

# One new species of *Tritneptis* Girault (Hymenoptera: Pteromalidae) from China with a key to Chinese species

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**Abstract:** The genus *Tritneptis* (Hymenoptera: Pteromalidae) in China is briefly introduced in this paper. One new species, *Tritneptis riwoqensis* Jiao & Xiao, is described. Morphological descriptions, distributions and morphological figures are provided. A key to the three Chinese species is provided. Specimens are deposited in the Zoological Museum, Institute of Zoology, Chinese Academy of Sciences.

**Key words:** Apocrita; Chalcidoidea; taxonomy; key

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## 中国翠金小蜂属分类研究及一新种记述（膜翅目：金小蜂科）

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**摘要:** 对中国翠金小蜂属 *Tritneptis* Girault, 1908 进行了分类研究, 共记述 3 种, 包括 1 新种: 类乌齐翠金小蜂 *Tritneptis riwoqensis* Jiao & Xiao sp. nov.。提供了形态描述、分布和形态特征图, 以及该属中国纪录种的分种检索表。研究标本保存于中国科学院动物研究所动物标本馆。

**关键词:** 细腰亚目; 小蜂总科; 分类; 检索表

### Introduction

The genus *Tritneptis* was described by Girault in 1908 with the type species *Tritneptis hemerocampae* Girault. Subsequently, Girault (1924) treated *Tritneptis hemerocampae* Girault as a synonym of *Dibrachys boucheanus* Ratzeburg. However, Gahan discovered that *Dibrachys boucheanus* Ratzeburg and *Tritneptis hemerocampae* Girault actually were different species, and *Tritneptis* was considered a valid taxon in Gahan's work (Gahan 1938).

*Tritneptis* is very close to *Dibrachys* Förster but it can be identified by the following characters: occiput without occipital carina (distinct in *Dibrachys*) and face distinctly protuberant at antennal insertion (not protuberant in *Dibrachys*).

Until now, eleven valid species in the genus *Tritneptis* have been described from the

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Holarctic and Oriental Regions (Noyes 2013). Two species has been recorded from China (Liao *et al.* 1987). In this study, one new species is described for the first time. A key to Chinese species of *Tritneptis* is also provided based on female characters.

## Material and methods

Specimens were swept using an insect net and preserved in 75% ethanol. They were subsequently air dried, point-mounted, and examined with a Leica MZ APO stereomicroscope. Photographs were obtained using a Nikon Multizoom AZ100 system, and plates for illustrations were compiled using Adobe Photoshop software. All specimens are deposited in the Institute of Zoology, Chinese Academy of Sciences, Beijing, China (IZCAS).

Morphological terminology follows that of Bouček (1988), Gibson *et al.* (1997) and Gibson (2009). Body length (i.e. length of body excluding the ovipositor sheaths) is measured in millimeters, but other measurements are relative. Abbreviations of morphological terms used are:  $fu_n$ —funicular segment; eyes space—the minimal distance between the eyes in frontal view; POL—posterior ocellar distance; OOL—ocellocular distance;  $Gt_n$ —gastral tergum.

## Taxonomy

### Genus *Tritneptis* Girault, 1908

*Tritneptis* Girault, 1908: 92. Type-species: *T. hemerocampae* Girault, by monotypy and original designation. Gahan, 1938: 213. Graham, 1969: 801–804. Burks, 1971: 1.

*Kvaseria* Hedqvist, 1978: 313. Type-species: *Kvaseria flavipes* Hedqvist, by original designation. Synonymized by Bouček, 1991: 205.

Diagnosis. Body slim; occiput without occipital carina; face strongly protuberant at antennal insertion (Figs. 1, 3, 6); clypeal margin truncate or slightly protruding; both mandibles four-toothed. Antenna inserted at below ocular line, formula 11263; scape not reaching lower margin of anterior ocellus; pedicel longer than each funicular segment respectively; two anelli transverse. Mesosoma more or less flattened, pronotum with collar not margined, mesoscutum with notauli incomplete, propodeum with median carina or not. Fore wing with marginal fringe except end of postmarginal vein to end of the fore wing; basal vein hairy; marginal vein 1.5–3× as long as stigmal vein; postmarginal vein as long as or longer than stigmal vein. Hind tibia with 1 spur. Gaster spindly, petiole absent.

Biological notes. Species of this genus were recorded as parasites of Hymenoptera, such as Diprionidae and Tenthredinidae. There are also host records from Diptera (Muscidae, Tachinidae) and Lepidoptera (Geometridae) (Noyes 2013).

### Key to species of *Tritneptis* from China (female)

1. Eyes space 1.5× as long as eye height (Fig. 8); postmarginal vein as long as or slightly shorter than stigmal vein (Figs. 2, 8) ..... *T. affinis* (Nees)
- Eyes space at most 1.25× eye height (Figs. 11, 13); postmarginal vein longer than stigmal vein, 1.2× stigmal vein ..... 2
2. Head and thorax bronze green; mesosoma 1.29× as long as broad (Fig. 10); marginal vein 2× stigmal vein ...

- ..... *T. macrocentri* (Liao)  
 -. Head and thorax black; mesosoma 1.6× as long as broad (Fig. 12); marginal vein 2.4× stigmal vein.....  
 ..... *T. riwoqensis* Jiao & Xiao sp. nov.

### 1. *Tritneptis affinis* (Nees, 1834) (Figs. 1, 2, 8, 9)

*Pteromalus affinis* Nees, 1834: 115.

*Diglochis lophyrorum* Ruschka, in Ruschka & Fulmek, 1915: 400.

*Tritneptis lophyrorum* (Ruschka) Graham, 1969: 802. Synonymized by Graham, 1993: 224.

*Tritneptis affinis* (Nees) Graham, 1993: 224.

Remarks. This species is close to *Tritneptis klugii* (Ratzeburg) so that Gahan treated *Tritneptis klugii* (Ratzeburg) as a synonym of *Tritneptis affinis* (Nees) in 1938. But Graham considered the two species to be different, and *Tritneptis affinis* (Nees) can be identified by the postmarginal vein equal in length to, or slightly shorter than the stigmal vein (but in *kluggi*, the postmarginal vein is slightly longer than the stigmal vein). So Graham treated the *Tritneptis affinis* (Nees) as a valid species (Graham 1969).

**Specimens examined.** China, 4♀, Heilongjiang, Dailing, 390 m, 15-VI-1959, coll. Zhong HE; 4♀1♂, Heilongjiang, Mudanjiang, Linkou, 13-VII-1972, ex. pupa of *Pristiphora erichsonii* (Hartig), coll. Buqu GAO; 3♀, Heilongjiang, Mudanjiang, Linkou, 13-VII-1972, ex. pupa of *Pristiphora erichsonii* (Hartig), coll. Gongtian XU; 199♀22♂, Inner Mongolia, Chifeng, Bairin Left B., 18-VI-1989, ex. *Pristiphora erichsonii* (Hartig), coll. Jiuse BI; 1♀, Jilin, Changbai Mt., 08-VII-1978, coll. Dingxi LIAO; 1♀, Hebei, Weichang, 12-VIII-1985, coll. Huaifu MI; 1♀, Hebei, Wuling Mt., 1800 m, VII-1994, coll. Jian YAO; 4♀, Hebei, Weichang, 30-VII-1994, ex. *Pristiphora erichsonii* (Hartig), coll. Zhen ZHANG; 1♀, Gansu, Jingyuan, 06-VI-1992, ex. *Pseudopanolis flavimacula* (Wileman), coll. Mingping GAO; 10♀2♂, Gansu, V-1990, ex. pupa of *Pseudopanolis flavimacula* (Wileman), coll. You ZHANG; 1♀, Qinghai, Qilian, 19-XI-2001, coll. Chaodong ZHU.

Biology. Our materials were bred from pupae of *Pristiphora erichsonii* (Hartig) and *Pseudopanolis flavimacula* (Wileman) (Hymenoptera: Tenthredinoidea). Other host records, *Diprion pini* L. (Hymenoptera: Diprionidae), *Gilpinia polytoma* Hartig (Hymenoptera: Tenthredinoidea) and *Pristiphora abietina* Christ. (Hymenoptera: Tenthredinoidea), were reported (Graham 1969; Herting 1977; Dzhankmen 1978).

Distribution. China (Heilongjiang, Jilin, Inner Mongolia, Hebei, Gansu, Qinghai); Nearctic and Palearctic Regions (Austria, Belgium, Canada, Czech Republic, Czechoslovakia, Germany, Kazakhstan, Lithuania, Netherlands, Sweden, United States of America, USSR).

### 2. *Tritneptis macrocentri* Liao, 1987 (Figs. 3, 4, 10, 11)

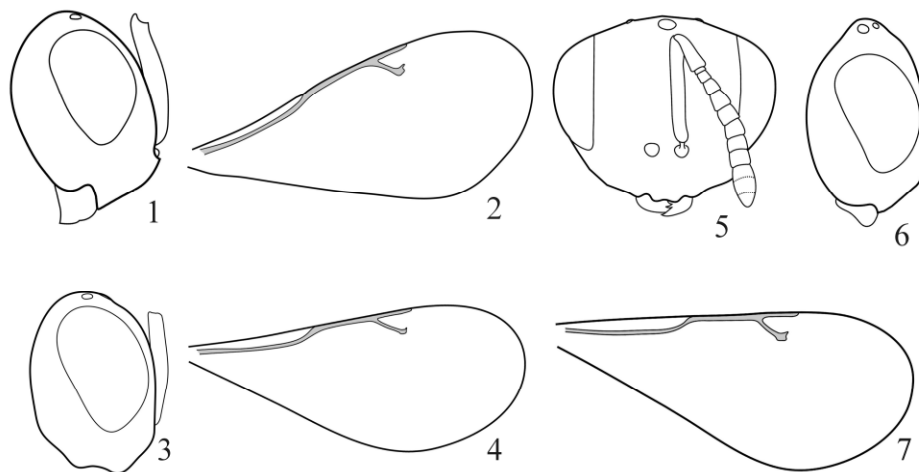
*Tritneptis macrocentri* Liao, 1987: 82.

Remarks. The species is close to *Tritneptis riwoqensis* Jiao & Xiao sp. nov. with the postmarginal vein distinctly longer than stigmal vein. But the species can be identified by the mesosoma 1.29× as long as broad (1.6× in *Tritneptis riwoqensis* Jiao & Xiao sp. nov.), marginal vein 2× stigmal vein (2.4× in *Tritneptis riwoqensis* Jiao & Xiao sp. nov.).

**Specimens examined.** 1♀ (holotype), China, Yunnan, Jingdian, 25-V-1967, ex. larva of *Macrocentrus* sp. (Hymenoptera: Braconidae), coll. Jingliang QI.

Biology. From larva of *Macrocentrus* sp..

Distribution. China (Yunnan).



Figures 1–7. 1, 2, *Tritneptis affinis* (Nees), ♀; 3, 4, *Tritneptis macrocentri* Liao, ♀; 5–7, *Tritneptis riwoqensis* Jiao & Xiao sp. nov., ♀. 1, 3, 6. Head, lateral view; 2, 4, 7. Fore wing; 5. Head, front view.

### 3. *Tritneptis riwoqensis* Jiao & Xiao sp. nov. (Figs. 5–7, 12, 13)

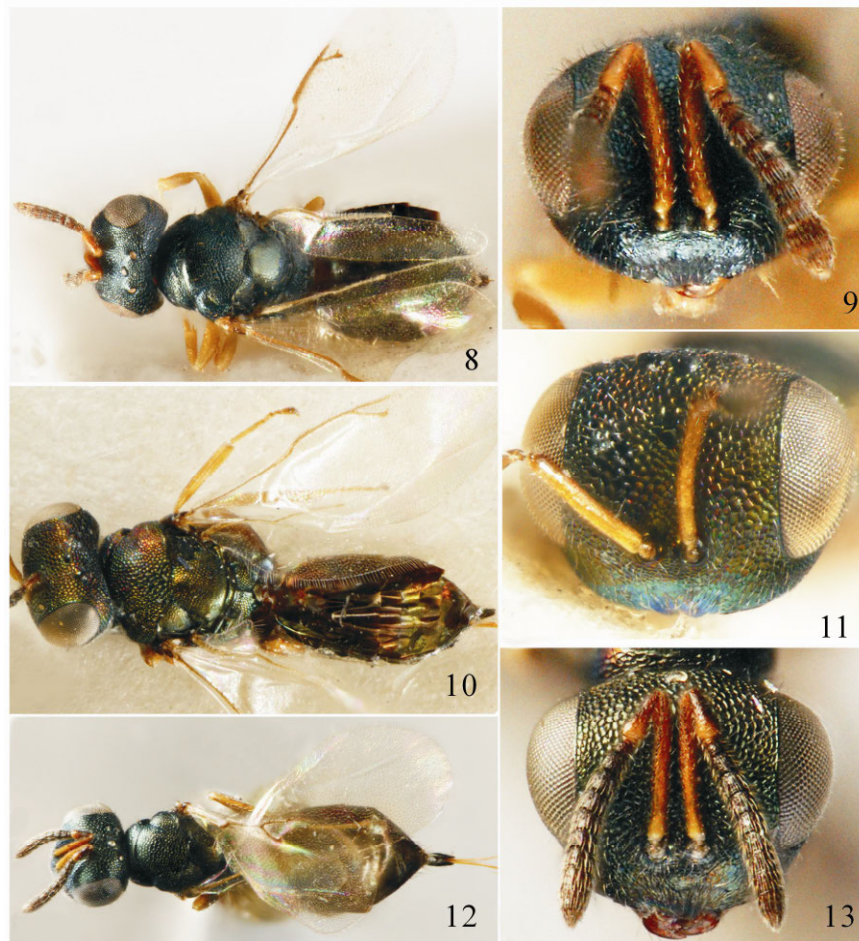
Female. Length 2.1–2.5 mm. Head and thorax metallic dark green (Fig. 12), gaster brown. Antenna with scape yellowish brown, pedicel brown except apex part yellowish brown, flagellum dark brown. Wings hyaline with slightly pale smoke. Legs with coxae concolorous with mesosoma, femora brown in central part, tibiae and claws yellowish brown. Ovipositor distinctly produced.

Head in frontal view about  $1.23\times$  as high as wide (Figs. 5, 13), spreading pale hairs; eye space  $1.24\times$  eye height; eye height  $0.63\times$  head height, inner margin of eyes parallel; upper face and lower face with finely raised reticulation; scrobe shallow and reticulated densely, not reaching lower anterior ocellus. Clypeus with epistomal sulcus, lower margin of clypeus slightly protruding and emarginated in the middle (Fig. 5). Head in lateral view (Fig. 6), malar sulcus indistinct; eye height  $2.2\times$  eye width,  $2.36\times$  malar space. Head in dorsal view  $2\times$  as wide as long, vertex convex, occipital carina absent; POL  $1.78\times$  OOL; eye length  $2\times$  as long as temple. Antenna (Fig. 13) inserted at lower face, lower margin of torulus at lower ocular line; pedicel and flagellum combined as long as head width; scape as long as eye height, not reaching anterior ocellus; pedicel  $2.5\times$  as long as broad; first anellus very short, second anellus  $2.5\times$  as long as broad; each funicular segment quadrate to slightly shorter than length, each bearing one row of longitudinal sensilla; clava not clavate,  $2\times$  as long as its greatest width.

Mesosoma in dorsal view distinctly narrower than head width (Fig. 12), head width about  $1.33\times$  as wide as mesosoma; mesosoma flat in lateral view,  $1.58\times$  as long as broad. Pronotum with short collar, collar not carinate. Mesoscutum  $1.66\times$  as wide as long, notauli incomplete; scutellum as long as broad, frenal line absent. Propodeum  $0.6\times$  length of scutellum, nucha very short; median carina complete and showing reversed Y-shape; plica indistinct; spiracle oval,  $2\times$  as long as broad. Fore wing  $2.34\times$  as long as wide (Fig. 7); costal cell bare on upper surface, and with a row of hairs and 2 incomplete rows of hairs on ventral surface; basal vein with setae, basal cell with several hairs; speculum reaching base of marginal vein; marginal vein  $2\times$  postmarginal vein; postmarginal vein  $1.2\times$  stigmal vein.

Metasoma with petiole invisible in dorsal view; gaster ellipse,  $1.89\times$  as long as wide; gaster width  $1.33\times$  mesosoma width;  $Gt_1$  length  $0.25\times$  gaster, hind margin straight and slightly emarginate in the middle; ovipositor produced.

Male. Unknown.



Figures 8–13. 8, 9. *Tritneptis affinis* (Nees), ♀; 10, 11. *Tritneptis macrocentri* Liao, ♀; 12, 13. *Tritneptis riwoqensis* Jiao & Xiao sp. nov. ♀; 8, 10, 12. Body, dorsal view; 9, 11, 13. Head, frontal view.

**Holotype.** ♀, **China**, Tibet, Riwoqê Co., 3920 m, 12-VIII-2001, coll. Chaodong ZHU;  
**Paratype.** ♀, same data as holotype.

**Etymology.** The specific epithet is from the name of the type locality, Riwoqê of Tibet, China.

**Remarks.** The new species is close to *T. macrocentri* (Liao) with the postmarginal vein distinctly longer than stigmal vein. But the species can be identified by the mesosoma  $1.6\times$  as long as broad ( $1.29\times$  in *T. macrocentri*), marginal vein  $2.4\times$  stigmal vein ( $2\times$  in *T. macrocentri*). The new species differs from *T. affinis* (Nees) by the eyes relatively bigger than the latter and the marginal vein distinctly longer than stigmal vein.

**Biology.** Unknown.

Distribution. China (Tibet).

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