

Short Paper

## *Scirpophaga tongyaii* Lewvanich, 1981 (Lepidoptera: Crambidae: Schoenobiinae), a new record from Iran

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**Abstract:** An examination of the entire Schoenobiinae material preserved in the Hayk Mirzayans Insect Museum (HMIM) of the Iranian Research Institute of Plant Protection (IRIPP) revealed the presence of 19 males and 18 females of *Scirpophaga tongyaii* Lewvanich collected in Kerman Province. This species is newly reported for the fauna of Iran. Brief description of the species as well as the figures of the adults and both male and female genitalia are presented.

**Keywords:** Crambidae, Schoenobiinae, *Scirpophaga tongyaii*, new record, Iran

### Introduction

The Schoenobiinae with 236 described species in 29 genera (Nuss *et al.*, 2003-2016) are cosmopolitan and can be found in wetlands. Their larvae are mostly stem borers in hygrophilous Poaceae, Juncaceae and Cyperaceae (Speidel, 2005), and the two genera *Scirpophaga* and *Rupela* include pests of rice in the Old World and New World, respectively (Munroe and Solis 1999).

So far, four species, namely *Schoenobius gigantella* (Denis and Schiffermüller, 1775), *Donacaula niloticus* (Zeller, 1867) (as *Shoenobius alpherakii* Staudinger in Amsel, 1959, 1961 and in Mirzayans and Kalali, 1970), *Scirpophaga praelata* (Scopoli, 1763) and *S. innotata* (Walker, 1863) have been reported from Iran (Amsel, 1959, 1961; Mirzayans and Kalali 1970; Sobh Zahedi *et al.* 2014) but the presence of the latter one, because of its restricted geographical distribution, is doubtful.

During the study of Schoenobiinae material preserved in the Hayk Mirzayans Insect Museum (HMIM), Iranian Research Institute of Plant Protection (IRIPP), several *Scirpophaga* specimens collected from Kerman Province were found and identified as *S. tongyaii* Lewvanich, 1981. This species is newly reported for the fauna of Iran.

The genus *Scirpophaga* includes 41 described species worldwide (Nuss *et al.*, 2003-2016) which are distributed in the Palaearctic, Ethiopian, Oriental and Australian Regions (Chen and Wu, 2014) and most of them are stem borers of graminaceous crops (Nuss *et al.*, 2003-2016). As stated by Speidel (2005), scobinate surface of corpus bursae in the female genitalia would be a probable autapomorphic character for this genus. Lewvanich (1981) has divided the genus into seven species-groups; the newly reported species belongs to *excerptalis*-group, while the two remaining species reported from Iran so far are members of *praelata*-group (*S. praelata*) and of the *incertulas*-group (*S. innotata*). As stated by Chen *et al.* (2006), X-shaped dorsal sclerotized thickening of tegumen, spine-like subteguminal processes, and manica with two groups of strong spines are diagnostic features of *excerptalis*-group.

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## Materials and Methods

Genitalia dissections followed Robinson (1976). Photographs were taken using a digital Still camera DSC-F717 and a Dino-Eye Microscope Eye-piece camera. The Iranian specimens compared with specimens from China which had been identified as *Scirpophaga tongyaii* by Dr. Fuquiang Chen. All of the examined specimens are deposited in the Hayk Mirzayans Insect Museum (HMIM) of the Iranian Research Institute of Plant Protection (IRIPP).

## Results

The adult examined specimens are briefly described as follow:

### *Scirpophaga tongyaii* Lewvanich, 1981

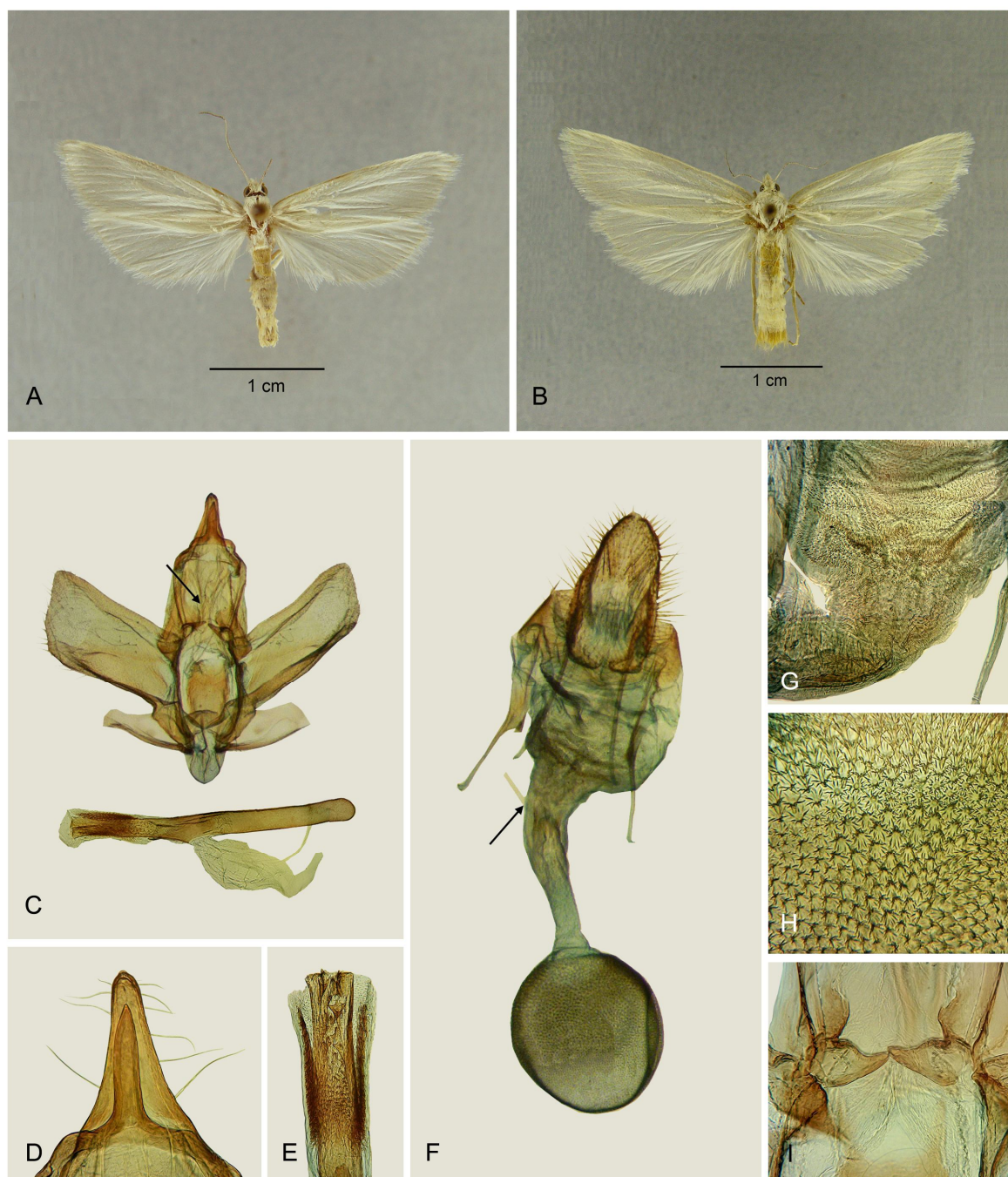
Material examined- **Kermān Prov.:** 7 ♂♂ 5 ♀♀, Jiroft, Esfandagheh, Sargaz, 1650 m, 20.V.1977, Safavi, Pāzuki leg. (GS: HA-2121, HA-2141, HA-2142), 1 ♂ 4 ♀♀, Jiroft, 30 km. NE. Jiroft- Saghdar Rd., 1650 m, 17.V.1977, Safavi, Pāzuki leg., 4 ♂♂ 3 ♀♀, 35 km. Jiroft, Mohammad Ābād, 3.-4.V.1973, Borumand leg., 1 ♂, Jebāl-e Bārez, 15.VI.1971, Hāshemi, Zaim leg., 1 ♂, Dehbakry, 13.VI.1967, Mirzāyāns, Pāzuki leg., 3 ♂♂, Dehbakry (Bam- Jiroft Rd.), 2400-2600 m, 19, 20.V.2004, Rajāei leg. (GS: HA-2120), 2 ♂♂ 6 ♀♀, Bam, Dehbakry, 2300 m, 23.V.2004, Rajāei leg.

**Diagnosis.** Male (Fig. 1A): wingspan 27.5-34.0 mm; forewing length 13.5-16.5 mm (n = 15). Female (Fig. 1B): wingspan 26.5-41.0 mm; forewing length 12.5-20.0 mm (n = 18). Male and female similar in the shape and pattern of both fore-and hindwing, and differing for the last segment of the abdomen which bears a pale ochreous scale tuft in the female (Figs 1A, B). Forewing color white to pale creamy-white and partly glossy, rarely with slightly darker shadow in costal margin, underside fuscous in males, white in females and more glossy than the upperside; hindwing

of the same color as the forewing both in upper- and underside. Head and thorax of both sexes mostly similar to each other, except the labial palpi, which are covered with snowy-white scales throughout in females, without yellowish scales basally; while in the examined males, they are pale yellowish at the posterior end of the 1<sup>st</sup> segment as well as distal end of the second one; ventral cilia of antennae of the male dense and almost as long as the width of flagellum, while in the female cilia of antennae are less dense and clearly shorter than the width of flagellum.

Male genitalia (Figs 1C-E, I): Dorsal sclerotized thickening of tegumen in form of two lines tend to join forming a "X", spine like subteguminal processes, and a broad uncus are diagnostic characters of the male genitalia of this species according to Chen *et al.* (2006). In the examined males, gnathos slightly shorter than uncus and pointed apically (Figs 1C, D); dorsal sclerotized thickenings of tegumen either in the shape of two narrowly separated lines (Fig. 1C) or a X-shaped structures; sclerotized subteguminal process similar to scorpion's venomous stinger (Fig. 1I). Length of the phallus in the examined males slightly more than twice the length of valve, with entrance point of ductus ejaculatorius at the distal end of phallus, manica with two groups of spines, and cornuti in form of dense spines extended towards the middle part (Figs 1C, E).

Female genitalia (Figs 1F-H): Absence of antrum, corpus bursae weakly wrinkled, membranous, not sclerotized, but entirely lined with dense sclerotized spinules (Figs 1F, H), ostium bursae lined with not too densely arranged spines, and ductus bursae bearing annulated sclerotized plates between ostium bursae and ductus seminalis (Figs 1F, G) are the main characteristics of the female genitalia according to Chen *et al.* (2006). In the examined females, ductus seminalis arises from the dorsal surface of ductus bursae at posterior one-fourth (Fig. 1F).



**Figure 1** *Scirpophaga tongyaii* Lewvanich, adults and genitalia. A) Adult male; B) Adult female; C-E, I) Male genitalia. C: Main body and phallus in ventral and lateral views, respectively (distal end of the phallus to the left), D: Posterior end including uncus and gnathos, E: Distal end of phallus in dorso-lateral view, I: Subteguminal processes; F-H) Female genitalia. F: Main body in ventral view, G: Posterior part of ductus bursae, H: Dense spines lining the surface of corpus bursae. Arrow in figure "C" indicates dorsal sclerotized thickenings of tegumen which are in the shape of two narrowly separated lines; arrow in figure "F" indicates the arising point of ductus seminalis.

**Distribution**

Thailand, Burma, India, Myanmar, China: Hainan, Yunnan (Lewvanivh, 1981; Chen *et al.*, 2006; Chen and Wu, 2014).

**Remarks**

This species is newly reported for the fauna of Iran.

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گزارش گونه: *Scirpophaga tongyaii* Lewvanich, 1981 (Lepidoptera: Crambidae: Schoenobiinae) برای اولین بار از ایران

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چکیده

ضمن مطالعه نمونه‌های زیرخانواده Schoenobiinae موجود در موزه حشرات هایک میرزایانس مؤسسه تحقیقات گیاه پزشکی کشور، گونه *Scirpophaga tongyaii* Lewvanich شناسایی شد که متشکل از ۱۹ نمونه نر و ۱۸ نمونه ماده بود که همگی از استان کرمان جمع‌آوری شده بودند. این گونه برای اولین بار از ایران گزارش می‌شود. در این مقاله این گونه به اختصار معرفی شده و تصاویر مربوط به افراد بالغ و اندام‌های تناسلی نر و ماده ارائه شده‌اند.

واژگان کلیدی: *Scirpophaga tongyaii*, Schoenobiinae, Crambidae، گزارش جدید، ایران