



Pelecotoides xui sp. nov., the third Asian species of *Pelecotoides* Laporte from Xizang, China (Coleoptera: Ripiphoridae: Ptilophorinae)

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Abstract

Pelecotoides Laporte, 1833 (Coleoptera: Ripiphoridae: Ptilophorinae) is reported from western China for the first time; a new species, *P. xui* sp. nov., is described and illustrated from Xizang. A key to the three Asian species of *Pelecotoides* is provided.

Key words: Tenebrionoidea, ripiphorid beetles, taxonomy, morphology, new species, southern Xizang

Introduction

The family Ripiphoridae (Coleoptera) remains poorly known with respect to the Chinese fauna. In the first edition of *Catalogue of Palaearctic Coleoptera*, only six genera and 16 species from China were listed (Batelka 2008); surprisingly after more than 12 years, the revised and updated second edition recorded the same taxa and same number from China (Barclay 2020). But fortunately, taxonomic research on Chinese ripiphorids has advanced in recent years, and the number of recorded taxa has increased. *Pelecotoides tokejii* (Nomura & Nakane, 1959) has been confirmed from Taiwan Province (Hsiao & Huang 2017); and notably, Dr. Zhao Pan's research team has erected one genus, described three species, and added two species newly recorded from China (Pan *et al.* 2021; Jiang & Pan 2024; Jiang *et al.* 2024, 2025).

The genus name *Trigonodera* Dejean, 1834 was in use for a considerable time until recently Batelka *et al.* (2025) synonymised it with *Pelecotoides* Laporte, 1833 (Ptilophorinae). *Pelecotoides* is distinguished from related genera by the combination of the following characters (Falín 2003; Jiang *et al.* 2025): male antennae short pectinate or serrate; scape cylindrical, with external edge produced at apex; maxillary palpomere 3 shortest; labial palpomeres 2 and 3 subequal in length; ligula subcordate; eyes emarginate at anterior margins; tibial spur formula 2-2-2; pretarsal claws pectinate along ventral face. This genus is widely distributed across the Neotropics, Africa, Australia, and into New Guinea, and currently comprises approximately 73 recognised species (Falín 2002, 2003; Lawrence *et al.* 2010; Batelka & Chaboo 2015). However, only two species are known from Asia. *Pelecotoides tokejii* (Nomura & Nakane, 1959) is the first Asian representative described from Japan (Nomura & Nakane 1959), and Hsiao & Huang (2017) corroborated its occurrence in Taiwan, China. More recently, *P. sinicus* Jiang & Pan, 2025 was reported from Zhejiang and Fujian provinces, China (Jiang *et al.* 2025).

In the present study, I describe a new species of *Pelecotoides* from Xizang Autonomous Region, China, under the name *P. xui* sp. nov. Illustrations of the diagnostic characters of the new species and a key to the three Asian species are provided.

Material and methods

In August 2017 my colleagues, Hao Xu and Jian-Yue Qiu, collected two incomplete male specimens of the new species from flowers at the Yarlung Zangbo Grand Canyon Nature Reserve (Xizang, China) using nets. After fieldwork, the specimens were kept in a freezer (-20°C). Specimens were initially relaxed and softened in hot water for six hours, after which they were immersed in distilled water for cleaning and dissection. To examine the male genitalia, the abdomens were detached using fine-tipped tweezers and subsequently cleared with a trypsin enzyme solution at room temperature for 12 hours. Thereafter, they were placed in a 70% ethanol solution to remove residual trypsin. Following examination, the dissected body parts were mounted on a slide using Euparal Mounting Medium for future studies. Digital images in Figures 1–4 were acquired with a Canon MP-E 65mm F/2.8 1–5× MF macro lens on a Canon 5DsR camera, and images of the same object taken at different focal planes were merged using Zerene Stacker 1.04 stacking software. Post-processing of the images was performed with Adobe Photoshop CS6. Morphological terminology follows Falin (2002, 2003).

Measurement criteria, expressed in millimeters (mm), are used as follows: **antennal length**: length between the base and the apex of antenna; **body height**: widest part of the body in lateral view; **body length**: length between the anterior margin of clypeus and the apex of elytra along midline; **elytral length**: length between the basal border and the apex of elytra along suture; **eye diameter**: longest part of a single compound eye in lateral view; **head length**: length between the anterior margin of clypeus and the posterior margin of occipital carina along midline; **head width**: widest part of head (including compound eyes); **humeral width**: width across elytral humeri; **pronotal length**: length of the pronotum along midline; **pronotal width**: widest part of pronotum.

The type material of the new species is deposited in the invertebrate collection of Mianyang Normal University, Mianyang, China (MYNU).

Results

Pelecotoides Laporte, 1833

锯角大花蚤属

Pelecotoides xui sp. nov.

许氏锯角大花蚤

(Figs 1–5)

Type material. Holotype: ♂ (MYNU), **CHINA, Xizang:** Médog County, Beibeng Town [背崩乡], Geling Village [格林村], Yarlung Zangbo Grand Canyon Nature Reserve [雅鲁藏布大峡谷自然保护区], 21.VIII.2017, on flowers, Hao Xu [许浩] & Jian-Yue Qiu [邱见玥] leg. **Paratype:** 1♂ (MYNU), same data as holotype.

Etymology. The specific epithet is dedicated to Dr. Hao Xu (MYNU), one of the collectors of the type specimens, my colleague and an excellent scarabist, in recognition of his continuous support and assistance to my taxonomic study over the years. The name is treated as a noun in the genitive case.

Description. Male. *Measurements* (n = 2, paratype & holotype). Body length 8.0 & 9.3 mm, height 2.7 & 3.3 mm, widest at elytral humeri, 3.4 times as long as wide, 2.8 & 2.9 times as long as high. Lengths of body parts (mm): head (1.0 & 1.3), antenna ([incomplete in paratype] & 3.1), pronotum (1.3 & 1.3), elytra (5.7 & 6.7); width: head (1.2 & 1.3), eye (0.2 & 0.3), pronotum (2.2 & 2.6), humeri (2.3 & 2.7).

Habitus (Figs 1A; 2A–F). Body wedge-shaped, elongate, strongly convex dorsally, and lusterless. Integument colour generally reddish brown; scape, pedicel, and apical parts of appendages more or less lighter; head dark brown; eyes blackish.

Pubescence. Body dominantly covered with moderately long, decumbent, yellow setae. Antennae covered with much finer, decumbent, pale-yellowish setae. Elytra covered with bicolour setae, except above-mentioned yellow setae, additional dark-brown setae forming three transverse bands: basal band begins from about basal 2/9 and ends to about basal 3/7; middle band from about half length to about apical 1/4; apical band from about apical 1/5 to apex; basal and middle bands fused along suture. Abdominal sternites VI and VII covered with dark-brown setae as in elytral bands.

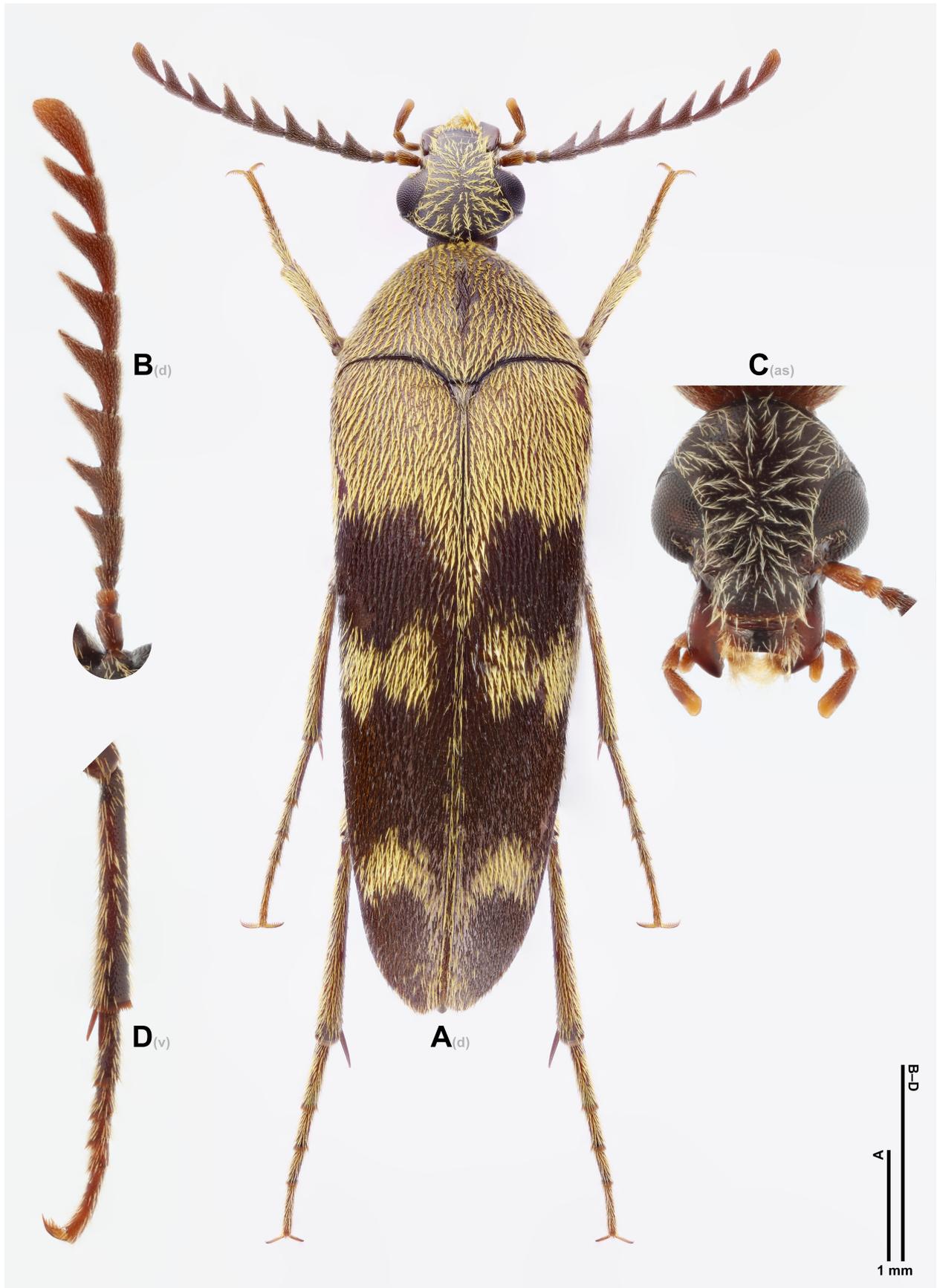


FIGURE 1. *Pelecotoides xui* sp. nov., ♂, Xizang (A, C, D. Paratype; B. Holotype). **A.** Reconstructed habitus. **B.** Right antenna. **C.** Head. **D.** Left mesotibia and mesotarsus. (as)—anterosuperior view, (d)—dorsal view, (v)—ventral view.

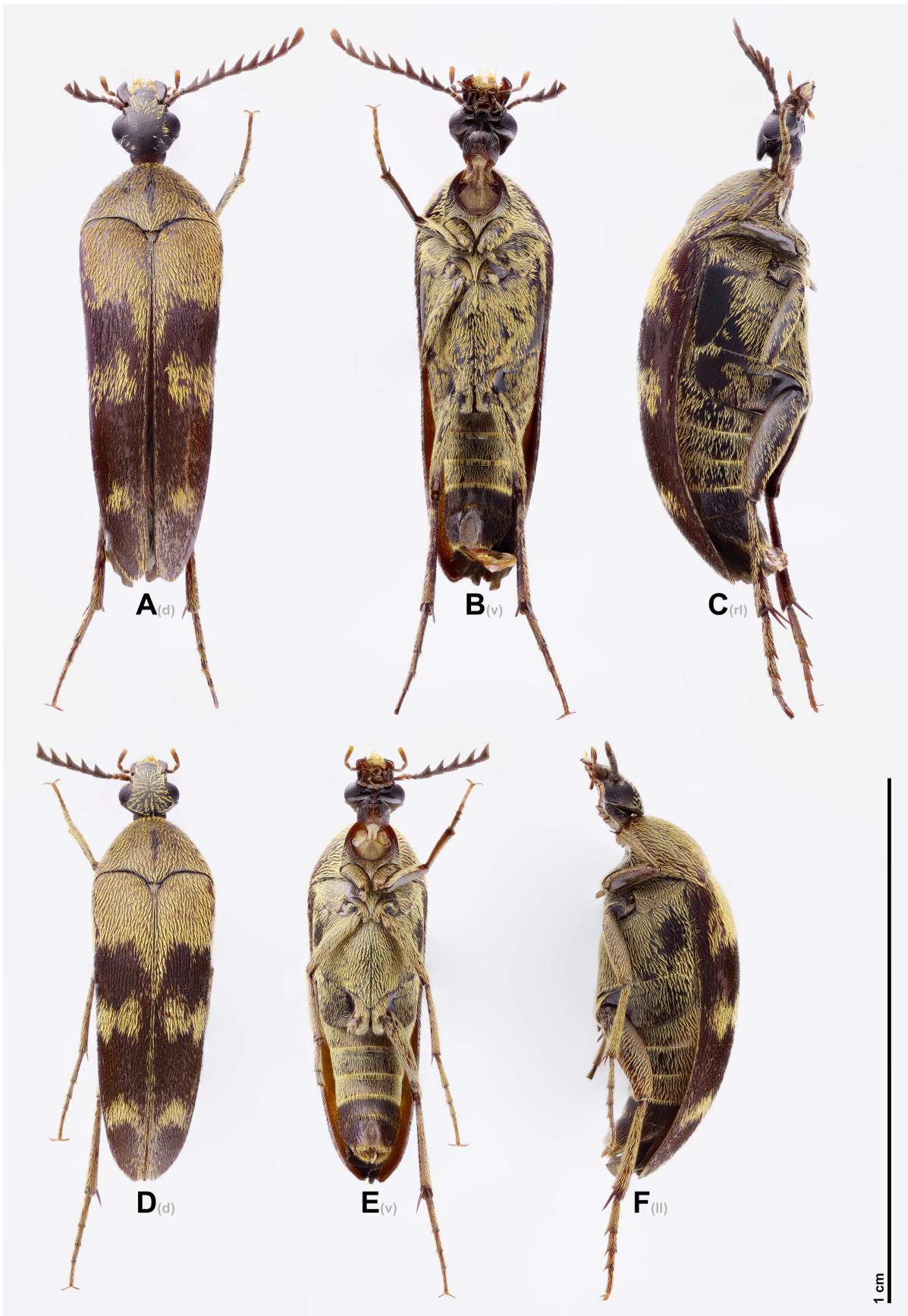


FIGURE 2. Habitus of *Pelecotoides xui* sp. nov., ♂, Xizang. **A–C.** Holotype. **D–F.** Paratype. (d)—dorsal view, (ll)—left lateral view, (rl)—right lateral view, (v)—ventral view.

Head (Fig. 1C) almost as wide as long, half as wide as pronotum. Clypeus wider than long, weakly arcuate at anterior margin. Frons hardly concave in centre. Vertex broad, with well-developed occipital carina. Surface densely covered with small, round punctures, interstices with micro wrinkles. Eyes subglobular, large, moderately prominent, distinctly emarginate at anterior margins, separated from each other by 2.5 times of eye diameter on dorsal side. Labrum transverse, slightly emarginate at anterior margin. Mandibles strong and long, strongly arcuate in apical part of lateral margins. Maxilla with ultimate palpomere stick-like, slightly expanded apically. Labium with ultimate palpomere stick-like, slightly curved.

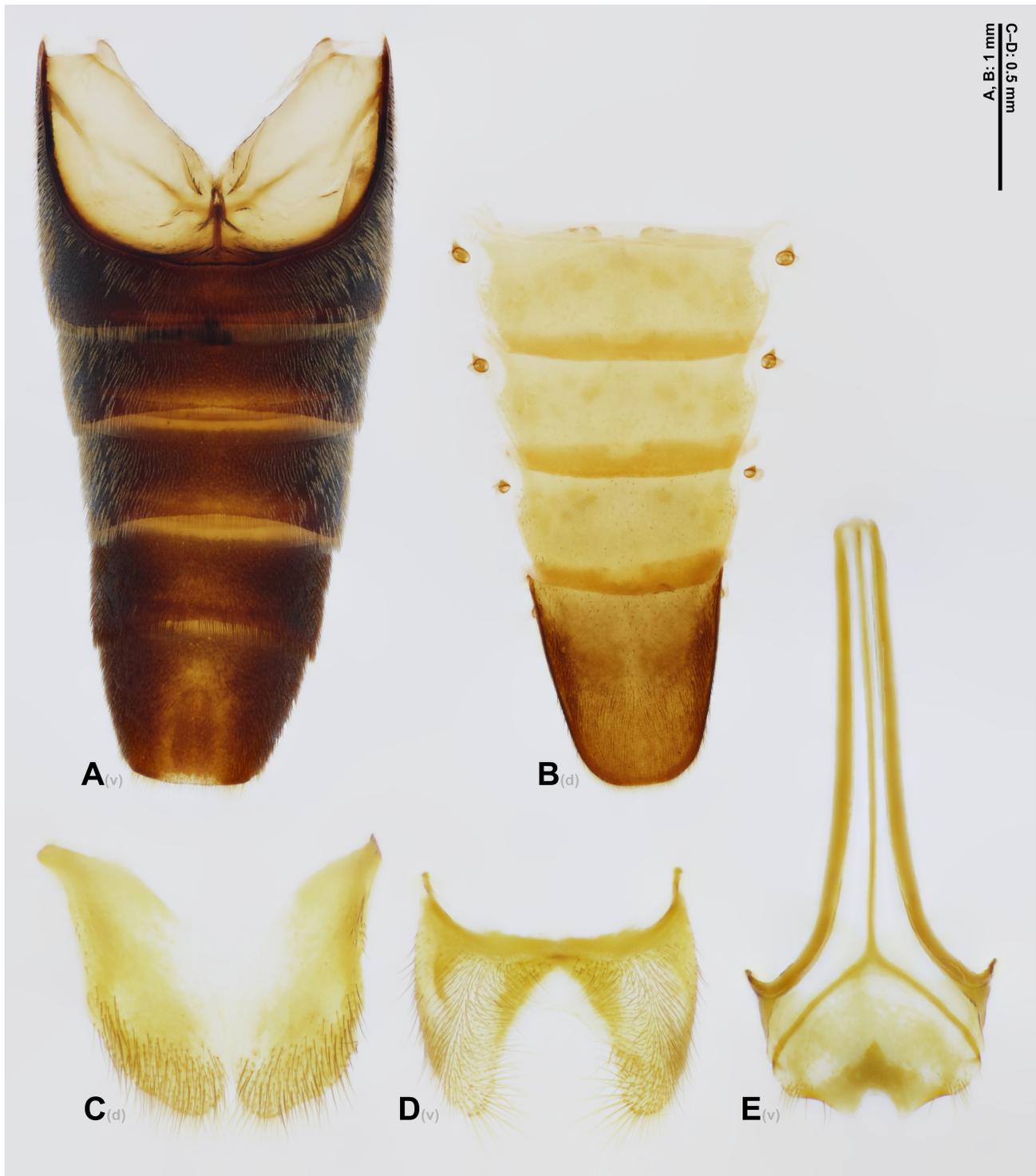


FIGURE 3. Abdominal segments of *Pelecotoides xui* sp. nov., ♂, holotype, Xizang. **A.** Sternites III–VII. **B.** Tergites VI–VII. **C.** Tergite VIII. **D.** Sternite VIII. **E.** Sternite IX. (d)—dorsal view, (v)—ventral view.



FIGURE 4. Aedeagus of *Pelecotoides xui* **sp. nov.**, holotype, Xizang. **A–D.** Phallobase. **E–H.** Median lobe. (d)—dorsal view, (ll)—left lateral view, (rl)—right lateral view, (v)—ventral view.



FIGURE 5. Overview of type locality; orange arrow indicates the site where the type specimens were collected (photo © Hao Xu).

Antennae (Fig. 1B) 11-segments, moderately long, 2.4 times as long as head width, reaching about basal 1/7 of elytra when positioned backwards. Antennomeres with length ratio from scape to antennomere 11 as follows: 1.7 : 1.0 : 1.0 : 2.1 : 2.0 : 2.3 : 2.6 : 2.5 : 2.5 : 2.5 : 3.9. Scape subcylindrical, thick, weakly dilated apically, 1.5 times as long as wide, with external edge produced; pedicel and antennomeres 3 both tuberculate, thick and shortest; antennomeres 4–10 serrate; medial rami subtriangular, flat, gradually enlarged apically; length ratios of medial rami to respective antennomeres 4–10 as follows: 0.7, 0.9, 1.0, 1.0, 1.0, 1.1, 1.0; antennomere 11 spatulate, longest, 2.9 times as long as wide.

Pronotum bell-shaped, twice as wide as long, widest at posterior angles. Anterior margin rounded; lateral margins strongly narrowing anteriorly; posterior angles acuminate, projecting posterolaterally; posterior margin of median lobe straight. Dorsum densely covered with small, round punctures, interstices with micro wrinkles. Lateral ridges complete, extending from posterior angles to anterior margin.

Scutellar shield linguiform, rounded at apex. Surface densely and minutely punctate.

Elytra elongate, complete, 2.5 times as long as wide, widest at humeri, with apical parts distinctly dehiscent. Humeri widely rounded, as wide as pronotum. Lateral margins slightly constricted around anterior 1/3, then gradually convergent to separately rounded apices. Dorsum densely covered with small, round punctures, interstices with micro wrinkles.

Legs slender. Femora fusiform, wider than tibiae and subequal in length. Tibiae (Fig. 1D) straight, spur formula 2-2-2, each inner spur longer than outer one. Tarsi simple; metatarsomeres 1–4 with length ratio as follows: 2.0 : 1.2 : 1.0 : 1.5. Claw with 7 or 8 teeth along ventral face.

Venter: Prosternum short, surface concave, with prosternal process acuminate between procoxae.

Mesoventrite short, carinate medially, and acuminate between mesocoxae. Metaventrite broad, with discrimen fine and shallow.

Abdomen gradually convergent from abdominal sternite III towards apex. Tergites and sternites densely covered with small, round punctures. Tergite VII (Fig. 3B) linguiform, rounded at apex; tergite VIII (Fig. 3C) setose in apical part, narrowly and subtriangularly excavated at middle of posterior margin. Sternite VII (Fig. 3A) subtrapezoidal, with a longitudinal elliptical depression at middle, and gently arcuate at posterior margin; sternite VIII (Fig. 3D) entirely setose, deeply and broadly excavated at middle of posterior margin; sternite IX (Fig. 3E) less setose near posterolateral margin, with spiculum gastrale long and wide, and roundly excavated at middle of posterior margin.

Aedeagus. Phallobase (Fig. 4A–D) asymmetrical, stout, about 9.4 times as long as parameres. Parameres (Fig. 4A–D) highly sclerotised, hook-shaped. Median lobe (Fig. 4E–H) asymmetrical, about 2.1 times as long as phallobase; apical part spatulate; basal part thin, and curved at apex; in lateral view, weakly bent dorsally.

Female. Unknown.

Distribution. China (Xizang) (Fig. 5).

Differential diagnosis. On the basis of the original descriptions of other congeners, *Pelecotoides xui* **sp. nov.** can be distinguished by its distinctive pubescence colour pattern.

The new species is readily distinguished from the other two Asian congeners by the following characters: compared with *P. tokejii* (its characters in brackets), *P. xui* **sp. nov.** has the elytra covered with bicoloured setae, comprising yellow setae intermixed with dark-brown setae that form three transverse bands (elytra uniformly covered with yellow setae); the abdomen is likewise clothed with bicoloured setae, with sternites VI and VII covered with dark-brown setae (abdomen uniformly covered with yellow setae). Relative to *P. sinicus* (its characters in brackets), *P. xui* **sp. nov.** shows the elytra with bicoloured setae, including dark-brown transverse bands (elytra uniformly yellow); the abdomen bears bicoloured setae, with sternites VI and VII dark-brown (abdomen uniformly yellow); the male antennae are serrate (pectinate); and the posterior margin of the median lobe of the pronotum is straight (distinctly emarginate).

Key to *Pelecotoides* Laporte from Asia

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|---|--|---|
| 1 | Elytra and abdomen covered with unicolour, yellow setae | 2 |
| – | Elytra and abdomen covered with bicolour setae; elytra with additional dark-brown setae forming three transverse bands; sternites VI and VII with dark-brown setae | <i>P. xui</i> sp. nov. |
| 2 | Male antennae pectinate; pronotum with posterior margin of median lobe distinctly emarginate | <i>P. sinicus</i> Jiang & Pan, 2025 |
| – | Male antennae serrate; pronotum with posterior margin of median lobe almost straight | <i>Pelecotoides tokejii</i> (Nomura & Nakane, 1959) |

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锯角大花蚤属 *Pelecotoides* 亚洲第三种——西藏许氏锯角大花蚤（鞘翅目：大花蚤科：羽大花蚤亚科）

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摘要：首次记录中国西部锯角大花蚤属 *Pelecotoides*（鞘翅目：大花蚤科：羽大花蚤亚科）；描述并图示一新种，即西藏的许氏锯角大花蚤 *Pelecotoides xui* **sp. nov.**。提供该属亚洲3种检索表。

关键词：拟步甲总科；大花蚤；分类学；形态学；新种；藏南