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Notes on Three Encrytid Parasitoids of Trioza syzygii in Taiwan with Description of One New Species (Hymenoptera: Encyrtidae)【Research report】

臺灣產寄生蒲桃個木蝨之三種跳小蜂(膜翅目：跳小蜂科)附一新種之描述【研究報告】

Zhi-Hong Xu, Liang-Yih Chou and Shi-Cheng Hong
徐志宏、周樑鎰*、洪士程

*通訊作者E-mail : chouly@wufeng.tari.gov.tw

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Abstract

Three species of encyrtid parasitoids (Hymenoptera: Encyrtidae) were reared from nymphs of Trioza syzygii Li and Yang (Homoptera: Psyllidae) in Taiwan for the first time. Among them, Psyllaephagus stenopsyllae (Tachikawa) is Taiwan, Psyllaephagus taiwanus Xu sp. n. is new to science, Syrphophagus taiwanus Hayat and Lin is a hyperparasitoid . All species belong to Encyrtidae. The new species is described and illustrated in this paper.

摘要

蒲桃個木蝨(Trioza syzygii Li and Yang)(同翅目：木蝨科)是臺灣新記錄危害蒲桃(Syzygium jambos (L.) Alston)與蓮霧(S. samarangense (Blume) Merrill and Perry)之害蟲。本文首次記錄寄生該木蝨之三種跳小蜂：窄木蝨跳小蜂(Psyllaephagus stenopsyllae(Tachikawa))、臺灣木蝨跳小蜂(Psyllaephagus taiwanus Xu sp. n.)及臺灣蚜蠅跳小蜂(Syrphophagus taiwanus Hayat and Lin)。其中P. stenopsyllae 為臺灣新記錄，而S.taiwanus 則可能為重複寄生蜂。本文附新種之描述與形態特徵圖。

Key words: Trioza syzygii, Encyrtidae, new species, Taiwan.

關鍵詞: 蒲桃個木蝨、跳小蜂科、新種、臺灣

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Notes on Three Encyrtid Parasitoids of *Trioza syzygii* in Taiwan with Description of One New Species (Hymenoptera: Encyrtidae)

Zhi-Hong Xu Institute of Applied Entomology, Postbox 3-398, Zhejiang University, Hangzhou 310029, China
Liang-Yih Chou* Department of Applied Zoology, Taiwan Agricultural Research Institute, Taichung 413, Taiwan, R.O.C.
Shi-Cheng Hong Department of Plant Protection, Chiayi Agricultural Experiment Station, Taiwan Agricultural Research Institute, Min-Chuan Road, Chiayi 600, Taiwan, R.O.C.

ABSTRACT

Three species of encyrtid parasitoids (Hymenoptera: Encyrtidae) were reared from nymphs of *Trioza syzygii* Li and Yang (Homoptera: Psyllidae) in Taiwan for the first time. Among them, *Psyllaephagus stenopsyllae* (Tachikawa) is newly recorded from Taiwan, *Psyllaephagus taiwanus* Xu sp. n. is new to science, *Syrphophagus taiwanus* Hayat and Lin is a hyperparasitoid. All species belong to Encyrtidae. The new species is described and illustrated in this paper.

Key words: *Trioza syzygii*, Encyrtidae, new species, Taiwan.

Introduction

Trioza syzygii Li and Yang (Homoptera: Psyllidae) was recorded as a pest of *Syzygium cumini* (L.) Skeels (Myrtaceae) in Guangxi and Guangdong (Li and Yang, 1991). Recently, this species was found feeding on *S. jambos* (L.) Alston and *S. samarangense* (Blume) Merrill and Perry in Chiayi, Taiwan. In the present study, three species of encyrtid parasitoids were reared from nymphs of this pest. The first one is *Psyllaephagus stenopsyllae* (Tachikawa), which is newly recorded from Taiwan; the second is *Psyllaephgus taiwanus* Xu, sp. n., which is new to science; and the third is *Syrphophagus taiwanus* Hayat and Lin, which is a hyperparasitoid, but its real host is still unknown.

Previously described species are listed, and the new species is described and illustrated. The holotype and one paratype of the new species are deposited in the Taiwan Agricultural Research Institute; other specimens are deposited in the Institute of Applied Entomology, Zhejiang University, Hangzhou, China.

Psyllaephagus stenopsyllae (Tachikawa)

Metaprionomitus stenopsyllae Tachikawa, 1963: 182.
Psyllaephagus stenopsyllae: Trjapitzin,

*Correspondence address
e-mail:chouly@wufeng.tari.gov.tw

1967: 193.

Materials examined: TAIWAN: Chiayi, 20♀10♂, XII-1998, ex *T. syzygii* on *S. jambos* (S. C. Hung), CI99902-I.

Hosts: *Stenopsylla nigricornis* Kuwayama (Tachikawa, 1963) and *Trioza syzygii* (Psyllidae).

Distribution: Japan and Taiwan (new record).

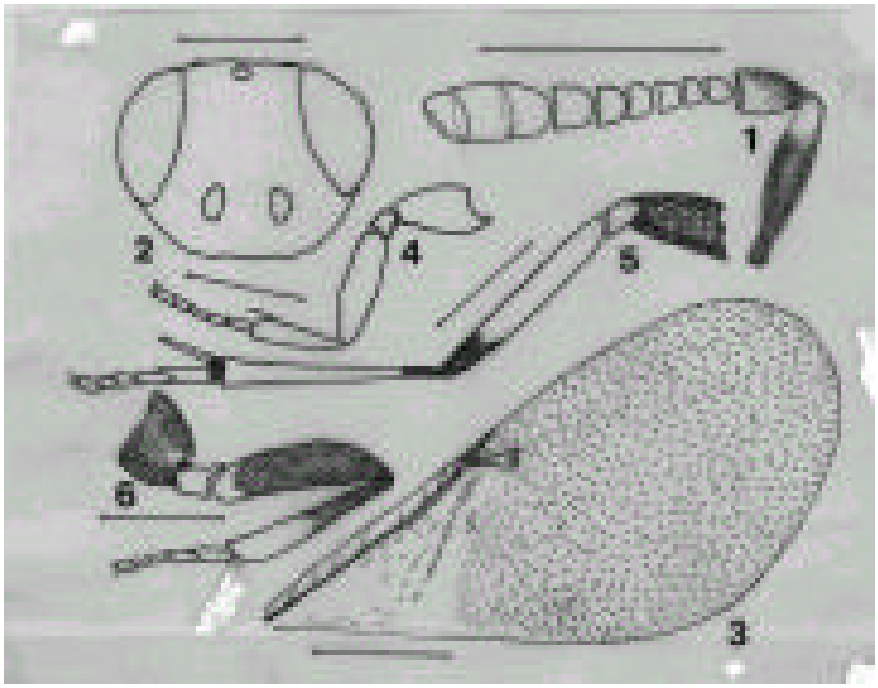
Psyllaephagus taiwanus Xu, sp. n.
(Figs. 1-6)

Female: Body length 0.95 mm.

Color: Black, with weak purple and green metallic color. Following parts yellowish brown: tip of antennal scape, most of pedicel, and flagellum; following parts yellowish white: maxillary palpi and labial palpi, fore leg, mid-leg except coxa, apical 0.33 of femur, and basal 0.2 of tibia, and hind leg except coxa, most of femur, and basal 0.6 of tibia. Wings hyaline.

Head: In dorsal view 2.2 times as wide as long, 2.9 times as wide as width of frontovertex; ocelli forming a rectangular triangle; POL, OCL, and OOL as long as 3.0, 2.0, and 0.5 times diameter of anterior ocellus, respectively, anterior ocellus separated from post ocellus by 0.8 times POL; head in frontal view 1.3 times as wide as high, toruli separated from each other by 1.4 times their own longest diameters, upper margin above lowest level of eye; torulus separated from clypeus by 1.1 times longest diameter of torulus; mandible without clear teeth; maxillary palpi 4-segmented, with pointed apex, labial palpi 3-segmented, with rounded apex.

Antenna: Scape ventrally slightly expanded, 3.9 times as long as maximum width, pedicel 1.7 times as long as wide at apex, 2.6 times as long as first



Figs. 1-6. *Psyllaephagus taiwanus* Xu, sp. n.: 1, antenna; 2, head in frontal view; 3, fore wing; 4, fore leg; 5, mid-leg; 6, hind leg. Scales = 0.2 mm.

funicular segment, longer than first and second funicular segments combined; first funicular segment subquadrate, 0.9 times as long as wide, second to sixth funicular segments widened apically, sixth funicular segments subquadrate; clava 3-segmented, as long as third to sixth funicular segments combined, slightly wider than sixth funicular segment, slightly oblique truncated apically.

Thorax: Mesoscutum longitudinally sculptured; axillae horizontally sculptured, longitudinal sculpture on scutellum deeper and finer than that on mesoscutum, and with 4 pairs of setae on scutellum.

Fore wing: 2.2 times as long as wide; submarginal and parastigmal vein with 4 setae respectively, submarginal, parastigmal, marginal, and postmarginal vein as long as 5.0, 3.1, 0.44, and 0.55 times stigmal vein, respectively; basal triangle with sparse setae, speculum with 10 setae in 1 row, outside speculum uniformly pubescent.

Leg: Mid-tibia with 6 spines apically, spurs of mid-tibia as long as basal tarsus.

Gaster: Short, cardiac, rounded apically, pygostyli located on basal 0.4 of gaster, hypopygium not reaching apex of gaster, ovipositor slightly exserted.

Measures: With mid-tibia length as 100 (= 0.38 mm), then thorax 147, gaster 96, ovipositor 87, gonostylus 16, and width of outer plate of ovipositor 13.

Male: Unknown.

Materials examined: Holotype ♀, TAIWAN: Chiayi, XII-1998, ex. *T. syzygii* on *S. jambos* (S. C. Hung). Paratypes: 4 ♀, same data as holotype, C199901-1.

Host: *Trioza syzygii* (Psyllidae).

Distribution: Taiwan.

Diagnosis: This new species is similar to *Psyllaephagus colposceniae* Trjapitzin 1969, but can be distinguished by the following combined characters: (1) the sixth funicular segment subquadrate, the latter with the sixth funicular segment clearly wider than long; (2) antennal clava as long as third to sixth funicular segments combined, slightly obliquely truncated apically, the latter with antennal clava as long as second to sixth funicular segments combined, pointed apically; (3) anterior femur white, mid and posterior femora more or less darkened, the latter with only posterior femora darkened.

Syrphophagus taiwanus Hayat and Lin

Syrphophagus taiwanus Hayat and Lin, 1988: 100.

Material examined: TAIWAN: Chiayi, 1♀, XII-1998, ex. *T. syzygii* on *Syzygium jambos* (S. C. Hung), C199903-1.

Hosts: Hyperparasitoids of *Diaphorencyrtus aligarhensis* (Shafee, Alam and Agarwal) (Encyrtidae) and *Tamarixia radiata* (Waterston) (Eulophidae) (Chien *et al*., 1988, 1991; Hayat and Lin, 1988). Reared from nymphs of *T. syzygii* on *S. jambos*, and probably hyperparasitoids also.

Distribution: Taiwan.

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臺灣產寄生蒲桃個木蝨之三種跳小蜂(膜翅目：跳小蜂科)附一新種之描述

徐志宏　浙江農業大學應用昆蟲學研究所　浙江省杭州華家池 310029

周樑鎰*　行政院農業委員會農業試驗所應用動物系　臺中縣 413 霧峰鄉中正路 189 號

洪士程　行政院農業委員會農業試驗所嘉義農業試驗分所　嘉義市 600 民權路 2 號

摘　要

蒲桃個木蝨(*Trioza syzygii* Li and Yang)**同翅目：木蝨科**)**是臺灣新記錄危害蒲桃**(*Syzygium jambos* (L.) Alston)**與蓮霧**(*S. samarangense* (Blume) Merrill and Perry)**之害蟲。本文首次記錄寄生該木蝨之三種跳小蜂：窄木蝨跳小蜂**(*Psyllaephagus stenopsyllae* (Tachikawa))**、臺灣木蝨跳小蜂**(*Psyllaephagus taiwanus* Xu sp. n.)**及臺灣蚜蠅跳小蜂**(*Syrphophagus taiwanus* Hayat and Lin)**。其中** *P. stenopsyllae* **為臺灣新記錄，而** *S. taiwanus* **則可能為重複寄生蜂。本文附新種之描述與形態特徵圖。**

關鍵詞：蒲桃個木蝨、跳小蜂科、新種、臺灣。