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## A NEW SPECIES OF THE GENUS *SONAGARA* (LEPIDOPTERA: THYRIDIDAE) FROM CHINA AND VIETNAM

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### ABSTRACT

A new species of the genus *Sonagara* Moore, 1882 (Lepidoptera: Thyrididae: Striginae), *S. bifurcatis* **sp. nov.**, is described from southern China and northern Vietnam. The new species is similar to *S. strigipennis* Moore in external morphology, but can be easily distinguished by the forewing having a brownish black line stretched from the apical angle to the outer side of inner margin, and the male genitalia with gnathos having peg-like teeth and with a short and broad valva. Adults and male genitalia are illustrated. The holotype is deposited in the Department of Entomology, South China Agricultural University, Guangzhou, China.

**Key Words:** Lepidoptera, Thyrididae, Striginae, *Sonagara*, new species, China, Vietnam

### RESUMEN

Se describe una nueva especie del género *Sonagara* Moore, 1882 (Lepidoptera: Thyrididae: Striginae), *S. bifurcatis* **sp. nov.** del sur de China y el norte de Vietnam. La nueva especie es similar a *S. strigipennis* Moore en la morfología externa, pero se pueden distinguir fácilmente por el ala delantera que tiene una línea de color negro pardusco que se extiende desde el ángulo apical hasta el lado exterior del margen interno y por la genitalia del macho que tiene el gnathos con dientes tipo estaca y con una valva corta y ancha. Se ilustra la genitalia del macho adulto. El holotipo es depositado en el Departamento de Entomología de la Universidad de Agricultura del Sur de China, Guangzhou, China.

**Palabras Clave:** Lepidoptera, Thyrididae, Striginae, *Sonagara*, nuevas especies, China, Vietnam

The genus *Sonagara* was established by Moore in 1882 on the basis of the type species *S. strigipennis* Moore, 1882. Hampson (1893) synonymized the genus *Sonagara*, *S. strigipennis* and other similar taxa with *Strigina* Guenée, 1877 and *S. scitaria* (Walker, 1862), and many authors followed his treatment (Hampson 1897; Seits 1912; Della Torre 1914; Matsumura 1931; Inoue 1955; Chu & Wang 1991). Gaede (1932) pointed the difficulty of the *S. scitaria* complex, noting that "many species or forms were united with it [*S. scitaria*] as synonyms, which are better kept separated", and raised 2 taxa, *Strigina vialis* and *S. strigipennis*, to specific rank.

In the revisional study on the subfamily Striginae, Whalley (1976) revalidated *Sonagara* as a monobasic genus, distributed in India, Sikkim, Formosa [Taiwan], Borneo and Hainan, and enumerated the generic features as follows: eyes without interfacetal hairs; fore tibia with tubercle, hind tibia with 2 pairs of spurs; tarsi

each with rows of spines; forewing with  $M_1$  to  $R_3$  separately from cell; hindwing with  $S_c+R_1$  and  $R_3$  approaching but not touching; uncus modified with 2 lateral forks; gnathus modified, without peg-like teeth; valve with prominent apical sacculus process; female with double frenulum, sometimes triple; ostial plate relatively simple; signum in bursa. Robinson et al. (1994) added Burma [Myanmar] and Thailand to the distribution. In addition, Chu & Wang (1991) revised the Chinese Striginae, and described *Strigina curvida* and *Strigina stricta*, which were synonymized with *Sonagara strigipennis* by Owada & Wang (2011).

In our surveys, 1 species, which is very similar to *S. strigipennis* in wing maculation but clearly different in the genitalia, was collected at Nanling National Nature Reserve in Guangdong province, South China, and adjacent areas. By our close examination of other related species, we confirm it as a new species, and describe it in this article.

## MATERIALS AND METHODS

The description is based on the dried specimens from the Department of Entomology, South China Agricultural University (SCAU), Guangzhou, and the Department of Zoology, National Museum of Nature and Science (NSMT), Tsukuba. Photographs of adults were taken by Nikon Coolpix 4500 digital camera. Genitalia were dissected under the microscope after the abdomen was dipped in boiling 10% NaOH solution for 3-5 min. The images of genitalia were taken by Carl Zeiss Discovery V12. The photos were combined by Adobe Photoshop software 6.0.

## RESULTS

*Sonagara bifurcatis* **sp. nov.** (Figs. 1-6)

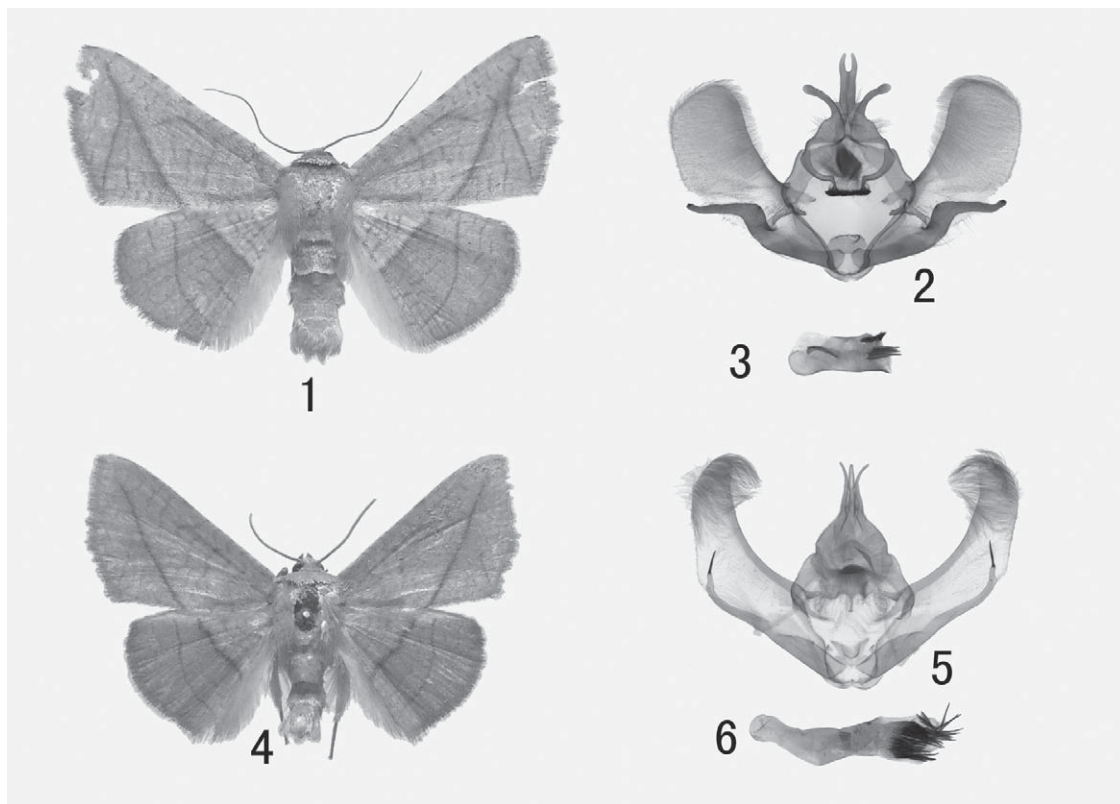
## Diagnosis

This new species is very similar to *S. strigipennis* Moore in external morphology, but can be distinguished from it by the following features: the forewing has a brownish black line stretching from the apical angle to the outer side of inner

margin; the oblique lines running from the apex of forewing to hindwing are more prominent; basal part of hindwing paler; the uncus wider, with 3 processes, middle one forked apically, and other 2 digitate; the gnathos has peg-like teeth; the valva shorter and broader; the harpe finger-shaped, sclerotized, broad at base, and with a minute apical hook; the aedeagus shorter, and with a crescent-shaped cornutus basally.

## Description: Male

Wingspan 28-33 mm. Head whitish yellow, collar grayish white; antenna filiform, brownish yellow; labial palpus short, yellowish brown, proboscis long, curled downwards; compound eye surrounded by yellowish brown scales. Thorax and tegula with sliver yellowish white scales, baenopoda yellowish white. Abdomen with a broad white stripe close to thorax, urosome with a narrow grayish-yellow stripe. Forewing light yellow, costal margin tinged slightly with grey, pagina with some irregular brown transverse lines, strongest one from inner side of apical angle to middle of posterior margin, dark brown oblique line starting below apical angle to metagonia,



Figs. 1-6. 1. Male adult of *Sonagara bifurcatis* **sp. nov.**, holotype. 2. Male genitalia, holotype. 3. Aedeagus. 4. Male adult of *Sonagara strigipennis* Moore. 5. Male genitalia. 6. Aedeagus.

apical angle slightly round, outer margin curved, fringe scales grayish-yellow. Hindwing, basal half whitish light yellow and with light red reticulate line, apical half light yellow, medially with an distinct dark brown line, which converges with the forewing oblique line at the costal margin, with a narrower black brown line at the outer said of the distinct line, which few inconspicuous brownish black lines.

#### Male Genitalia

Uncus with one median process and 2 lateral curved processes, median process broad basally, apically forked. Gnathos robust and fused distally, armed with peg-like teeth. Tegumen languet-shaped, with long hair on terminal part. Valva broad medially, clothed with hair, as long as uncus, with 2 process at base. Harpe finger-shaped, strongly sclerotized, broad at base, slightly narrow at middle, apex slightly curved and with a minute hook. Juxta cap-shaped. Vinculum broad triangle-shaped, apex smooth. Saccus arc-shaped, nearly flat. Aedeagus cylindrical, with a crescent-shaped cornutus basally,  $\frac{1}{3}$  as long as aedeagus, terminal part with 2 rows of long spines at the inner side.

#### Female

Unknown

#### Type Material

**HOLOTYPE:** Male, CHINA, Guangdong Province, Mt. Nanling, 26-VII-2011, leg. Hai-ming Xu. In SCAU. **PARATYPES:** 1 male, data same as holotype; 1 male, same locality, 29-VII-2011; 1 male, 23-25-IV-2004; 16 males, same locality, 11-18-V-2005; 2 males, same locality, 18-22-V-2004; 12 males, same locality, 21-28-VI-2008; 10 males, same locality, 7-8, 12-13-VII-2007; 3 males, same locality, 27-31-VII-2008; 1 male, same locality, 1-6-VIII-2006; 1 male, same locality, 5-11-IX-2005; 1 male, Longtanjiao, 1,100 m, Qinyuan, Guangdong, 10-VII-2007, 2 males, Mao'ershan, Guilin, Guangxi, 6-10-VIII-2007, leg. Min Wang et al.; 2 males, Nang Oa, 800 m, near Mt. Pia Oac, Cao Bang, Vietnam, 11-V-1997, leg. Mamoru Owada. In SCAU, NSMT and IEBR.

#### Distribution

China (Guangdong and Guangxi Provinces), Vietnam (Cao Ban Province).

#### Etymology

The species name refers the specific character of the uncus with 2 forks.

#### Notes

The gnathos of this species has a series of peg-like teeth, which are absent in *Sonagara strigipennis*, the type species of genus *Sonagara*. As was illustrated by Whalley (1976, figs. 1A-K), the outline of gnathos is quite variable in the genus *Striglina*. Excepting the gnathos structure, the male genitalia of this species have same conformation as those of *S. strigipennis*.

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