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## Six new species of the genus *Opopaea* Simon, 1891 from Xishuangbanna Rainforest, southwestern China (Araneae: Oonopidae)

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### Abstract

Seven species of the genus *Opopaea* Simon, 1891 from Xishuangbanna Rainforest, Yunnan, China are recognized, including six new species: *Opopaea auriforma* sp. nov. (male, female), *Opopaea cornuta* Yin & Wang, 1984, *Opopaea flabelata* sp. nov. (female), *Opopaea macula* sp. nov. (male, female), *Opopaea rigidula* sp. nov. (male, female), *Opopaea semilunata* sp. nov. (female), and *Opopaea zhengi* sp. nov. (male, female). Morphological descriptions and illustrations of all the six new species are given. All the types are deposited in the Institute of Zoology, Chinese Academy of Sciences in Beijing (IZCAS).

**Key words:** taxonomy, diagnosis, morphology, tropical forest

### Introduction

Xishuangbanna is one of the richest regions in biodiversity in China, and a key area in biogeography. Recently, a fourteen-month spider survey in Xishuangbanna Tropical Botanical Garden (XTBG) of Chinese Academy of Sciences (CAS) (2006–2007) was carried out by the colleagues of the Institute of Zoology, Chinese Academy of Sciences. A huge number of new taxa across a wide variety of spider families were discovered in this region (i.e., Gao & Li 2010, 2014; Li & Wunderlich 2008; Lin & Li 2008; Liu & Li 2010; Liu *et al.* 2010; Tang & Li 2009a–c, 2010, 2012; Zhang & Li 2011; Zhang *et al.* 2011; Zhao & Li, 2014).

The goblin spider genus *Opopaea* Simon is widely distributed in tropical region of the world. Currently, 174 species have been recorded in the whole world (World Spider Catalog 2014). *Opopaea* are small to medium-sized oonopids, ranging from 1.0 to 2.4 mm in body length, with the abdomen completely covered with ventral and dorsal scuta. Species of *Opopaea* have the male palpal patella greatly swollen, connected to the femur medially, and the cymbium and bulb are completely fused. The differences between *Opopaea* and some similar genera, i.e., *Camptoscaphiella* Caporiacco, *Malagiella* Ubick & Griswold, *Prethopalpus* Baehr *et al.*, and *Vientiane* Tong & Li, have been discussed by many authors (Andriamalala & Hormiga 2013; Baehr *et al.* 2013; Tong & Li 2013a). The genus *Opopaea* can be easily distinguished from the other genera by the absence of legs spines, by the completely fused cymbium and bulb, and by the presence of dorsolateral, triangular extensions on pedicel as well as paired of scutal ridges on scuto-pedicel region.

The *Opopaea* fauna of China is poorly known, with only 12 described species, of which two species (*O. conujaingensis* (Xu, 1986), *O. media* Song & Xu, 1984) from Anhui and Zhejiang; one species (*O. plumula* Yin & Wang, 1984) from Hunan; one species (*O. sauteri* Brignoli, 1974) from Hainan and Taiwan; two pantropical species (*O. apicalis* (Simon, 1893), *O. deserticola* Simon, 1891) from Taiwan; five species endemic to Hainan; and one species (*O. cornuta* Yin & Wang, 1984) widely distributed in southern China (Tong & Li 2010, 2014; Song *et al.* 1999).

***Opopaea zhengi* sp. nov.**

(Figures 13–15)

**Type material. Holotype:** male (IZCAS Ar-25026), China: Yunnan Province, Mengla County, Menglun Town, XTBG, primary tropical seasonal rainforest (21°55.035'N, 101°16.500'E, Alt: 558 m), fogging, 22 July 2007, leg. G. Zheng. **Paratypes:** 1 female, 2 males (IZCAS Ar-25027), same data as holotype; 3 males (IZCAS Ar-25028), fogging, secondary tropical seasonal moist forest (21°54.607'N, 101°17.005'E, Alt: 633 m), 28 July 2007, leg. G. Zheng; 1 female (IZCAS Ar-25029), searching; 2 females, 1 male (IZCAS Ar-25031), fogging, secondary tropical seasonal moist forest (21°54.390'N, 101°16.811'E, Alt: 612 m), 10 August 2007; 1 female (IZCAS Ar-25032), fogging, secondary tropical seasonal moist forest (21°54.948'N, 101°16.982'E, Alt: 656 m), 10 August 2007.

**Etymology.** This species is named for Guo Zheng, who collected specimens of this species.

**Diagnosis.** The new species is similar to *O. striata* Baehr, 2013, but can be distinguished by the scuto-pedichel region without the additional median scutal ridge (compare Fig. 11H and Baehr *et al.* 2013: Fig. 26E), by the shape of the distal part of male palpal bulb (compare Fig. 15B and Baehr *et al.* 2013: Fig. 25J), and by the small postgynum depression of female genital area.

**Description.** Male (holotype). Yellowish brown species with yellow legs. Body length 1.41; carapace 0.56 long, 0.46 wide; abdomen 0.78 long, 0.51 wide. Habitus as in Fig. 13A–C. Carapace: oval in dorsal view, sides with longitudinal streaks; dorsal area smooth with some hairs at lateral edges; *pars cephalica* slightly elevated in lateral view (Fig. 13E); lateral margin rebordered. Eyes: six, well developed, ALE largest, PLE smallest; posterior eye row straight from above, procurved from front; ALE separated by less than their radius, ALE-PLE separated by less than ALE radius, PME touching throughout most of their length, PLE-PME separated by less than PME radius. Clypeus margin unmodified; clypeus height about 1.0 time ALE diameter (Fig. 13G). Sternum longer than wide, uniform, fused to carapace; radial furrows present between coxae I-II, II-III, III-IV, with rows of small pits; surface smooth, without pits, microsculpture only in furrows (Fig. 13F). Anterior end of endites with a small, sharply pointed projection (Fig. 13F). Legs short, thick and spineless. Abdomen: dorsal scutum strongly sclerotized, punctate, covering full length of abdomen. Book lung covers small, ovoid, without setae. Pedicel tube short, ribbed, with small, dorsolateral, triangular extensions, scuto-pedichel region lower than diameter of pedicel, with paired curved scutal ridges (Fig. 13I), scutum not extending far dorsal of pedicel. Sperm pore small, transverse; posterior spiracles connected by groove (Fig. 13H); posteriorly directed apodemes present. Palp (Fig. 15A, B, E–H): patella 0.24 long, 0.14 wide, attached to femur at 0.46; cymbium completely fused to bulb, no seam visible; bulb slightly bulging ventrally, distal part with two outgrowths.

Female. As in male except as noted. Habitus as in Fig. 14A–C. Body length 1.55; carapace 0.57 long, 0.48 wide; abdomen 0.95 long, 0.63 wide (Fig. 14D, E). Endites without projections (Fig. 14F). Genitalia (Fig. 15C, D, I, J): central part of the anterior scutal ridge (asr) of postgynum with a small round projection (srp); paddle-like sclerite (pls) with thin straight arms bent at end; nail-like process (nlp) well separated; globular appendix (ga) small.

**Distribution.** Known only from the type locality.

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