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## ***Platambus striatus* (ZENG & PU 1992) a valid species from south-western China (Coleoptera: Dytiscidae)**

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**A b s t r a c t :** *Platambus striatus* (ZENG & PU 1992), described originally in the genus *Hydronebrius* JAKOVLEV 1897, is redescribed based on specimens collected recently in the mountainous area of Sichuan and Yunnan provinces, China. The species is very similar in habitus to *Platambus lineatus* GSCHWENDTNER 1935, with which it was incorrectly synonymized by NILSSON (1995). Both species can be reliably distinguished only by the male genitalia. The median lobe of *P. striatus* is broadly attenuated and sinuous in apical third, in lateral view, while the median lobe of *P. lineatus* is regularly narrowed to the apex.

**Key words :** Coleoptera, Dytiscidae, *Platambus*, China.

### **Introduction**

Among all the known species of the genus *Platambus* THOMSON 1859, *P. lineatus* GSCHWENDTNER 1935, known from the Himalaya, has for long been considered to be the only representative characterised by a yellow body colour with black longitudinal stripes on the elytra (cf. BRANCUCCI 1982, 1988). The occurrence of another similarly coloured species was thought to be quite improbable. When ZENG & PU (1992) described their *Hydronebrius striatus* ZENG & PU 1992 from the mountainous region of Sichuan Province, China, very few authors took much notice of it. The original description is completely in Chinese, but the drawings, although very schematic, are quite accurate. However, ZENG & PU (1992) probably did not know *Platambus lineatus*, and so did not provide a differential diagnosis from this species. Furthermore, the usefulness of the description was lowered by the apparently incorrect assignment of their new species to the genus *Hydronebrius* JAKOVLEV 1897. The synonymy of these two species, proposed by NILSSON (1995), was therefore generally accepted. Additional specimens of Zeng & Pu's enigmatic species have recently been collected in Sichuan and Yunnan, and this has enabled us to clarify its status and to describe the differences between *P. lineatus* and *P. striatus*. At present, 21 species of the genus *Platambus* are known from China (cf. BRANCUCCI 2005, NILSSON 2003).

## Material and Methods

The material studied is deposited in the following institutional collections:

ISAS..... Kunming Institut of Zoology, Kunming, Yunnan, China (Prof. Liang Xingcai)  
 NHMB ..... Naturhistorisches Museum, Basel, Switzerland (Michel Brancucci)  
 NMPC ..... Národní muzeum, Praha, Czech Republic (Jiří Hájek)  
 NMW ..... Naturhistorisches Museum, Wien, Austria (Manfred A. Jäch)  
 OLML ..... Oberösterreichisches Landesmuseum, Linz, Austria (Fritz Gusenleitner)

## Taxonomy

### *Platambus lineatus* GSCHWENDTNER 1935

*Platambus lineatus* GSCHWENDTNER 1935: 62 (orig. descr., Arunachal Pradesh); BRANCUCCI 1982: 122 (descr.); NILSSON 2001: 40 (catalogue).

**Material studied:** paratypes, 1♂ and 1♀: "Ind. Mus., Dihong R, below Pasighat., Abor Expedition, 16.XII.[19]11, Kemp [leg.] [printed]", "Paratype, Gschw [red label, handwritten]", "Coll., Gschwendtner [printed]", "lineatus Gschw. [handwritten], det. Gschwendtner [printed]", "Paratype [red label, handwritten] (OLML); 2♀: "R. Brahmaputra [printed]", "Ind. Mus., Kobo, 400 ft., Abor Exped., 4-XII-II [=1911], Kemp [leg.] [printed, date handwritten]", "Coll., Gschwendtner [printed]", "lineatus Gschw. [handwritten], det. Gschwendtner [printed]", "Paratype [red label, handwritten] (OLML).

### *Platambus striatus* (ZENG & PU 1992) comb. nov., stat. revid. (Figs 1-5)

*Hydronebrius striatus* ZENG & PU 1992: 482 (orig. descr., Sichuan); NILSSON 1995: 57 (as synonym of *Platambus lineatus* GSCHWENDTNER 1935); 2000: 35 (in synonymy); 2001: 40 (in synonymy).

**Material studied:** 1♂ and 1♀: "China, Sichuan Prov., Moxi [ca. 29.40N 102.06E], 25.VI.1999, V. Beneš leg." (NMPC). 1♀: "China, Yunnan, Daju, 50 km N Lijiang, 27°21'N 100°19'E, 27.-28.VI.1992, E. Jendek leg." (NMW). Text in Chinese: 1♀ "China, Yunnan, Baoshan City, 6.VI.1983, D. Dong leg."; 1♂: Idem, 7.VI.1983; 1♂ and 1♀: Idem 12.VI.1983; 2♀: Idem: 15.VIII.1983 (ISAS, NHMB).

**Description:** Body elongate-oval, slightly convex, yellow with a black pattern as shown in Fig. 1.

**Measurements:** Total body length: 7.2-8.1 mm; width: 3.5-3.9 mm.

Head completely yellow, somewhat darkened alongside eyes and distinctly on vertex. Reticulation consisting of well impressed polygonal meshes, irregular in size, with 1-3 very small punctures within them and larger ones on their intersections. Large punctures forming a row alongside eyes, and distinct fronto-clypeal fovea.

Pronotum of variable shape (Fig. 2). In some specimens slightly cordiform, broadest before middle, lateral margin rounded in anterior half, but almost straight in posterior half, posterior angles obtuse, and pronoto-elytral angle distinct. On the other hand, some specimens have pronotum with posterior angles protruding, thus pronotum widest basally, and pronoto-elytral angle indistinct. Colour yellow with generally a broad black basal band. A more or less distinct blackish band also along anterior margin. Reticulation similar to that on head. Anterior margin with a row of large setigerous punctures, and a similar row near posterior margin broadly interrupted at middle. Lateral margin thinly but distinctly bordered.

Elytra yellow with a thin black transverse basal band, a sutural and two discal black stripes, as well as two lateral longitudinal black spots of variable size, which could be completely reduced in some specimens. Sutural stripe reaching from elytral base up to apex. Inner discal stripe mostly connected to base, but stopping before apex. Outer discal stripe broadened subbasally, but not reaching either elytral base or apex. Epipleura yellow. Reticulation consisting of weakly but distinctly impressed polygonal meshes, with several minute punctures within them. Each elytron with a sutural, discal and lateral row of large serial setigerous punctures.

Ventral side completely yellow, somewhat darkened on the last two sternites. Reticulation consisting of small polygonal meshes. Prosternal process elongate, lanceolate, bordered laterally and produced into a long sharp point. Mesofemur and mesotibia ventrally with numerous large setigerous punctures. Metasternal wings narrow. Metacoxa with large punctures and irregular grooves laterally. Metatrochanter rounded at apex. Metafemur without setae or large punctures near posterolateral angle. Metatibia ventrally with two longitudinal rows of large punctures. Sternites with oblique grooves, anal sternite posteriorly with transverse corrugations and large punctures.

Male. Tarsomeres 1-3 of fore and middle legs weakly dilated, with bristles on ventral side. Median lobe, in lateral view, broadly attenuated and sinuous in apical third (Fig. 3); in ventral view almost parallel-sided on basal two-thirds, evenly tapered on apical third, and ending in a sharp point (Fig. 4). Paramere as depicted in Fig. 5.

Female. Similar in habitus to male, but slightly larger in size. Tarsomeres of fore and middle legs not dilated.

**A f f i n i t y :** *Platambus striatus* is very similar in habitus to *P. lineatus*, and can only be reliably distinguished by the male genitalia. The median lobe of *P. striatus* is broadly attenuated and sinuous in apical third, in lateral view, while the median lobe of *P. lineatus* is regularly narrowed to the apex.

**H a b i t a t :** The specimens from Moxi were collected in a small river.

**D i s t r i b u t i o n :** So far known only from a few localities in the mountainous areas of Sichuan and Yunnan provinces, China.

### Discussion

For a long time, the generic classification of the tribe Agabini was problematic, but a new classification was proposed by NILSSON (2000) who redefined most of the genera, including *Platambus* THOMSON 1859, and *Hydronebrius* JAKOVLEV 1897. According to NILSSON, the autapomorphy of *Platambus* is the prosternal process with the lateral bead broadly inflated posterior of procoxae and/or mesocoxae widely separated, while *Hydronebrius* is characterised by: (1) the very strong body puncturation, and (2) the reduced setal row at the posterolateral angle of the metafemur (NILSSON 2000). However the same tendency towards both character states is also found in those *Platambus* species formerly classified in the subgenera *Agraphis* GUIGNOT 1954 (both characters) and *Anagabus* JAKOVLEV 1897 (reduced setal row), to which *Platambus striatus* should also be assigned. In fact it is most probably the reduced setal row on the metafemora, the character that characterises the genus *Hydronebrius*, that led ZENG & PU (1992) to place *P. striatus* in that genus.

We believe that the reduction of the setal row at the posterolateral angle of the metafemur must have evolved independently in *Hydronebrius* and *Platambus*. NILSSON (2000) considered this reduction in *Hydronebrius* to be a consequence of the strong puncturation of the metafemur in this genus. However, we regard this reduction to be more probably a possible adaptation to living in the gravel bottom of mountain rivers – the typical habitat of *Hydronebrius* as well as of *Anagabus* and *Agraphis* species.

The importance of this character for grouping species within the genus *Platambus* was discussed by HENDRICH & BRANCUCCI (2005), who recorded the tendency for a reduction of the metafemoral setae in several species from different species groups (e.g. *Platambus angulicollis* (RÉGIMBART 1899)). Additional study has revealed that even when the setae are reduced the row of punctures always remains distinct in the species of *Platambus* s. str. (*maculatus*- and *optatus*-species groups), whereas the metafemora of *Anagabus* species have several punctures distributed irregularly laterally (*P. semenowi* (JAKOVLEV 1897), *P. sogdianus* (JAKOVLEV 1897)) or have nothing at all in this place (*P. lineatus*, *P. striatus*). We therefore consider the reduction of the puncture row to be the more important character rather than a simple reduction of the setae.

Although NILSSON (2000) synonymized the two subgenera *Agraphis* and *Anagabus* with *Platambus* and recognised species-groups in their place, we believe that *Anagabus* (*semenowi*-group) is actually a monophyletic taxon within the genus *Platambus*. This is supported by two apomorphies: (1) the reduced puncture row at the posterolateral angle of the metafemur – this character is shared with *Agraphis* (*sawadai*-group); (2) the distinct pronoto-elytral angle.

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### Zusammenfassung

*Platambus striatus* (ZENG & PU 1992) wurde ursprünglich in der Gattung *Hydronebrius* JAKOVLEV 1897 beschrieben. Auf der Basis von kürzlich in Bergregionen der chinesischen Provinzen Sichuan und Yunnan gesammelten Tieren geben die Autoren eine Neubeschreibung dieser Art. Sie ist mit *P. lineatus* GSCHWENDTNER 1935, sehr nahe verwandt und wurde sogar irrtümlicherweise von Nilsson (1995) mit ihr synonymisiert. Beide Arten unterscheiden sich deutlich nur durch die Form des männlichen Genitalorgans.

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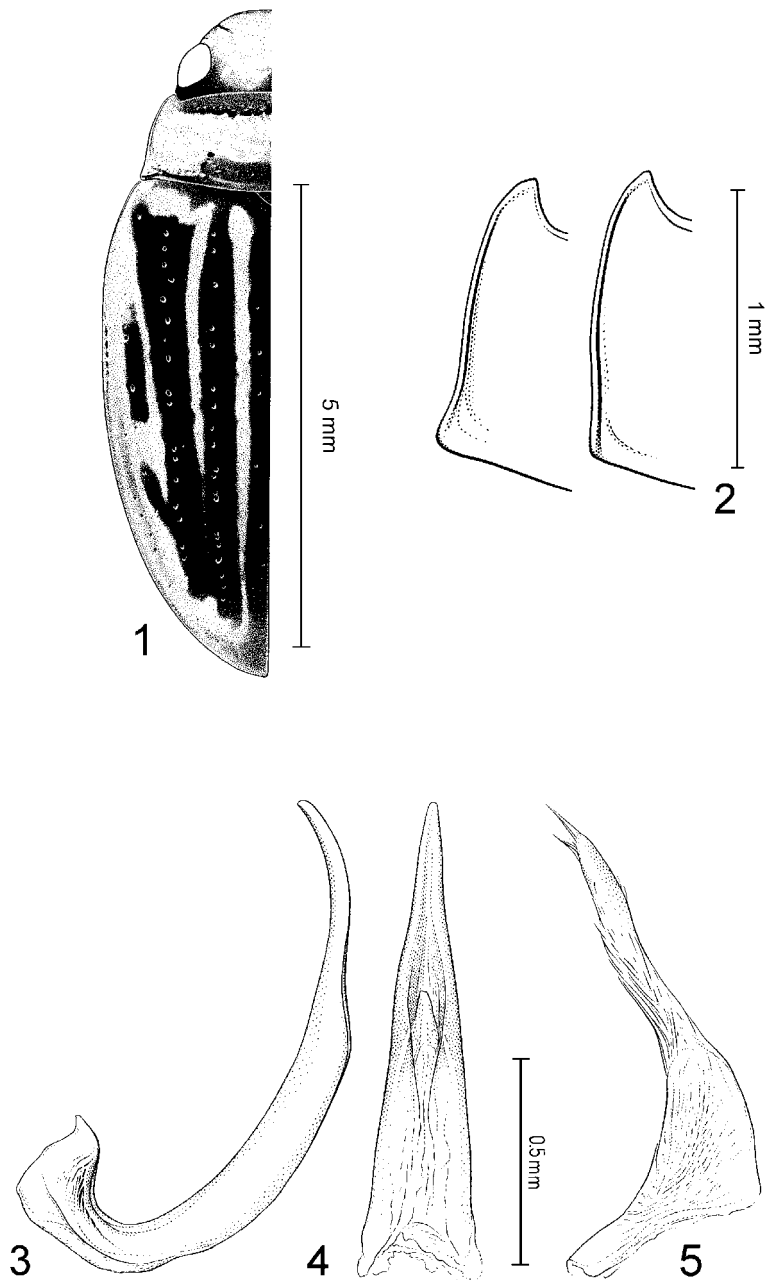
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1402



**Figs 1-5:** *Platambus striatus* (ZENG & PU): (1) habitus, specimen from Yunnan; (2) shape of pronotum; (3) median lobe in lateral view; (4) median lobe in ventral view; (5) paramere.

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