



A study of the genus *Neocerambyx* J. Thomson (Coleoptera: Cerambycidae: Cerambycinae: Cerambycini) from China, with the description of a new species

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Abstract

One new species of the genus *Neocerambyx* J. Thomson, 1861, *N. huai* Lin & Zhang, **sp. nov.** is described from Guangdong, China. The genitalia pictures and descriptions are provided for three recently published species: *N. liyuani* Lin, Miroshnikov & He, 2025, *N. miaobenfui* Lin, Miroshnikov & He, 2025, and *N. gui* Lin, Miroshnikov & He, 2025. *Neocerambyx atratulus* (Holzschuh, 2018) from Mêdog, Xizang is recorded from China for the first time.

Key words: taxonomy, new record, male genitalia, Motuo (Mêdog), Guangdong, Oriental Region

Introduction

After recent research which described three new species (Lin, Miroshnikov & He 2025), six specimens similar to *Neocerambyx gui* Lin, Miroshnikov & He, 2025 were discovered from the National Animal Collection Resource Center Sun Yat-sen University. These specimens turned out to be a new species. In this paper, *N. huai* Lin & Zhang, **sp. nov.** is described from Guangdong, China, and the genitalia pictures and descriptions are provided for all the four species. This new contribution upgrades the species number of the genus *Neocerambyx* from China to 17.

Material and methods

The male genitalia were prepared by soaking the whole beetle in a water bath at room temperature for 8~24h, removing the abdomen, then removing the genitalia with forceps, and clearing them in 10% KOH at room temperature for 16~24h. Genitalia were photographed submerged in ethyl alcohol and subsequently preserved in polyethylene genitalia vials filled with glycerin, and pinned under the specimens.

Habitus images were taken using a Canon EOS 7D camera with Canon Macro 100 mm macro lens. Images of the same object at different focal planes were combined using Helicon Focus 8 stacking software. Adobe Photoshop CS6 was used for post-processing. The terminalia were photographed with a Keyence VHX-1000C large depth-of-field 3D Digital Microscope.

Specimens studied were deposited in the following institutional museums and private collections; abbreviations as shown in the text:

CCCC	collection of Chang-Chin Chen, Tianjin, China;
IZCAS	Institute of Zoology, Chinese Academy of Sciences [= NACRC National Animal Collection Resource Center], Beijing, China;
MYNU	Invertebrate collection of Mianyang Normal University, Mianyang, Sichuan, China;
SYSU	Sun Yat-sen University, Guangzhou, Guangdong, China.

Taxonomy

Neocerambyx huai Lin & Zhang, sp. nov.

(Figs 1, 2)

Type material. HOLOTYPE: CHINA: ♂ (Figs 1A, B, 2A–I), Guangdong, Fengkai County, Heishiding (封开县黑石顶), 15.VI.2009, leg. Feng-Xia He (SYSU). **PARATYPES: CHINA:** 2 ♀♀ (Figs 1C, D, 2J–K), same data as holotype but 16.VI.2009; 1 ♂, 1 ♀, same data as holotype but 16.VI.2009 leg. Xiao-Lei Han (SYSU); 1 ♂, same data but 14.VI. 2009.

Description. Body length: 56.5–74.5 mm, humeral width 15.0–20.0 mm. Body black to blackish-brown, partly reddish brown. Head with yellow-brown pubescence. Antennae blackish-brown, covered with green-brown pubescence, without fringe of setae underneath. Head with longitudinal deep groove behind eyes on occiput. Eye deeply emarginate, with lower lobe very large. Mandible moderately sized, curved and sharp apically. Male antennae exceed apices of elytra by ninth antennomere; scape stout, with strongly protruding outer apical angle, with well-expressed longitudinal folds dorsally, distinctly shorter than third antennomere, second antennomere strongly transverse, third to fifth antennomeres distinctly stouter than following antennomeres, third very distinctly inflated in apical part, fourth noticeably expanded apically, third distinctly longer than fourth and shorter than fifth; fifth distinctly slenderer and longer than fourth, but shorter and stouter than sixth; sixth to eighth antennomeres subequal in length; ninth to eleventh gradually slenderer and flatter apically, ninth slightly shorter than eighth and slightly longer than tenth; eleventh antennomere ongest, subequal to ninth and tenth combined. Female antennae distinctly fail to reach apices of elytra; scape stout, with strongly protruding external apical angle, about as in male, significantly shorter than third antennomere and slightly shorter than fourth; second antennomere strongly transverse, third to fifth antennomeres slightly expanded in apical part, third longer than fifth in length; fifth distinctly longer than fourth; sixth and seventh antennomeres slenderer and semi-cylindrical, sixth distinctly longer than fifth, but distinctly shorter than fourth and fifth combined, seventh subequal to sixth in length, slenderer than sixth; eighth to eleventh antennomeres become gradually flatter, eighth shorter than seventh, ninth shorter than eighth, tenth slightly shorter than ninth, eleventh longer than tenth. Prothorax covered with dense green-brown pubescence. Pronotum 1.20 and 1.14 times as wide as long in male and female, respectively, with base distinctly wider than apex, usually abruptly constricted at apex, and moderately so at base; disc partly with some transverse grooves which are irregular, curved and interrupted, pair of oblique indistinct longitudinal grooves and one indistinct middle glabrous line. Scutellum covered with sparse pubescence except for middle glabrous line, widely rounded at apex. Elytra completely covered with green-brown uniform pubescence, moderately elongated, 2.60–2.82 times as long as humeral width; sides approximately parallel starting from base, rounded at apex. Ventral surface mostly pubescent. Prosternum with many transverse grooves and almost glabrous on apical third, with a deeper and totally glabrous groove behind apex; prosternal process expanded posteriorly, with a pair of very prominent apical tubercles. Mesoventral intercoxal process emarginate apically, forming two lobes, all with dense pubescence, distinctly wider than prosternal process; meso- and metasterna, and abdominal sternites finely and densely punctate; metasternum with very sharp median groove. Legs blackish-brown to reddish-brown; moderately long; femora quite robust, tibiae slender and non-grooved; metatarsomere I slightly shorter than tarsomeres II and III combined. Abdominal segment VII in both sexes with sternite slightly emarginate at apex and tergite emarginate, forming two apical lobes.

Male genitalia (Fig. 2A–I): Tergite VIII (Fig. 2B) transverse, distinctly emarginate at apex, with setae quite evenly developed. Tegmen rhombic in ventral view (Fig. 2C), moderately curved in lateral view (Fig. 2D), parameres (= lateral lobes in Lin *et al.* 2009) subparallel until apical fourth converging respectively, not so slender (length/width about 2.2), with apical setae about one third as long as parameres. Median lobe slightly curved (Fig. 2H) in lateral view, median struts slightly less than half length of entire median lobe; ventral plate narrowly rounded at apex (Fig. 2F, G). Internal sac as in Fig. 2G, H, with two pieces of crest-shaped basal armature (Fig. 2H, I). Female genitalia (Fig. 2J, K): Spermathecal tube very long, spermathecal capsule crescent-shaped, looking like long question mark.

Diagnosis. The new species is especially similar to *Neocerambyx gui* Lin, Miroshnikov & He, 2025 by the sculpture of the pronotal disc, namely, the median groove, and two oblique incomplete grooves on either side, but differs by the irregular transverse folds and indistinct longitudinal grooves on the pronotal disc; the male antennomere 3 without irregular rugose sculpture in the basal half, antennomere 6 flatter; the female antennomere 3 slightly longer than 5 (subequal in *N. gui*); the antennae colour not separated between basal five antennomeres and

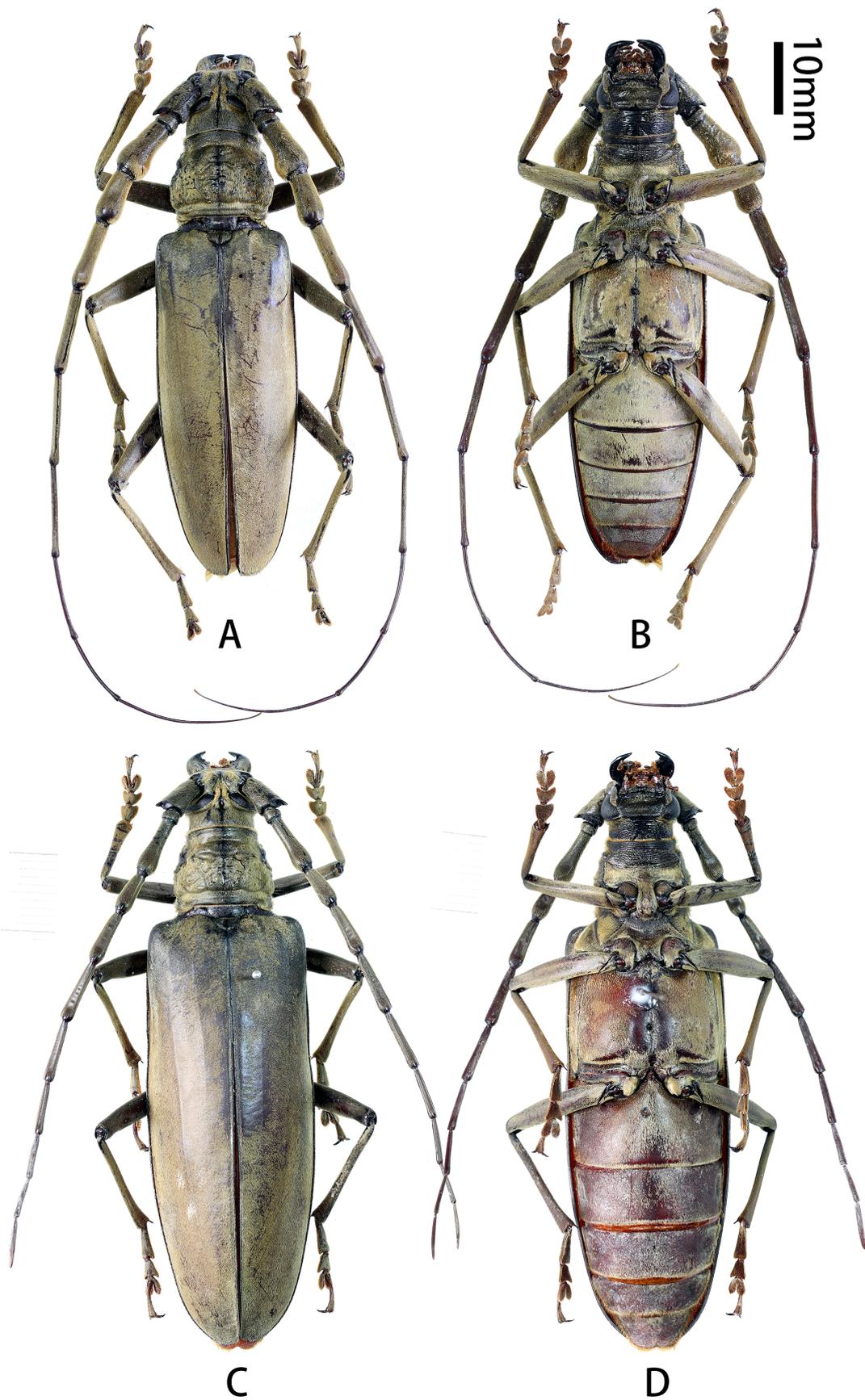


FIGURE 1. Habitus of *Neocerambyx huai* sp. nov. A–B. ♂ holotype, from Guangdong. C–D. ♀ paratype, from Guangdong. (A, C. Dorsal view. B, D. Ventral view).

rest. Their male and female genitalia characters are quite different in the shapes of tergite VIII especially the apex (Fig. 2B vs. Fig. 3B), tegmen especially parameres (Fig. 2C, E, F vs. Fig. 3C, D, F), apex of ventral plate of the median lobe (Fig. 2F, G vs. Fig. 3G), and female spermatheca capsule (Fig. 2J, K vs. Fig. 3J, K).

The new species is also quite similar to *Neocerambyx sabinae* Holzschuh, 2020, but differs by the longer median groove between upper eye lobes deeper and clearly extending onto the occiput; the last antennomere of male subequal to ninth and tenth combined in length; the female antennomere 3 slightly longer than 5 (antennomere 3 slightly shorter than 5 in *N. sabinae*). *N. huai* **sp. nov.** is similar to *N. punctulifer* Holzschuh, 2020, but differs by the less elongated male antennomeres starting from antennomere 3, the shorter female antennae (in *N. punctulifer*, female antennae distinctly reaching beyond the apex of the elytra), and the presence of rough longitudinal folds on male scape at least dorsally. Compared with *N. brudermanni* Holzschuh, 2020, the new species differs by the male antennomere 3 being more strongly inflated in apical part, the male antennomere 11 not longer than ninth and tenth combined. The new species was sometimes misidentified as *N. unicolor* (Gahan, 1906), but differs by the sculpture of the pronotal disc and the less elongated at least male antennomere 3. *N. huai* **sp. nov.** also resembles *N. vitalisi* Pic, 1923, but differs by the sculpture of the pronotal disc, the longer median groove between the upper eye lobes clearly extending onto the occiput and the less elongated male antennomeres 3 and 4.

The new species should be attributed to the *unicolor*-group sensu Miroshnikov (2020).

Etymology. The new species is dedicated to the memory of the late Prof. Li-Zhong Hua (华立中, 7 June 1931–26 July 2023), who was one of the three important longicornists in first generation in China. The type specimens were discovered in the SYSU collection where he had worked for many years.

Distribution. China: Guangdong.



FIGURE 2. Terminalia of *Neocerambyx huai* **sp. nov.** (A–I. Male. J–K. Female). **A, B.** Tergite VIII with sternites VIII & IX. **C–F.** Tegmen. **G.** Whole male genitalia. **H, I.** Median lobe. **J, K.** Female, spermathecal capsule and tube. (A, C, D, G. Ventral view. B, F, I. Dorsal view. E, H. Lateral view). Scale bar for A–I; J not to scale.

Neocerambyx gui Lin, Miroshnikov & He, 2025

(Fig. 3)

Neocerambyx gui Lin, Miroshnikov & He, 2025: 54, fig. 5A–D.

Additional description. Male genitalia (Fig. 3A–I): Tergite VIII (Fig. 3B) transverse, slightly emarginate at apex, with setae quite evenly developed. Tegmen rhombic in ventral view (Figs. 3C, 3D), moderately curved in lateral view (Fig. 3E), parameres (= lateral lobes in Lin *et al.* 2009) converging respectively, slender (length/width about 3); with apical setae about one third as long as parameres. Median lobe slightly curved (Fig. 3H) in lateral view; median struts about half length of entire median lobe; ventral plate narrowly rounded at apex (Fig. 3G). Internal sac as in Figs. 3G, H, I, with 2 pieces of crest-shaped basal armature (Fig. 3H, I). Female genitalia (Fig. 3J, K): spermathecal tube very long, spermathecal capsule crescent-shaped, looking like long question mark.

Dissected material. Holotype ♂ (Fig. 3A–I), **Hainan**, Limushan (海南黎母山), 1984.V.28, leg. Mao-Bin Gu by light trap (IZCAS); 1 ♀ paratype (Fig. 3J, K), **Hainan**, Jianfenglingding (海南尖峰岭顶), 1983.V.27, leg. Mao-Bin Gu by hand (IZCAS). **Additional material.** 1 ♀, **Hainan**, Ledong County, Jianfengling, Nanzhonoglinqu (海南乐东县尖峰岭南中林区), 2021.VIII.10-15, leg. Zhi-Gao Zeng (IZCAS).

Distribution. China: Hainan.



FIGURE 3. Terminalia of *Neocerambyx gui* Lin, Miroshnikov & He, 2025. (A–I. Male. J–K. Female). **A, B.** Tergite VIII with sternites VIII & IX. **C–F.** Tegmen. **G–I.** Median lobe. **J, K.** Female, spermathecal capsule and tube. (A, C, D, G. Ventral view. B, F, I. Dorsal view. E, H. Lateral view). Scale bar for A–I; J–K not to scale.

Neocerambyx miaobenfui Lin, Miroshnikov & He, 2025

(Fig. 4)

Neocerambyx miaobenfui Lin, Miroshnikov & He, 2025: 51, fig. 4A–D.

Additional description. Male genitalia (Fig. 4A–L): Tergite VIII (Fig. 4B) transverse, almost truncated at apex, with setae shorter and sparser in middle. Tegmen rhombic in ventral view (Fig. 4G), slightly curved in lateral view (Fig. 4H), parameres (= lateral lobes in Lin *et al.* 2009) converging and touching at apices, slender (length/width more than 3); with apical setae short, less than one fourth of length of parameres. Median lobe slightly curved (Fig. 4E, K) in lateral view; median struts about half length of entire median lobe; ventral plate rounded at apex (Fig. 4J). Internal sac as in Fig. 4C, E, L, with 2 pieces of crest-shaped basal armature (Fig. 4F, J). Female genitalia (Fig. 4M, N): spermathecal tube very long, spermathecal capsule crescent-shaped, looking like a long question mark.

Dissected material. 1 ♂ paratype (Fig. 4A–L), **Hainan**, Ledong County, Jianfengling, Tianchi Bishushanzhuang (海南省乐东县尖峰岭天池避暑山庄), alt. 950 m, 26.V.2011, leg. Wenhsin Lin (IZCAS); 1 ♀ (Fig. 4M, N), same data but 25.V.2011; 1 ♂, same data, but taken on 29.V.2011 (CCCC).

Distribution. China: Hainan.



FIGURE 4. Terminalia of *Neocerambyx miaobenfui* Lin, Miroshnikov & He, 2025. (A–L. Male. M–N. Female). **A, B.** Tergite VIII with sternites VIII & IX. **C–F.** Whole male genitalia. **G–I.** Tegmen. **J–L.** Median lobe. **M, N.** Female, spermathecal capsule and tube. (A, C, D, G, J. Ventral view. B, F, I, L. Dorsal view. E, H, K. Lateral view). Scale bar: 1 mm for A, D, F, G, H, J; 2 mm for B, C, E, I, L; M–N not to scale.

***Neocerambyx liyuani* Lin, Miroshnikov & He, 2025**
(Fig. 5)

Neocerambyx liyuani Lin, Miroshnikov & He, 2025: 47, figs. 1A–D, 2A, B.

Additional description. Male genitalia (Fig. 5A–I): Tergite VIII (Fig. 5B) longer than broad, slightly and smoothly emarginate at apex, with setae shorter and sparser in middle. Tegmen rhombic in ventral view (Fig. 5F), slightly curved in lateral view (Fig. 5D); parameres (= lateral lobes in Lin *et al.* 2009) converging respectively, stout (length/width less than 2), with apical setae about half as long as parameres. Median lobe slightly curved (Fig. 5D) in lateral view; median struts slightly shorter than half length of entire median lobe; ventral plate pointed at apex (Fig. 5H). Internal sac as in Fig. 5C, D, E, with 2 pieces of crest-shaped basal armature (Fig. 5H, I). Female genitalia (Fig. 5J, K): spermathecal tube very long, spermathecal capsule crescent-shaped, looking like a long question mark.

Dissected material. 1 male, holotype (Fig. 5A–I), **Sichuan**, Liangshan Yi Autonomous Prefecture, Leibo County, Guihua Village (四川省凉山彝族自治州雷波县桂花乡), alt. 1740 m, 15.V.2024, at light, leg. Yuan Li (MYNU); 1 female, paratype (Fig. 5J, K), same data to holotype but taken on 16.V.2024 (MYNU); 1 ♀, **Hubei**, Shennongjia, Muyuzhen, 4.VII.1993 (IZCAS).

Distribution. China: Hubei, Sichuan.

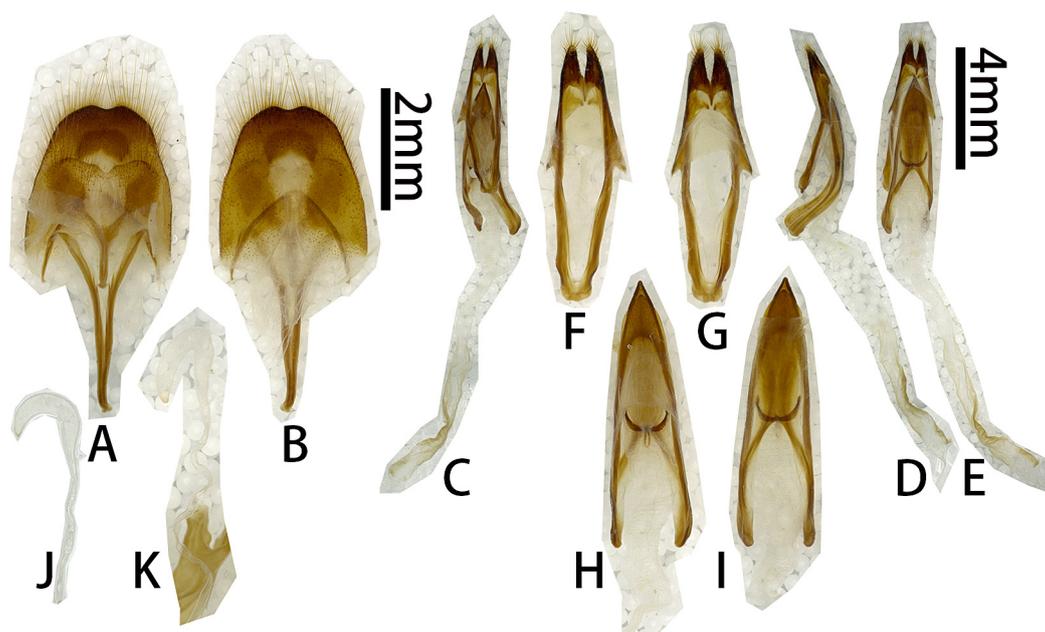


FIGURE 5. Terminalia of *Neocerambyx liyuani* Lin, Miroshnikov & He, 2025. (A–I. Male. J–K. Female). **A, B.** Tergite VIII with sternites VIII & IX. **C–E.** Whole median genitalia. **F, G.** Tegmen. **H, I.** Median lobe. **J, K.** Female, spermathecal capsule and tube. (A, C, F, H. Ventral view. B, E, G, I. Dorsal view. D. Lateral view). Scale bar: 2 mm for A, B, F–I; 4 mm for C–E; J–K not to scale.

Neocerambyx atratulus (Holzschuh, 2018)

(Fig. 6)

Massicus atratulus Holzschuh, 2018: 87, fig. 7. Type locality: India, Darjeeling Distr., Samco, Church compound, 150 m.
Neocerambyx atratulus: Lazarev 2019: 1195.

Material examined. China, **Xizang**: 2 ♂♂, 2 ♀♀, Nyingchi City, Mêdog County, 80K (西藏林芝墨脱80K), alt. 2110 m, 29°39'28"N, 95°29'22E, 24.VIII.2006, leg. Ming Bai (IZCAS); 1 ♀, same data, but taken on 25.VIII.2006; 1 ♀, Mêdog County, Gutang Town (西藏墨脱格当), alt. 2000 m, 1.X.1982, leg. Yin-Heng Yan (IZCAS).

Distribution. Until now, this species has only been known from northeast India (Holzschuh 2018). On the material above, *Neocerambyx atratulus* is here recorded from China (Xizang) for the first time. The species was attributed to the *Neocerambyx dierli* group sensu Miroshnikov (2020).

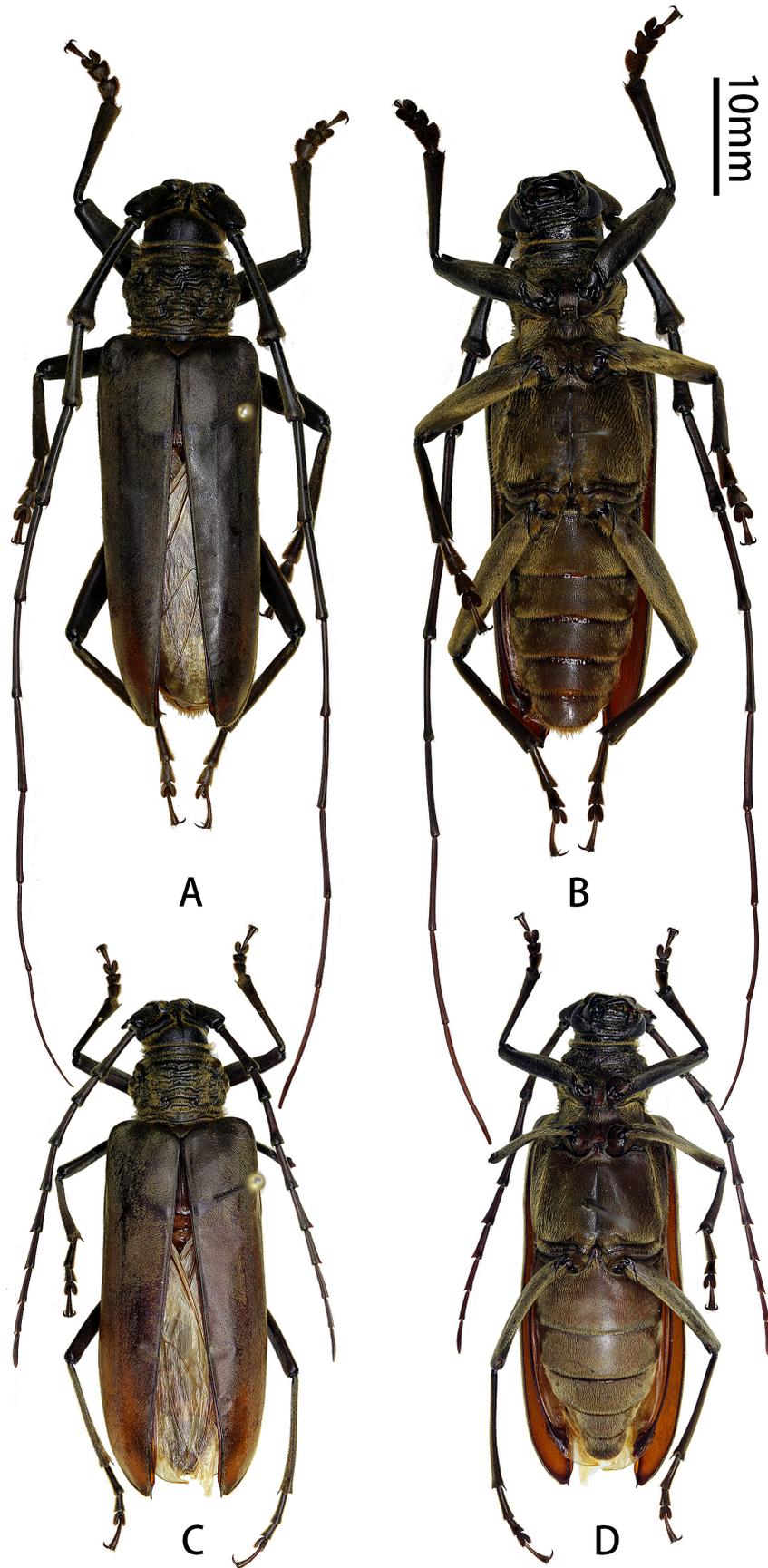


FIGURE 6. Habitus of *Neocerambyx atratulus* Holzschuh, 2018. A–B. ♂ from Xizang. C–D. ♀ from Xizang. (A, C. Dorsal view. B, D. Ventral view).

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<https://doi.org/10.5962/bhl.title.9206>

中国肿角天牛属 *Neocerambyx* 一新种 (鞘翅目: 天牛科: 天牛亚科: 天牛族)

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摘要: 描述肿角天牛属 *Neocerambyx* 一新种, 即广东的华氏肿角天牛 *N. huai* sp. nov.; 提供了近期发表同属三种的外生殖器图和描述, 即顾氏肿角天牛 *N. gui*、本福肿角天牛 *N. miaobenfui* 和李圆肿角天牛 *N. liyuani*。同时, 报道了一中国新记录种, 即西藏墨脱的黑褐肿角天牛 *N. atratulus*。

关键词: 分类; 新记录; 雄性外生殖器; 墨脱; 广东; 东洋区