FOLIA ENTOMOLOGICA HUNGARICA
ROVARTANI KÖZLEMÉNYEK
Volume 87 2026 pp. 127–133
ISSN 0373-9465 (print) ISSN 2786-2798 (online)
published: 21 October 2026

A remarkable new species of *Promethis* Pascoe, 1869 from Yunnan, China (Coleoptera: Tenebrionidae)

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Abstract – *Promethis kissattilai* sp. nov. (Coleoptera: Tenebrionidae: Stenochiinae: Cnodalonini), a remarkable new species with unique leg armature and distinctive male genital morphology, is described from Yunnan Province of China.

Key words – darkling beetles, taxonomy

INTRODUCTION

Promethis Pascoe, 1869 is a large genus of darkling beetles (Coleoptera: Tenebrionidae: Stenochiinae: Cnodalonini), comprising approximately 150 described species. Members of the genus are forest dwellers distributed across the Eastern Palaearctic, Indo-Malayan, and Australasian Regions, and one species is known from Madagascar (Kaszab 1988*a*, *b*, Cheong 2025). Kaszab (1988*a, b*) revised the genus, recognising 139 species and subspecies (69 of them described as new) in 34 informal species groups based on external morphological characters, and provided an identification key and checklist of the included species. Since then, additional species of *Promethis* have been described by Chûjô (1995) from Tokunoshima Island of Japan, Ren & Yang (2004) and Ren & Hua (2006) from Guangxi Zhuang Autonomous Region of China, Masumoto *et al*. (2005) from Taiwan, Ren & Bai (2005) from Gansu Province of China, Ba & Ren (2009) from Hainan Island of China, Grimm (2011, 2013, 2016) from Sabah and Sarawak States of Malaysia and West Papua Province of Indonesia, and Cheong (2025) from Singapore. The Chinese fauna contains a total of 31 *Promethis* species and subspecies to date, excluding taxa whose occurrence in China was considered questionable by Kaszab (1988*a*)

DOI: *https://doi.org/10.17112/FoliaEntHung.2026.87.127*
ZooBank: *https://zoobank.org/urn:lsid:zoobank.org:pub:AA01E88A-31CD-444A-9FC1-E40C922AEE11*

and six species from Taiwan (Kaszab 1988*a*, *b*, Ren & Yang 2004, Ren & Bai 2005, Ren & Hua 2006, Ba & Ren 2009, Ando *et al*. 2016).

MATERIAL AND METHODS

The studied material is deposited in the Coleoptera Collection of the Hungarian National Museum Public Collection Centre – Hungarian Natural History Museum, Budapest (HNHM). Label text is given verbatim, without corrections or additions. Explanatory comments by the author are given in square brackets.

Morphological examinations were made using a Leica MZ12.5 binocular stereomicroscope. The habitus image was produced using a Raynox Super Macro Conversion Lens DCR-150 adapter set attached to a Nikon D7200 digital camera. The dissected male genitalia were mounted on separate card on the same pin under the corresponding specimen. Images of the aedeagus were made using an Olympus SZX12 photographic microscope and its softwares DPController and DPManager. Helicon Focus 8 was used for image stacking. Post-image works were done with Adobe Photoshop.

Identification was based on the literature cited above, and on comparisons with type and non-type materials of *Promethis* species housed in the HNHM (see Merkl *et al*. 2015). The species mentioned in the Remarks on identification section could only be examined through non-type specimens identified by Zoltán Kaszab.

TAXONOMY

***Promethis kissattilai* sp. nov.**

(Figs 1–4)

Type material – Holotype male: "CHINA, Yunnan Province, E sl. [= eastern slopes of] Daxueshan, W [= West-] Niutoushan, 24° 07' 48" N, 99° 42' 12" E, 2370–2460 m, 1.06.2010 [= 1.VI.2010], Belousov I. & Kabak I. leg."; deposited in the HNHM.

Diagnosis – *Promethis kissattilai* sp. nov. pertains to the 34th group ("*pedestris* species group") of Kaszab (1988*a*), which is defined by the following character states in combination: metatibiae of male deeply notched on inner side before apex, sharp subtriangular process or angle formed before incision; last visible sternite sharply margined apically or only transversely depressed. The new species can be readily distinguished from all of its congeners by the unique combination of the comparatively narrow pronotum which is significantly narrower than the elytral humeri; the presence of four conspicuous pronotal impressions arranged in an inverted trapezoid pattern; the posterior

pronotal angles being produced laterally; the presence of subtriangular processes on both pro- and mesotibiae; and the peculiar, apically swollen, notched metatibiae. The characteristic processes of the metatibiae and the shape of the aedeagus are both unique, readily separating the new species from all known relatives.



Figs 1–4. *Promethis kissattilai* sp. nov., holotype male, 1 = habitus, dorsal view, scale bar = 5 mm, 2 = metatibia and metatarsus, dorsal view, scale bar = 2 mm, 3 = aedeagus, dorsal view, scale bar = 1 mm, 4 = aedeagus, lateral view, scale bar = 1 mm (photos by Kristóf Mislai)

Description – Colouration: Body dark coloured, opaque. Head, pronotum, legs, and venter black; antennomeres one to two light rufous–brown; antennomeres three to eleven, labial palpi, tarsal claws and elytra dark rufous–brown; setation on antennae, labrum and legs yellow.

Measurements (in mm): Body length 18.9; maximum head width across canthus 3.0, minimum distance between eyes 1.6; pronotum length 4.4, maximum width 5.5; elytra length 12.9, maximum width of combined elytra (across base) 6.3; total length of aedeagus 2.8.

Head: Widest across middle of eyes; mandible apically bidentate; visible portion of labrum strongly transverse with dense setation of considerable length along outer margin; anterior edge of clypeus weakly but broadly arcuate, laterally more strongly arcuate towards clypeo-genal meeting point; fronto-clypeal and clypeo-genal sutures rather strongly incised, frontal suture inconspicuous. Genae apico-laterally rounded, narrower than eyes. Surface moderately densely, finely punctate. Antennae rather short, reaching midlength of pronotum; antennomeres six to eleven with fine setae, eight to eleven elliptical, dorso-ventrally compressed, forming a weak club. Mentum subtrapezoid, rugose-punctate, anteriorly stronger elevated than posteriorly, medially longitudinally raised.

Prothorax: Pronotum transverse, widest in anterior third, maximum width/length ratio 1.3. Anterior edge very shallowly emarginate, lateral sides arcuate towards anterior angles, nearly straight or slightly converging towards base and very shallowly emarginate before base. Apical angles obtusely rounded, basal angles subrectangular. Anterior and lateral areas rimmed, very broadly margined and distinctly reflexed, basal margin significantly weaker; degree of reflexion decreasing towards base. Surface moderately densely punctured, punctures shallow, without setation, interspaces finely microreticulate; disc with four elliptical impressions arranged in an inverted trapezoid and a very shallow median longitudinal sulcus. Propleura nearly smooth, basally shallowly rugulose with scattered punctures; apically microgranulate or with fine, scattered punctures. Prosternal intercoxal process narrow, shallowly incised, slightly arcuate towards apex.

Pterothorax: Scutellum semicircular, longitudinally slightly elongated. Elytra subparallel, striate-punctate; intervals convex with significant microreticulation, transverse folds arising from striae and with very sparse, minute punctures. Width of lateral margin vary along elytra, narrowest and almost invisible in dorsal view along humeral area, widest around elytral midlength. Mesoventrite with interspersed fine punctures or microgranules. Metaventrite weakly rugulose and finely punctate around strongly rugose-punctate linguiform area mesally at base.

Abdomen: Abdominal ventrite one bordered anteriorly, longitudinally shallowly rugulose, with interspersed punctures; ventrites two to three anteriorly, longitudinally rugulose, posteriorly finely punctured; ventrites four to five finely punctured; ventrite five thickly bordered and rounded apically.

Legs: Profemur slightly curved in basal two-thirds; protibia with elongate subtriangular process at inner basal third, curved at apical two-thirds, apical area widened antero-posteriorly, inner edge with dense setation; terminal protarsomere longer than combined length of preceding four tarsomeres. Mesofemur straight, weakly tapering in distal two-thirds; mesotibia with elongate median subtriangular process (weaker than that of protibia) at inner side, very slightly curved in apical third, with small, rounded-off preapical protuberance at inner side dividing patch of setation; terminal mesotarsomere about as long as preceding four tarsomeres combined. Metafemur similar to mesofemur but more robust; metatibia strongly widened and deeply notched apically at inner side, bearing lobe-like process above excavation with dense, short setation on outer side, inner surface of notched area divided into two 'levels' along a longitudinal median line, lower and inner margins with dense, moderately long setation (see Fig. 2); Metatarsomere 1 elongate, longer than combined length of two following metatarsomeres, terminal metatarsomere slightly shorter than preceding three tarsomeres combined.

Genitalia: Aedeagus strongly curved, bow-shaped in lateral view, oblong-oval at base, slender and strongly elongate at apex (Figs 3–4).

Female: Unknown.

Distribution – China (Yunnan Province).

Etymology – The specific epithet of the new species is dedicated to Attila Kiss, an extraordinary secondary school teacher and the former geography teacher of the author, in recognition of his inspiring teaching, mentorship and unwavering passion for his profession, which guided the author towards the field of zootaxonomy. Proper noun in the genitive case.

Remarks on identification – *Promethis kissattilai* sp. nov. most closely resembles *P. parallela parallela* (Fairmaire, 1897) (distributed in southern China and northern Laos) in the general dorsal habitus and in the peculiar morphology of the metatibial process, but differs markedly in the shape of the aedeagus (in the newly described species the apicale is slender, gradually and only slightly thickened towards the apex, while in *P. parallela parallela* it is medially expanded and nearly as wide as the widest part of the basale), in bearing subtriangular processes on both pro- and mesotibiae (present only on the mesotibiae in *P. parallela parallela*), and in the narrower pronotum (compared to the elytral humeri) with laterally directed posterior angles (directed posteriorly in *P. parallela parallela*) (Kaszab 1988a). The new species may also be compared to *P. noctivigila* (Lewis, 1894) (distributed in Japan), from which it differs by the larger size and the setose metatibial process (*P. noctivigila* has a body length of 14–17 mm and possesses glabrous metatibial process) (Kaszab 1988a) and to *P. yunnanica* Kaszab, 1988 (from southwestern China), in which the pronotal impressions are lacking and the armature of both the pro- and mesotibiae is different (Kaszab 1988a). Despite the notable similarity in the shape of the aedeagus, the new species can be distinguished from *P. persimilis* (Chûjô,

1980) (from the Ryukyu Islands, Japan) by the smaller size and the distinctly sculptured, microreticulate, convex elytral intervals (*P. persimilis* is 20–22 mm long and its elytral intervals are glossy and almost flat) (Kaszab 1988a). The species is also similar to *P. pedestris* (Gebien, 1918) (from northern Vietnam), in bearing subtriangular processes on the pro- and mesotibiae, but it is separable from the latter species by the medially placed mesotibial process (apically positioned in *P. pedestris*), and the absence of the dense setose patches on the mesofemora of the males (Kaszab 1988a).



Fig. 5. Habitat of the holotype of *Promethis kissattilai* sp. nov.
(photo by Igor Alexandrovich Belousov)

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Acknowledgements – I sincerely thank Dmitry Telnov (Natural History Museum, London, United Kingdom) for his help in obtaining relevant literature, Ilya Igorevitsh Kabak (All-Russian Institute of Plant Protection, St. Petersburg, Russia) for providing images of the habitat of the new species, and Balázs Tóth (HNHM, Hungary) for his kind assistance with preparing images of the male genitalia. I am also grateful to an anonymous reviewer and the editorial team of this journal for providing numerous helpful suggestions during the review process.

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