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

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
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## ● A new species of the genus *Falcicornis* Motschulsky (Coleoptera: Lucanidae) from Vietnam

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**Abstract:** A new species of the genus *Falcicornis* Planet, 1894 (Coleoptera: Lucanidae: Lucaninae), *F. wangjini* sp. nov., is described and illustrated from North Vietnam. Colour plates are presented to illustrate its diagnostic characters.

**Keywords:** Lucaninae, Dorcini, morphology, Oriental Realm, stag beetle, taxonomy

## ● 越南小刀锹属一新种（鞘翅目：锹甲科）

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**摘要:** 本文描绘了产自越南北部的小刀锹属（鞘翅目：锹甲科：锹甲亚科）一新种——王锦小刀锹 *Falcicornis wangjini* sp. nov.，并提供了彩色图版以说明其鉴别特征。

**关键词:** 锹甲亚科，刀锹族，形态，东洋区，锹甲，分类

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FIGURE 1. Habitus of *Falcicornis wangjini* sp. nov., ♂, large-sized, holotype, dorsal view.

## Introduction

The genus *Falcicornis* Planet, 1894 (Coleoptera: Lucanidae: Lucaninae: Dorcini) currently includes 28 species (excluding subspecies) (Bartolozzi *et al.* 2016; Huang & Chen 2013, 2017, 2023; unpublished data of the authors), widely occurring from Southeast Asia to Northeast Asia (Fujita 2010; Yi 2023). Very recently, Xin *et al.* (2024) listed fourteen species of *Falcicornis* from Vietnam, including *F. vidam* (Nguyen & Schenk, 2015) they transferred and *F. zhongi* Xin & Qi, 2024 they described.

In the present study, we describe and illustrate a new *Falcicornis* species from Tỉnh Yên Bái and Tỉnh Hà Giang of Vietnam. The differential diagnosis of the new species from its congeners is provided.

## Material and methods

Specimens were relaxed and softened in a HH-2 digital homoeothermic water bath at 44.4°C for 12 hours and then placed in distilled water for cleaning and dissection. In order to examine the male genitalia, the abdomens were detached and treated with a 10% solution of potassium hydroxide for 12 hours, then transferred to distilled water to flush the remaining KOH and stop any further bleaching. After examination, the dissected body parts were mounted on a slide using Euparal Mounting Medium for future studies. Images were taken with a Canon macro photo lens MP-E 65 mm on a Canon 5DsR. Images of the same object at different focal planes were combined using Zerene Stacker 1.04 stacking software. Adobe Photoshop CS6 was used for postprocessing. The terminology adopted in this paper for external features of the body and genitalia follows Holloway (2007) and Huang & Chen (2010, 2013, 2017). Measurement criteria in millimetres (mm) follow Wang & Zhou (2019).

The material examined for this study is deposited in the following collections: **BMNH**—Natural History Museum (formerly British Museum), London, United Kingdom; **CTLH**—collection of Tian-Long He, Huainan, China.

## Taxonomy

### Genus *Falcicornis* Planet, 1894 小刀锹属

#### *Falcicornis wangjini* sp. nov. 王锦小刀锹

<https://zoobank.org/8AFF7F1F-8A7B-472F-A667-2BC137659EDD>

Figs 1; 2A–F; 3A–F; 4A–C

**Type material:** 5♂♂. **Holotype:** 1♂ (BMNH), **VIETNAM:** Tỉnh Yên Bái [安沛省], Huyện Trạm Tấu [站奏县], 1900 m, 6.VI.2024, Hai Dang leg. **Paratypes:** 2♂♂ (CTLH), same as holotype; 2♂♂ (CTLH), **VIETNAM:** Tỉnh Hà Giang [河江省], Huyện Xin Mãn [箐门县], 2050 m, 20.VI.2024, Hai Dang leg.

**Etymology.** The new species is dedicated to our friend, Mr. Jin Wang [王锦] (Chengdu, China), an enthusiastic amateur entomologist, for his continuous support and assistance over the past sixteen years. The name is a noun in the genitive case.

**Description. Holotype, large-sized male.** Size relatively large for the genus, body 34.2 mm long, widest across posterior 3/8 of pronotum. Length of particular parts (mm): head (4.6), mandible (10.4), pronotum (5.4), elytra (14.1); width (mm): head (9.8), pronotum (10.4), elytra (9.5).

**Habitus** (Figs 1; 2A–C). Color entirely brownish black. Body generally lustreless and glabrous; some yellowish pubescence present on mouthparts, anterior and posterior margins of pronotum, legs and posterior part of abdominal sternite VII.

**Head** about 2.1 times as broad as long, broadest across posterior ends of canthi, surface densely covered with fine punctures, interstices shagreened. Vertex inconspicuously depressed in a triangular center area. Anterior margin bisinuate. Clypeolabrum shortly transverse, 1/3 width of head, widely and deeply emarginate at apical margin, with

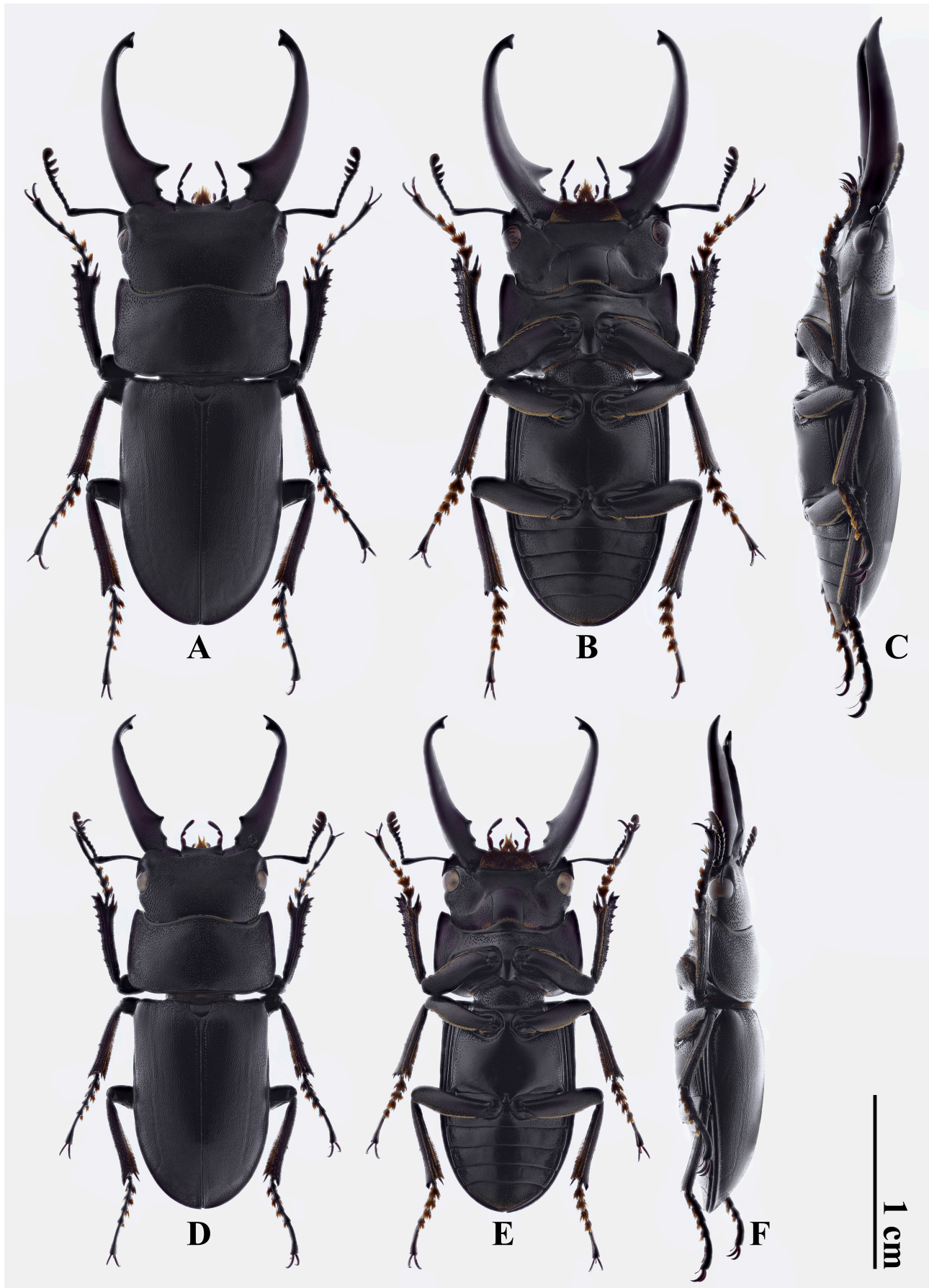
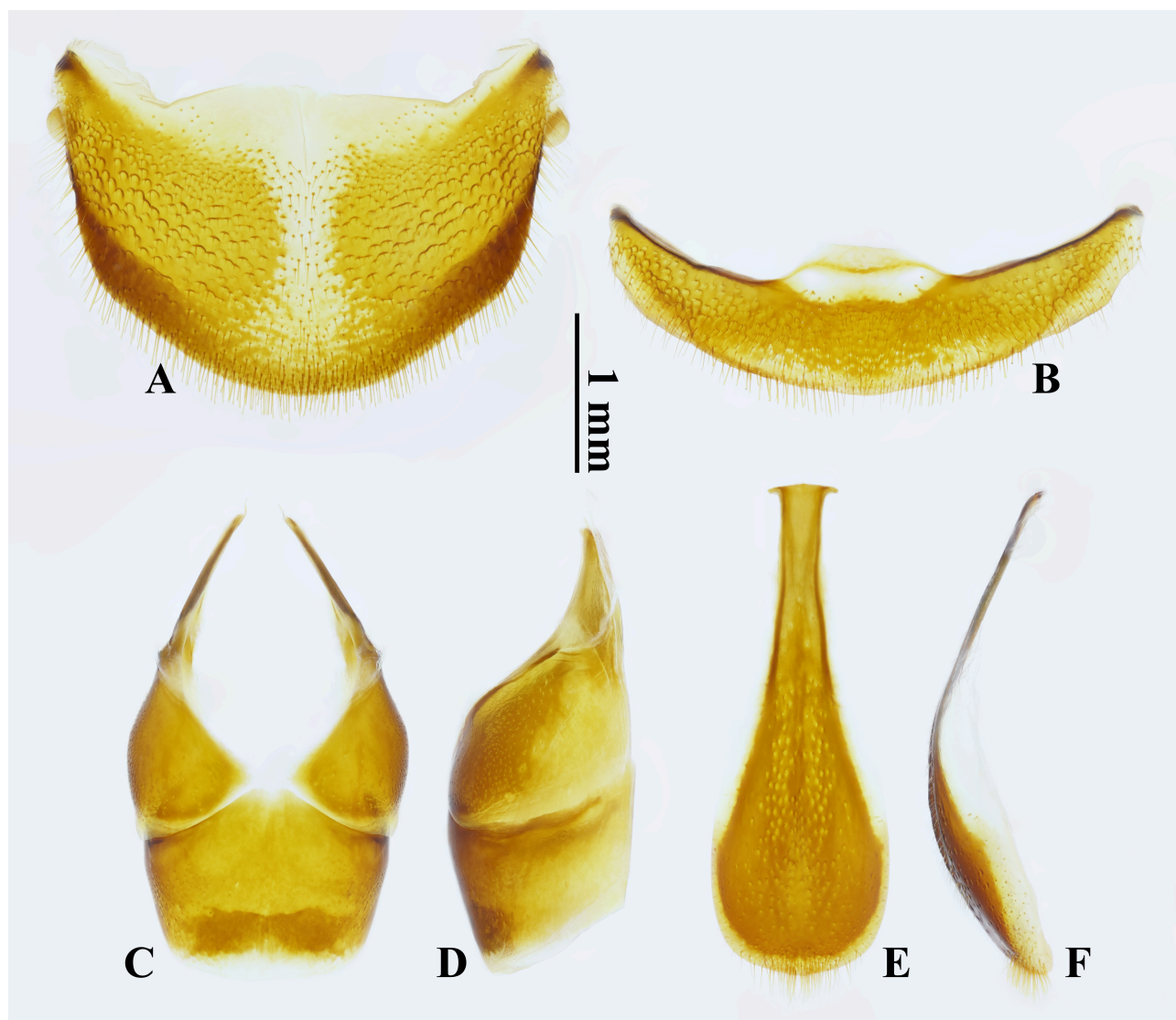


FIGURE 2. Habitus of *Falcicornis wangjini* sp. nov., ♂♂: A–C large-sized, holotype D–F moderate-sized, paratype. (A, D dorsal views B, E ventral views C, F lateral views)



**FIGURE 3.** Abdominal segments VIII & IX of *Falcicornis wangjini* sp. nov., ♂, large-sized, holotype: **A** tergite VIII **B** sternite VIII **C, D** tergite and pleurite IX **E, F** sternite IX. (**A, C** dorsal views **B, E** ventral views **D, F** lateral views)

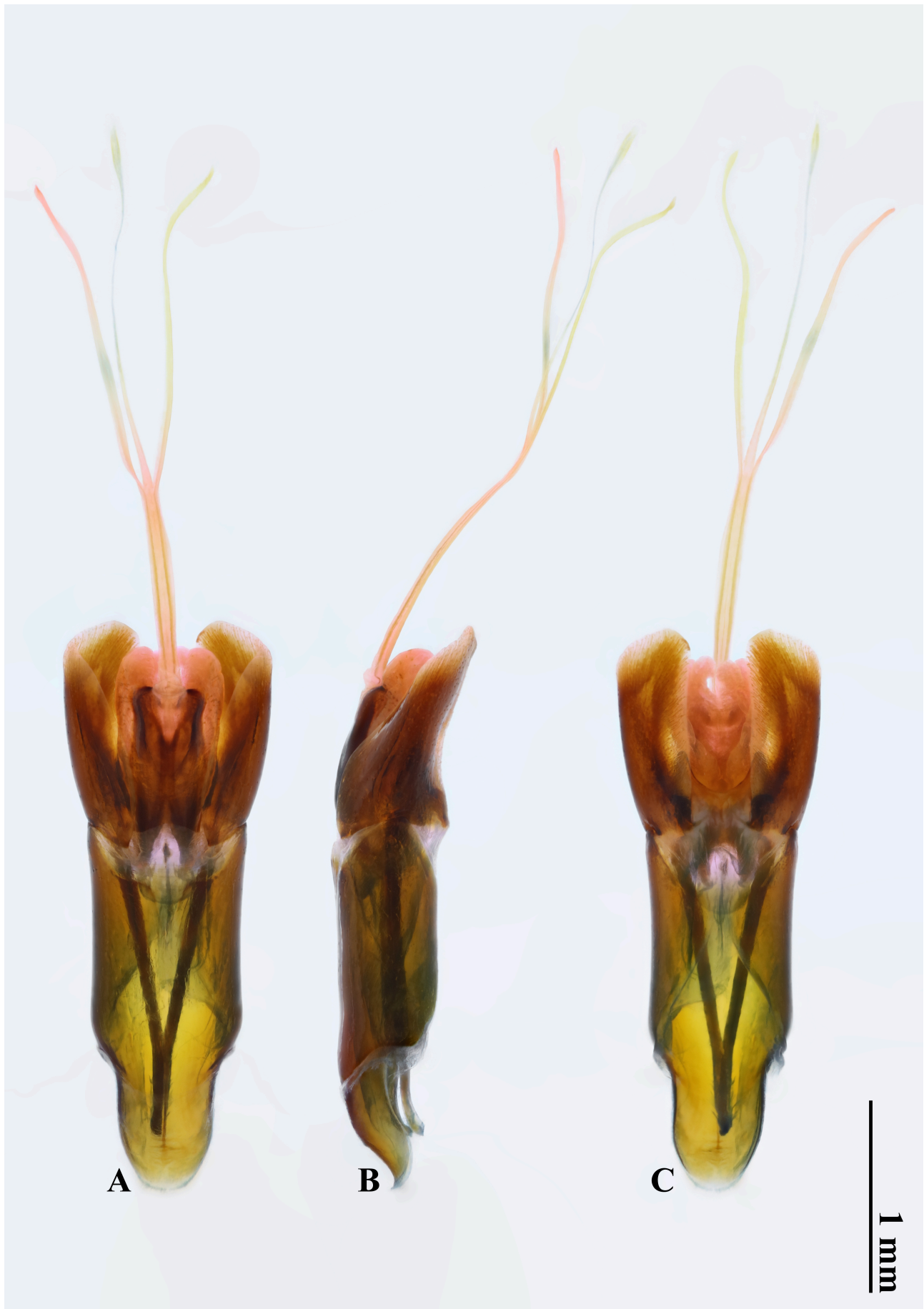
lateral angles acute. Mandible about 2.3 times as long as head, gently incurved, and upturned in apical part in lateral view (Fig. 2C); apex feebly bifurcate; one single inner tooth present at basal 1/4, pointing inwards and round at apex; basal tooth small and slightly bifurcate. Preocular margin weakly emarginate. Postocular margin weakly bulged just after eyes. Antennal club with three pubescent antennomeres; antennomere 7 sharp at inner angle; antennomeres 8–10 lamellate. Mentum subtrapezoidal, surface tomentose, with anterolateral angles rounded. Submentum inverted trapezoidal, sparsely and finely punctate. Gula elongate, smooth.

*Pronotum* 1.9 times as wide as long, widest across posterior 3/8 where protruded, and 1.1 times as wide as head. Anterior margin strongly bisinuate, clearly extending forwards in middle part; lateral and posterior margins both gently bisinuate. Anterior angles subrectangular, directing forwards; posterior angles rounded. Surface smooth, densely covered with fine punctures, interstices shagreened.

*Scutellar shield* linguiform. Surface finely and roundly punctate, interstices microreticulate.

*Elytra* 1.5 times as long as wide, widest around anterior 3/7, with width equal to pronotum. Surface smooth, most rather densely covered with shallow oval punctures, intensifying at base.

*Legs.* Protibia serrated along outer margin, with 6–8 larger acute teeth; apex bifurcate with branches slightly acute at tip. Except apical spurs and spines, each meso- and metatibia with one sharp denticle along outer margin.



**FIGURE 4.** Aedeagus of *Falcicornis wangjini* sp. nov.: **A** ventral view **B** dorsal view **C** lateral view.

**Male genitalia.** Abdominal tergite VIII (Fig. 3A) subhexagonal, with wide longitudinal membranous area along midline; sternite VIII (Fig. 3B) transverse, with transverse membranous areas at middle of both anterior and posterior parts, round at posterior margin. Abdominal tergite IX (Fig. 3C) with transverse membranous areas at posterior part, round at posterior margin, and with lateral extensions relatively slender (Fig. 3D); pleurite IX (Fig. 3C) separated dorsally; sternite IX (Fig. 3E) without membranous stripe. Aedeagus (Fig. 4A) in ventral view about 2.7 times as long as wide; basal piece (Figs 4A, C) distinctly constricted in anterior part, about 1.7 times as long as parameres, with paired sclerotized broad dorsal plates (Fig. 4C); ventral caudal plate (Fig. 4A) excavated at apex; paramere without basal process (Figs 4A, C), narrowed and weakly upturned at apex (Fig. 4B); median lobe (Fig. 4A) slender and biarcuate, about 5/6 length of parameres; flagellum (Figs 4A–C) short, trifurcate, about 2.8 times as long as parameres, apex of middle furcation weakly enlarged.

**Male paratypes.** All moderate-sized males (Figs 2D–F), body 25.2–28.8 mm long. Length of particular parts (mm, n=2): head (3.9), mandible (8.2), pronotum (4.6), elytra (12.1); width (mm): head (7.6), pronotum (8.6), elytra (8.0). All male types without evident variations.

**Differential diagnosis.** This new species is distinguishable from its congeneric species by the combination of the following characters: 1) color entirely brownish black; 2) clypeolabrum 1/3 width of head, widely and deeply emarginate at apical margin; 3) unique structures on mandible, apex feebly bifurcate, one single inner tooth present at basal 1/4, basal tooth small and slightly bifurcate; 4) mentum tomentose; 5) ventral caudal plate of aedeagus excavated at apex; 6) median lobe slender and biarcuate.

**Distribution.** Vietnam.

**Remarks.** The holotype and two paratypes were collected from Tỉnh Yên Bái, locating in the southern section of the Huanglian Mountain Range. Another two paratypes were collected from Tỉnh Hà Giang, bordering with Wenshan Prefecture, Yunnan Province of China. Therefore, it can be predicted that the new species is also likely to be distributed in China.

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## Additional information

**Author contributions:** Conceptualization: C-B Wang & T-L He. Project administration: T-L He. Resources: T-L He. Supervision: T-L He. Visualization: C-B Wang. Writing—original draft: C-B Wang. Writing—review and editing: C-B Wang & T-L He.

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