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Two new species of the genus *Laena* Dejean (Coleoptera: Tenebrionidae: Lagriinae) from southern China

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Abstract

Two new species of the genus *Laena* Dejean, 1821 from southern China were described and illustrated: *Laena nana* **sp. nov.** from Nanling Nature Reserve of Guangdong and *L. dayaoshanensis* **sp. nov.** from Dayaoshan Nature Reserve of Guangxi. A key to *Laena* species from Guangdong and Guangxi, China, is given.

Key words: Laenini, *Laena*, new taxa, Guangdong, Guangxi

Introduction

The genus *Laena* Dejean, 1821 is the largest group in the tribe Laenini Seidlitz, 1895 which is characterized by the hind wing regression, lack of defensive glands and a concealed lifestyle (Seidlitz 1895; Matthews *et al*. 2010; Kanda 2016; Schawaller & Bellersheim 2023; Wei & Ren 2024).

In China, the four known species of the genus *Laena* Dejean from Guangdong Province and Guangxi Zhuang Autonomous Region were recorded by Schawaller and his collaborator (Schawaller 2008; Schawaller & Bellersheim 2023). Guangdong Province and Guangxi Zhuang Autonomous Region with complex terrain and diverse ecological environments, which may contain some undescribed species. During the survey of insect diversity in the Nanling Mountains and surrounding areas, two new taxa of the genus *Laena* are discovered: *Laena nana*, **sp. nov.** from Nanling Mountains of Guangdong Province, *L. dayaoshanensis*, **sp. nov.** from Dayaoshan Mountains of Guangxi Zhuang Autonomous Region. An identification key to the known *Laena* species in Guangdong and Guangxi is given in the present study, excepting *L. fanjingshanana* (Fig. 1A) described by Ren & Hua (2006), which was redescribed by Schawaller & Bellersheim (2023) based on the specimens collected from Dayaoshan of Guangxi, however, this is a misidentification because of male metatibiae of the holotype of *L. fanjingshanana* bear longer and denser setae near apex on inner sides and having more rounded apex of aedeagal apicale than those in the specimen redescribed by Schawaller & Bellersheim. We also examined four *Laena* specimens from Dayaoshan Mountains of Guangxi Zhuang Autonomous Region and treated it as a new species in the present study.

Materials and Methods

The examined specimens are deposited in the China West Normal University (CWNU), Nanchong City of Sichuan Province, China and the Museum of Hebei University (MHBU), Baoding City of Hebei Province, China. The photographs of habitus and characters of the *Laena* specimens were taken with a Canon EOS 9D Mark III camera connected to a Laowa FF 25 mm F2.8 Ultra Macro 2.5–5 times lens.

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Taxonomy

Tribe Laenini Seidlitz, 1895

Genus *Laena* Dejean, 1821

A key to the known *Laena* species from Guangdong and Guangxi, China

1	Prothoracic hypomera with deep depression near the anterior corner	***L. dayaoshanensis* sp. nov.**
-	Prothoracic hypomera without deep depression near the anterior corner	**2**
2	All femora with teeth near apex on inner sides	**3**
-	All femora without teeth near apex on inner sides	**4**
3	Each femur with a pair of common teeth; meso- and metatibiae unhooked at inner apex.	***L. yuanbaoica***
-	Each femur with a single tooth; meso- and metatibiae hooked at inner apex	***L. nana* sp. nov.**
4	Lateral margins of pronotum not beaded	***L. logshengica***
-	Lateral margins of pronotum beaded	5
5	Elytral intervals without punctures, interval IX with three setigerous pores	***L. hajeki***
-	Elytral intervals with sparse fine punctures, each of which bears long erect seta, interval IX with four setigerous pores	***L. guangxiensis***

Laena dayaoshanensis sp. nov.

Chinese common name: 大瑶山菜甲
(Fig. 1B–F)

Type material. HOLOTYPE: CHINA: ♀, Guangxi, Jinxiu County, Dayaoshan Nature Reserve, Guitiancun, 21.III.2024, native collector leg., CWNU. **PARATYPES: CHINA:** 2 ♀, same data as for the holotype, CWNU.

Other material examined. 1 ♀ (in ethanol), same data as for the holotype, CWNU.

Description. Holotype. Female: body (Fig. 1B–C) length 8.5 mm (8.3–9.4 mm in paratypes). Body dark brown, antennae, maxillary palpus, and tarsi light brown; body dorsally shiny and sparsely covered with long erect setae.

Epistome nearly trapezoidal, anterior margin distinctly concave; surface with uneven and large punctures; each lateral part with two longer setae; base with a row of punctures. Fronto-epistomal suture shallow, straight in middle. Genae distinctly raised. Eyes oval and slightly prominent. Frons slightly convex; surface with sparse and large punctures, each puncture with a long erect seta, and bearing one longer seta at middle of each lateral portion. Antennae (Fig. 1D) reaching basal 1/3 of pronotum when directed backwards; antennomere III about 2.2 times as long as antennomere II.

Pronotum (Fig. 1E) nearly subcordate, widest at anterior 1/3, approximately 1.1 times as wide as long; anterior margin nearly straight; lateral margins weakly arcuate, finely beaded; basal margin neither bent downwards nor beaded; disc slightly convex dorsal, surface with sparse and large punctures, distance between punctures 0.5–4.0 times as long as puncture diameter, each puncture with long erect seta, and also surface with a pair of shallow depressions at middle and a shallow depression at middle of base; anterior corners obtuse, posterior ones rounded. Prothoracic hypomera deeply depressed near anterior corners (Fig. 1C), with punctures as large as those on pronotal disc, but each bearing with shorter seta.

Elytra (Fig. 1E) elongate-oval, about 1.6 times as long as wide, widest at middle, prolonged and slightly pointed at apices; humeral angles absent; lateral sides approximately parallel in middle; surface smooth, with rows of punctures in striae; punctures in rows as large as those on pronotum, each bearing short seta; intervals sparsely punctate, flat on intervals I–IV, weakly convex on V–VII, VI one distinctly shorter than others, and IX with five setigerous pores.

Legs long and slender. Femora without teeth near apex on each inner side. Protibiae slightly curved on inner sides, meso- and metatibiae straight on inner sides; tibiae unhooked at inner apex.

Male: unknown for us (based on the description of misidentified specimens of "*L. fangjingshanana*" from Dayaoshan (Schawaller & Bellersheim 2023), which has subcordate pronotum widest at apical third, while our holotype has pronotum widest at middle; the male and female without significant differences).

Distribution. China: Guangxi.

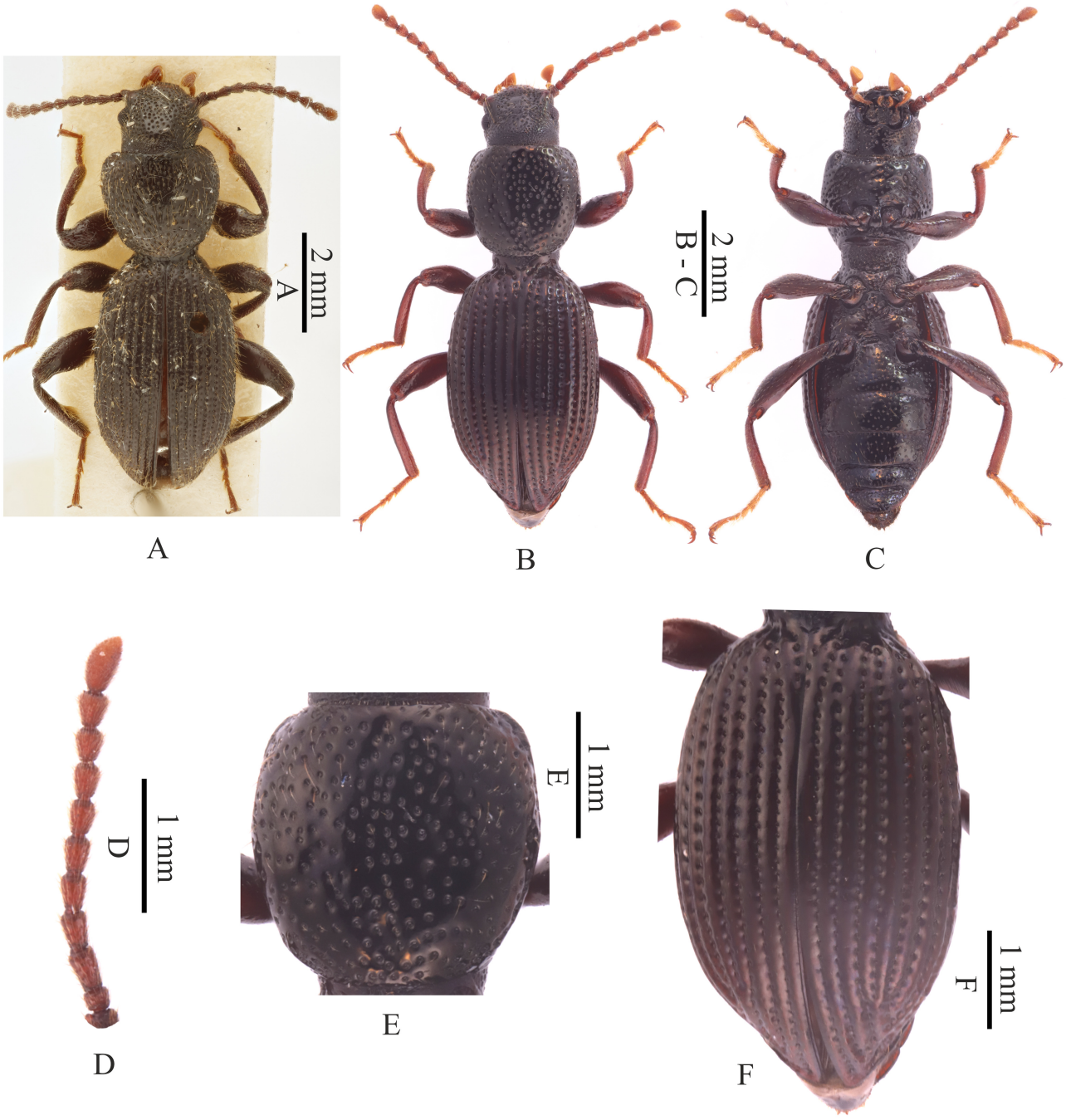

FIGURE 1. Holotype of *Laena fanjingshanana* Ren & Hua, 2006 (A) and *L. dayaoshanensis* **sp. nov.** (B–F). **A–B.** Dorsal and ventral habitus. **C.** Antenna. **D.** Pronotum. **E.** Elytra.

Diagnosis. This is the third record of *Laena* species from Guangxi Zhuang Autonomous Region. This new species is similar to *L. guangxiensis* Schawaller, 2008, *L. fangjingshanana* Ren & Hua, 2006, *L. logshengica* Schawaller & Bellersheim, 2023 in body shape, unarmed femora, and elytral punctures in rows as large as those on pronotum, but can be distinguished from laters by the following characteristics: (1) prothoracic hypomera with a deep depression near the anterior corner; (2) large body (body length 8.3–9.4 mm); (3) elytral intervals V–VII weakly convex.

Etymology. The specific epithet refers to the type locality Dayaoshan Nature Reserve (Guangxi, China).

***Laena nana* sp. nov.**
Chinese common name: 侏儒莱甲
(Fig. 2)

Type material. HOLOTYPE: CHINA: ♂, Guangdong, Ruyuan County, Nanling Nature Reserve, elev. 1019 m, 18.VI.2007, Huang & Xu leg., MHBU. **PARATYPES: CHINA:** 2 ♂, 4 ♀, Guangdong, Nanling Nature Reserve, X.2008, Lei Gao leg., MHBU.

Other material examined. 1 ♀, (in ethanol), China: Guangdong, Ruyuan County, Nanling Nature Reserve, 21.V.2021, Zhonghua Wei leg., CWNU.

Description. Holotype. Male: Body (Fig. 2A) length 3.3 mm (body length of paratypes: 3.2–3.3 mm in male, 3.3–3.4 mm in female). Body dark brown, antennae, maxillary palpus, and tarsi brown; body dorsally shiny and densely covered with long erect setae.

Epistome nearly trapezoidal, anterior margin almost straight; surface with uneven and large punctures, and with four longer setae at each lateral part. Fronto-epistomal suture shallow, straight in middle. Genae distinctly raised. Eyes oval and slightly prominent. Frons nearly flat; surface with sparse, large punctures, covered with long erect setae. Antennae (Fig. 2B) reaching pronotal base of pronotum when directed backwards; antennomere III about 1.5 times as long as antennomere II.

Pronotum (Fig. 2C) subcordate, widest at anterior 1/4, approximately 1.1 times as wide as long; anterior margin nearly straight; lateral margins arcuate, beaded; basal margin neither bent downwards nor beaded; disc nearly flat, surface with sparse and large punctures, distance between punctures 2.0–4.0 times puncture diameter, each puncture bearing long erect seta; anterior and posterior angles rounded. Prothoracic hypomera with punctures as large as those on pronotal disc, but each bearing with shorter seta.

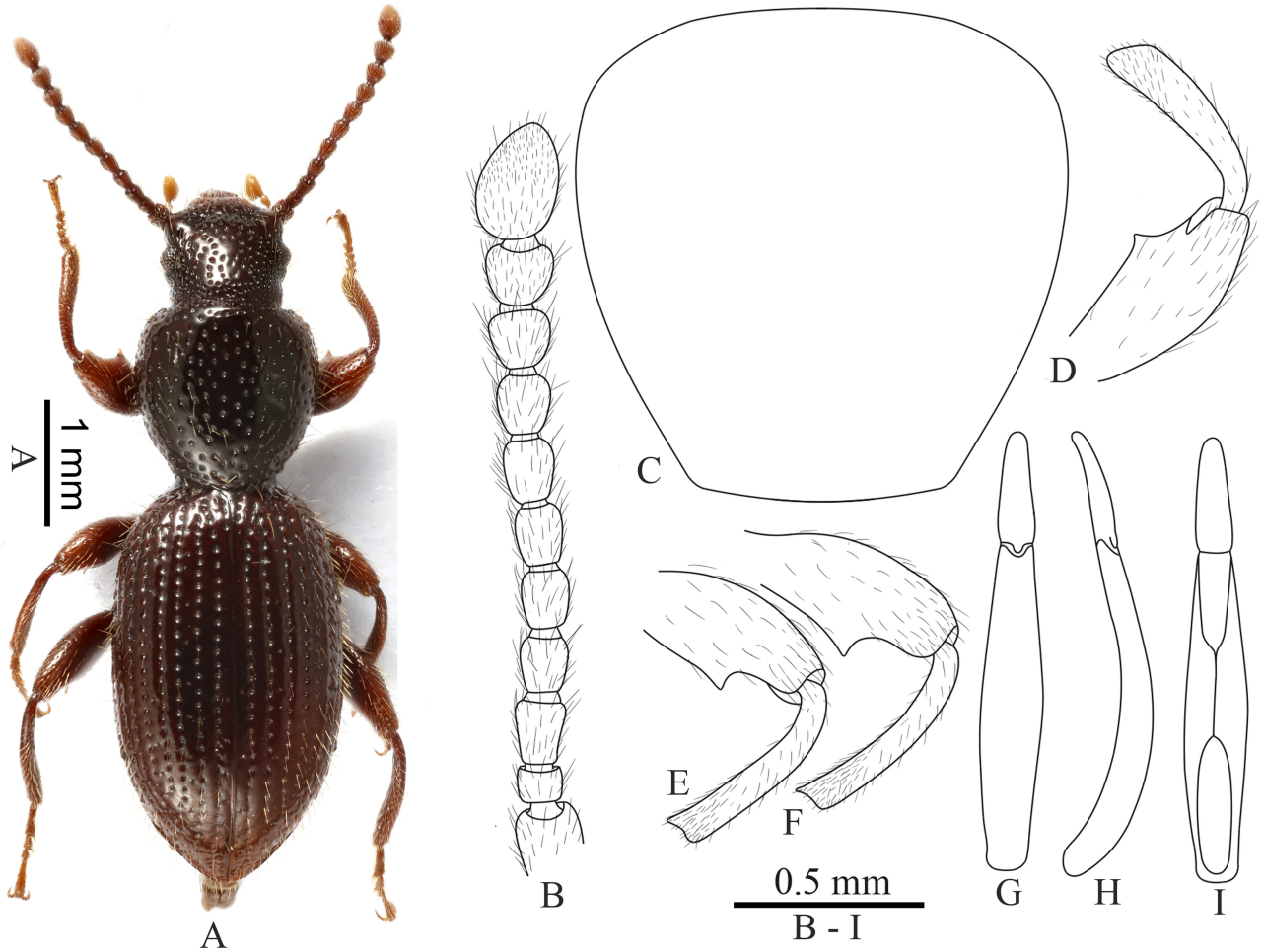

FIGURE 2. Habitus and diagnostic characters of *Laena nana* **sp. nov. A.** Habitus. **B.** Antenna. **C.** Pronotum. **D.** Profemur and protibia, ventral view. **E.** Mesofemur and mesotibia, ventral view. **F.** Metafemur and metatibia, ventral view. **G–I.** Aedeagus, dorsal, lateral and ventral views.

Elytra elongate-oval, about 1.6 times as long as wide, widest at middle, slightly prolonged ata apices; humeral angles absent; surface smooth, with rows of punctures in striate punctures in rows as large as those on pronotum and each bearing a long erect seta; intervals with a few punctures nearly naked, slightly prominent on VII–IX , three setigerous pores on IX (one on anterior part, two on posterior part).

Legs slender. Femur (Fig. 2D–F) with a small sharp tooth near apex on inner side. Meso- (Fig. 2E) and metatibiae (Fig. 2F) hooked at each inner apex; metatibiae distinctly curved in inner sides.

Aedeagus (Fig. 2G–I) subfusiform. Parameres widest at base and narrowing toward apices, with rounded apex.

Female: Meso- and metatibiae unhooked at inner apex, and metatibiae straight in inner sides.

Distribution. China: Guangdong.

Diagnosis. This is the second *Laena* species recorded from Guangdong Province. This new species is similar to *L. hajeki* Schawaller & Bellersheim, 2023 (distributed in Guangdong), *L. hongkongica* Schawaller & Aston, 2017 (distributed in Hongkong), and *L. walkeri* Schawaller & Aston, 2017 (distributed in Hongkong) in body shape, body with long setae, pronotal lateral margins beaded, elytral interval IX with three setigerous pores, but can be easily distinguished from the laters by the following characteristics: (1) elytral intervals VII–IX slightly prominent; (2) meso- and metatibiae hooked in male; (3) femur with a small sharp tooth near apex on inner side; (4) body smaller.

Etymology. The specific epithet refers to this new species with small body.

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中国南方莱甲属*Laena*二新种（鞘翅目：拟步甲科：伪叶甲亚科）

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摘要：描述中国莱甲属*Laena*二新种，即广东南岭自然保护区的侏儒莱甲*Laena nana* **sp. nov.**和广西大瑶山保护区的大瑶山莱甲*L. dayaoshanensis* **sp. nov.**；还提供了广东和广西莱甲属物种检索表。

关键词：莱甲族，莱甲属，新种，广东，广西