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Two New Species of the Genus *Paussus* Linné, 1775 (Coleoptera, Carabidae, Paussinae) from Thailand

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Abstract. Two peculiar new species of *Paussus* Linné, 1775 (Paussini, Paussina), *Paussus drumonti* sp. nov. and *P. masao* sp. nov., are described from Thailand.

Key words: Paussini, Paussina, taxonomy, Indochina.

Introduction

The genus *Paussus* Linné, 1775 is distributed mainly in the Ethiopian and Oriental regions (extending to southern parts of the Palearctic region) and composed of about 390 species. Luna de Carvalho (1989), in his great monograph of the tribes Paussini and Protopaussini (in the current sense), subdivided the genus and recognized 25 genera. However, Nagel, in his recent studies (e.g., 2003, 2006, 2009), rejects Luna de Carvalho's (1989) concept and has treated all species as members of the genus *Paussus*, as have many previous authors (e.g., Westwood, 1874; Desneux, 1905; Fowler, 1912). Herein, I follow this concept. The Oriental *Paussus* fauna is still poorly known, especially those of Indochina (Nagel, 2009). Recently, I examined two peculiar *Paussus* species from Thailand, which could not be assigned to any known "genera" of Luna de Carvalho (1989), and which lacked clear affinities to any of the known species. This paper describes these species.

Methods

Photographs were taken using a Canon EOS 60D with a Canon MP-E 65 mm 1–5X macro lens and mounted using the automontage software CombineZP.

The following abbreviations are used for measurements: BL: body length (from apex of head to apices of elytra); ACL: maximum length of antennal club; ACW: maximum width of antennal club; H: head width; PL: pronotal length (at midline); PAW: maximum width

of anterior part of pronotum; PPW: maximum width of posterior part of pronotum; HTL: maximum length of hind tibia. All measurements are in millimeters.

***Paussus drumonti* Maruyama, sp. nov.**
(Figs. 1-6)

Type material. Holotype, ♀, "Coll. I.R.Sc.N.B., Thailand, Na Haeo, Malaise Trap 4, 22-29. V. 2003, Leg. P. Grootaert". Deposited in Institut Royal des Sciences Naturelles de Belgique.

Description.

Female holotype (Figs. 1-3): body almost uniformly reddish brown; dorsal surface of head, pronotum, antennal clubs and legs smooth and shining; elytra along suture coarsely punctured, opaque; all parts body with long setae with the exception of the mostly glabrous pygidium and abdomen.

Head (Figs. 1-3) at frontal part medially with shallow longitudinal groove, flanked by a pair of low convexities; vertex transversely strongly convex above eyes; surface covered with setae which are becoming denser and longer around vertex and temples, but around apex of frontal part and anterior area of vertex almost glabrous; neck narrow, strongly constricted. Eyes moderate in size but only slightly visible in dorsal view.

Mouthparts (Fig. 2) "closed" type, i.e. maxillary and labial palpi cover mouth opening from beneath; maxillary palpi with third from terminal segment large, compressed; terminal segment of labial palpi slightly compressed, oblong oval with acute tip.



Figs. 1-6. *Paussus drumonti* sp. nov. 1, Habitus (female holotype), dorsal view; 2, ditto, ventral view; 3, ditto, antero-lateral view; 4, right antennal club, dorsal view; 5, ditto, posterior view; 6, right hind tibia and tarsus. Scale=1.0 mm.

Antennae (Figs. 1-3) with segment I large, subtriangular with strongly widened base; club (Figs. 4, 5) somewhat spherical with fore margin strongly, roundly convex; hind margin slightly convex, without traces of indentations; basal tooth large, curved, truncate at apex with trichomes; hind margin with round, deep furrow, which is margined dorsally and ventrally, margins infuscate; large tooth of apex slightly curved dorsad; dorsal disc convex, almost glabrous around basal tooth, with apical sensory field (Nagel, 1980) along apical half of fore margin; dorsal disc convex, with apical sensory field thicker than that on dorsal disc.

Pronotum (Figs. 1-3) strongly divided into anterior and a posterior part by deep, V-shaped, transverse furrow; anterior part 1.2 times wider than posterior part, strongly divided by longitudinal groove and thus forming two lobes which are strongly projecting upward, transversely narrow and slightly curved postero-laterally; anterior margin of anterior part gently rounded; posterior margin projecting medially (thus forming V-shaped furrow); transverse furrow with trichome-bearing glandular openings at furthest lateral ends; posterior part with almost parallel-sided, slightly concave lateral margins; with deep depression around antero-medially; surface densely covered with long, subrecumbent setae on anterior part, and sparsely covered with suberecting setae on posterior part.

Elytra (Figs. 1-3) parallel-sided; surface sparsely with yellowish, long, erect or slightly slanting setae, coarsely punctured along suture, forming longitudinal opaque band, moderately punctured on lateral areas, and almost glabrous around apico-lateral flange; hind wing developed.

Pygidium (Fig. 1) with disc glabrous and shining, with large subcircular furrow mesally; posterior margin slightly truncate; true marginal trichome (band of setae along the margin) missing.

Legs (Figs. 1-3) long, robust; mid and hind femora strongly depressed around base; fore tibia gently widened apicad, with outer apical angle obliquely cut; mid tibia flattened, gently widened apicad, its outer apical angle with tooth; hind tibia (Fig. 6) flattened, slightly curved in dorsal view, strongly widened apicad, its outer apical angle with large tooth; tarsi not compressed, segments I-IV wider than long, subequal in length; segments I-IV of all tarsi ventrally setose, without adhesive pubescence.

Male unknown.

Measurements. BL, 3.84; HW, 0.79; ACL, 0.98; ACW, 0.71; PL, 0.74; PAW, 1.03; PPW, 0.68; HTL, 1.13.

Distribution. The species is only known from the type locality in Northeastern Thailand.

Etymology. Dedicated to Dr. Alain Drumont, a curator of Institut Royal des Sciences Naturelles de Belgique for his large contribution to the Oriental beetle fauna and lending the material for my study.

Differential diagnosis. The species forms part of the large group of species characterized by their deep transverse pronotal furrow. Within this group, this species is peculiar; no similar species are known from the Oriental region so far, and it is clearly distinguished from the other species especially by the vertex of the head being strongly convex, the antennal club being almost spherical, the anterior part of the pronotum having thin, transverse lobes, and the hind tibia being strongly widened apicad.

***Paussus masaoi* Maruyama, sp. nov.**

(Figs. 7-11)

Type material. Holotype, ♂, "Doi Pui, Chiangmai, N. Thailand, 4. VI. 1984, Masao Ito Leg." Deposited in M. Maruyama collection in the Kyushu University Museum. This specimen was originally deposited in the collection of the late Mr. Tamaki Gomi, and was found in his collection by Mr. Wataru Suzuki who kindly sent it to me for the present study.

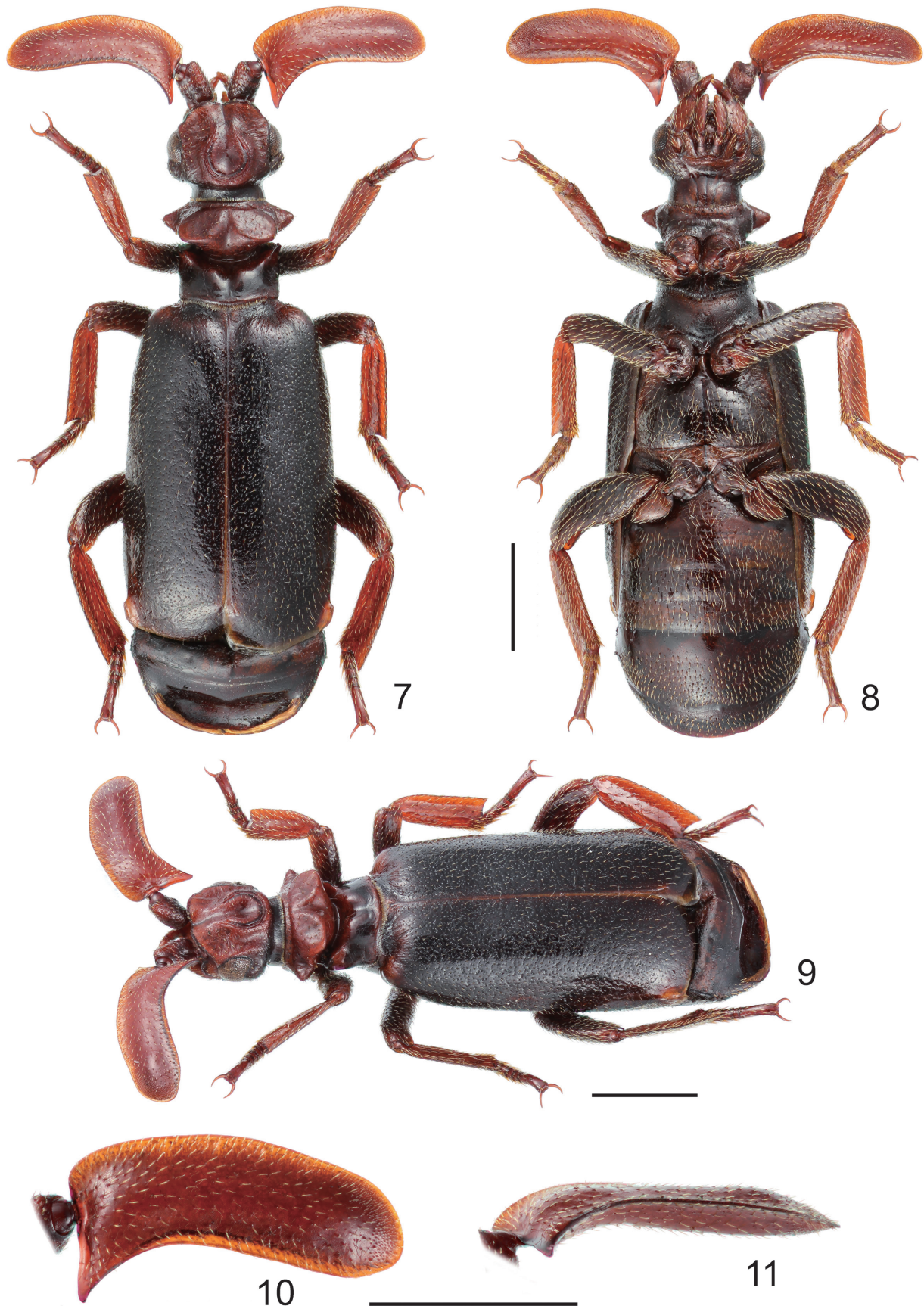
Description.

Male holotype (Figs. 7-9): body blackish brown but head, antennae, mouthparts, anterior part of pronotum, elytral suture, tibiae and tarsi brown to reddish brown; dorsal surface of head, antennal clubs, pronotum, legs and pygidium smooth, shining, but those of elytra moderately punctured; all parts of body covered with short, mostly sparse pubescence with the exception of the mostly glabrous head, pronotum and pygidium.

Head (Figs. 7-9) at frontal part with shallow, wide, longitudinal groove, its sides depressed; vertex with large, turned-C-shaped crista (anterior margin opened) which is margined with shallow, thin groove, and its opening connected to groove on frontal part; dorsal surface finely sparsely punctured, almost glabrous, but along eyes sparsely with short, scale-like setae; temples convex laterad, more prominent than eyes, with surface moderately covered with setae; eyes large, somewhat prominent; neck narrow, strongly constricted.

Mouthparts (Fig. 8) "closed" type, i.e. maxillary and labial palpi cover mouth opening from beneath; maxillary palpi with third from terminal segment large, compressed; terminal segment of labial palpi slightly compressed, oval, with tip acute.

Antennae (Figs. 7-9) with segment I parallel-sided, with surface rugose; club (Figs. 10, 11) strongly compressed; fore margin slightly convex, hind margin



Figs. 7-11. *Paussus masaoi* sp. nov. 7, Habitus (male holotype), dorsal view; 8, ditto, ventral view; 9, ditto, antero-lateral view; 10, right antennal club, dorsal view; 11, ditto, posterior view. Scale=1.0 mm.

emarginate without traces of indentations; basal tooth large, without trichome; hind margin thin, curved ventrad near base, without furrow; dorsal disc slightly convex, with surface rather sparsely covered with scale-like short setae, with narrow apical sensory field around apex.

Pronotum (Figs. 7-9) strongly divided into anterior and posterior part by deep transverse furrow; anterior part 1.2 times wider than posterior part, laterally acute in dorsal view; strongly divided by longitudinal medial groove and thus forming two projecting lobes slanting slightly backwards over transverse furrow; transverse furrow with trichome-bearing glandular openings at furthest lateral ends; posterior part with almost parallel, slightly concave lateral margins; medially with a deep, wide, longitudinal furrow; surface of anterior part sparsely covered with minute setae, posterior part completely glabrous.

Elytra (Figs. 7-9) somewhat expanded posteriad, widest around posterior 1/3; surface moderately, almost uniformly punctured, covered with short, thin setae, but along apical margin glabrous; hind wing developed.

Pygidium with disc glabrous and shining, bordered apically by high, blade-like, semicircular margin; marginal trichome well developed.

Legs (Figs. 7-9) robust; tibiae slightly compressed with hind tibiae broader than mid and fore tibiae; outer apical angle of hind tibiae obliquely cut, its margin slightly emarginate; tarsi with segments I-IV as long as wide, subequal in length; segments I-IV of all tarsi ventrally setose, without adhesive pubescence.

Female unknown.

Measurements. BL, 5.2; HW, 1.10; ACL, 1.62; ACW; PL, 0.98; PAW, 1.24; PPW, 0.95; HTL, 1.23.

Distribution. The species is only known from the type locality in Northern Thailand.

Etymology. Dedicated to Mr. Masao Ito, collector of the holotype.

Differential diagnosis. Several species similar in antennal shape are known in *Paussus*. However, none are obviously closely related to this species. The crista of the

head is similar to those of *P. hystrix* Westwood, 1850 and its allies (members of “*Scaphipaussus* Fowler *sensu* Luna de Carvalho, 1989”, no longer recognized as a genus nor subgenus as mentioned above), but distinguished from them by the antennae lacking a posterior furrow and without traces of indentations, and the setal arrangements and punctuation of the dorsal surface which are almost sparse and weak.

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