



## Key to the Oriental species of *Passaloecus* Shuckard (Hymenoptera: Crabronidae), with descriptions of four new species from China

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### Abstract

A key to the Oriental species of *Passaloecus* Shuckard (Crabronidae: Pemphredoninae: Pemphredonini) is provided. Four new species are described and illustrated: *P. columnaris* and *P. labrinigratus* from Yunnan, China, *P. multituberculatus* from Zhejiang, China, and *P. petiolatus* from Tibet, China. In addition, four Oriental species are reported, of which *P. clypealis* Faester and *P. monilicornis* Dahlbom are recorded from the Oriental Region for the first time.

**Key words:** *Passaloecus*, taxonomy, China

### Introduction

The genus *Passaloecus* Shuckard includes 36 species with five subspecies of small to medium size predatory solitary wasps worldwide, of which 21 species with three subspecies occur in Palearctic, one subspecies in Oriental, 12 species with one subspecies in Nearctic, two species in both Palearctic and Nearctic, and one species in both Palearctic and Oriental Regions (Fox, 1892; Yasumatsu, 1934; Tsuneki, 1955, 1967, 1974; Merisuo, 1972, 1973; Lomholdt, 1975; Bohart and Menke, 1976; Vincent, 1979; De Rond, 2003; Pagliano and Negrisolo, 2005; Raemakers, 2008; Pulawski, 2012). Two species, *P. insignis* (Vander Linden) and *P. monilicornis taiwanus* Tsuneki were reported from South China (Shanghai, Taiwan) by Tsuneki, 1967 and Lomholdt, 1975. In the course of our study of *Passaloecus* from China, four new species and two species occurring in Oriental Region were discovered. A key to the Oriental species of *Passaloecus* is presented. The new species are described, and the Oriental species are reported below.

### Materials and methods

The specimens examined during this study were deposited in the following institutions: Yunnan Agricultural University, Kunming, Yunnan, China; Institute of Zoology, Academia Sinica, Beijing, China; and Zhejiang University, Hangzhou, Zhejiang, China.

The specimens were observed and illustrated with the aid of an Olympus stereomicroscope (SZ Series, Japan) with an ocular micrometer. For the terminology we mainly follow Bohart and Menke (1976). The abbreviations in the text are as follows: HLD, head length in dorsal view (the distance from frons to occipital margin in the middle); HLF, head length in frontal view (the distance from vertex to clypeal margin in the middle); HW, head width (dorsal view, maximum); EW, eye width (lateral view, maximum); EWd, eye width (frontal view, maximum); TW, gena width (lateral view, maximum); EL, eye length (lateral view, maximum); POD, postocellar distance (distance between inner margins of hind ocelli); OOD, ocellular distance (distance between out margin of hind ocellus and nearest inner orbit); OCD, ocello-occipital distance (distance between posterior margin of hind ocellus and occipital margin, dorsal view); PW, petiole width (dorsal view, in the middle); PL, petiole length (lateral view); WTI, maximum width of gastral tergum I (dorsal view); LTI, maximum length of gastral tergum I (dorsal view).