

## Review of the issid genus *Parasarima* Yang (Hemiptera: Fulgoroidea: Issidae) with description of one new species from China

CHE Yanli<sup>1,2</sup>, ZHANG Yalin<sup>1</sup>Ⓐ, WANG Yinglun<sup>1</sup>

1. Key Laboratory of Plant Protection Resources and Pest Management of Ministry of Education, Entomological Museum, Northwest A&F University, Yangling, Shaanxi 712100, China

2. College of Plant Protection, Southwest University, Beibei, Chongqing 400716, China

**Abstract:** This paper reviewed the genus *Parasarima* Yang and revised the generic diagnosis. *Parasarima triphylla*, a new species of Issidae (Hemiptera) is described from Hubei and Guangxi, China. In addition, a key to all species of the genus is provided.

**Key words:** Taxonomy; Fulgoromorpha; *Sarima*; new species

**CLC number:** Q969.36<sup>+</sup>5.8      **Document code:** A

**Article ID:** 1000-7482(2012)03-0533-05

### 帕萨瓢蜡蝉属综述及中国一新种记述（半翅目：蜡蝉总科：瓢蜡蝉科）

车艳丽<sup>1,2</sup>, 张雅林<sup>1</sup>Ⓐ, 王应伦<sup>1</sup>

1. 植保资源与病虫害治理教育部重点实验室, 西北农林科技大学昆虫博物馆, 陕西 杨凌 712100; 2. 西南大学植物保护学院, 重庆 北碚 400716

**摘要:** 对帕萨瓢蜡蝉属的研究进行了综述并修订了属征, 报道采自中国湖北和广西的帕萨瓢蜡蝉属 1 新种: 三叶帕萨瓢蜡蝉 *Parasarima triphylla* sp. nov.。该新种与帕萨瓢蜡蝉 *Parasarima pallizona* (Matsumura) 相似, 主要区别为: 1) 前翅 M 脉 3 分支, 后者 2 分支; 2) 后足刺式, 前者 6-7-2, 后者 7-9-2; 3) 抱器的突起基部尖细、端部钝圆, 后者突起的基部和端部钝圆。研究标本保存在西北农林科技大学昆虫博物馆。

**关键词:** 分类; 蜡蝉; 萨瓢蜡蝉属; 新种

#### Introduction

Chan & Yang (1994) erected *Parasarima* to include *Sarima pallizona* Matsumura, 1938. This genus resembles *Sarima* Melichar in shape of carination of frons and venation of median lobe of wings, but differs from it by median lobe of wings without cross vein and tegmina with Sc long, reaching over middle. Initially, *Parasarima* was placed in the tribe Thionini, but Gnezdilov (2009) considered the presence of the trilobed hind wing as an insufficient

Received date: 7 Jun. 2012

ⒶCorresponding author, E-mail: yalinzh@yahoo.com.cn

character for the definition of a separate tribe Thioniini and treated Thioniini Melichar, 1906 as a junior synonym of Issini Spinola, 1839. In the present paper, a second species from *Parasarima*, *P. triphylla* sp. nov. from Hubei and Guangxi of south China, is described and illustrated.

## Material and methods

Terminology follows Chan & Yang (1994). The genital segments of the examined specimens were macerated in 10% KOH and observed in glycerin jelly using a Leica MZ125 stereomicroscope. Photographs of the specimens were made using a Nikon SMZ1500 stereomicroscope with a Q-image CCD. Images were produced using the software Synoptics Automontage. All the specimens studied are deposited in the Entomological Museum of Northwest Agriculture and Forestry University (NWAFU).

## Description

*Parasarima* Yang, 1994

*Parasarima* Yang, 1994: 96.

Type species: *Sarima pallizona* Matsumura, 1938.

Body nearly hemispherical. Head (including eyes) distinctly narrower than pronotum. Vertex subquadrangular, much wider at base than long in middle line, with disc obviously depressed, anterior margin slightly convex angularly, hind margin slightly concave, lateral margins strongly elevated and convergent anteriorly, median carina feeble. Ocelli present. Frons coarse, ampliate and finely granulose, disc flat with median and one inverted U-shaped carinae, both reaching to the middle of frons; U-shaped carina cross median carina near apical margin and then curved laterad to apex. Frontoclypeal suture strongly arched. Clypeus stout and smooth, not laterally compressed and without carina. Rostrum long, reaching to metatrochanter. Pronotum narrow, with two central pits and median carina; anterior margin distinctly convex; posterior margin nearly truncate. Mesoscutellum more or less triangular, with median carina and two pits along each lateral margin. Tegmina nearly rectangular, anterior margin almost parallel to sutural margin, Sc long and reaching over middle, Sc and R forked near base and Y vein not reaching over the clavus. Wings a little shorter than tegmina, with dorsal lobe with 2 cross veins, median lobe without cross vein, 1A branched at apex, 3A simple. Hind tibiae with 2 lateral teeth. Spinal formula of hind leg (6-7)-(7-9)-2. Male genitalia symmetrical; aedeagus tubular, with two spinose processes near apex. Female genitalia with three pairs of valvulae, first valvula with teeth, third valvula with apical margin tumid and polished. Pregenital sternite with apical margin distinctly convex.

Remarks. Chan & Yang (1994) considered that the connection of male genitalia and the shape of lateral lobes of the aedeagus were sufficient for the definition of a separate genus. However, after examination of specimens of another species and the original description of *P. pallizona*, we consider that these characters are of greater value at the species than the genus level. The distinguishing characters of *Parasarima* are: frons distinctly ampliate near base, hind wing well-developed and median lobe with veins forked near apex and without cross

veins, tegmen with Sc long.

Distribution. China (Taiwan, Guangxi, Hubei).

### Key to species of *Parasarima* Yang, 1994

1. Pygofer with hind margin shallowly convex near mid in lateral view, ventral lobe with apical margin convex, lateral angle tapering ..... *P. triphylla* sp. nov.
- . Pygofer with hind margin strongly produced in lateral view, ventral lobe with apical margin concave, lateral angle rounded ..... *P. pallizona*

#### 1. *Parasarima pallizona* (Matsumura, 1938)

*Sarima pallizona* Matsumura, 1938: 151.

*Sarima pallizona* var. *midoriana* Matsumura, 1938: 151. Synonymized by Chan & Yang, 1994: 97.

*Parasarima pallizona*, Chan & Yang, 1994: 97.

No materials examined.

#### 2. *Parasarima triphylla* sp. nov. (Figs. 1–14)

Length, male (including tegmen): 5.3 mm, length of tegmen: 4.3 mm; female (including tegmen): 5.4 mm, length of tegmen: 4.3–4.5 mm.

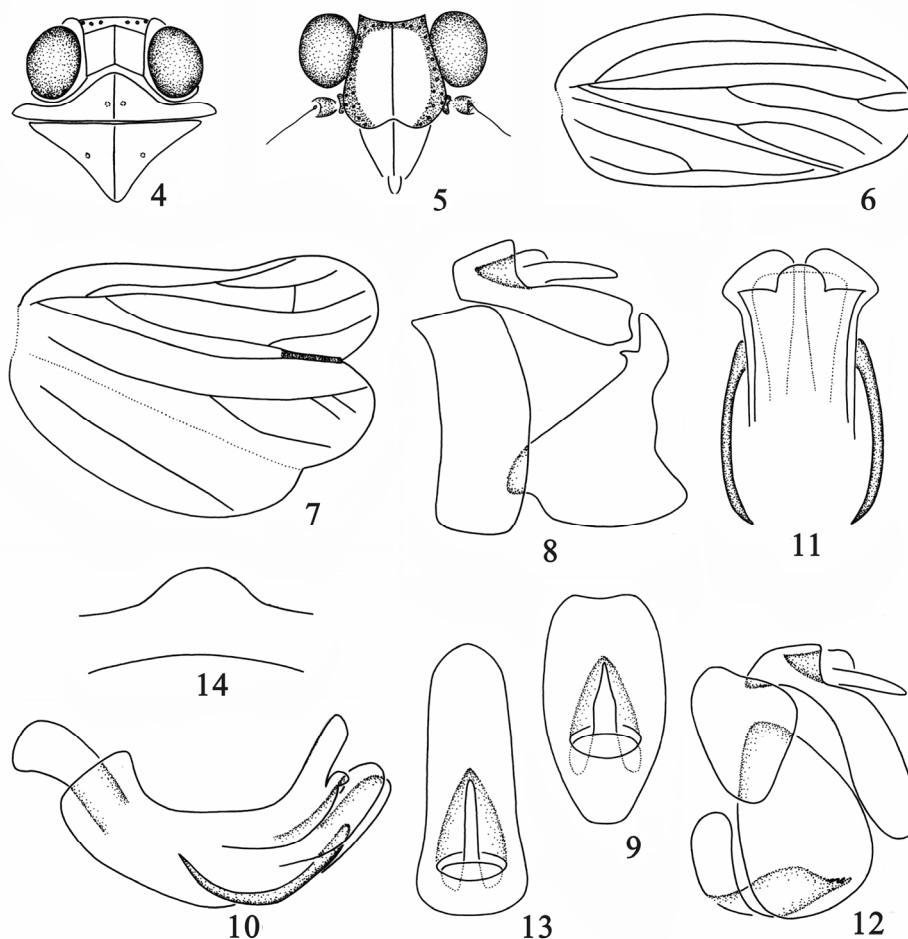
Body brown with dark brown spots (Fig. 1). Vertex brown with dark brown spots. Eyes brown. Frons brown with pale brown spots (Fig. 2). Tegmen brown with irregular dark brown patches, cross veins pale brown (Fig. 1). Abdomen dorsally and ventrally pale brown, apex of each segment brown.



Figures 1–3. *Parasarima triphylla* sp. nov. (♂). 1. Holotype, dorsal view; 2. Same, head, ventral view; 3. Same, lateral view.

Vertex subhexagonal with elliptical spots near hind margin, disc distinctly depressed; anterior margin slightly convex angularly, hind margin slightly concave, median carina feeble, 1.5× wider at apex than length in midline (Fig. 4). Frons coarse with fine granules, disc slightly elevated, widest at base, with median carinae and one inverted U-shaped carinae; area between lateral carina and lateral margin more or less darker and with lots of tubercles; frons 1.3× longer than widest part, 1.2× wider at widest part than at base (Fig. 5). Frontoclypeal suture distinctly curved (Fig. 5). Clypeus smooth with median carina (Fig. 5). Mesoscutum with median carina, 1.8× wider at widest part than length in midline. Tegmen nearly

quadrilateral, anterior margin nearly parallel to sutural margin, longitudinal veins distinct; tegmen with Sc and R forked near base, Sc long and reaching over middle, M 3-branched, Cu forked, “Y” vein not reaching over clavus, concave area among veins with irregular maculae; wing slightly shorter than tegmen,  $0.95\times$  length of tegmen, with 3 lobes, obviously wider than tegmen; dorsal lobe with cross veins, median lobe with veins forked at apex, without cross vein, 3A simple (Figs. 6, 7). Hind tibia with 2 lateral teeth, spinal formula of hind leg 6-7-2 (Fig. 3).



Figures 4–14. *Parasarima triphylla* sp. nov. 4. Head and thorax, dorsal view; 5. Frons and clypeus; 6. Tegmen; 7. Wing; 8. Male genitalia, left side; 9. Male anal segment, dorsal view; 10. Aedeagus, lateral view; 11. Apex of aedeagus, dorsal view; 12. Female genitalia, left side; 13. Male anal segment, dorsal view; 14. Female genital scale, ventral view.

**Male genitalia.** Anal segment in dorsal view distinctly longer than greatest width apically, lateral margins strongly divergent from base to apex, apical margin slightly concave at middle, anal foramen situated at basal half, lateroapical angle slightly roundly produced (Fig. 9). Pygofer in lateral view with caudal margin evenly rounded (Fig. 8). Phallus in profile shallowly curved with 2 long spiniform processes directed cephalad arising near apex; dorsal

lobe in dorsal view with apex divided into three lobes, apical margin convex and round, lateroapical angle acute and lateral margin smooth; lateral lobes branched, apical margin obtusely round; ventral lobe in ventral view not split, apical margin obtuse and nearly straight at middle (Fig. 10). Genital style moderately long, nearly triangular, apical margin more or less tapering and rounded, dorsal margin produced into one tapering process near apex; base of process acuminate and apex obtusely rounded in caudal view (Fig. 11).

Female genitalia. Anal segment in dorsal view obviously longer than wide, widest at base, apical margin strongly convex at middle, lateral margins slightly divergent from apex to base and anal foramen situated at base. Ovipositor with first valvula curved dorsally, with one 3-toothed process near lateral margin, apical margin without tooth (Figs. 12, 14). In lateral view ninth tergum and third valvula nearly triangular, with apical margin tumid and polished. Pregenital sternite with apical margin distinctly convex at middle.

**Holotype.** ♂, **China:** Guangxi, Fangcheng, Mt. Pinglongshan, 01-XII-2001, coll. Zongqing WANG; **Paratypes.** 1♂, **China:** Hubei, Tongshan, Jiugongshan, Hengshi, 08-XIII-2001, coll. Yanli CHE; 1♂3♀, **China:** Guangxi, Shiwangdashan Senlingongyuan, 29–30-XI-2001, coll. Zongqing WANG; 1♀, same data as holotype.

Remarks. This species is related to *P. pallizona* (Matsumura, 1938), from which the main differences are: 1) tegmen with M 3-branched (M forked in *P. pallizona*); 2) spinal formula of hind leg 6-7-2 (6-9-2 in *P. pallizona*); 3) genital style with base of process acuminate and apex obtusely rounded (base and apex of process obtusely rounded in *P. pallizona*).

Etymology. The specific epithet is derived from the Latin word “*triphyllus*” meaning “three-leafed”, referring to the tri-lobed dorsal lobe of the aedeagus.

### Acknowledgments

We are sincerely grateful to Dr. Murray Fletcher (Orange Agricultural Institute, Industry & Investment NSW, Australia) for commenting on the manuscript. This study is supported by the National Natural Science Foundation of China (30970388) and the Ministry of Education of China (TS2011XBNL061).

### References

- Chan ML, Yang CT. 1994. *Issidae of Taiwan (Homoptera: Fulgoroidea)*. Chen Chung Book, Taichung, 188 pp.
- Gnezdilov VM. 2009. Revisionary notes on some tropical Issidae and Nogodinidae (Hemiptera: Fulgoroidea). *Acta Entomologica Musei Nationalis Pragae*, 49: 75–92.
- Matsumura S. 1938. Homopterous insects collected by Mr. Tadao Kano at Kotosho, Formosa. *Insecta Matsumurana*, 12: 147–153.