

**Studies on types in the genus *Rhyssemus*. 5.  
*Rhyssemus loebli* Petrovitz, 1975  
(Coleoptera: Scarabaeidae: Aphodiinae: Psammodiini)**

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**Taxonomy, redescription, Coleoptera, Scarabaeoidea, Scarabaeidae, Aphodiinae, Psammodiini, Rhyssemina, *Rhyssemus*, Oriental Region.**

**Abstract.** Results of studying the type and 7 paratypes of the species *Rhyssemus loebli* Petrovitz, 1975, kept in the Muséum d'histoire naturelle, Genève, Switzerland, are presented. Photos (habitus as well as details) are published for the first time. Most important features differentiating the species (described from Tamil Nadu, South India) from similar members of the genus inhabiting the Oriental Region (and also Palaearctic parts of the Indian Subcontinent) are discussed.

## INTRODUCTION

Having in mind considerable problems with identification of species in the genus *Rhyssemus* Mulsant, 1842, we attempt to stepwise revise type materials with providing the appropriate photographic documentation. In our preceding works (Rakovič et al 2016a, 2016b, 2018a, 2018b), we paid our attention to general considerations and to five Afrotropical species of the genus.

In the work presented here, we offer results of studying type material (type and eight paratypes) of the species *Rhyssemus loebli* Petrovitz, 1975, kept in the Muséum d'histoire naturelle, Genève, Switzerland.

## MATERIAL AND METHODS

The specimens were observed by using the MBS-10 and SZP 1120-T stereoscopic microscopes. The photos published here were taken by the use of the Meopta laboratory microscope, CMEX 5 digital camera and the Helicon Focus programme.

Prior to the study and taking photos, they were kept in a detergent solution for 30 to 60 min and submitted to mechanical cleaning.

The following acronym is employed for the collection, in which the specimens studied here are kept:

MHNG Muséum d'histoire naturelle, Genève, Switzerland.

The type series studied consisted of a specimen originally labelled as "TYPE" and further seven specimens, each of them labelled as "PARATYPE". One can, however, reasonably assume that the specimen bearing the red label "TYPE" has actually a value of the holotype.

For morphological terms used in the description of epipharyngeal structures we follow Dellacasa et al. (2010).

## TAXONOMY

***Rhyssemus loebli* Petrovitz, 1975**

(Figs. 1-22)

*Rhyssemus loebli* Petrovitz, 1975: 617 (original description).*Rhyssemus loebli*: Dellacasa 1988: 423 (catalogue).**Type locality.** "Udamalpet, Tamil Nadu, India".

**Type material studied (all in MHNG).** Type, ♂, "INDIA MADRAS / Udamalpet / 400 m, 26. xi. 1972 Besuchet Löbl Mussard [white printed/handwritten label] // TYPUS [red printed label] // *Rhyssemus* / *loebli* n sp. / Petrovitz [red printed label] // 2385, Dok. L. Mencl [pale green printed label, related to the photo-documentation system of the second author]". Six paratypes, same locality data as with type on white labels, PARATYPUS instead of TYPUS on red label; one paratype also equipped with pale green label as holotype, but with number 2387 instead of 2585; 1 paratype, ♀, "INDIA MADRAS / Anaimalai H. / 17. xi. 1972 Aliyar Dam / 300 m / Besuchet Löbl Mussard [white printed/handwritten label] // PARATYPUS [red printed label] // *Rhyssemus* / *loebli* n sp. / Petrovitz [red printed label] // 2387, Dok. L. Mencl [pale green printed label, related to the photo-documentation system of the second author]".

See also Figs. 21 and 22 for etiquettes pinned under the type and paratype, respectively.

**Redescription based on the male type.** Total body length: 3.5 mm. Oblong oval, broadest at about elytra midlength, (Figs. 1 and 2); not strongly shining, but elevated sculptures (granules and ridges) fairly shining; dark brown (Fig. 1).

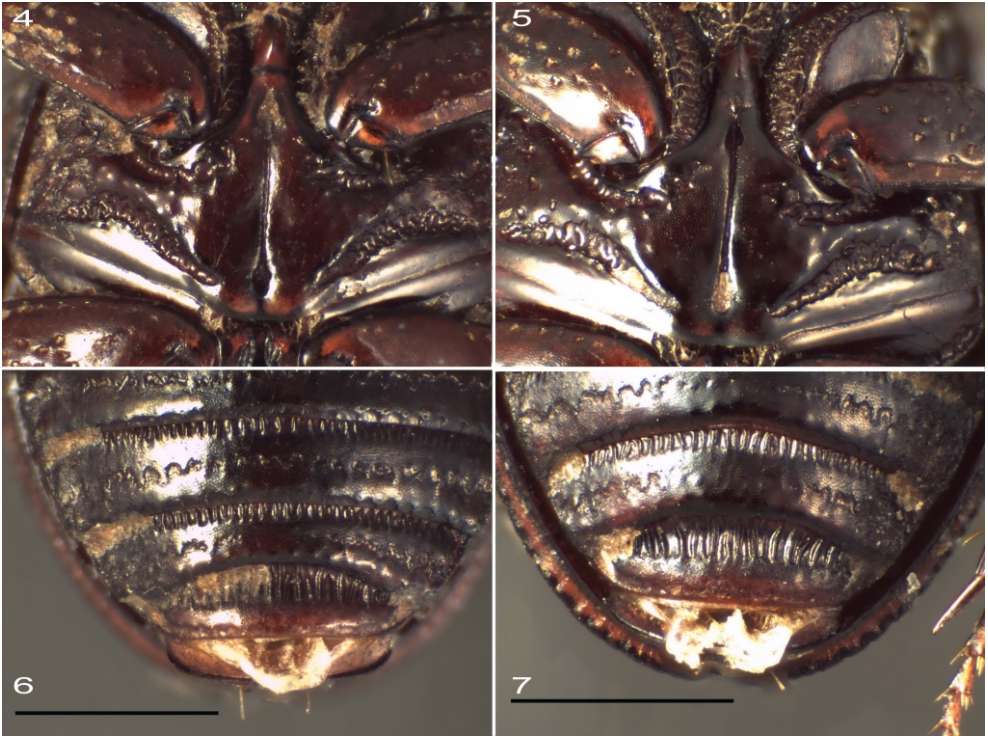
Head (Fig. 8). Clypeus not dentate, but angulate each side of wide anteromedian emargination, its sides not sinuate anteriorly, arcuate throughout and nearly aligned with genae; genae protruding slightly more than eyes and bearing few fine acuminate macrosetae (Fig. 20). Clypeus surface with not very dense, mostly obsoletely transversal granules decreasing in size forward and sideward; middle protuberance distinctly elevated. Head vertex with two pairs of distinct, smooth oblique ridges; ridges of anterior pair longer, those of posterior pair short; furrow between middle protuberance and anterior pair of oblique ridges as well as that between ridges of anterior pair and ridges of posterior pair filled with round, discrete granules separated one from another by at most granule diameter.

Epipharynx (Fig. 16) transversal, anterior outline remarkably emarginate, lateral outlines regularly widely rounded; epitorma subquadrate, well sclerotised; helus with group of somewhat irregularly spaced sensilla (including five remarkably large ones medially) and two irregular longitudinal rows of long microtrichia anteriorly; corypha and zygum absent; phobae weakly sclerotised, glabrous; both chaetopariae with row of 20 long, stout, closely spaced spines, apices of spines in chaetopariae reaching approximately to bases of spines in prophobae; area of prophobae well sclerotised, bearing longitudinal row of six short, stout, densely spaced spines.

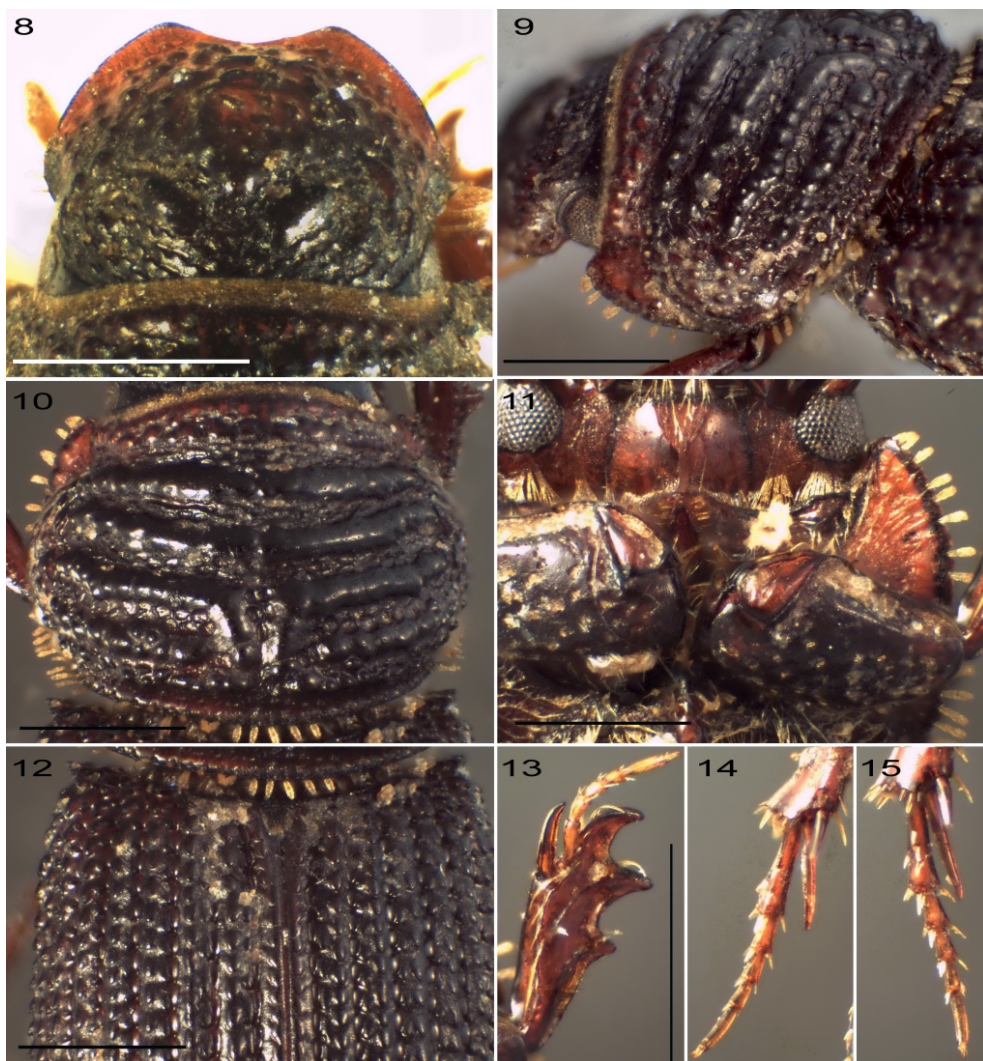
Pronotum (Figs. 9-10) transversal (its length-to-width ratio of 0.780), widest behind midlength, its lateral margins only moderately arcuately narrowed forward, arcuate posteriorly and merging into quite round (neither truncate nor excised) posterior corners. Lateral edges crenulate, with macrosetae dilated toward apex, apex itself being truncate to moderately rounded (Fig. 11). Pronotal structure consisting of five transversal ridges, five transversal furrows, posterior longitudinal furrow and accessory swelling present in furrow 4 on each side of longitudinal furrow, arranged as follows on disc: ridge 1 granulate, subdivided into anterior (lower) area with small granules and posterior (higher) area with larger and irregularly shaped granules; ridges 2-4 continuous, more elevated than ridge 1, slightly narrower than respective furrows; accessory swelling granulate but continuous; ridge 5 relatively low, consisting of row of discrete granules, short (reduced laterally); furrows 1 and 2 filled with transversal wrinkles; furrow 3 filled with transversal punctures.



Figs. 1-3. *Rhyssemus loebli*, paratype, ♀, habitus: 1- dorsal view; 2- dorsolateral view; 3- ventral view; Scale line 1 mm. Photographs by L. Mencl.



Figs. 4-7. *Rhyssemus loebli*, details, ventral views: 4- type, ♂, metaventral plate; 5- paratype, ♀, metaventral plate; 6- type, ♂, abdominal ventrites 3-6; 7- paratype, ♀, abdominal ventrites 4-6. Scale line 0.5 mm. Photographs by L. Mencl.



Figs. 8-15. *Rhyssemus loebli*, paratype, ♀, details: 8- head, dorsal view; 9- pronotum, lateral view; 10- pronotum, dorsal view; 11- part of prosternum, lateral view; 12- part of elytra with scutellum, dorsal view; 13- upper face of right protibia and protarsus; 14- inside surface of right mesotibia apex and mesotarsus; 15- inside surface of right metatibia apex and metatarsus. Scale line 0.5 mm. Photographs by L. Mencl.

Scutellum small, triangular, about as long as wide (Fig. 19).

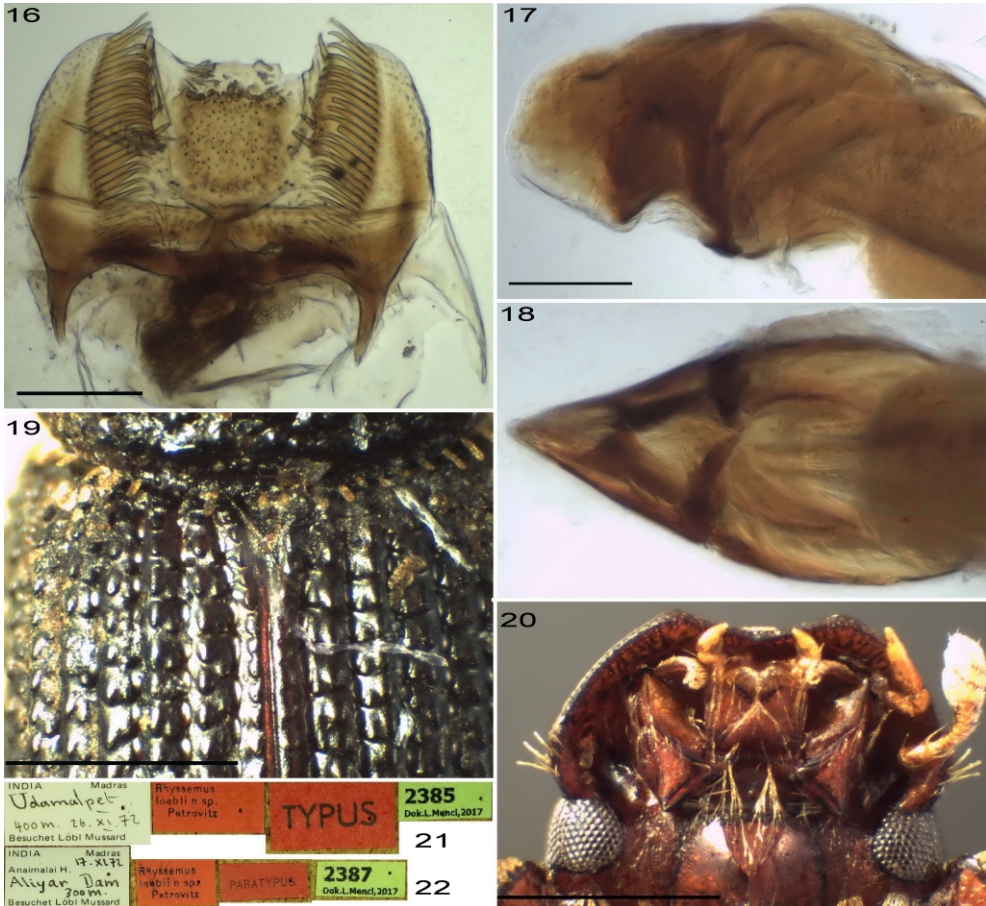
Elytra (Figs. 1-2) broader behind (their length-to-width ratio of 1.39), widest behind midlength, with ten striae and ten intervals; with considerable humeral denticles. Striae deep; individual granules in discal elytral intervals easy to recognize even under low magnification (about 10x), arranged in two rows: outside row of large and inside row of small granules; granules in shape of rather elongate, backward directed elevations (Figs. 12, 19).

Legs in dorsal view (Figs. 13-15). Superior terminal spurs of meso- and metatibia at least as long

as basal meso- and metatarsomere, respectively. Basal meso- and metatarsomere about as long as meso- and metatarsomeres 2-4 combined, respectively.

Ventral surface (Fig. 3) also dark brown and fairly shining, mostly glabrous and smooth, but femora with medium-sized (profemora) or relatively smaller (meso- and metafemora) punctures bearing short macrosetae. Metaventral plate with narrow longitudinal furrow, which is moderately reduced anteriorly, nearly complete and moderately dilated posteriorly (Figs. 4-5). Abdominal ventrites 3-5 fluted anteriorly; with transverse serrate lines ("zig-zag lines") rather more distinct laterally and less distinct close to midline; ventrite 6 strongly transversally impressed anteriorly, impression taking more than ventrite anterior half (Figs. 6-7).

Aedeagus as in Figs. 17-18.



Figs. 16-22. *Rhyssemus loebli*, details and etiquettes: 16- paratype, ♀, epipharynx; 17- type, ♂, aedeagus, lateral view; 18- type, ♂, aedeagus, ventral view; 19- paratype, ♀, detailed elytral sculpture; 20- paratype, ♀, head, ventral view; 21- etiquettes, type; 22- etiquettes, paratype. Scale lines 0.1 mm for Figs. 16-18, 0.5 mm for Figs. 19-20. Photographs by L. Mencl.

**Sexual dimorphism.** There are no important differences between external characters of males and females.

**Variability.** In the series of specimens (type and paratypes) studied here, the body size ranges between 3.3 and 3.5 mm. Only unimportant sculptural variability can be found: oblique ridges on the head are more or less distinct, those of the second (posterior) pair can be indistinct in some individuals; the granulation of ridge 1 can exert slight differences and ridges 2-4 can be slightly narrower or wider compared to the type.

**Distribution.** South India, Tamil Nadu [known based on the type series only until the present time].

**Notes.** Among species of *Rhyssemus* from the Oriental Region, *R. loebli* can be recognized based on the following combination of characters as follows. The clypeus is not dentate, but angulate each side of the wide anteromedian emargination, its sides are not sinuate anteriorly, arcuate throughout and nearly aligned with genae. The pronotal structure consists of five transversal ridges, five transversal furrows, posterior longitudinal furrow and accessory swelling present in furrow 4 on each side of the longitudinal furrow arranged as follows in dorsal view: ridge 1 granulate, subdivided into anterior (lower) area with small granules and posterior (higher) area with larger and irregularly shaped granules, ridges 2-4 continuous, more elevated than ridge 1, moderately narrower than respective furrows; accessory swelling granulate but continuous, ridge 5 relatively low, consisting of row of discrete granules, short (reduced laterally), furrows 1 and 2 filled with transversal wrinkles, furrow 3 filled with transversal punctures. Elytra are not subparallel but have their lateral margins arcuate - maximum elytra width is found at about elytra midlength, and from there, the elytra are distinctly narrowed forward as well as backward; individual granules in discal elytral intervals (Figs. 12 and 19) are easy to recognize even under low magnification (about 10x).

## DISCUSSION

As to our knowledge, the species *R. loebli* has not been collected since the time of its description. In the literature, the species is noted in the original description only (Petrovitz 1975) and in a catalogue (Dellacasa 1988). The original description is rather brief and insufficient for reliable identification without a comparison with type material. No keys to species from the Oriental Region or from the Indian Subcontinent are available. Under these circumstances, we believe that the data and illustrations presented here will be helpful in this respect.

The most important characters are summarized in the paragraph "Notes" (the Part "Taxonomy") above. The shape of elytra is a feature particularly characteristic of the species.

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