

A New *Onthophagus* Species (Coleoptera, Scarabaeidae) from Borneo

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Abstract A new *Onthophagus* species *O. koechlei* sp. nov., is described from Sabah, East Malaysia.

Dr. Hans BÄNZIGER of Chiang Mai University has been contributing for a long time to our study of the dung beetle fauna of Thailand. Recently he handed us an unknown *Onthophagus* species collected by him from Sabah, Malaysia. By our careful study, this species appears related to *O. (Onthophagus) batillifer* HAROLD, 1875, but is distinct from any known congeners including *O. (O.) batillifer* in several external characters and the male genitalia. Thus, we are going to describe it as a new species.

We cordially thank Dr. Hans BÄNZIGER, for giving us an invaluable opportunity of examining this new species.

Onthophagus (Onthophagus) koechlei sp. nov.

(Figs. 1–7)

Length: 3.8–4.2 mm; width: 2.2–2.5 mm (n=4).

Body small, oval in general, somewhat strongly convex; dorsal side shining, sparsely clothed with short yellowish white hairs which are well noticeable under high magnification ($\times 20$); pygidium sparsely clothed with hairs similar to those on dorsum; ventral side shining, partly clothed with yellowish white hairs. Color black to brownish black, slightly with weak purplish luster on head and pronotum; head black with anterior portion somewhat reddish; pronotum also black with anterior angles yellowish brown; elytra black, each with three small yellowish brown patches on 2nd, 4th, and 6th to 7th intervals at base, and with two similar transverse bands on 2nd to 4th, and 6th to 7th intervals at apex; pygidium almost yellowish brown, often partly darkened; ventral surface black, with head and anterior portion of prothorax, median portion of epipleura longitudinally reddish brown, abdominal sternites sometimes partly reddish or yellowish; legs with femur yellowish brown and tibia reddish brown.

Male. Head transverse and polygonal in outline, flat and almost simply formed dorsally, with clypeus strongly produced forward as an upturned elongate flat process at the apex, whose distal end is rounded; fronto-clypeal suture completely effaced; genal sutures finely defined, not carinate; genae moderately produced laterad, with genal angle obtuse though distinct; frons and vertex simply formed, without carina or tubercle; surface only slightly wrinkled in part, rather sparsely to moderately densely covered with small punctures, which become finer apicad; in smaller males, the clypeal median lobe reduced to a short and bi-lobed process.

Pronotum moderately convex, entirely simply formed, without distinct longitudinal groove along the midline, about 1.4 to 1.5 times as wide as long (n=3); anterior margin emarginate,

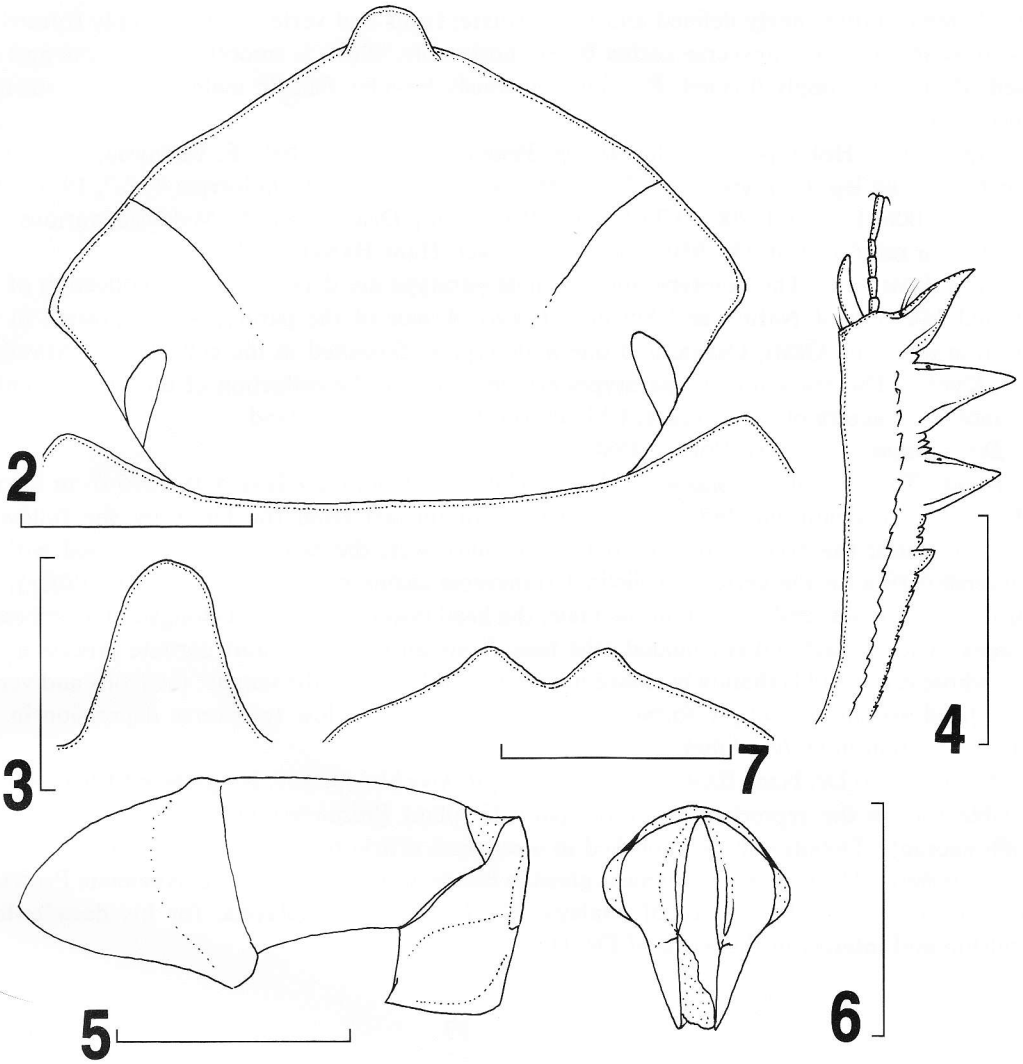


Fig. 1. *Onthophagus* (*Onthophagus*) *koechlei* sp. nov., habitus (holotype, male).

finely bordered; lateral margins gently rounded in front, nearly straight or scarcely sinuate behind, finely bordered; anterior angles distinctly produced forward, with apex rectangular or slightly obtuse; posterior angles obtuse; basal margin obtusely angled at the middle, not bordered; disc evenly and not so strongly convex dorsad, without trace of depression or tubercle; surface moderately, partly, rather sparsely covered with strong punctures, which become slightly larger laterad, with interspace between punctures smooth and polished.

Elytra moderately convex, about 1.3 times as wide as long ($n=3$), each with eight distinct striae including one along epipleural margin; each stria strongly and rather widely grooved, with fine ridge on either side throughout; 7th stria noticeably curved slightly before base; strial punctures somewhat weak, transverse, slightly notching either side of intervals; intervals weakly convex, a little closely covered with distinct punctures, which are slightly smaller than those on pronotum, with interspace between punctures smooth and polished.

Pygidium sharply carinate at base, weakly convex near apex, only slightly and partly wrinkled, closely covered with strong punctures. Protibiae elongate, slender and slightly curved,



Figs. 2-7. *Onthophagus* (*Onthophagus*) *koechlei* sp. nov., 2-6, male; 7, female. — 2, Head, dorsal view; 3, clypeal process, posterior view; 4, right protibia, dorsal view; 5, aedeagus, lateral view; 6, parameres, frontal view; 7, clypeal teeth, dorsal view. All scales 0.5 mm.

with four external teeth; 1st and 2nd teeth sharp and continuous to each other, though the 2nd is slightly larger than the 1st, the 3rd a little shorter than the 1st, and the 4th distinctly small, the remaining external margin finely denticulate; terminal spur finger-like, decurved and pointed at apex.

Aedeagus moderate-sized, relatively short and robust. Phallobase about 1.0 mm in length ($n=1$), about 0.4 mm in apical width ($n=1$). Parameres short and wide in frontal view, about 0.5 mm in length ($n=1$); in frontal view, lateral portions gradually narrowed toward apices, which are simply formed and not toothed laterad; in lateral view, apico-ventral corner acutely toothed.

F e m a l e. Head with clypeus strongly produced forward and deeply notched at the middle, with a reflexed and rather sharp tooth on either side of the notch; fronto-clypeal suture completely

effaced; genal sutures finely defined and not carinate; frons and vertex almost simply formed, at most traceable line of transverse carina barely noticeable, which is smooth, impunctate and not raised. Pronotum simply formed. Protibiae obviously broader than in male, with four stronger external teeth.

Type series. Holotype: ♂, Ulu Moyog, Penempang Dist., Sabah, E. Malaysia, 19-I-2006, Hans BÄNZIGER leg. Paratypes: 2 ♂♂, 1 ♀, the same data as for the holotype; 4 ♂♂, 19-I-2006, 1 ♂, 21-I-2006, 1 ♀, 26-I-2006, Ulu Moyog, Penempang Dist., Sabah, E. Malaysia, various sites in evergreen rainforest at 750–950 m above sea level. Hans BÄNZIGER leg.

Type depository. The holotype and a female paratype are deposited in the collection of the National Museum of Nature and Science, Tokyo. A pair of the paratypes is deposited in the collection of Teruo OCHI, Osaka, and one male type is deposited in the collection of Masahiro KON, Kyoto. The remaining six paratypes are deposited in the collection of the Department of Entomology, Faculty of Agriculture, Chiang Mai University, Thailand.

Distribution. Northern Borneo (Sabah).

Notes. The present new species is closely related to *O. batillifer* HAROLD, 1875 from Borneo and the Malay Peninsula, but can be easily distinguished from the latter by the following character states: the body is much smaller and narrower; the head is simply formed without transverse carina on the vertex, (a distinct transverse carina on the vertex in *O. batillifer*); the elytral striae are obviously broad; in the male, the head bears an upturned elongate flat process at the apex, whose distal end is rounded (the head bears an upturned short cordate process at the apex, whose distal end is shallowly emarginate in *O. batillifer*); in the female, the frons and vertex of the head are almost simply formed, (the head bears a shallow transverse depression in the posterior portion in *O. batillifer*).

According to Dr. Hans BÄNZIGER, *Onthophagus koechlei* sp. nov. is significant because of its probable role in the reproduction of the parasitic plant *Rhizanthus lowii* (BECCARI) HARMS (Rafflesiaceae). Details will be published in a separate article by him in near future.

Etymology. The new species name is given in honor of Richard KÖCHLE, Associate Professor (emeritus, Geodesy), University of Malaya, Kuala Lumpur, Malaysia, for his decades-long friendship and interest in the work of Dr. Hans BÄNZIGER.

要 約

益本仁雄・越智輝雄・近 雅博: ボルネオ産エンマコガネ (コウチュウ目コガネムシ科) の1新種。——ボルネオ・サバ地区からエンマコガネの新種 *Onthophagus (Onthophagus) koechlei* sp. nov. を記載した。本種は、ボルネオやマレー半島などに分布する *O. (O.) batillifer* Harold, 1875 に近いと考えられるが、各部位の特徴がその類縁種とも比べてまったく異なっている。

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