

A new record of the genus *Xylotopus* Oliver (Diptera: Chironomidae) from China

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ABSTRACT

The genus *Xylotopus* Oliver is newly recorded from Oriental China. One new record *Xylotopus par* (Coquillett, 1901) is redescribed and illustrated on pupae. The generic diagnosis of pupa is emended.

Key words: Orthocladiinae, diagnosis, pupal exuviae, China, identification.

INTRODUCTION

Oliver (1982) erected the Orthoclaadiinae genus *Xylotopus* with *Orthocladius par* Coquillett, 1901 as the type species. Oliver (1985) subsequently reviewed the genus with description of a new species, *Xylotopus burmanensis* Oliver, 1985. Sasa (1990) described *Eurycnemus amamiapiatus* Sasa from the Amami Islands, Japan, which was transferred to the genus *Xylotopus* by Kobayashi (1995). Thus, three species of the genus have been recorded in the world (Ashe & O'Connor, 2012).

Furthermore, the male, female, pupa and larva of *Xylotopus par* (Coquillett) were described by Oliver (1982, 1985). Moreover, the life history and feeding ecology of this species has been studied (Kaufman, 1983; Kaufman & King, 1987). Kaufman, Pankratz, & Klug (1986) reported an ectoperitrophic association of bacteria within the midgut of *Xylotopus par* larvae. This species appears restricted to the Nearctic region (Ashe & O'Connor, 2012).

Here we provide the first report of the genus *Xylotopus* Oliver in China. *Xylotopus par* (Coquillett, 1901) is redescribed and illustrated based on pupal exuviae collected from Oriental China. The generic diagnosis of pupae is emended.

MATERIAL AND METHODS

The morphological nomenclature follows Sæther (1980). The material examined was mounted on slides following the procedure outlined by Sæther (1969). The pupal exuviae of *Xylotopus par* were collected from Tie stream, in Administration of the Qiandongnan Miao and Dong Autonomous Prefecture, Guizhou (GPS: 27°02'05"N, 108°24'40"E), on 25.04.2015 (WBL). The specimens were preserved in ethanol (75%). Color is described as observed in specimens preserved in alcohol. Three pupal exuviae used for identification and mensuration. Measurements are given as ranges. Specimens examined in this study are deposited in the College of Life Sciences, Nankai University, China (BDN).

RESULTS AND DISCUSSION

Xylotopus Oliver, 1982

Xylotopus Oliver 1982: 167; Cranston, Oliver, & Sæther, 1983: 205; Oliver 1985: 1093; Coffman, Cranston, Oliver, & Sæther, 1986: 217; Cranston, Oliver, & Sæther, 1989: 252; Ashe & O'Connor, 2012: 650

Type species: *Orthocladius par* Coquillett 1901: 608, by original designation.

Diagnostic characters (following Oliver (1982, 1985); Cranston et al (1989); Coffman et al (1986). The characters of the large size, the anterodorsal projection of the anteronotum, and the presence of a stout terminal peg on the apical lobe of gonostylus will separate adult from other genera in the subfamily Orthoclaadiinae. The 5-segment antennae and an abdomen with lateral fringe of setae will easily differentiate *Xylotopus* larvae from other genera in the subfamily Orthoclaadiinae. The abdomen

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with spinules or spines, setal fringe on each side of the abdominal segments, anal macrosetae absent, and a large broad and flattened thoracic horn will distinguish pupae of *Xylotopus* from the ones of all other chironomids.

Emended diagnosis: Based on examined material and references, the generic diagnosis of pupa *Xylotopus* by Coffman et al (1986) must be emended as follows:

Pupa: Thoracic horn with sloping apex pointed at one corner or both sides (*X. par* in China). Tergite 2-6 with shagreen on posteromedian area, tergite 7 with shagreen on posteromedian or anterolateral area (*X. par* in China).

Ecology and distribution: The larvae of the genus decomposed wood submerged in shallow standing water or in slower reaches of flowing water. Pupal case is spun in a larval mine (Coffman et al, 1986).

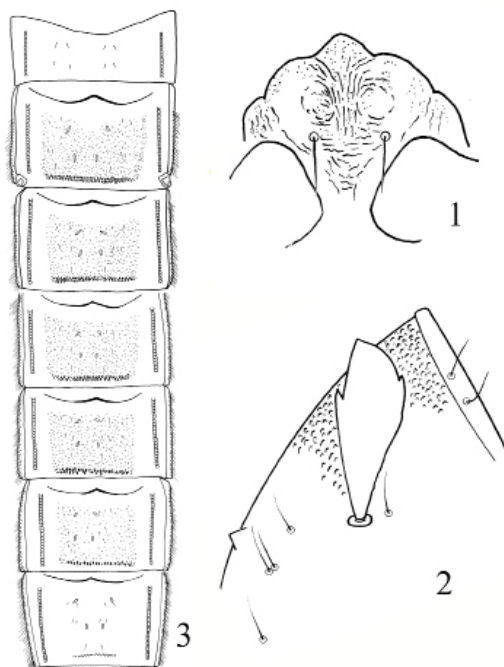
Description: *Xylotopus par* (Coquillett, 1901) (Figs. 1-7)

Orthocladus par Coquillett 1901: 608; Johannsen 1905: 265.

Brillia par (Coquillett); Johannsen 1934: 352.

Xylotopus par (Coquillett); Oliver 1982: 167; Cranston et al, 1983: 200; Kaufman et al, 1986: 657; Kaufman & King, 1987: 2280; Ashe & O'Connor, 2012: 651.

Diagnostic characters. Pupal stage: large size, the setal fringe on each side of abdominal segments, anal macrosetae absent and thorax horn large, broad and flattened, covered with spinules or spines.



Figs.1-3. *Xylotopus par* (Coquillett, 1901). Pupae. 1. Frontal apotome. 2. Thorax. 3-Tergites 1-7.

Material examined: 3P, China: Guizhou Province, Administration of the Qiandongnan Miao and Dong Autonomous Prefecture, Zhenyuan County, Tie stream, 27°02'05"N, 108°24'40"E. Wenbin Liu.

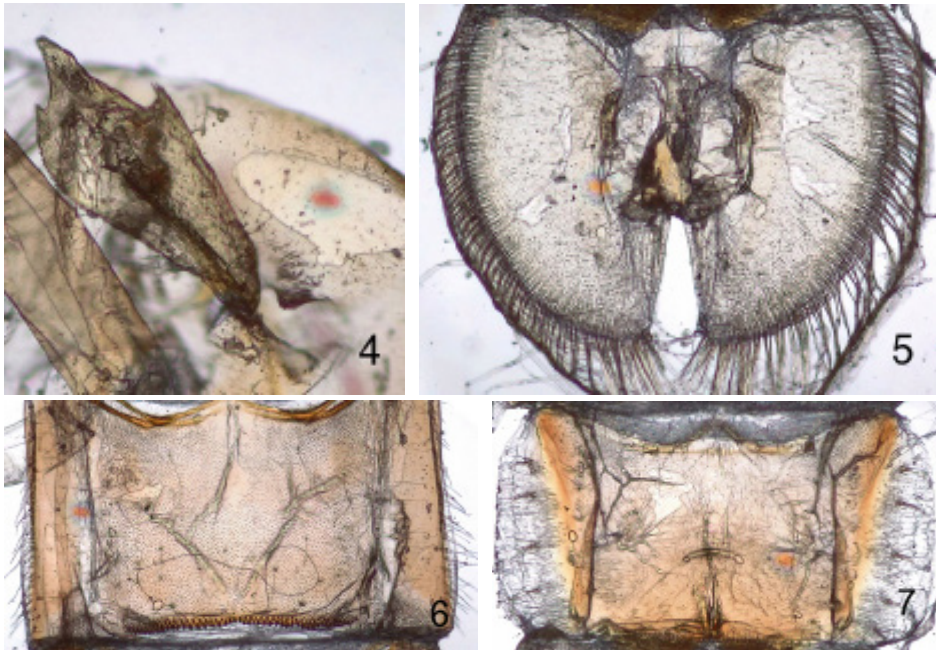
Pupa (n = 3), n: numbers of specimens measured.

Total length 8.60-9.70 mm. Exuviae dark brown.

Cephalothorax (Figs. 1-2, 4). Frontal setae on frontal apotome, 145-160 μm long. Frontal apotome (Fig. 1) rugulose, with low cephalic tubercle. Thoracic horn (Fig. 4) 600-720 μm long, large, broad and flattened with sloping apex pointed at both sides, and surface covered with spines. One precorneal seta present, 50-68 μm long. Dorsocentrals in row with Dc_3 closer to Dc_2 than Dc_4 , lengths of dorsocentrals (μm): 90-100, 95-110, 150-165, 110(1). Wing sheath smooth, without pearls.

Abdomen (Figs. 3, 6-7). Tergite I with weak shagreen. Tergites 2-6 with shagreen, area covered smaller on successively posterior tergites; 7-8 with shagreen on anterolateral area; 9 without shagreen. Sternites 1 and 9 without shagreen; 2-4 with shagreen on median area; 5-8 with shagreen on anterior area. Tergite 2 with brown hooklets; 2-7 with thorn-like spines on posterior margin; 8 with brown blunt tipped spines on posterior margin. Posterior margin of sternites 6-7 rugose; 8 rugose bilobed without spines. Pedes spurii A on sternites 4-6; pedes spurii B present on segment 2. Apophyses distinct. Segment 1 with 4 D, 1 L and 4 S setae; 2-6 with 5 D, fringe of L (24-53) and 4 V setae; 8 with 2 D and 5 strongly lamelliform L setae.

Anal lobe (Fig. 5) 1.4-1.5 x as long as broad; without anal macrosetae and apical spines, with long thick fringe. Genital sac reaching 0.43 x lobe length (♀).



Figs. 4-7. *Xylotopus par* (Coquillett, 1901). Pupae. 4. Thoracic horn. 5. Anal lobe (♀). 6. Tergite I. 7. Tergite IV.

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Remarks. This species can be easily identified to genus *Xylotopus* by having fringe of setae on the side of each abdominal segments and a large, broad and flattened thoracic horn. The species is newly recorded from China. The additional specimens mainly agree with the description in Oliver (1982, 1985). In contrast, tergite VII has shagreen on anterolateral area of the Chinese specimen and there are minor differences in the shagreen on the posteromedian area of specimens from the Nearctic region. *Distribution*. China (Oriental China: Guizhou Province); Canada (Nova Scotia, Ontario); U.S.A (Alabama, Florida, Georgia, Maine, Michigan, New Jersey, New York, North Carolina, Ohio, South Carolina, Tennessee, Texas, Utah).

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