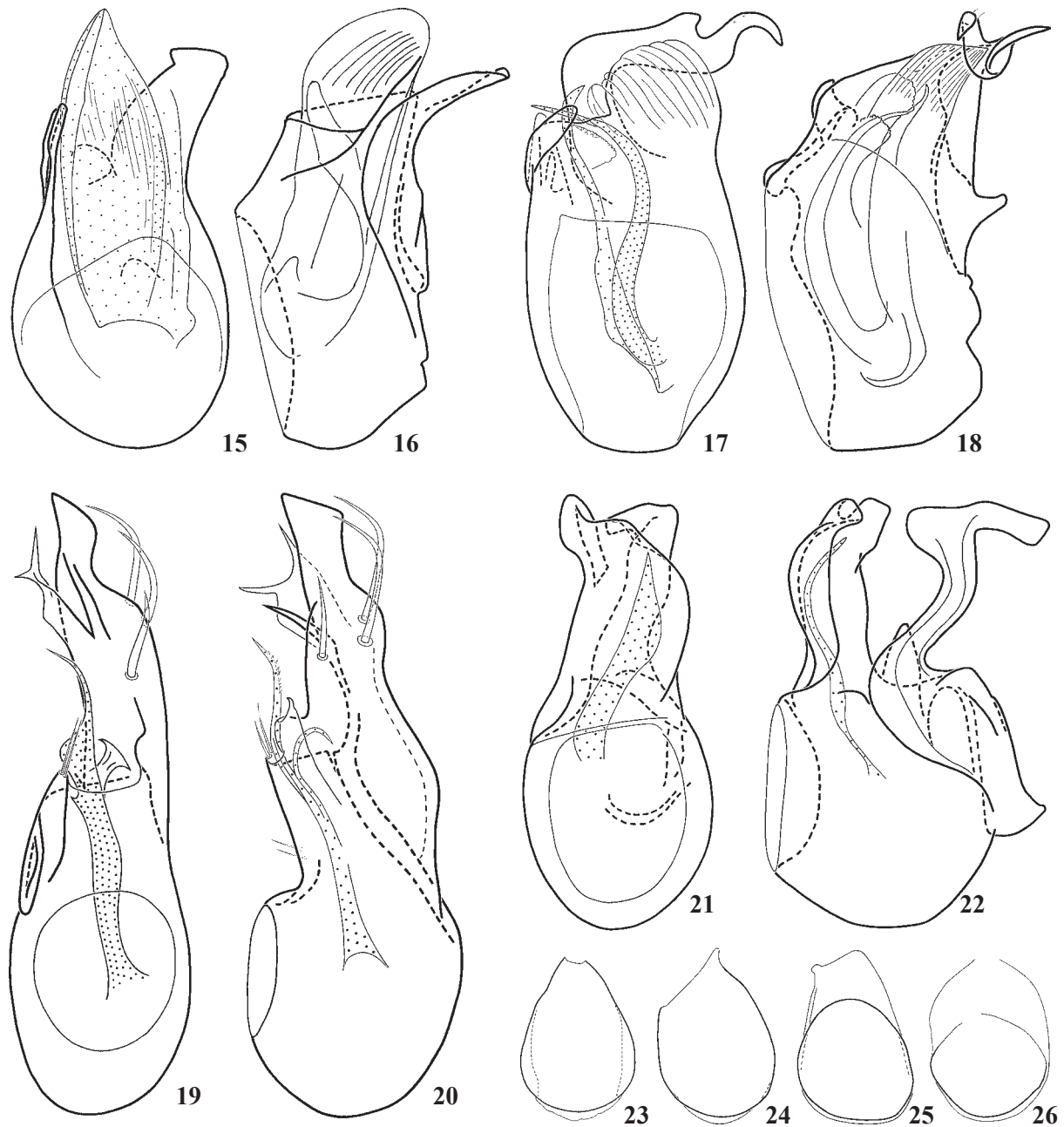
Figs 21–22, 26.

MATERIAL. Holotype ♂: SW Sakhalin, 14 km East of Nevelsk, 46°44'33.8"N 142°03'04.5"E, rotten *Picea*, 22.07.2021, S. Kurbatov (ZIN). Paratypes: 3♂ with holotype; 1♂, SW Sakhalin, 15 km East of Nevelsk, 46°44'37.5"N 142°03'35.0"E, rotten *Abies*, 24.07.2021, S. Kurbatov (MHNG, ZIN, ZMUM, PCSK).

DESCRIPTION. Body 1.35–1.4 mm long, light brown, in fairly fine, dense decumbent pubescence.

Head 0.21 mm long, 0.27–0.29 mm wide. Vertexal foveae quite large, distance between them slightly greater than distance from edge of fovea to inner edge of eye at this level.

Frontal sulcus intermediate between U- and V-shaped. Anterior edge of the front angular. Eyes large, convex, their diameter in lateral view slightly longer than length of temples. Temples widely rounded. Head dorsally with some minute punctures on frontal anterior edge and on lateral edge above eyes. Antennal tubercles weakly protruding. Antennae with scape subcylindrical; pedicel 1.5 times as long as wide, hardly narrower than scape; antennomeres 3–8 subequally wide, distinctly narrower than pedicel; antennomere 3 slightly longer than wide; antennomeres 4–8 subequal, hardly wider than long, sometimes antennomere 4 as long as wide; antennomere 9 transverse, distinctly wider and hardly longer



Figs 15–26. Details of the *Ramussia* spp: 15–16, 23 — *R. lovtsovae* sp.n.; 17–18, 24 — *R. svetlanae* sp.n.; 19–20, 25 — *R. parabile*; 21–22, 26 — *R. captiosum* sp.n.; 15–22 — aedeagi, dorsally and laterally; 23–26 — IX sternite.

Рис. 15–26. Детали строения *Ramussia* spp: 15–16, 23 — *R. lovtsovae* sp.n.; 17–18, 24 — *R. svetlanae* sp.n.; 19–20, 25 — *R. parabile*; 21–22, 26 — *R. captiosum* sp.n.; 15–22 — эдеагусы, дорсально и латерально; 23–26 — IX стернит.

than 8; antennomere 10 transverse, more than twice as wide as long, barely longer and wider than 9; antennomere 11 more or less conical, wider than 10, longer than 8–10 combined.

Pronotum more or less as long as wide (0.29/0.30 mm), widest between anterior third and quarter length. Disc variable, either with thin shallow median longitudinal sulcus (in this case pronotal punctuation fine) or without sulcus (then there are several large points there). Short oblique, indistinct sulcus anteriorly from lateral fovea reaching pronotal mid-length.

Elytra (0.39–0.40/0.43–0.47 mm) with three basal foveae; discal stria not reaching elytral mid-length.

Male secondary sexual characters on head and legs not expressed. Sternite 6 (VIII) emarginate at apex, notch covered by penial plate (IX sternite), 0.130 mm long (Fig. 26).

Aedeagus (Figs 21–22) 0.230–0.235 mm long.

COMMENTS. The new species differs from *R. parabile* in the proportions of the 9–10 antennomeres, which are at least twice as wide as long (less than twice as wide as long in *parabile*), in the absence of pronounced secondary sexual characters on the front and legs (present in *parabile*), in the shape of penial plate (Figs 25–26) and of aedeagus (Figs 19–22). Another species, *Ramussia camponoti* (Lea, 1912), transferred to this genus by Chandler and unknown to us is easily distinguished by the shape of the aedeagus [see Chandler, 2001, P.217–220, Fig. 85].

Ramussia lovtsovae Kurbatov, **sp.n.**

Figs 1, 3–4, 6, 9, 12–13, 15–16, 23.

MATERIAL. Holotype ♂: SW Sakhalin, 14 km East of Nevel'sk, 46°44'33.8"N 142°03'04.5"E, rotten *Picea*, 22.07.2021, S. Kurbatov (ZIN). Paratypes: 6♂ with holotype (1 specimen is dismembered) (MHNG, ZIN, ZMUM, PCSK).

DESCRIPTION. Body 1.25–1.35 mm long, light brown, in fairly fine, dense decumbent pubescence.

Head 0.19–0.20 mm long, 0.26–0.27 mm wide. Vertexal foveae quite large, distance between them slightly greater than distance from edge of fovea to inner edge of eye at this level. Frontal sulcus rather V-shaped. Anterior edge of the front rounded. Eyes large, convex, their diameter in lateral view slightly longer than length of temples. Temples widely rounded. Head in anterior half with fine punctures except smooth antennal tubercles weakly protruding, rest of the head without pronounced punctuation. Antennae (Fig. 9) about the same as the previous species, but antennomeres 9 and 10 can be more than twice or less than twice as wide as length.

Pronotum more or less as long as wide (0.29/0.30 mm), widest at its anterior third. Median longitudinal sulcus always present, not connected to the median antebasal fovea. No sulcus present anteriorly of lateral fovea. Punctuation very indistinct.

Elytra (0.37–0.40/0.43–0.44 mm) with two basal foveae; discal stria not reaching elytral mid-length.

Male secondary sexual characters on head and legs not expressed. Sternite 6 (VIII) emarginate at apex, notch covered by penial plate (IX sternite) 0.115–0.120 mm long (Fig. 23).

Aedeagus (Figs 15–16) 0.200–0.215 mm long.

ETYMOLOGY. This species is named in honor of my colleague Yulia Lovtsova, specialist on Psychidae, who provided valuable assistance to the author during the field work on Sakhalin.

COMMENTS. The new species (as well as the following *R. svetlanae* **sp.n.**) differs first of all from *R. parabile* and *R. captiosum* **sp.n.** in the presence of only two basal elytral foveae; in addition, *R. parabile* lacks the median longitudinal

sulcus, which present in *R. lovtsovae* **sp.n.** However, in my opinion, at the present level of knowledge of the group, this is not a sufficient basis to consider them as members of different genera. First, while having three basal elytral foveae *R. captiosum* **sp.n.** has also median longitudinal sulcus (though weakly expressed) in some specimens. Second, almost all other characters of the genus level coincide in *R. parabile* and *R. lovtsovae* **sp.n.**, including the structure of some previously unexplored mouthparts [see Figs 1–14 and Kurbatov, 1991, P.94–95]. Some difference in the general structure of the aedeagus of *R. captiosum* **sp.n.** and *R. svetlanae* **sp.n.** on the one hand and *R. parabile* on the other hand is compensated by the “intermediate” structure of the aedeagus of *R. lovtsovae* **sp.n.** In this situation, I prefer to modify the diagnosis of the genus, taking into account the variability of the above-mentioned features (see below).

It is also interesting to mention that all (except one) specimens of *R. captiosum* **sp.n.** and *R. lovtsovae* **sp.n.** were collected together in the same fragment of a rotten trunk of *Picea ajanensis* exposed to the sun.

Ramussia svetlanae Kurbatov, **sp.n.**

Figs 17–18, 24.

MATERIAL. Holotype ♂: S Kunashir, border post Alekhino, litter near thermal spring, 4.08.2011, S. Kurbatov (ZIN).

DESCRIPTION. Body 1.35 mm long, yellowish brown, in fine, dense decumbent pubescence.

Head 0.21 mm long, 0.29 mm wide. Vertexal foveae quite large, distance between them slightly greater than distance from edge of fovea to inner edge of eye at this level. Frontal sulcus rather V-shaped. Anterior edge of the front roundly angular. Eyes large, convex, their diameter in lateral view about as long as temples. Temples widely rounded. Head only with minute punctures between vertexal foveae. Antennal tubercles weakly protruding. Antennae with scape subcylindrical; pedicel almost 1.5 times as long as wide, hardly narrower than scape; antennomeres 3–6 subequally wide, distinctly narrower than pedicel; antennomere 3 approximately 1.5 times as long as wide, antennomeres 4–5 as long as wide, antennomere 6 hardly wider than long; antennomeres 7–8 hardly wider than long, slightly larger than 6; antennomere 9 less than twice as wide as long, much wider and hardly longer than 8; antennomere 10 twice as wide as long, wider than 9; antennomere 11 more or less conical, slightly wider than 10, as long as 7–10 combined.

Pronotum more or less as long as wide (0.29/0.30 mm), widest at its anterior half. Median longitudinal sulcus present, not connected to the median antebasal fovea. Lateral fovea more depressed on the anterior edge. Punctuation dense, very fine.

Elytra (0.41/0.45 mm) with two basal foveae; discal stria not reaching elytral mid-length.

Male secondary sexual characters on head and legs not expressed. Sternite 6 (VIII) emarginate at apex, notch covered by penial plate (IX sternite) 0.170 mm long (Fig. 24).

Aedeagus (Figs 17–18) 0.270 mm long.

ETYMOLOGY. The species is named after my wife Svetlana Kurbatova, who always helps me a lot both during field work and in processing material.

COMMENTS. The new species is close to *R. lovtsovae* **sp.n.** due to the presence of median longitudinal pronotal sulcus and two basal elytral foveae. The differences between species are observed in the proportions of antennomeres 3–5, presence of distinct, though fine punctuation of pronotum and especially structure of aedeagus. See also Comments under *R. lovtsovae* **sp.n.**

Thus, after the discovery of three new species of the genus *Ramussia* in the Far East of Russia and the transfer to this genus of the Australian representative [see Chandler, 2001, P.217–220], we make some changes in the description of the genus, namely: mouthparts as in Figs 1–8; pronotum with or without median longitudinal sulcus; elytra with two or three basal foveae; male secondary sexual characters can be localized on the front, abdominal sternites, and legs.

There are currently four species from the Russian Far East and one from Australia, namely: *Ramussia parabile* Kurbatov, 1991 (Primorye); *R. captiosum* sp.n. (Sakhalin), *R. lovtsovae* sp.n. (Sakhalin); *R. svetlanae* sp.n. (Kunashir), *R. camponoti* (Lea, 1912) (*Limoniates*) (New South Wales).

In addition, several species not yet described are known to the author from China, and Chandler [2001, P.219] has seen several species from Australia (including Christmas Island), New Britain Island, and Philippines.

Genus *Leptoplectus* Casey, 1908

The occurrence of several dozens of representatives of this genus on Sakhalin and in other areas of the Russian Far East has allowed to make a more detailed study of the genus. As a result, one species is synonymized, and another, previously identified as *L. spinolae* (Aubé, 1944), is described as new.

Leptoplectus similis Kurbatov, 1991

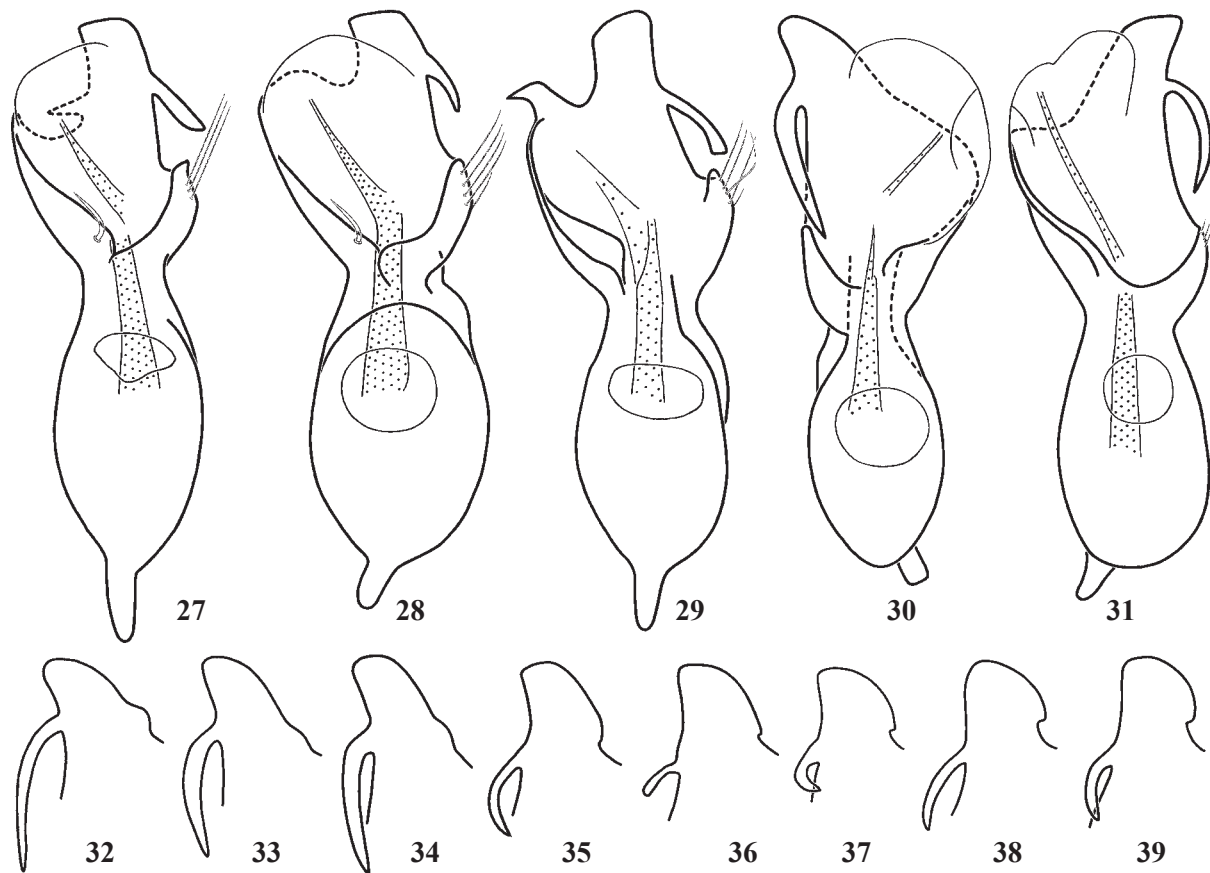
Figs 30–39.

The difference between *Leptoplectus similis* and *L. illex* Kurbatov, 1992 actually is represented only in the inversion of the aedeagus (Figs 30–31). However, no geographical isolation between the two species has been detected. Studies on Sakhalin have shown that these species can coexist not only in the same geographical location but even in the same substrate sample. At the same time, the study of aedeagus of 24 males of these species from Sakhalin, Kunashir and continental Far East has shown, that apical lobe of aedeagus varies in its form, without giving clear correlation with geographical distribution. The figures (Figs 32–39) demonstrate the variability in the apical lobe of *L. similis*. The difference in length and shape of the lateral spine is largely apparent: in different specimens, the spine is curved differently towards the observer. A similar variability in the apical lobe exists in *L. illex*. Thus, I see no reason for maintaining two species and synonymize *Leptoplectus illex* Kurbatov, 1992 with *Leptoplectus similis* Kurbatov, 1991 (**syn.n.**).

Leptoplectus perperus Kurbatov, sp.n.

Fig. 27.

MATERIAL. Holotype ♂: SW Sakhalin, 7 km NNE of Nevelsk, near Yasnomorskoye, rotten *Betula*, 18.07.2021, S. Kurbatov (ZIN).



Figs 27–39. Details of the *Leptoplectus* spp: 27 — *L. perperus* sp.n.; 28 — *L. spinolae*; 29 — *L. falcifer*; 30, 32–39 — *L. similis*; 31 — *L. illex*; 27–31 — aedeagi; 32–39 — variability of the apical lobe of the aedeagus (32 — Vladivostok, S Primorye; 33 — Kholmsk, Sakhalin Isl.; 34 — Venevitinovo, S Primorye; 35–37, 39 — Nevelsk, Sakhalin Isl.; 38 — Mendeleevo, Kunashir Isl.).

Рис. 27–39. Детали строения *Leptoplectus* spp: 27 — *L. perperus* sp.n.; 28 — *L. spinolae*; 29 — *L. falcifer*; 30, 32–39 — *L. similis*; 31 — *L. illex*; 27–31 — эдеагус; 32–39 — изменчивость вершинной доли эдеагуса (32 — Владивосток, Ю Приморье; 33 — Холмск, о. Сахалин; 34 — ВeneвИтИновo, Ю Приморье; 35–37, 39 — Невельск, о. Сахалин; 38 — Менделеево, о. Кунашир).

Paratypes: 1♂, SW Sakhalin, 15 km East of Kholmsk, 47°02'16.7"N 142°12'09.6"E, rotten *Betula*, 17.07.2021, S. Kurbatov; 1♂, SE Sakhalin, 25 km East of Yuzhno-Sakhalinsk, near Lesnoye, rotten *Betula*, 27.07.2021, S. Kurbatov; 1♂, S Sakhalin, near Yuzhno-Sakhalinsk, the foothills of Mount Chekhov, rotten *Betula*, 17.07.2011, S. Kurbatov; 1♂, SW Kunashir Is., cordon Ivanovsky, rotten *Abies*, 20.07.1989, S. Kurbatov; 1♂, SW Kunashir Is., near Mendelevo, rotten *Alnus*, 29.06.1991, S. Kurbatov; 2♂, SW Kunashir Is., near Mendelevo, rotten *Alnus*, 04.07.1991, S. Kurbatov; 2♂, SW Kunashir Is., cordon Ozerny, rotten *Betula*, 26.07. and 27.07.2011, S. Kurbatov; 1♂, SW Kunashir Is., cordon Ozerny, rotten *Phellodendron*, 27.07.2011, S. Kurbatov; 1♂, NE Kunashir, lower course of Saratovka River, F.I.T., 12–18.07.2014, Yu. Sundukov (ZIN, ZMUM, MHNG, PCSK).

DESCRIPTION. Body 1.15–1.30 mm long, yellowish brown (elytra sometimes darker), in fine decumbent pubescence.

Head (0.17–0.19/0.24–0.26 mm) entirely in dense fine punctation. Occipital impression long and narrow. Distance between vertexal foveae less than twice the diameter of the individual fovea and approximately equal to the distance between edge of the fovea and lateral edge of the head. Frontal sulcus with lateral branches short, not reaching the transversal branch; the latter with weak medial longitudinal elevation. Antennae short, longer than wide (seems to be wider than long when appended to the head); antennomere 2 as long as wide or slightly longer, as wide as 1; antennomeres 3–8 as wide as long or slightly wider, much narrower than 2, antennomeres 5 and 7 hardly larger than neighboring segments; antennomere 9 transverse, distinctly wider than 8; antennomere 10 transverse, wider than 9; antennomere 11 a little wider than 10, elongated, as long as 7–10 combined.

Pronotum (0.21–0.23/0.22–0.24 mm) narrower than head, with the same punctation. Elytra (0.33–0.34/0.30–0.31 mm) less distinctly punctated than pronotum. Abdominal tergites 1–2 (IV–V) each with pair of longitudinal basal carinae; carinae of tergite 1 about 3/4 the length of the tergite, carinae of tergite 2 about 2/3 the length of the segment.

6 (VIII) sternite of male with point-shaped medial impression.

Aedeagus (Fig. 27) 0.16–0.18 mm long. There are specimens with both normal and inverted aedeagus, and the variability of its apical lobe is much less than that in the previous species.

COMMENTS. The new species is very close to *L. spinolae* (Aubé, 1844). Despite some difference (poorly formalized) in the structure of the upper part of the head the new species differs reliably from the latter only in the structure of the apical lobe of the aedeagus, which in addition to the long spike (as in *L. spinolae*) has an additional long acute denticle on the other side of the apical lobe (Figs 27–28). There is a surprising coincidence here. The image of the aedeagus of *L. spinolae* in “Die Käfer Mitteleuropas” [Besuchet, 1974: 323] also shows a minute denticle on the same spot of the apical lobe. When the author examined the collection of MHNG, among the males of *L. spinolae* was found exactly the specimen whose aedeagus is depicted in “Die Käfer Mitteleuropas”. It turned out that the aedeagus preparation had the inclusion of a fine dust particle, which gave an optical distortion, giving the impression of a denticle. In fact, there is no any denticle. Examination of other males of this species also revealed the absence of a denticle in this location.

The above difference between the two species seems relatively insignificant. However, on the one hand, it is stable and there is not even a hint of the existence of transitional

forms. One species is distributed in Western Europe, the other occurs only in the insular part of the Far East (Sakhalin and Kunashir). In addition, the significance of this difference is indicated by another Far Eastern species *Leptoplectus falcifer* Kurbatov, 1992, which is very close to the two compared species. The male of this species has a characteristic peculiar modification of the frontal sulcus, which immediately allows to recognize this species. Its aedeagus is very similar to that of the two compared species, having a slight difference in the structure of the same part of the apical lobe of the aedeagus (Fig. 29).

Tribe Brachyglutini

Batraxis kawaharai Maruyama et Sugaya, 2004

MATERIAL. 1♂: S Sakhalin, nr. Yuzhno-Sakhalinsk, Khomutovo, rotten *Larix* stump, 14.07.2011, S. Kurbatov.

NOTE. This Japanese species was recorded in Russia for the first time.

Rybaxis nigrescens Jeannel, 1958

The study of type material of this species (1♂ and 1♀, Japan, Nikko, 18 juin 1909) from the collection of MNHN showed that it is identical to the later described *Rybaxis korolevi* Kurbatov, 1984 from Kunashir Island (**syn.n.**).

Trissemus alienus (Sharp, 1874)

The study of the holotype and one paratype of this species stored in NHM showed that *Trissemus pseudalienus* Kurbatov, 1990, described from Kunashir Island, belongs to the same species (**syn.n.**).

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