



First record of the tribe Keroplatini from China, with descriptions of two new species (Diptera: Keroplatidae)

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Abstract

This is the first report of the tribe Keroplatini in China. Two new species are described: *Platyroptilon wui*, Cao, Xu et Evenhuis, **n. sp.** and *Setostylus chinensis* Cao, Evenhuis et Zhou **n. sp.** Another species, *Heteropterna septemtrionalis* (Okada), is newly recorded in China.

Key words: Keroplatidae, Keroplatini, new species, China

Introduction

Examination of numerous specimens in the entomological collection of Zhejiang Forestry College, Lin'an, Zhejiang, China (ZJFC) has revealed two new species and one newly recorded species of keroplatids of the tribe Keroplatini: *Platyroptilon wui*, **n. sp.**, *Setostylus chinensis*, **n. sp.** and *Heteropterna septemtrionalis*. These are first records of the tribe Keroplatini from China. Undoubtedly, this is a significant addition to the knowledge of tribe Keroplatini in Southeast Asia and more species await discovery in China.

Material and methods

Specimens were collected by sweeping and Malaise traps and preserved in 80% ethanol. Holotypes and paratypes of new species in this study are deposited in ZJFC. Morphological terminology follows that of Söli *et al.* (2000).

Descriptions of species

Platyroptilon Westwood, 1850

This is a rather small genus of keroplatids with characteristic pectinate antennae. They are represented by about 13 species (not including the species dealt with here) found primarily pantropically (Evenhuis, 2006).

Of these, nine species are known from the Neotropical Region, two are known from the Australasian/Oceanian Region and two are known from the Oriental Region. The new species below from two provinces in China includes the first record of the genus from the Palaearctic Region (the specimen from Henan Province).

The genus is distinguished from other related genera by the following characters (Matile, 1990): flagellomeres pectinate; anepisternum and laterotergite bare; tibiae with setulae in regular rows on almost entire tibial length; basal cell normal, vein A_1 almost reaching wing margin.

***Platyroptilon wui* Cao, Xu et Evenhuis, n. sp.**

(Figs. 1–4)

Description. MALE. Lengths: Body: 6.6 mm; wing: 3.8 mm.

Head. Vertex and occiput yellowish brown with fairly dense small black recumbent hairs. Three ocelli, median ocellus very small. Frons obscurely yellow, bare. Antennae (Fig. 1): scape and pedicel yellowish brown. Flagellum: 14 flagellomeres; first 13 flagellomeres with long parallel pectinations each covered with very short close-set setae and with 1–4 terminal setae; first 11 flagellomeres yellowish brown, the 12th flagellomere obscurely yellow with pale yellow coloration apically, the apical two flagellomeres all pale yellow. Face obscurely yellow. Palpi pale yellow.

Thorax. Mesonotum brown with silvery pruinosity, three bare yellow stripes on disc separated by two narrowly hairy brown stripes, medial bare stripe extending anteriorly to pronotum; long dark setae on lateral margins. Scutellum obscurely yellow, with long dark setae on posterior margin. Anepisternum, katepisternum and laterotergite yellowish brown, bare; mediotergite yellowish brown, narrow yellow membranous area at base, bare. Halter yellow, knob pale brown.

Legs. Yellow (apex of mid coxa and apical three-fourths of hind coxa brown). Tibiae with few setae except fore tibia and tibial setulae forming distinct regular rows towards apex. Fore tibia without comb, mid tibia with only black posterior comb, hind tibia with black anterior and posterior comb. Tibial spurs yellowish brown. Fore basitarsus 1.1x length of fore tibia, mid and hind basitarsi 0.8x lengths of their respective tibiae. Tibial spurs yellowish brown. Claws strong.

Wing (Fig. 2). Veins yellowish brown. Costa reaching one-third distance from vein R_5 to vein M_1 ; Sc ends in C slightly beyond the level of apex of R_s ; Sc_2 situated at level of basal 0.4 between h and tip of Sc . Distance between tips of R_1 and R_4 0.6 times as long as R_4 . Ratio of radiomedial fusion / petiole of M: 1.3. Petiole of M one-seventh as long as length of M_1 ; vein M_2 not reaching wing margin, vein A_1 almost reaching wing margin.

Abdomen. Tergite I brown, tergites II–V brown with yellow anterolaterally, tergites VI–VIII brown. Sternite I brown, sternites II–V brown with yellow basal half and Sternites VI–VIII brown.

Hypopygium (Figs. 3–4). Tergite IX yellow, tapered from base to apex and subequal in length to gonocoxites. Cercus visible in dorsal view, short and rounded apically. Gonocoxites yellow, broad with some densely short stout setae apically. Gonostylus (Fig. 3) yellow.

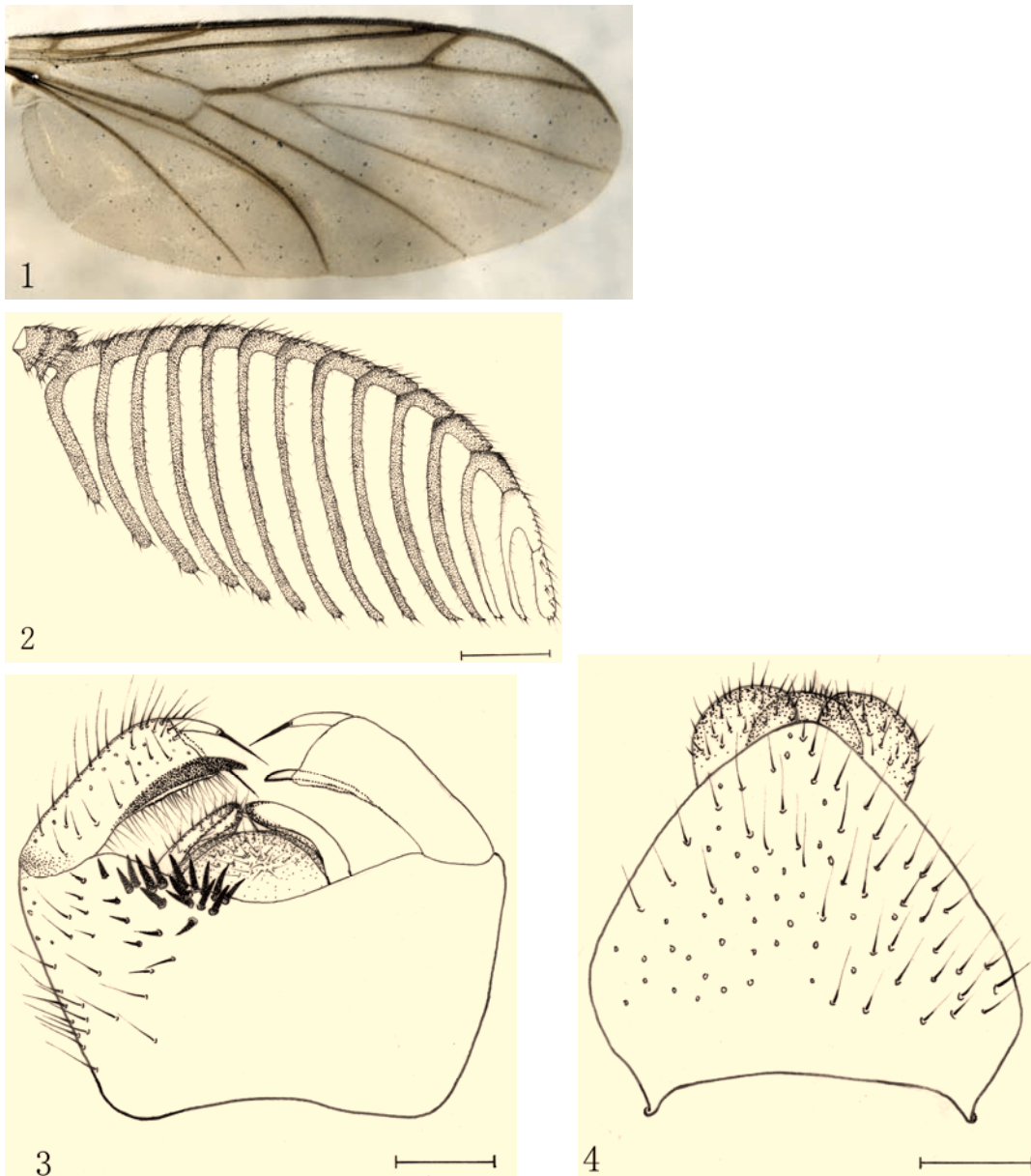
FEMALE. Unknown.

Types. Holotype ♂ (ZJFC 931899) from: CHINA: Zhejiang province: Gutian Mountains, 25 July 1992, Hong Wu; paratype: 1 ♂, Henan province: Jigong Mountains, 11 July 1997, Hong Wu.

Etymology. This species epithet honors the collector of the specimens, Prof. Wu Hong.

Diagnosis. This species is similar to the Neotropical species *P. zernyi* Edwards, in having 14 flagellomeres, but it is easily distinguished by the apical two flagellomeres being pale yellow (these flagellomeres are brown in *P. zernyi*) and the distinct difference between the shape of their gonostylus. Having compared *P. wui*, n. sp. with the Oriental species *P. kirkspriggsi* Matile and *P. scurror* Matile, we have found that the new species differs in having 14 flagellomeres (only 12 flagellomeres in the two mentioned species), radiomedial

fusion 1.3x length of petiole of M (0.5x in *P. kirkspriggsi* and 1.0x in *P. scurror*) and M₂ not reaching wing margin (reaching it in the other two species). The shape of the gonostylus is also characteristic of *P. wui* **n. sp.**



FIGURES 1–4. *Platyroptilon wui*, **n. sp.** 1. wing; 2. male antenna, scale bar = 0.2 mm; 3. male terminalia, ventral view, scale bar = 0.1 mm; 4. male tergite IX and cercus, dorsal view. scale bar = 0.1 mm.

Setostylus Matile, 1990

This is a very small genus, which comprises 9 previously described species found in the world (Evenhuis, 2006). Of these, most species are known from the Neotropical Region and the Oriental Region. The specimen from Sichuan Province of the new species below marks the first record of the genus from the mainland of the Palearctic Region.

The genus is distinguished from other related genera by the following characters (Matile, 1990; Sjøli *et al.* 2000): antennae strongly compressed; A₁ present; R₄ ending in C; laterotergite bare; fore and mid tibiae with

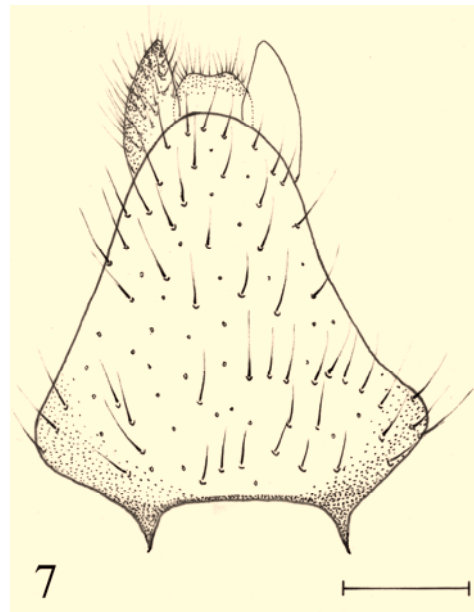
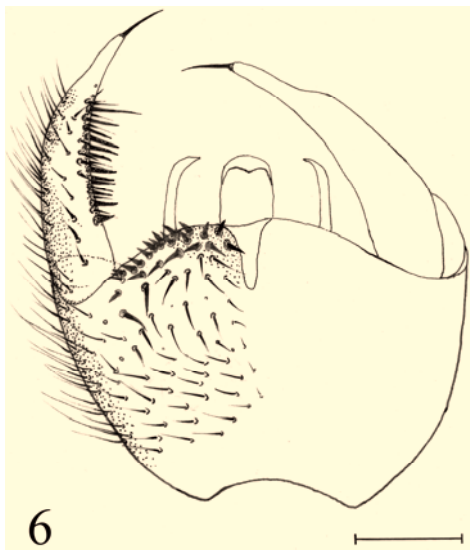
setulae in regular rows on at least apical 1/3, hind tibia with setae in regular rows on almost entire tibial length.

***Setostylus chinensis* Cao, Evenhuis et Zhou n. sp.**
(Figs. 5–7)

Description. MALE. Lengths: Body: 5.0 mm; wing: 3.3 mm.

Head. Vertex and occiput yellowish brown with fairly dense small black recumbent hairs. Three ocelli. Frons obscurely brown, bare. Antennae: brown; Flagellum: flagellomeres strongly compressed with a few long setae. Face and palpi pale yellow.

Thorax. Prosternum with short setae. Mesonotum with uniformly setae, obscurely yellow with three broad yellowish brown stripes on disc, medial stripe extending anteriorly to pronotum. Scutellum brown, with long dark setae on posterior margin. Anepisternum pale brown with patch of short hairs above; katepisternum, laterotergite and mediotergite obscurely yellow, bare. Halter pale brown.



FIGURES 5–7. *Setostylus chinensis*, n. sp. 5. wing; 6. male terminalia, ventral view; 7. male tergite IX and cercus, dorsal view. Scale bar = 0.1 mm.

Legs. Yellow (apex of mid and hind coxae, base of mid and hind femur brown). Fore tibia without comb, mid tibia with only black posterior comb, hind tibiae with black anterior and posterior comb. Tibial spurs black; anterior spur of mid tibia 0.3x length of its posterior spur, two spurs of hind tibia subequal in length.

Fore basitarsus 1.3x length of fore tibia, mid and hind basitarsi 0.8–0.9x lengths of their respective tibiae. Claws strong.

Wing (Fig. 5). Subhyaline, yellow. Veins brown. Costa slightly beyond one-third distance from vein R_5 to vein M_1 ; Sc ends in C reaching the level of middle of R_s ; Sc_2 absent. Distance between tips of R_1 and R_4 0.4–0.5 times as long as R_4 . Ratio of radiomedial fusion / petiole of M : 1.0–1.1. Petiole of M one-sixth as long as length of M_1 ; vein A_1 reaching wing margin.

Abdomen. Tergite I brown, tergites II–V brown with yellow on basal half, tergites V–VIII brown. Sternum patterned as on tergites.

Hypopygium (Figs.6–7). Tergite IX obscurely yellow, tapered from base to apex and slightly exceeding length of gonocoxites. Cercus visible in dorsal view, tapered apically. Gonocoxites yellow with stiff setae medially and long setae laterally, with a deep cleft medially. Gonostylus long, tapered from base to apex; hairy on basal 3/4, inferior setae short and thick, the remaining setae longer; apex with a long and thick black hair.

FEMALE. Unknown.

Types. Holotype ♂ (ZJFC 060204) and paratypes from: CHINA: Sichuan province: Wolong National Natural Reserve, 21 July 2006, Jian Cao.

Etymology. The species name refers to the first record of the genus from China.

Diagnosis. This species is similar to the Japanese species *S. abdominalis* (Sasakawa & Tamu), but it is easily distinguished by areas from petiole of M to basal branches of M without spot (with a brown spot in *S. abdominalis*) and two spurs of hind tibia subequal in length (posterior spur of hind tibia very shorter than its anterior spur in *S. abdominalis*). Having compared *S. chinensis*, **n. sp.** with the Malaysian species *S. rufobrunneus* Matile, we have found that the new species differs in having scutellum with long dark setae on posterior margin (without long setae in *S. rufobrunneus*) and the gonocoxites with a medial cleft deeper than in *S. rufobrunneus* and the gonostylus thinner than in *S. rufobrunneus*.

***Heteropterna* Skuse, 1888**

This genus is represented by 25 species and occurs in most zoogeographic regions. Most of the species are known from the Australasian/Oceanian Regions and the Neotropical Region, and there are three species in the Oriental Region, and only one species recorded here is known from in the Palaearctic Region.

The genus is distinguished from other related genera by the following characters (Matile, 1990; Sjøli *et al.*, 2000): antennae strongly compressed; A_1 present; R_4 ending in C ; laterotergite bare, mediotergite with triangular membranous area at base.

***Heteropterna septemtrionalis* (Okada, 1938)**

Cerotelion quadripunctatus form *septemtrionalis* Okada, 1938: 34.

This species was originally described from Honshu and Shikoku in Japan. It is obviously a separate species based on flagellomeres 11–14 yellow and mesonotum brown with yellow stripes.

Material examined: 1♂, CHINA: Zhejiang province: Wuyanling National Natural Reserve, 14 Jun 2005, Yiping Wang, Malaise trap; 1♂, Zhejiang province: Gutian Mountains, 21 July 1992, Hong Wu.

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