

## Description of a new species of the genus *Yimnashana* (Coleoptera: Cerambycidae) from Laos

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**Abstract.** A new species, *Yimnashana wakaharai* sp. nov. (Coleoptera: Cerambycidae: Lamiinae: Gyaritini), is described from Laos. A key to the known species of the genus *Yimnashana* Gressitt, 1937 is provided.

**Key words.** Coleoptera, Cerambycidae, Lamiinae, Gyaritini, *Yimnashana*, endophallus, new species, taxonomy, Laos, Oriental Region

### Introduction

During 2002–2011, we made several expeditions to the northern mountainous region of Laos, and the first author brought back a remarkable species of the tribe Gyaritini Breuning, 1956. The tribe is a small group of the subfamily Lamiinae Latreille, 1825 (Coleoptera: Cerambycidae) and shares most of the characteristics with the tribe Pteroplini Thomson, 1860, such as claws are divergent, antennal scape lacks cicatrix on the apex, and mesotibiae are simple without anterior distal notch, but has been distinguished from Pteroplini by the characteristics of mesocoxal cavities which are opened laterally (BREUNING 1956, 1979). Presently, the tribe consists of 43 species in 13 genera and flourishes from Southeast Asia to Australia.

After a close examination, we concluded that the gyaritine species in question is an undescribed new species of the genus *Yimnashana* Gressitt, 1937. The genus *Yimnashana* was erected by GRESSITT (1937) for a single species, *Y. denticulata* Gressitt, 1937 (type locality: Yim-na-Shan (Mt.), Guangdong Prov., China). Subsequent researchers (GRESSITT 1951, BREUNING 1979) added three more species to the genus, *Y. lungtauensis* Gressitt, 1951 (type locality: Luang-tau-Shan (Mt.), Kukiang Dist., Guangdong Prov., China), *Y. theae* Gressitt, 1951 (type locality: Tung-mu-ying, Chungan Dist., Fujian Prov., China) and *Y. ceylonica* Breuning, 1979 (type locality: Ceylon). In this paper, we describe the fifth species of the genus from Laos.

## Materials and methods

This study is based on dried specimens preserved in the Ehime University Museum (EUMJ) and our own collections. The verbatim label data indicated by quotation marks (‘ ’) are provided for the holotype, of which the line breaks are indicated by a slash (/).

For observation of the male genitalia with endophallus in fully inflated condition without eversion, the specimens were prepared by soaking the whole body in hot water for about 5 minutes. The abdomen was then removed with forceps under a stereomicroscope. The genitalia were extracted from the abdomen after treatment in 10% KOH solution for a few minutes, and then the muscles and visceral tissues were removed. After separation into each terminal part, the apical part of the median lobe was attached inside a fine nozzle by gelatinous instant adhesive made mainly of ethyl 2-cyanoacrylate. Additional adhesive was applied to caulk the gap between the median lobe and the bore of the nozzle. After the adhesive had dried, a little air was carefully injected from the median orifice to inflate the endophallus by using a syringe to which the fine nozzle with the median lobe on the tip was attached. After observation, the fine nozzle with the median lobe was soaked in acetone to dissolve the adhesive, and then the median lobe was carefully detached from the nozzle. All the terminal parts were observed under a stereomicroscope. The terminal parts were preserved in glass or polyethylene genitalia vials filled with glycerin after rinsing well with water.

The endophallic structure of male genitalia is known to be useful for identification or classification in many groups of Coleoptera and also in Cerambycidae. The observational methods of cerambycid endophallus in everted or inflated condition have been shown by RUBENYAN (2002) or YAMASAKO & OHBAYASHI (2011). However, their techniques require a median orifice with a sufficient bore size to insert a nozzle to inflate the endophallus, and are difficult to apply for small specimens. Actually, the median lobe of the gyaritine species is too small to insert a nozzle. Therefore, we contrived an applied method based on the approach of YAMASAKO & OHBAYASHI (2011) as mentioned above.

For terminology and abbreviations of the endophallus, we partly follow DANILEVSKY *et al.* (2005), KASATKIN (2006) and YAMASAKO & OHBAYASHI (2011). The abbreviations used in the present paper are as follows: APH – apical phallomer; AS – sclerite of apical phallomer; BPH – basal phallomer; ED – ejaculatory duct; MPH – median phallomer.

## Taxonomy

### Genus *Yimnashana* Gressitt, 1937

*Yimnashana* Gressitt, 1937: 604. Type species: *Yimnashana denticulata* Gressitt, 1937.

*Yimnashana*: GRESSITT (1939: 71); GRESSITT (1951: 453, 484); BREUNING (1956: 235); BREUNING (1961: 292); BREUNING (1979: 12).

### Key to the species of *Yimnashana*\*

- 1 Lower eye lobes distinctly longer than genae. .... 2
- Lower eye lobes shorter than genae. .... 3
- 2 Elytra with a pair of short longitudinal ridges consisting of several teeth near base. (Sri Lanka). .... *Y. ceylonica* Breuning, 1979

\* Modified from BREUNING (1979).

- Elytra with a pair of spinous tubercles near base. (China: Guangdong). ..... *Y. denticulata* Gressitt, 1937
- 3 Elytra lacking spinous tubercles. (Laos: Houa Phan Prov.). ..... *Y. wakaharai* sp. nov.
- Elytra with a pair of spinous tubercles near base. .... 4
- 4 Elytra widest at humeri. (China: Guangdong Prov.). ..... *Y. lungtauensis* Gressitt, 1951
- Elytra widest near middle. (China: Fujian Prov.). ..... *Y. theae* Gressitt, 1951

***Yimnashana wakaharai* sp. nov.**

(Figs. 1–9)

**Type locality.** The foot of Phou Pan (Mt.), Ban Saleui, Houa Phan Prov., Laos [20°13'N and 103°59'E, ca. 1500 m a.s.l.].

**Type material.** HOLOTYPE: ♂, '[LAOS] Mt. Phou Pan / Ban Saleui, Xam Neua / Houa Phan Prov. / Alt. ca. 1,400–1,500 m / 27. IV–11. V, 2007 / J. Yamasako leg.' (EUMJ). PARATYPES: 1 ♂, Phou Pan (Mt.), Alt. ca. 1,500–1,800 m, Houa Phan Prov., Laos, 22. V, 2004, T. Mizusawa leg.; 1 ♂ 1 ♀, same data as the holotype. (EUMJ and our own collections).

**Description. Male** (n = 2, Figs. 1–2). Body elongated, pandurate in shape. Body length from vertex to the elytral apices 5.3–5.4 mm, width at humeri 1.6 mm.

Body black. Antennae, elytra and legs dark brown with sparse suberect setae which vary from grayish to blackish. Head sparsely provided with grayish pubescence. Pronotum covered with black pubescence. Elytra covered with grayish ochre pubescence with two black maculae at base and behind middle, of which the basal one is inverted triangular in shape, the second one forms a transverse band of which anterior margin is emarginated to 1/4 of its width at the center. Femora and tibiae with sparse grayish pubescence.

Head slightly narrower than pronotum, roughly punctured; frons well convex. Eyes almost subdivided into two lobes; lower lobe well prominent, about 0.6 times as long as gena, transverse, about 0.6 times as long as wide.

Antennae about 1.5 times as long as body length, surpassing elytral apices at apices of seventh segments; relative lengths of each segment as follow: 1.2 : 0.3 : 1.1 : 1.2 : 1.0 : 0.9 : 0.9 : 0.9 : 0.8 : 0.8 : 0.9; scape elongated cuneiform, well thickened apicad, without cicatrix, slightly longer than the third and almost same in length as the fourth.

Pronotum cylindrical, about 1.1 times as long as wide, weakly convex above, with small projection on each lateral side just behind middle; disk with a longitudinal high swelling on anterior half of middle, and a pair of hook-like tubercles near middle; posterior margin slightly narrower than anterior margin, distinctly narrower than humeral width of elytra.

Scutellum wide, ligulate in shape.

Elytra about 0.6 times as long as body length, 2.1 times as long as conjoint width across humeri, 2.2 times as long as pronotal length, widest at apical third; sides slightly dilated laterad from weakly projected humeri toward apical third, thence arcuately narrowed toward rounded apices; disk weakly depressed behind humeri, thence roundly convex above, highest near apical third.

Legs long and slender; mesotibiae without distal notches on anterior margin; relative lengths of metatarsal segments from the basal to the third and claws: 2.5: 1.7: 2.0: 3.8.

Male genitalia (n = 1, Figs. 3–9). Tegmen in dorsal view slender triangular, widest behind middle, weakly curved ventrad in lateral view. Lateral lobes in dorsal view thick and short,

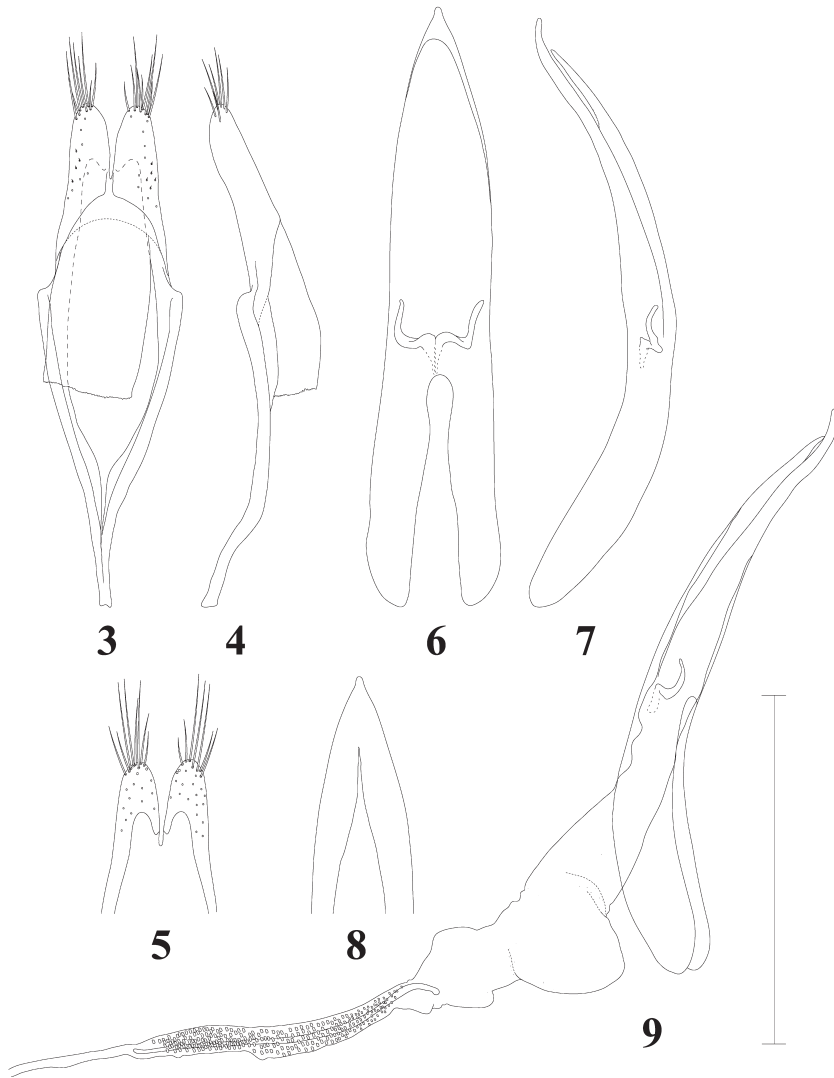


Figs. 1–2. Male habitus of *Yimnashana wakaharai* sp. nov. (holotype): 1 – dorsal view; 2 – lateral view.

about 1/7 length of tegmen, evenly and slightly narrowed apicad, with some long setae near apices and a few short setae on latero-dorsal side; apices rounded. Ringed part in dorsal view expanded laterad behind middle of tegmen, thence arcuately narrowed basad.

Median lobe in lateral view weakly curved ventrad, and reflexed dorsally near apex; apex roundly acuminate in ventral view; median struts dehiscent from before middle.

Endophallus in lateral view weakly curved dorsally, about 1.5 times as long as median lobe. MPH with a well-developed swelling on ventral side near middle, evenly covered with rounded sclerites which are small and uncoloured. APH narrow, elongate, cylindrical, densely covered with obtuse sclerites, provided with AS which is consisted of a long rod like sclerotized sclerite, with a single ED on base.



Figs. 3–9. Male genital organ of *Yimmashana wakaharai* sp. nov. (holotype): 3 – tegmen in dorsal view; 4 – tegmen in lateral view; 5 – lateral lobes in ventral view; 6 – median lobe in dorsal view; 7 – median lobe in lateral view; 8 – apex of median lobe in ventral view; 9 – median lobe with endophallus in lateral view.

**Female** (n = 1, partly broken). Body length 5.8 mm, width at humeri 1.7 mm. Similar to male in general appearance. Body slightly thicker than male. Antennae about 1.3 times as long as body length, surpassing elytral apices at bases of tenth segments.

**Differential diagnosis.** This new species is easily distinguished from other congeners because it lacks spinous tubercles on the elytral base. See also the Key.

**Etymology.** The species epithet is dedicated to Mr. Hiroyuki Wakahara, a resident of Vientiane, who kindly offered us every facility during the fieldwork in Laos.

**Biological note.** This species was collected from a thin dead branch of a broad leaf tree in only a narrow area of a small basin located at the foot of Phou Pan (Mt.) (ca. 1,500 m a.s.l.).

**Remark.** Five species of four genera of the tribe Gyaritini are known from Laos (RONDON & BREUNING 1970), but the species of the genus *Yimmashana* is first recorded from Laos here.

## Discussion

According to the original description (GRESSITT 1937) and the redescription in the revisional study of the tribe Gyaritini (BREUNING 1979), the genus *Yimmashana* has deeply emarginated eyes and a pair of spinous ridges on the elytral base. However, these characters are very likely to vary among species, because these are also variable among the species of the genera *Gyaritus* Pascoe, 1858 or *Tinkhamia* Gressitt, 1937 which are considered to be sister groups of *Yimmashana*. In fact, the present new species coincides well with the definition of the genus except for having subdivided eyes and lacking the elytral ridges. Therefore, we placed the new species under *Yimmashana*. As a result, *Yimmashana* should be redefined by the following features (GRESSITT 1937, BREUNING 1979; partly modified): i) eyes emarginated or nearly subdivided; ii) lower eye lobes small; iii) antennae with basal eight segments fringed by long suberect setae and the reminders lacking such setae; iv) pronotum with a small projection on each side and a pair of spinous tubercles on disk; and v) metasternum relatively short (longer than in *Tinkhamia*, but shorter than in *Gyaritus*).

To date, the species of *Yimmashana* have been known only from Southeast China and Sri Lanka. The discovery of a new species from Laos fills a distributional gap between these two areas, and it is expected that further investigation may reveal additional species of the genus not only from Laos but also in neighbouring countries.

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