

***Odochilus (Odochilus) laotianus* sp. nov.**
- a new species of Odochilini Rakovič, 1987
(Coleoptera: Scarabaeidae: Aphodiinae) from Laos

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Abstract. A new species of the genus *Odochilus* Harold, 1877 - *O. (O.) laotianus* sp. nov. from Laos is described and illustrated. A photograph of the epipharynx of a member of the genus *Odochilus* Harold, 1877 is presented for the first time. A short discussion on the phylogeny of Odochilini Rakovič, 1987 is presented.

INTRODUCTION

A revision of the genus *Odochilus* Harold, 1877 with remarks on tribal classification was presented by Rakovič in 1987 with including five previously undescribed species. Thereafter, in 1997, Rakovič wrote a review of that genus with description of another five species and divided the genus *Odochilus* into two subgenera. Since that time, four further species have been described by: Bezděk & Křivan (2001), Masumoto, Lan & Kiuchi (2016), Ochi, Kon & Kawahara (2017) and Masumoto and Kiuchi (2019). A further species - the third species from continental Asia – is described here.

MATERIAL AND METHODS

The specimens were observed with a Nikon SMZ-U stereoscopic microscope. The photos published here were taken with a Canon EOS 5D Mark III connected to a Canon MP-E 65mm macro lens. Photos were edited in the Helicon Focus programme.

The holotype of the new species is indicated by a red, printed label added to the same pin and bearing the status of the specimen, sex, its name, name of the author, month and year of the designation.

The holotype is deposited in private collection of Cezary Nowak (Poland, Włoszczowa).

Addenda and remarks are found in brackets, separate label lines are indicated by slash (/), separate labels are indicated by double slash (//).

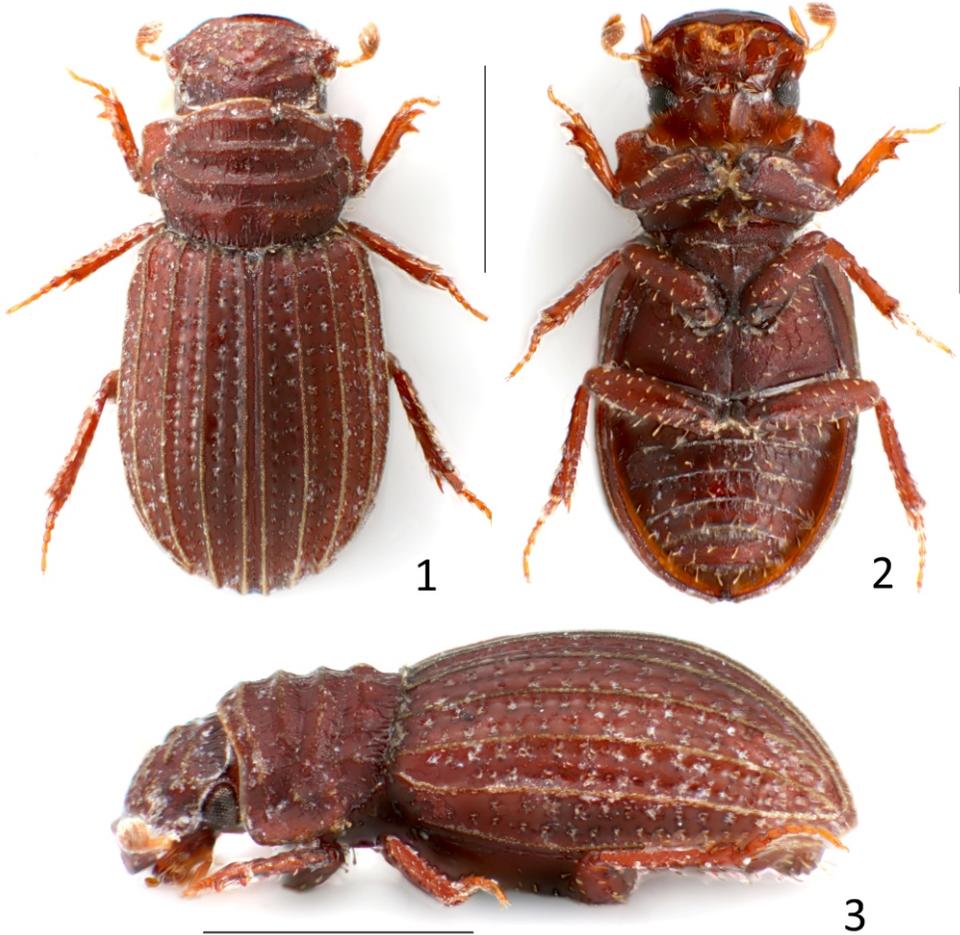
DESCRIPTION OF THE NEW SPECIES

***Odochilus (Odochilus) laotianus* sp. nov.**

(Figs. 1-6)

Type material. Holotype (♂): Laos / Vientiane prov. / Vang Vieng vill. env. / vi.2013 // *Odochilus (s.str.) / laotianus* sp. nov. / HOLOTYPE (♂) / det. Ł. Minkina (03.2019).

Description. Dorsum (Fig. 1). Body length 2.8 mm, greatest width 1.3 mm. Relatively wide. Oblong oval. Dorsally reddish brown, scarcely shiny. Glabrous except for tops of the elevated elements listed below, which bear extremely short, dust-like macrosetae.

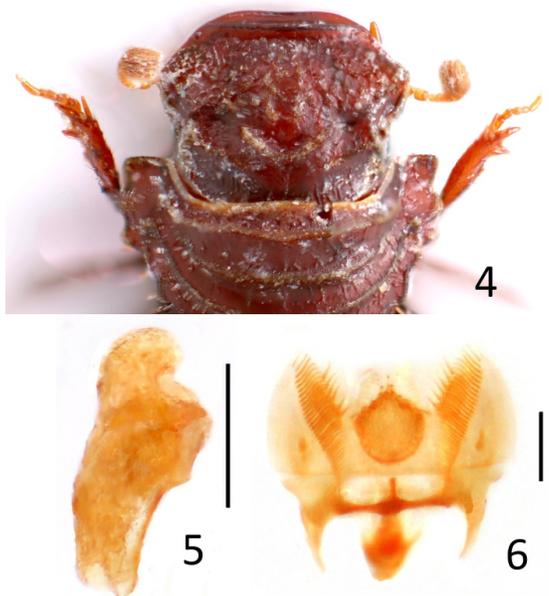


Figs. 1-3. *Odochilus* (s. str.) *laotianus* sp. nov., ♂, holotype: 1- dorsal view; 2- ventral view; 3- lateral view. Figs. 1-3: scale lines: 1.0 mm.

Head (Fig. 4). Clypeus anteriorly truncate, with truncate angles on sides. Genae nearly rectangular, distinctly more protruding than the eyes, which are clearly visible from above. Head anteriorly granulate, posteriorly with two pairs of oblique ridges; anterior pair of oblique ridges with a small but rather distinctly noticeable break between them; posterior pair of oblique ridges extended up to swellings above eyes. Oblique ridges with extremely short, dust-like setae.

Pronotum transverse, with four transverse ridges; first to third ridges sharp, continuous, fourth ridge interrupted medially. Small longitudinal ridges adjacent to lateral ends of third and fourth ridges. All ridges and lateral margins with extremely short, dust-like setae; basal margin additionally with long, relatively large, apically dilated setae. Surface between transverse ridges with longitudinal wrinkles. Sides of pronotum slightly but clearly bisinuate. Basal margin before hind angles very strongly sinuate.

Scutellum small, triangular, distinctly microreticulate.



Figs. 4-6. *Odochilus* (s. str.) *laotianus* sp. nov., ♂, holotype: 4- head; 5- aedeagus in lateral view; 6- epipharynx. Fig. 4: scale line: 0.5 mm. Fig. 5: scale line: 0.2 mm. Fig. 6: scale line: 0.1 mm.

Elytra rather distinctly broader behind, with ten striae and ten intervals. Striae wide, with large, slightly variably shaped punctures. Odd intervals high, sharp, strongly costate, even intervals much lower, very slightly costate, nearly flat. Epipleura and odd elytral intervals with extremely short, dust-like setae.

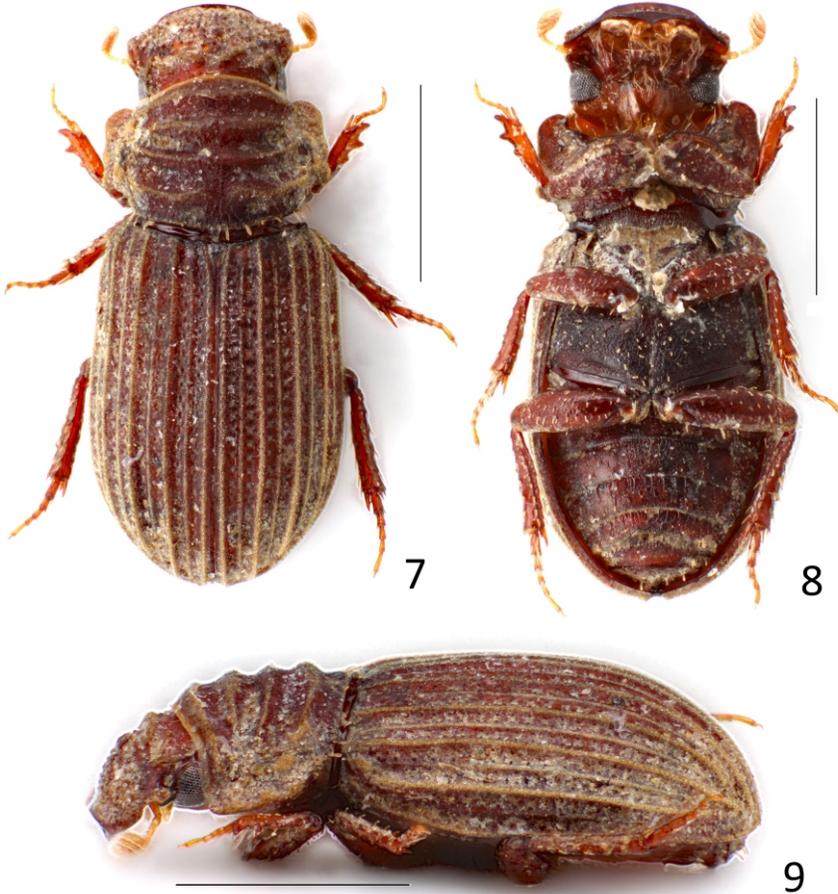
Venter (Fig. 2) matt, with distinct microreticulation. Meso-metaventral plate flattened in the middle, with distinct median impression; punctation of meso-metaventral plate very sparse, irregularly spaced; all punctures bearing relatively long, thick, club-shaped setae. Abdominal ventrites matt, with microreticulation; with transverse rows of punctures; all punctures bearing relatively long, thick, club-shaped setae. Pygidium with similar structure to abdominal ventrites. Meso- and metafemora with microreticulation, with fairly close but not dense, regular punctation bearing relatively long, thick, club-shaped setae. Femora and tibiae slender.

Aedeagus (Fig. 5). Parameres shorter than phallobase, at middle of length with regularly rounded ventral emargination in lateral view.

Epipharynx (Fig. 6) transverse, anterior outline almost straight, very gently sinuate, lateral outlines regularly widely rounded; tormae and nesium well sclerotised, apotormae missing; pateoepitorma rounded, mesoepitorma triangular, both well sclerotised; heli with one three celtes, the middle one longer than external; on sides two longitudinal rows of long, and very thin microtricha; corypha and zygom absent; adelochaetae and chaetopariae with rows of relatively thin, long closely spaced spines; area of prophobae very weakly sclerotised, bearing longitudinal row of short, very thin, closely spaced spines.

Differential diagnosis. In Rakovič's (1997) key to the genus *Odochilus*, the newly described species would run to *O. parasyntheticus* Rakovič, 1997 to which it is somewhat similar. However,

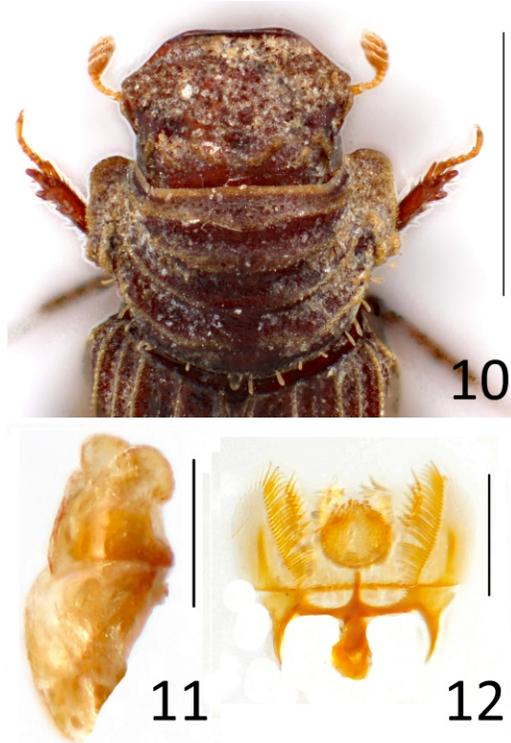
if the pronotal sides are considered to be distinctly bisinuate it would run to the point with *O. philippinensis* Rakovič, 1987 and *O. syntheticus* Harold, 1877. From both these species, *O. laotianus* sp. nov. can be easily distinguished by: sides of pronotum less distinctly bisinuate, body less elongate, base of pronotum before hind angles much more distinctly sinuate. *O. laotianus* sp. nov. can be distinguished from *O. parasyntheticus* Rakovič, 1997 by: body less distinctly elongate, with proportionally wider elytra, sides of pronotum slightly more distinctly bisinuate, base of pronotum before hind angles much more distinctly sinuate, anterior pair of oblique ridges of head very distinctly divided, but there is very gentle, sparse, dust-like macrosetation between them, pairs intervals of elytra slightly lower, without macrosetation. However, because of the proportions of the body, shape of pronotum, shape of elytral intervals among the whole genus, it seems to be most similar, and most closely related to *O. taiwanus* Masumoto, Lan & Kiuchi, 2016. It can be distinguished from it by: ridges on head distinctly divided, sides of pronotum slightly more distinctly bisinuate, base of pronotum before hind angles more distinctly sinuate.



Figs. 7-9. *Odochilus* (s. str.) *parasyntheticus* Rakovič, 1997, ♂: 7- dorsal view; 8- ventral view; 9- lateral view. Figs. 7-9: scale lines: 1.0 mm.

Name derivation. Toponymic; an adjective derived from the name of Laos country, where the new species was collected.

Short discussion. Rakovič, when he described tribe Odochilini Rakovič, 1987, focused only on differentiation of the newly proposed tribe from Psammodiini Mulsant, 1842. However, there is not much information about similarity and correlations with other tribes. The study presented above clearly shows similarity of aedeagus and epipharynx in Odochilini and Psammodiini Mulsant, 1842, and considering also some shared external features (like presence of transverse ridges on the pronotum, or on the head) we can suppose that both taxa had common ancestors. All these features suggest that both taxa are more closely related in comparison to other tribes among Aphodiinae Leach, 1815.



Figs. 10-12. *Odochilus* (s. str.) *parasyntheticus* Rakovič, 1997, ♂: 10- head; 11- aedeagus in lateral view; 12- epipharynx. Fig. 10: scale line: 0.5 mm. Fig. 11: scale line: 0.2 mm. Fig. 12: scale line: 0.1 mm.

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