

A new *Cryphalus* Erichson, 1836 species (Coleoptera: Curculionidae: Scolytinae) from Sakhalin

Новый вид рода *Cryphalus* Erichson, 1836 (Coleoptera: Curculionidae: Scolytinae) с Сахалина

М.Ю. Mandelshtam¹, A.V. Petrov²
М.Ю. МАНДЕЛЬШТАМ¹, А.В. ПЕТРОВ²

¹ St. Petersburg State Forest Technical University named after S.M. Kirov, Institutskii per. 5, St. Petersburg 194021, Russia. E-mail: amitinus@mail.ru

¹ Санкт-Петербургский государственный лесотехнический университет им. С.М. Кирова, Институтский пер., д. 5, 194021 Санкт-Петербург, Россия.

² Institute of Forest Science RAS, Sovetskaya st. 21, Uspenskoe, Moscow Region 143030, Russia. E-mail: hylesinus@list.ru

² Институт лесоведения Российской академии наук, с. Успенское, ул. Советская, д. 21, 143030 Московская обл., Россия.

KEY WORDS: Coleoptera, Curculionidae, Scolytinae, Cryphalini, *Cryphalus*, new species, bark beetles, taxonomy, conifers, Sakhalin, Russian Far-East.

КЛЮЧЕВЫЕ СЛОВА: Coleoptera, Curculionidae, Scolytinae, Cryphalini, *Cryphalus*, новый вид, короеды, хвойные породы деревьев, Сахалин, Дальний Восток России.

ABSTRACT. A new species of bark beetle, *Cryphalus nataliyae* Mandelshtam et Petrov, **sp.n.** is described and figured. The species, breeding on *Picea jezoensis* in the neighbourhood of Yuzhno-Sakhalinsk, southern Sakhalin was previously probably confused with *Cryphalus saltuarius* Weise, 1891.

РЕЗЮМЕ. Описан новый вид короедов *Cryphalus nataliyae* Mandelshtam et Petrov, **sp.n.** с южного Сахалина. Новый вид, развивающийся на *Picea jezoensis* в окрестностях Южно-Сахалинска, ранее, вероятно, смешивали с *Cryphalus saltuarius* Weise, 1891. Приведены фотографии нового вида.

According to the most recent taxonomic revision [Johnson et al., 2020], the tribe Cryphalini Lindemann, 1877 includes only one genus *Cryphalus* Erichson, 1836, and 255 species distributed widely in the world, including Eurasia, Southeast Asia, Africa, Oceania, North America, Central America (introduced), South America (introduced) [Johnson et al., 2020; Johnson, personal communication]. Fourteen species are recognized from the Russian Far East [Krivolutskaya, 1996]. The Cryphalini differ from other pygmy borers (Trypophloeini Nüßlin, 1911; Ernoporini Nüßlin, 1911) by the following combination of characters: 1) tarsi with third segment bilobed; 2) eye emarginated; 3) antennal funicle with 3–5 segments, in Russian species always 4-segmented; 4) antennal club marked by sutures, straight, recurved or procurved, and without septum; 5) hy-

pomeron usually with bifurcating setae, rarely with simple setae; 6) postnotum not fused with metanotum; 7) aedeagus with long penis apodemes, sometimes fused at apex, with a complete tegmen; 8) tegmen with pair of short apodemes; 9) proventriculus with large apical plate, typically with sutural teeth and much larger apical teeth [Johnson et al., 2020].

Cryphalus species breeding in Sakhalin were revised by Krivolutskaya [1958, 1996]. Several important earlier works [Kurentsov, 1941; Stark, 1952] devoted to bark-beetles of the Russian Far-East are out of date because they do not include species breeding in Southern Sakhalin, an area returned by Japan to Russia after World War II, nor species of the southern Kurile islands. These tiny bark beetles are very difficult to distinguish. Most of them are of no serious economic importance developing on small branches and twigs, but they can damage undersized and young trees [Stark, 1952]. Beetles injurious to conifers on Hokkaido were reviewed by Inouye and Nobuchi [1957], but this paper gave no special consideration to species breeding in Sakhalin, although most of them have hosts growing not only in Hokkaido, but also in Sakhalin. *Cryphalus* species are usually rather host-specific, but species breeding in conifers are usually oligophagous with a strong preference for one host-plant species.

During a trip to Sakhalin in 2017, the first author collected a short series from the conifer, *Picea jezoensis*, of a *Cryphalus* species clearly belonging to a new species. Its description follows.

Photographs of beetles were taken using a Canon 50D camera and macro lens MP-e65, and processed using the program CombineZP.

Cryphalus nataliyae Mandelshtam et Petrov, **sp.n.**
Figs 1–9.

MATERIAL. Holotype, ♀ (Zoological Institute, St.Petersburg, ZIN); RUSSIA: Sakhalin, app. env. of Yuzhno-Sakhalinsk, Rogatka River, start of path to ascend Chekhov peak, 15.VIII.2017, ca. 46°58'31.41"N, 142°49'25.14"E, about 300 m asl., under bark of standing *Picea jezoensis*, M.Yu. Mandelshtam leg. Paratypes: same place and date 1♂, 5♀♀ (ZIN), 1♀ (A.P. Petrov private collection, APP).

TYPE LOCALITY: Russia, Sakhalin, Yuzhno-Sakhalinsk.

DESCRIPTION: Female (holotype): body length 2.0 mm, 2.11 times as long as wide, body black, covered with pale scales; antenna and legs yellow (Figs 1–2).

Head black, shining. Frons simple, flattened, strongly impressed above epistoma, without aciculation, very coarsely and densely punctured, shining; vertex granulate-reticulate with obscure sparse punctures, dull; frontal vestiture hair-like, rather long, sparse, except numerous long yellow setae on epistoma (Fig. 4). Eyes large, rather coarsely faceted, with minute emargination at place of antennal insertion. Antennal funiculus with four segments, total length short, about half of club length, pedicellus shorter than next three segments combined. Antennal club with three slightly recurved, nearly straight sutures marked by rows of setae and grooves (Fig. 7). Labium and maxillae are figured (Fig. 8).

Pronotum 0.68 times as long as wide, surface only faintly shining; sides moderately arcuate on basal half, very broadly rounded in front; basal margin and posterior third of lateral margin marked by a fine raised line; anterior margin unarmed; summit at middle, anterior slope coarsely asperate, armed by 20–23 large rounded tubercles, surface punctured by small sparse points; posterior area shining, surface punctured with numerous points; vestiture on anterior part consists of erect hair-like setae, on posterior part with numerous short recumbent hair-like setae. Hypomeron with the simple setae.

Elytra 1.54 times as long as wide, 2.12 times as long as pronotum; sides almost straight and parallel on basal two-thirds, rather broadly rounded behind; striae 1 and 2 weakly impressed, other striae indistinguishable, punctures of striae and interstriae similar, small, uniform from the base to apex, interstriae on disc not at all granulate. Declivity convex, moderately steep; striae poorly developed, narrower than interstriae, all interstriae weakly elevated. Discal vestiture consists of scales arranged in four rows on each interstriae and of rows of erect interstitial rather short hairs, apex of each hair not attaining the base of the next hair in the row. Vestiture of the declivity is the same as at the disk.

Abdomen black, vestiture of long yellowish hair-like setae.

Proventriculus cylindrical, with eight sections. Crop spines hair-like, long. Anterior plate distinct, as long as posterior plate, with three rows of tubercles along the suture. Apical teeth distinct organized in two transverse rows. Masticatory brush strongly developed. Closing teeth numerous, longer than masticatory brushes (Fig. 9).

Male. Only one specimen, strongly damaged, was available for study. Frons as in female, without longitudinal or transverse carina, slightly impressed above epistoma, with obscure shining impunctate area (Fig.3). Aedeagus typical for genus, long, narrow. Penis apodemes only 1.1 times shorter than penis body. Tegmen seems not to be completely

circular, not fused at the ventral side, but these features may be an artifact due to damage to dissected male during collection (Figs 5–6).

NOTE: Paratypes (females) 1.9–2.1 mm long, 2.0–2.17 times as long as wide, pronotum 0.66–0.73 as long as wide, elytra 1.34–1.53 times as long as wide, 2.05–2.54 times as long as pronotum.

DIAGNOSIS: The new species is morphologically similar to *Cryphalus saltuarius* Weise, 1891 and *Cryphalus sichotensis* Kurentsov, 1941 from the continental parts of the Russian Far East, but can be distinguished from both by the more broadly rounded pronotum, which is semicircular and not triangular in profile and by the larger size on average. Males of *C. saltuarius* possess two frontal tubercles, one located on the median part of epistoma, and the second in the middle of frons. The frons of male *C. nataliyae* **sp.n.** has no frontal tubercles. Specimens of *C. sichotensis* are distinguished by distinct vestiture on the sides of the body, the pronotum laterally without erect hair-like setae, and setae present only on the basal part of the elytral sides, and by a distinctly smaller body size (1.4–1.7 mm). *Cryphalus nipponensis* Inouye et Nobuchi, 1957 breeding on *Picea jezoensis* in Hokkaido is smaller, only 1.8 mm long, with the pronotum anterior margin armed by 6 small denticles, a more slender body that is 2.27 times as long as wide, and elytra that are 1.6 times as long as wide. It also differs in the structure of male frons which has a narrow longitudinal elevation. *Cryphalus jezoensis* Inouye et Nobuchi, 1957 breeding in *Picea jezoensis* in Hokkaido is of same size as the new species but can be easily distinguished from the latter by its deep and very fine lineate-punctate elytra.

BIOLOGY: The species was collected in mountain spruce and fir forest under the bark of the trunk of a small *Picea jezoensis*. Specimens of *Cryphalus piceus* Eggers, 1926 were also collected from the same host material.

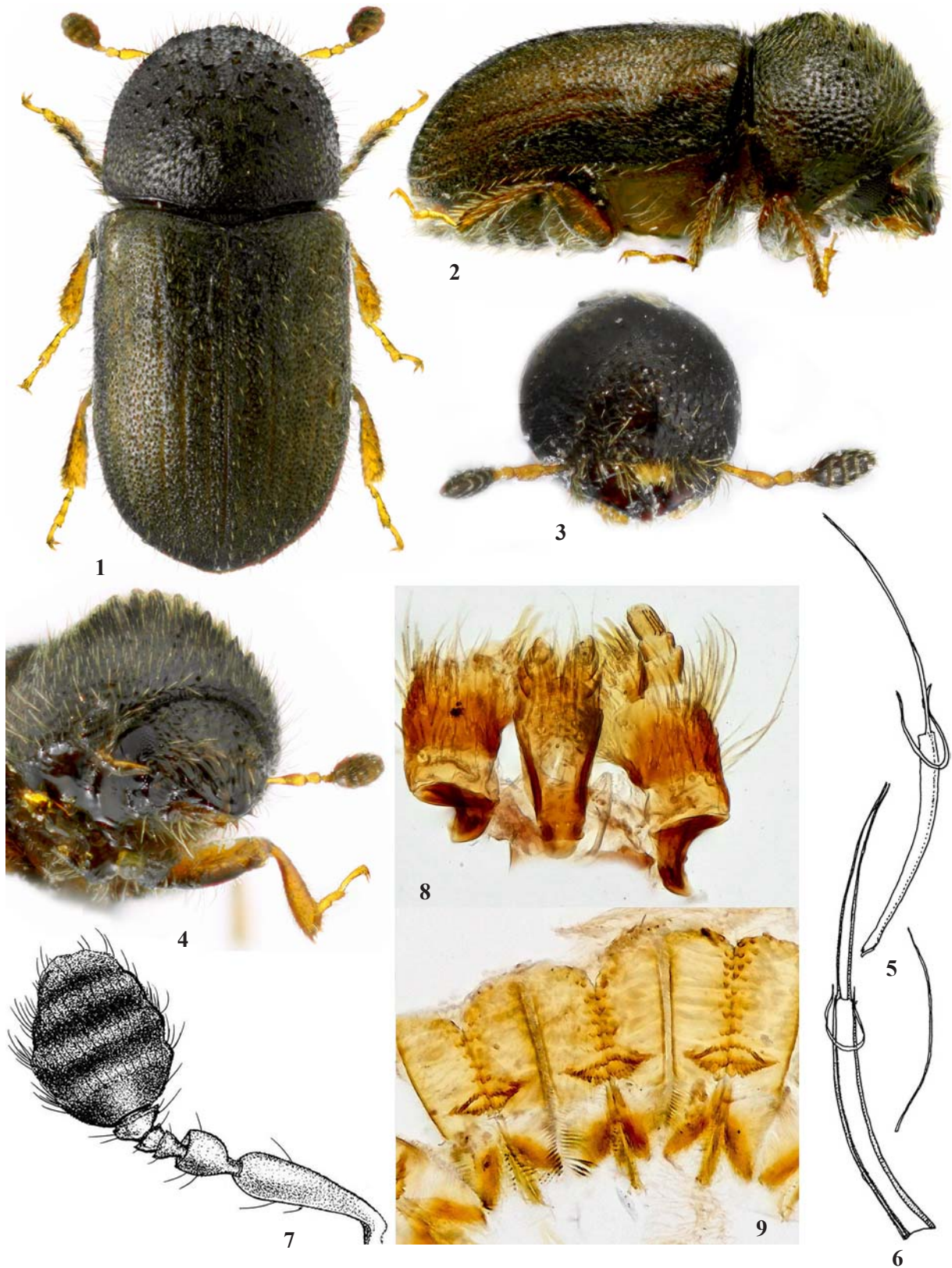
ETYMOLOGY. The new species is named in honor of Nataliya S. Khabazova, senior collection keeper at the Zoological Institute RAS, St.Petersburg, and wife of M.Yu. Mandelshtam.

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Competing interests. The authors declare no competing interests.

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Figs 1-9. Habitus and details of *Cryphalus nataliyae* sp.n.: 1-2 — female habitus; 3 — head male; 4 — head female; 5-6 — aedeagus; 7 — antenna; 8 — maxilla and labium; 9 — proventriculus; 1, 6 — dorsal view; 2, 5 — lateral view; 1 — holotype, female; 2-9 — paratypes.
 Рис. 1-9. Габитус и детали строения *Cryphalus nataliyae* sp.n.: 1-2 — внешний вид самки; 3 — голова самца; 4 — голова самки; 5-6 — гениталии самца; 7 — усик; 8 — нижняя челюсть и лабиум; 9 — провентрикулюс; 1 — голотип, самка; 2-9 — паратипы.

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