

***Linargius pangmalai* gen. et sp. n.**
(Coleoptera: Aphodiidae: Aphodiinae: Aphodiini)
from the Oriental Region

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Abstract. A new monotypical genus *Linargius* is proposed for *L. pangmalai* sp. n. found in Thailand (Mae Hong Son Province). The new genus is superficially closest to the genus *Agrilinus* Mulsant & Rey 1870, from which it differs by the type of the aedeagus and epipharynx and unmargined pronotal base; in addition, species of the genus *Agrilinus* Mulsant & Rey are known from the Palearctic Region only. The structure of the epipharynx partially reminds of some species of the genus *Loboparius* A. Schmidt 1913, but the arrangement of chaetopariae is different.

Key words. Taxonomy, new genus, new species, Coleoptera, Aphodiidae, Aphodiinae, Aphodiini, Oriental Region

Introduction

The work presented here deals with a new species of Aphodiinae from Thailand. From the essay of world genus-group taxa of Aphodiinae by Dellacasa et al. (2001) it appears that members of 33 genera of the tribe Aphodiini either occur or can be expected in the Oriental Region. This number is of course not definite, since the purpose of the essay was to provide a revision of genus type species only. New revisions and possibly also redefinitions of some genera can be expected, which could lead to a future compilation of a topical catalogue of the Aphodiinae of the Oriental Region. In more recent works, a new species of the genus *Coptochiroides* Balthasar 1939 (previously known from the Palearctic Region only) was described from Laos by Červenka (2005), and a new monotypical genus *Sariangus* Rakovič & Mencl 2011 was established for a new species from Thailand.

Examination of the specimen described below revealed that it does not belong to any existing genus of the tribe Aphodiini, and we thus propose a new monotypical genus for it. The new genus is superficially closest to the genus *Agrilinus* Mulsant & Rey 1870, from which it differs by the type of the aedeagus and of epipharynx and unmargined pronotal base; in addition, species of the genus *Agrilinus* Mulsant & Rey are known from the Palearctic Region only. The structure of the epipharynx partially reminds of some species of the genus *Loboparius* A. Schmidt 1913, but the arrangement of chaetopariae is different. In *Loboparius* the row of chetae is anteriorly strongly curved outward, thus mostly tangentially approaching the anterolateral rounded margin or extending directly to this rounded part of the margin – see appropriate drawings by Dellacasa (1983). In *Linargius*, on the other hand, the row of the chetae is nearly straight anteriorly, thus reaching the anterior margin still on its straight anterior edge (before the anterolateral round-off) (Fig. 4). External characters do not correspond to those found in *Loboparius* (strongly protruding genae), and parameres (observed in lateral view) are straight in *Linargius* and apically bent downward in *Loboparius*.

Methods

The holotype specimen was examined by MBS-10 and SZP 1120-T stereoscopic microscopes. The photos published here were made with a Meopta laboratory microscope and CMOS 5 digital camera with the Helicon Focus programme.

The aedeagus was treated by boiling in a 10% sodium carbonate solution.

Taxonomy

Linargius gen. n.

Type species. *Linargius pangmalai* sp. n.

Description. Small, relatively short, considerably convex, dorsal surfaces dark, moderately shining, glabrous, punctate, ventral surfaces dark, shining, punctate and/or setaceous. Clypeus with anterior margin glabrous, distinctly angular (neither sharply denticulate nor broadly rounded) on each side of anterior emargination; genae with few setae; frontal suture with a central tubercle and two lateral transverse elevations. Pronotum with sides and posterior corners margined, base unmargined, widest behind middle, considerably narrowed anteriorly and only slightly narrowed posteriorly. Scutellum triangular. Elytra with 10 distinct striae and 10 convex intervals on each elytron. Protibia normal, tridentate and with rather indistinct denticles behind proximal tooth; its dorsal surface with three short longitudinal rows of several punctures extending close to inner margin (along emargination between 1st and 2nd teeth, along emargination between 2nd and 3rd teeth and along denticles situated behind the 3rd tooth). Metatibial apex fringed with equal spinules. Pygidium with regularly distributed setigerous punctures. Aedeagus with parameres straight (not bent downward apically), not markedly elongate, their apices slightly dilated and blunt. Epipharynx with a long tylus, long tormae and characteristic arrangement of chaetopariae with rows of chetae straight anteriorly (not curved outward), thus reaching anterior margin of epipharynx before its anterolateral rounding-off.

Distribution. Thailand.

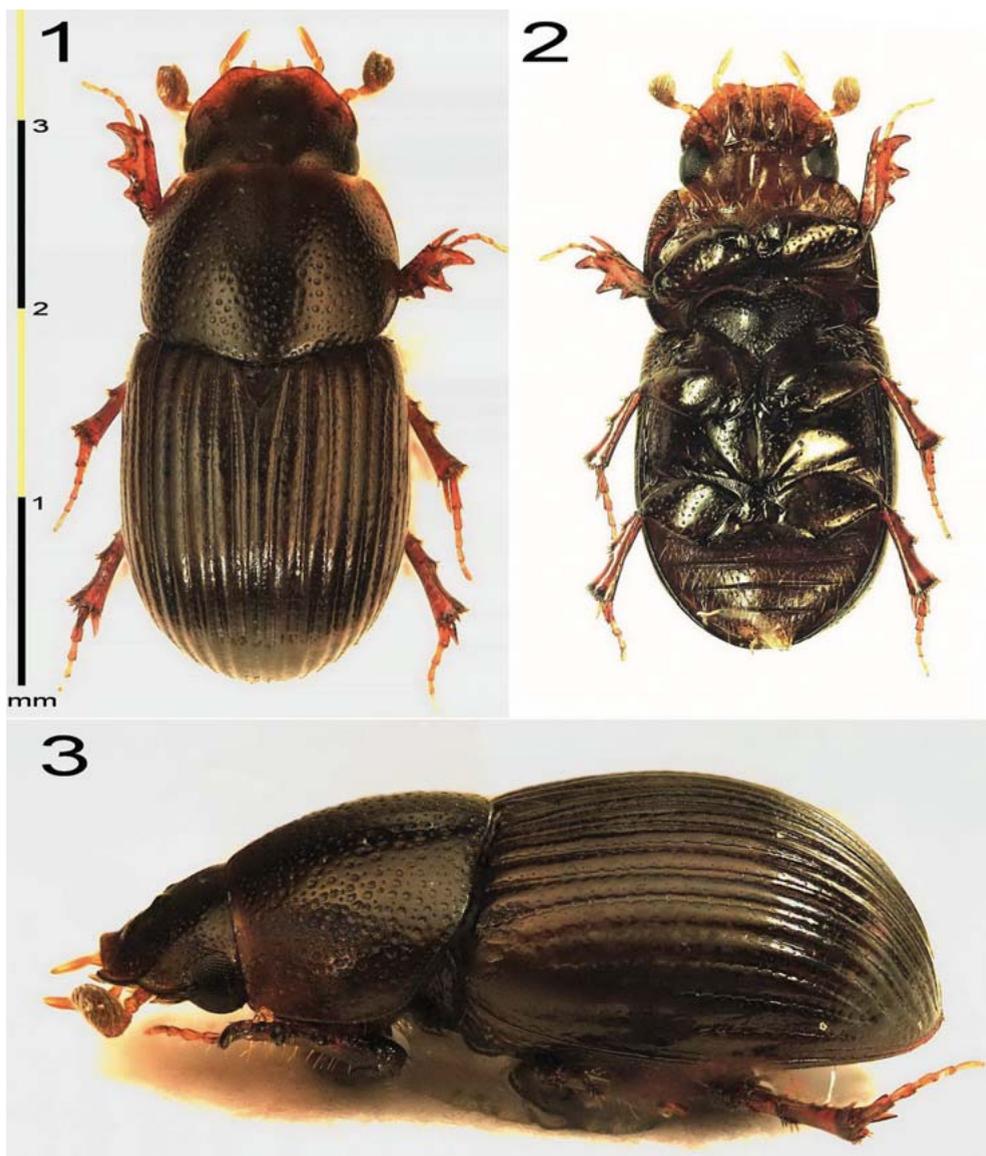
Etymology. An anagram obtained by a transposition of letters in the generic name *Agrilinus*. The gender is masculine.

Linargius pangmalai sp. n.

Figs. 1-6

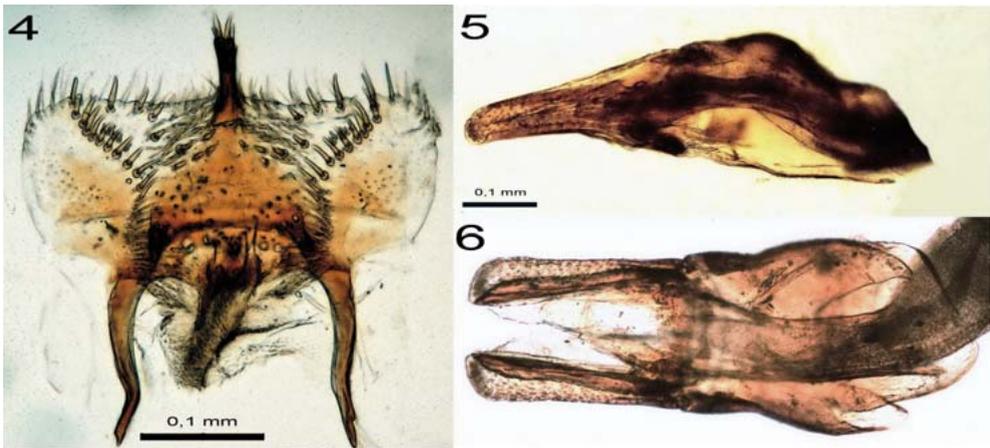
Type material. Holotype male (kept in Miloslav Rakovič's private collection) from northern Thailand (Mae Hong Son Province), bearing the following printed labels: 1) white: N. THAI, btw. Pang Malai and Pai; 2) white: 6.11.98, M. Rakovič lgt.; 3) pale green: 1422, Dok. L. Mencl; red: HOLOTYPE (♂), *Linargius pangmalai* sp. n., M. Rakovič & L. Mencl det. 2012.

Description. Small (2.9 mm), strongly convex, broader behind, moderately shining, glabrous, dark brown, clypeal margin, pronotal lateral margins and legs reddish brown (Figs. 1-3).



Figs. 1-3. *Linargius pangmalai* gen. et sp. n., holotype, 1 – habitus (dorsal view); 2 – habitus (ventral view); 3 – habitus (lateral view).

Head moderately convex. Clypeus distinctly emarginate anteriorly, quite angular (but not sharply denticulate) on each side of emargination; angles considerably upturned, sides distinctly upturned; genae not protruding more than eyes; lateral margins of clypeus nearly straight, only very slightly emarginate before genae, causing genal margin to be nearly aligned with clypeal margin; each gena with about six setae. Frontal suture with a central



Figs. 4-6. *Linargius pangmalai* gen. et sp. n., holotype, 4 – epipharynx; 5 – aedeagus (lateral view); 6 – aedeagus (dorsal view).

(distinct but not very high) tubercle and two low transverse elevations. Surface of clypeal margin rather uneven; slightly elevated epistomal area with medium-sized punctures, spaces between punctures mostly larger than puncture diameters; area behind frontal suture with similar punctures, spaces between them smaller than puncture diameters.

Pronotum strongly convex, broadest behind middle, considerably narrowed toward anterior and posterior corners, fairly uniformly covered with coarse punctures (larger than punctures on head) intermixed with fine punctures (smaller than those on head) (Figs. 1 and 3).

Scutellum small, triangular, its apical part and lateral areas smooth; depressed and having rather uneven surface in its basal half.

Elytra convex, with small humeral denticles (Fig. 1) and with 10 striae and 10 intervals on each elytron. Striae distinct, 8th stria considerably shortened anteriorly; punctures in striae rather indistinct, but transversally crenating intervals. Intervals considerably convex on disc, strongly convex on apex; surface of intervals finely shagreened, with very minute punctures tending to be arranged in two longitudinal rows (one row along each side of interval).

Protibia normal, tridentate and with indistinct denticles at base; apical spur normal. Mesotibia normal, apex fringed with short spinules. Metatibia apex with short, essentially equal spinules; basal metatarsite at most slightly longer than tarsites 2 and 3 combined; length of superior terminal spur subequal to that of basal metatarsite; inferior spur nearly as long as superior one.

Ventral surfaces shining, dark (nearly black), setaceous and/or punctate. For arrangement of setae and punctures and for shape of longitudinal metasternal furrow see Fig. 2. Pygidium with uniformly distributed, medium-sized, setigerous punctures.

Aedeagus as in Figs. 5-6. Parameres straight (not bent downward), not markedly elongate; their apices slightly dilated and blunt.

Epipharynx as in Fig. 4.

Female unknown.

Distribution. Thailand.

Etymology. Toponymic (found “between Pang Malai and Pai”).

Differential diagnosis. Given the fact that the genus is monotypical, there is no problem with the differentiation from related species. Based on external characters, the most similar genus is *Agrilinus* Mulsant & Rey 1870, which, however, has a margined pronotal base. Further relationships are considered above in the Introduction.

Discussion

The new species does not fall in any known genus of the tribe Aphodiini. The holotype is fortunately a male, which made it possible to study the aedeagus. This is of importance in the definition of genera within the tribe Aphodiini. Due to the above mentioned facts, we decided to establish a new monotypical genus for the species.

Taking into account data from the literature dealing with the Oriental Region, it is currently possible to consider species belonging to about 36 genera of the tribe Aphodiini. Most of them are, however, also represented by species in other zoogeographical regions, and only the following three monotypical genera are known solely from the Oriental Region: *Siamaphodius* Masumoto 1991, *Sariangus* Rakovič & Mencl 2011 and *Linargius* gen. n. described here. On the other hand, we recently described the species *Teuchestes*(?) *hongson* (Rakovič & Mencl in press), which does not completely exert features defining the genus *Teuchestes* Mulsant 1842 in terms of its small size, insufficiently convex body and characters of the aedeagus, but in that case we found it preferable to avoid proposing a new genus at least until a male specimen is discovered.

Relatively recent nature of findings mentioned in the preceding paragraph suggests that Southeast Asia has not yet been sufficiently explored and further new discoveries of Oriental Aphodiini can be expected.

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References

- Červenka R. 2005. A contribution to knowledge of Aphodiidae (Coleoptera) VI. A new species of the subgenus *Coptochiroides* Balthasar from Laos. Studies and Reports of District Museum Prague-East, Taxonomical Series, 1: 37-42.
- Dellacasa G. 1983. Taxonomic studies on Aphodiinae X. Revision of subgenus *Loboparius* A. Schmidt with description of a new species (Coleoptera Scarabaeidae). Annali del Museo Civico di Storia Naturale di Genova, 84: 245-268.
- Dellacasa G., Bordat P. & Dellacasa M. 2001. A revisional essay of world genus-group taxa of Aphodiinae (Coleoptera, Aphodiidae). Memorie della Società entomologica italiana, 79: 1-482.
- Masumoto K. 1991. Coprophagid beetles from Northwest Thailand. VI. Entomological Review of Japan, 46: 27-37.
- Rakovič M. & Mencl L. 2011. *Sariangus sariangi*, a new genus and species of the family Aphodiidae (Coleoptera, Scarabaeoidea) from Thailand. Studies and Reports, Taxonomical Series (continuation of Studies and Reports of District Museum Prague-East, Taxonomical Series), 7: 383-389.

Rakovič M. & Mencl L. in press. A contribution to knowledge of Asian species of the genus *Teuchestes* Mulsant, 1842 with descriptions of two new species (Coleoptera: Scarabaeoidea: Aphodiidae). Studies and Reports, Taxonomical Series (continuation of Studies and Reports of District Museum Prague-East, Taxonomical Series).