

Orchestes (Salius) lithocarpi sp.n., a new species of flea weevil
(Coleoptera: Curculionidae: Rhamphini) from Luzon Island,
Philippines

Orchestes (Salius) lithocarpi sp.n., новый вид жука-долгоносика
(Coleoptera: Curculionidae: Rhamphini) с острова Лусон,
Филиппины

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KEY WORDS: new species, *Orchestes*, Rhamphini, Luzon, *Lithocarpus*.

КЛЮЧЕВЫЕ СЛОВА: новый вид, *Orchestes*, Rhamphini, Лусон, *Lithocarpus*.

ABSTRACT. A new species, *Orchestes (Salius) lithocarpi* Zabaluev **sp.n.**, is described from Luzon Island, Philippines. It is closely related to *O. samoanus* (Marshall, 1931), but differs in the insertion of the antennae almost at the base of the rostrum in both sexes and the shape of the elytra, which gradually taper behind the humeri in an almost straight line towards the apex. This is the first record of the genus *Orchestes* from Luzon and the first record of the subgenus *Salius* from the Philippines in general. The host plant of the new species is *Lithocarpus* sp. (Fagaceae).

РЕЗЮМЕ. С острова Лусон (Филиппины) описан новый вид *Orchestes (Salius) lithocarpi* Zabaluev **sp.n.** Он близок к *O. samoanus* (Marshall, 1931), но отличается прикреплением усиков почти у основания головотрубки у обоих полов и формой надкрылий, которые позади плеч почти прямолинейно сужены к вершине. Это первая находка рода *Orchestes* на Лусоне и первая находка подрода *Salius* на Филиппинах в целом. Кормовое растение нового вида — *Lithocarpus* sp. (Fagaceae).

Introduction

The genus *Orchestes* Illiger, 1798 is the largest and most widespread genus of the tribe Rhamphini, with

representatives found in the Holarctic, Afrotropical, Oriental and Australasian regions. The Holarctic fauna includes about 90 species [Anderson, 1989; Alonso-Zarazaga *et al.*, 2023], while the fauna of other regions remains very poorly studied.

This genus is characterized by the following characters: antennae with 6-segmented funicle and compacted club, pro- and mesotibiae with sickle-shaped large uncus at the apex, metafemora strongly thickened and often with a row of denticles, long setae and/or spines, pronotum and elytra usually with erect setae at sides, the abdominal tergites 5–6 with spicule patches, the 7th abdominal tergite with a pair of scrapers or without them [Kojima, Morimoto, 1996]. The genus *Orchestes* is divided into four subgenera based on the structure of metatibiae, prothorax and mesothorax: *Orchomizo* Zabaluev, 2026, *Nomizo* Morimoto, 1984, *Orchestes* (s. str.) and *Salius* Schrank, 1798 [Morimoto, 1984; Kojima, Morimoto, 1996; Zabaluev 2025; 2026].

To date, only one species of this genus, *O. (Nomizo) prandii* Legalov, 2024, has been known from Mindanao Island in the Philippines [Legalov, 2024]. Another species of the genus *Orchestes*, but belonging to the subgenus *Salius*, was discovered in materials from Luzon Island, which turned out to be new to science and its description is given in this article.

Material and methods

Type specimens are deposited in the collections of Moscow State University (Moscow, Russia, ZMUM), Zoological Institute of Russian Academy of Sciences (St. Petersburg, Russia, ZISP), and in the personal collection of Ilya Zabaluev (IZCS).

Photographs of habitus were taken with a digital camera Canon EOS 5D Mark IV with Canon MP-E 65 mm objective lens. Photographs of genitalia and terminalia were taken with a digital USB-camera AmScope MU1000-HS mounted on a microscope Micromed-3.

The measurements were taken using a measuring eyepiece of the stereomicroscope. The length of the body was measured from the anterior margin of the eyes to the apex of the elytra. General terminology was followed by the online glossary of weevil characters available on the International Weevil Community Website [Lyal, 2024].

Results

Genus *Orchestes* Illiger, 1798

Type species: *Orchestes signifer* Creutzer, 1799 (= *Curculio hortorum* Fabricius, 1792).

Subgenus *Salius* Schrank, 1798

Type species: *Curculio fagi* Linnaeus, 1758.

Orchestes (Salius) lithocarpi Zabaluev, **sp.n.** Figs 1–15.

MATERIAL. Holotype ♂ (ZMUM) and 3 ♂♂ 6 ♀♀ paratypes (ZMUM, ZISP, IZCS): Philippines: Luzon Isl., Nueva Vizcaya prov., near Canabuan vill., on *Lithocarpus* sp., h=1000 m, 16.153013°N 121.088425°E, 6–18.VII.2025, local collectors; 2 ♀♀ paratypes (ZMUM, IZCS), the same data as in holotype, but "12–16.VIII.2025".

DESCRIPTION. **Male.** Head subglobose. Eyes very large, hemispherical, contiguous, finely faceted, occupying almost entire dorsal part of head. Rostrum 1.13–1.15× as long as pronotum; in dorsal view, slightly apically widened; in lateral view, separated from frons by narrow transverse depression, basally bent and directed posteroventrally, slightly evenly curved. Dorsal surface in basal half with sulci on each side, each with row of merging coarse punctures bearing transversely lying hair-like scales, in apical half on sides with sparse punctures, remaining surface smooth and shiny. Antennal scrobes very short, deep, with well-defined pterygia. Antennae inserted near at base of rostrum, at distance less than width of rostrum at this place. Scape very short, 1.9–2.1× as long as wide, barely longer than 1st funicle segment. Funicle 6-segmented: 1st segment conical, 1.9× as long as wide, 2nd segment elongated, 2.0× as long as wide, 3rd segment 1.2× as long as wide, 4th segment 1.1× as long as wide, 5th segment approximately equal in length and width, 6th segment transverse, 1.3× as wide as long. Club compacted, oblong-oval, approximately 2.4–2.5× as long as wide; covered with short fine pubescence, with several erect short fine setae.

Pronotum conical, 1.6–1.8× as long as wide, widest at base, noticeably narrowing anteriorly, at base 1.6× as wide as at apex, without distinct subapical constriction, on posterior margin protruding in middle in front of scutellum. Disc very

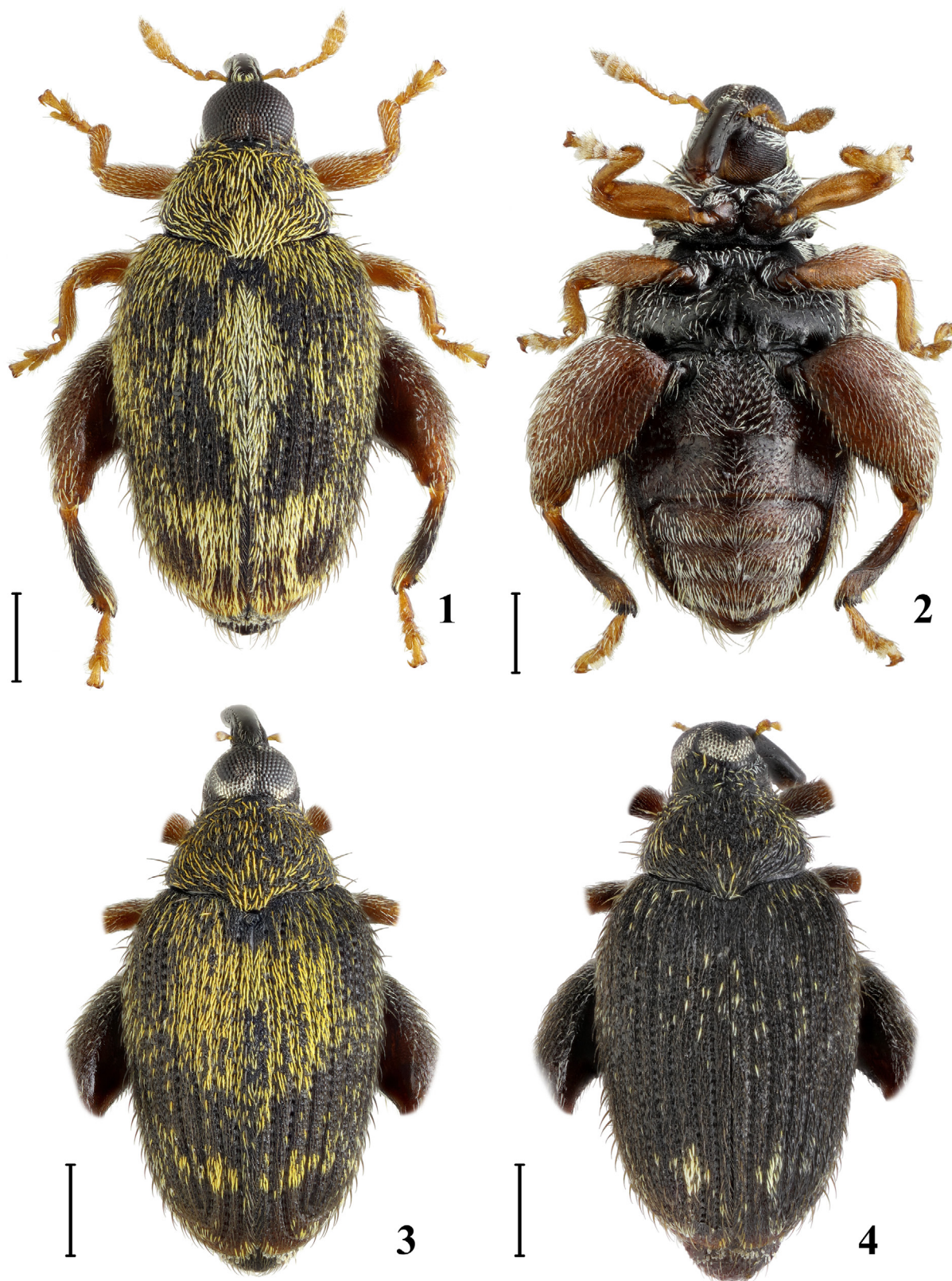
slightly convex, without median sulcus, covered with dense, coarse, more or less hexagonal punctures, interstices much narrower than their diameter and covered with distinct reticulate microsculpture. Scutellum small, subtransverse, slightly convex.

Elytra elongated, 1.4–1.5× as wide as long, widest slightly behind humeri, then gradually taper in an almost straight line towards apex, broadly and separately rounded at apex; in lateral view, almost flat in basal quarter, with shallow transverse depression in front of basal quarter, slightly convex in apical half. Humeri oblique, humeral tubercles slightly protruding, base of elytra approximately as wide as base of pronotum. Striae distinct, deep, composed of angular punctures separated mainly by distance approximately equal to their width. Interstriae moderately wide, almost flat, approximately 2.1–2.3× as wide as striae, covered with coarse granular sculpture; areas on humeri and along basal margin covered with larger granules.

Prosternum (Fig. 2) evenly rounded anteriorly, not emarginate. Procoxae contiguous, not separated by prosternal process. Basisternum barely noticeable, triangular. Sternellum in the form of small triangular tubercle with fossa in middle. Mesocoxae separated by metasternal process, distance between them approximately equal to diameter of mesocoxa. Metathorax large, convex, covered with sparse superficial punctures in middle part, and with large pit-shaped punctures on sides, with deep oblong fossa in front of middle of posterior margin. Abdomen strongly convex ventrally along middle line, sloping on sides; 1st and 2nd ventrites flatly depressed on sides for placing metafemora. 1st ventrite clearly depressed in middle part, covered very densely with large, coarse punctures, 2nd ventrite 1.3× as short as 1st, convex, covered with smaller, scattered punctures, 3–5th ventrites combined 1.4× as long as 1st, moderately densely covered with small punctures. Abdominal tergites (Fig. 5) 5–6 with spicule patches. Pygidium consists of 7th (Fig. 6) and 8th tergites (Fig. 7), exposed from under elytra, slightly convex, coarsely punctured, 7th tergite without scrapers.

Legs moderately robust. Profemora with one minute granule bearing short dark seta. Mesofemora with row of several small granules bearing fine dark setae. Pro- and mesofemora with distinct sulcus for receiving tibiae on inner margin. Metafemora very swollen, 1.9–2.0× as long as wide, along posterior margin with armament arranged in two rows: dorsalmost row of two denticles bearing short thick yellowish setae, three very long setae, and also few more minute setae; ventralmost row subregular, partly doubled, comprising 16–18 short black spines. Protibiae almost straight, slightly widened towards apex, with rather short and slightly curved uncus. Mesotibiae with large sickle-shaped uncus on inner apical angle. Metatibiae arcuately sinuated internally, curved part occupying 3/4 of inner margin length, without uncus. Tarsi: 1st pro- and mesotarsomere 1.7–1.8× as long as wide, 1st metatarsomere 2.3–2.4× as long as wide; 2nd tarsomere transverse, slightly wider than long; 3rd tarsomere bilobed, 1.1–1.2× as long as wide and 1.4–1.5× as wide as 2nd. Onychium moderately and rectilinearly widening apically. Claws appendiculate, with large wide basal tooth.

Body black, elytra from almost black to brown, reddish at apex; 3–5th ventrites reddish-brown; apex of rostrum, antennae, fore and middle legs, and metatarsi brownish-red; metafemora from reddish-brown to brown, metatibiae brownish-red, in middle part darkened to varying degrees, sometimes completely black, except for base; carinae on inner side and spines in corbels always black. Dorsum covered with moderately dense from yellowish-gray to brownish-yellow narrow scales with pointed apices. Elytra with variable patches cov-

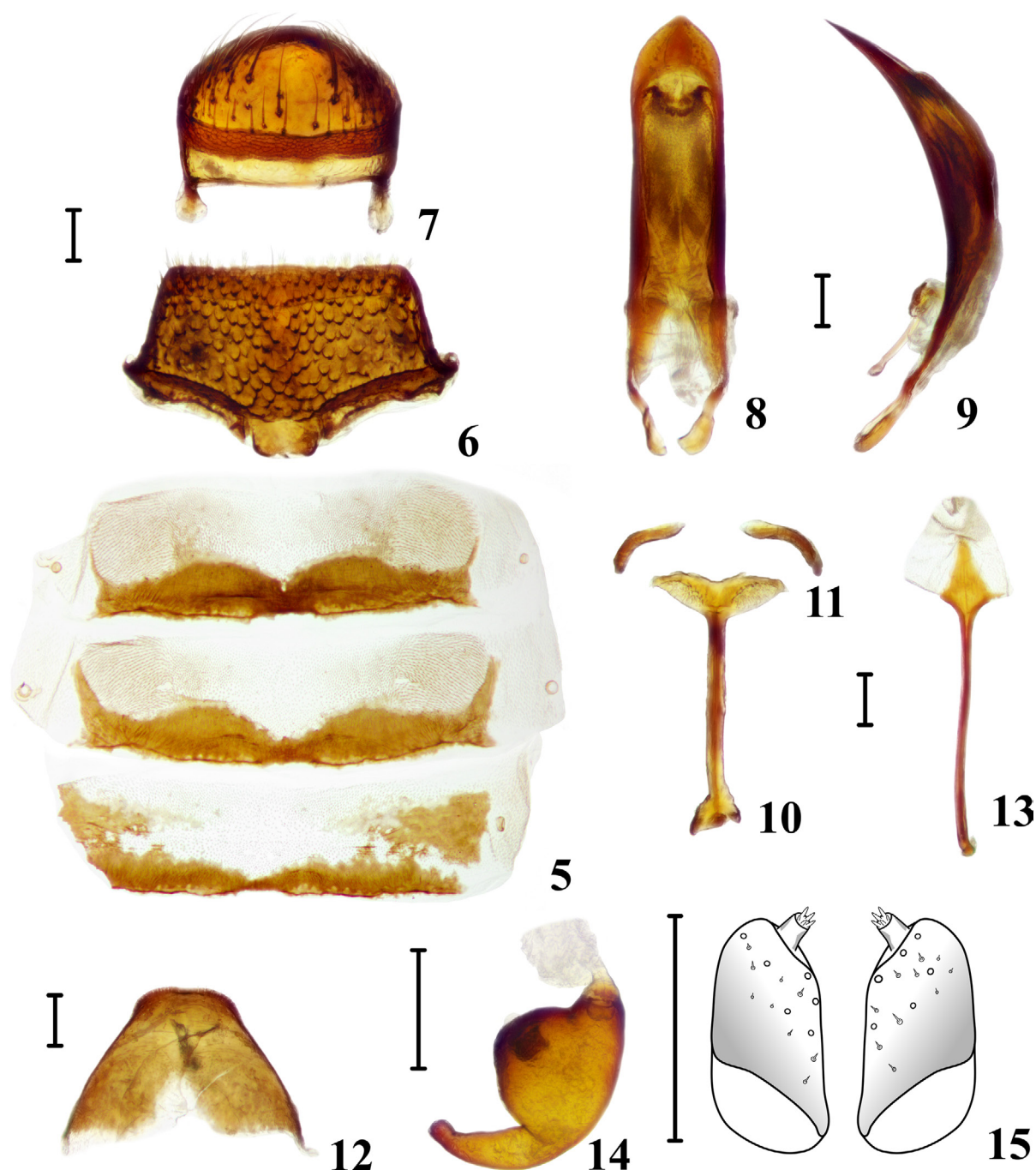


Figs 1–4. *Orchestes (Salius) lithocarpi* Zabaluev sp.n., habitus. 1 — holotype, male, dorsal view; 2 — paratype, male, ventral view; 3–4 — paratypes, females, dorsal view. Scale bars 0.5 mm.

Рис. 1–4. *Orchestes (Salius) lithocarpi* Zabaluev sp.n., габитус. 1 — голотип, самец, вид сверху; 2 — паратип, самец, вид снизу; 3–4 — паратипы, самки, вид сверху. Масштабный отрезок 0.5 мм.

ered with dark brown hair-like scales. Typical form (holotype and three paratypes) (Fig. 1): each elytron with two large nebulous dark-brown patches (one in basal quarter, another behind middle) and two small subapical patches aligned in a row and separated by 3rd interstria. In two paratypes (Fig. 3)

patches fused and yellowish scales formed large basal spot and transverse subapical band. In three paratypes (Fig. 4) light pattern reduced to two noticeable spots anterior to apex of 3rd interstria and several scattered yellowish scales on disc; rest of surface covered with dark-brown hair-like scales. Rarely



Figs 5–15. *Orchestes (Salius) lithocarpi* Zabaluev **sp.n.**, male (5–11) and female (12–15) genitalia and terminalia (extracted from paratypes): 5 — 4–6th tergites; 6 — 7th tergite; 7 — 8th tergite; 8 — aedeagus, dorsal view; 9 — aedeagus, lateral view; 10 — spiculum gastrale; 11 — hemisternites; 12 — 8th tergite; 13 — spiculum ventrale; 14 — spermatheca; 15 — coxites. Scale bars 0.1 mm.

Рис. 5–15. *Orchestes (Salius) lithocarpi* Zabaluev **sp.n.**, гениталии и терминалии самца (5–11) и самки (12–15) (извлечены из паратипов): 5 — 4–6-й тергиты; 6 — 7-й тергит; 7 — 8-й тергит; 8 — эдеагус, вид сверху; 9 — эдеагус, вид сбоку; 10 — гастральная спикула; 11 — гемистерниты; 12 — 8-й тергит; 13 — вентральная спикула; 14 — сперматека; 15 — кокситы. Масштабный отрезок 0.1 мм.

(one paratype) pronotum and almost entire elytra in yellowish scales, retaining only two small subapical dark-brown patches. In addition, on disc of pronotum and on elytral interstriae in form of one regular row there are long brown suberect setae-

ceous scales. Each puncture of striae with minute inconspicuous hair-like scales. Scutellum covered with hair-like yellowish scales. Sides of pronotum with five brown erect setae, sides in basal quarter of elytra with 4–5 setae, which difficult to



Figs 16–17. Type locality: Philippines, Luzon Isl., near Canabuan vill.

Рис. 16–17. Типовой локалитет: Филиппины, остров Лусон, возле деревни Канабуан.

recognize among erect setaceous scales. Ventral side and legs predominantly covered with sparse, hair-like whitish scales, somewhat denser and thicker along underside of eyes, on prothorax and sides of mesothorax; 3–5th ventrites with longer and denser hair-like scales with single, suberect, yellowish setaceous scales, pygidium with long hair-like scales, 7th tergite with yellowish multi-dissected scales.

Penis body elongated, approximately $3.3\times$ as long as wide; in dorsal view (Fig. 8), parallel-sided, gradually narrowed at the very apex; in lateral view (Fig. 9), noticeably evenly curved. Penis apodemes short, approximately half the length of penis body. Endophallus without distinct sclerotized structures. Spiculum gastrale (Fig. 10) well sclerotized, basal plate narrow, with narrowly triangular arms, located almost perpendicular to apodeme, apodeme almost straight, asymmetrically triangularly thickened at apex. Hemisternites (Fig. 11) paired, well sclerotized, narrow, curved.

Female. Rostrum $1.25\text{--}1.29\times$ as long as pronotum. 1st ventrite flat in middle part. Pygidium exposed, consists only of 7th tergite; 8th tergite reduced (Fig. 12). Plate of spiculum ventrale (Fig. 13) united, narrow, diamond-shaped; apodeme slightly curved. Spermatheca (Fig. 14), cornu narrow, slightly curved, nodulus large, collum not pronounced, ramus distinct, surface without distinct sculpture. Coxites (Fig. 15) oval, approximately $2\times$ as long as wide, styli short, $1.2\times$ as long as wide, with apical bunch of thick sensory setae. Other characters the same as those of male.

Length 2.5–2.9 mm. (holotype 2.8 mm).

DIAGNOSIS. The described species is most closely related to *O. samoanus* (Marshall, 1931) from the Samoan Islands [Marshall, 1931], but differs in the antennal insertion near the rostrum base in both sexes (in *O. samoanus* the antennae are inserted at one third from the base in the female, and closer to the middle of the rostrum in the male), in the shape of the elytra, which gradually taper behind the humeri in an almost straight line towards the apex (in *O. samoanus* the elytra are broadly elliptical, rounded at the sides), and also the new species is somewhat larger (*O. samoanus* is 2.0–2.4 mm). In the dorsal pattern, the new species is also similar to *O. (Salius) heritierae* (Morimoto, 1984) from Iriomote Island (Ryukyu Islands) [Morimoto, 1984], from which it differs in almost black body coloration, elongated shape of the elytra, the absence of distinct denticles on pro- and mesofemora, and other characters.

ETYMOLOGY. The specific name is a Latin masculine genitive that refers to the plant genus from which it was collected.

HABITAT AND HOST PLANT. The habitat is a primary montane tropical forest with the first canopy layer dominated by *Lithocarpus* sp. (Fagaceae) (Figs 16–17). All type speci-

mens were collected by beating the foliage of this tree, indicating it is a likely host plant.

Compliance with ethical standards

Ethical approval: No ethical issues were raised during our research.

Conflict of interest. The authors declare that they have no conflict of interest.

Acknowledgements. We are very grateful to V.Yu. Savitsky (Zoological Museum of Lomonosov Moscow State University) for the opportunity to work with the museum collection, and N. Layron and R. Martinez (Philippines) for assistance in fieldwork. The study was conducted under the state assignment of Lomonosov Moscow State University.

References

- Alonso-Zarazaga M.A., Barrios H., Borovec R., Bouchard P., Caldara R., Colonnelli E., Gültekin L., Hlaváč P., Korotyaev B., Lyal C.H.C., Machado A., Meregalli M., Pierotti H., Ren L., Sánchez-Ruiz M., Sforzi A., Silfverberg H., Skuhrovec J., Trýzna M., Velázquez de Castro A.J., Yunakov N.N. 2023. Cooperative catalogue of Palaearctic Coleoptera Curculionoidea. 2nd Edition // Monografías electrónicas. Vol.14. 780 pp.
- Anderson R.S. 1989. Revision of the Subfamily Rhynchaeninae in North America (Coleoptera: Curculionidae) // Trans. Am. Entomol. Soc. Vol.115. No.3. P.207–312.
- Kojima H., Morimoto K. 1996. Systematics of the flea weevils of the tribe Rhamphini [sic!] (Coleoptera, Curculionidae) from East Asia II. Phylogenetic analysis and higher classification // Esakia. Vol.36. P.97–134.
- Legalov A.A. 2024. A new species of the genus *Orchestes* Illiger, 1798 (Coleoptera, Curculionidae) from Mindanao island, the Philippines // Euroasian Entomol. J. Vol.23. No.2. P.102–104. <https://dx.doi.org/10.15298/euroasentj.23.02.05>
- Lyal C.H.C. 2024. Glossary of Weevil Characters. International Weevil Community Website. URL: <https://www.curculionoidea.org/glossary> (Accessed at 28.05.2026).
- Marshall G.A.K. 1931. Insects of Samoa and other Samoan terrestrial Arthropoda. Part IV. Coleoptera. Facs. 5. Curculionidae. London: British Mus. (Nat. Hist.). P.249–346.
- Morimoto K. 1984. The family Curculionidae of Japan. IV. Subfamily Rhynchaeninae // Esakia. Vol.22. P.5–76.
- Zabaluev I.A. 2025. Clarification of the taxonomic status and distribution of a number of Asian species of the tribe Rhamphini (Coleoptera: Curculionidae, Curculioninae) // Animal Taxonomy and Ecology. Vol.72. No.3. P.670–688. <https://doi.org/10.1556/1777.2025.00099>
- Zabaluev I.A. 2026. Contribution to the knowledge of the weevil tribe Rhamphini (Coleoptera: Curculionidae) of India // Zootaxa. Vol.5807. No.3. P.427–451.