Pyrex Journal of Biodiversity and Conservation

Vol 1(1) pp.10-13 June, 2016
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http://www.pyrexjournals.org/pjbc
ISSN: 2985-8844

Full Length Research Paper

Camarotoscena trjapitzini Loginova, a new record for Psylloidea (Hemiptera) from Iran

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Received 10th April, 2016; Accepted 15th June, 2016

Abstract

Psyllids of the Palearctic genus *Camarotoscena* Haupt, 1935 (Liviidae: Liviinae) are associated with poplar trees and distribute in Central and Southern Europe, Afghanistan, Armenia, Azerbaijan, China, Iran, Iraq, Kirgizstan, Mongolia, Russia, Tajikistan, Turkmenistan, Turkey and Uzbekistan, so far. A study was conducted to collect and identify the psyllid fauna of the Kurdistan province of Iran during 2012 and 2013. *C. trjapitzini* Loginova, 1968, previously known only from Armenia, was collected during the study in Malkeshan Sofla, Sanandaj, the center of Kurdistan province, on *Populus* sp. This is the first record of the species from Iran.

Keywords: Psyllids, Poplar trees, Fauna, Iran.

INTRODUCTION

So far, about 4000 species of psyllids have been identified in the world (Malenovsky *et al.,* 2012, Mifsud and Burckhardt 2002). Based on the latest classification introduced by Burckhardt and Ouvrard (2012), the superfamily Psylloidea includes eight families, namely, Aphalaridae, Liviidae, Carsidaridae, Homotomidae, Triozidae, Psyllidae, Calophyidae, and Phacopteronidae. These insects feed on plant sap and mostly phloem and often tend to be host-specific. Some species of psyllids make galls on the stems and leaves of their hosting plant (Burckhardt 2008). A few species are known as the vectors of plant pathogens and have limited hosting range (Hodkinson 1974).

The taxonomic position of *Camarotoscena* Haupt, 1935, has been revised by Burckhardt and Ouvrard (2012), from family Psyllidae to Liviidae and subfamily Liviinae (=Paurocephalinae). This genus is distributed in the Palearctic regions. The psyllids of the genus *Camarotoscena* feed on poplar trees (*Populus* L.) and have been found in Central and Southern Europe, Afghanistan, Armenia, Azerbaijan, China, Iran, Iraq, Kirgizstan, Mongolia, Russia, Tajikistan, Turkmenistan, Turkey and Uzbekistan, so far. Burckhardt and Lauterer (1993) studied Iranian psyllids thoroughly and reported three species of *Camarotoscena* including *C. fulgidipennis Loginova*, 1975, *C. hoberlandti* Vondráček, 1952 and *C. unicolor* Loginova & Parfentiev, 1958. The last species was transferred to *Synotomoza* by Burckhardt and Mifsud (2003). *C. fulgidipennis* was collected from *Populus pyramidalis*, and *C. hoberlandti* and *C. unicolor* were collected from other species of *Populus* (Burckhardt and Lauterer 1993).

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Table 1. Collection data of *Camarotoscena trjapitzini* in Iran

Date of collection	Region	Altitude	Host plant	Method of collection	No. of samples
8.viii.2013	Malkeshan Sofla, Sanandaj, IRAN: 35° 15' 24.79" N 46° 52' 4.74" E	1089 m	*Populus* sp. (Salicaceae)	Aspirator	2♂ & 3♀

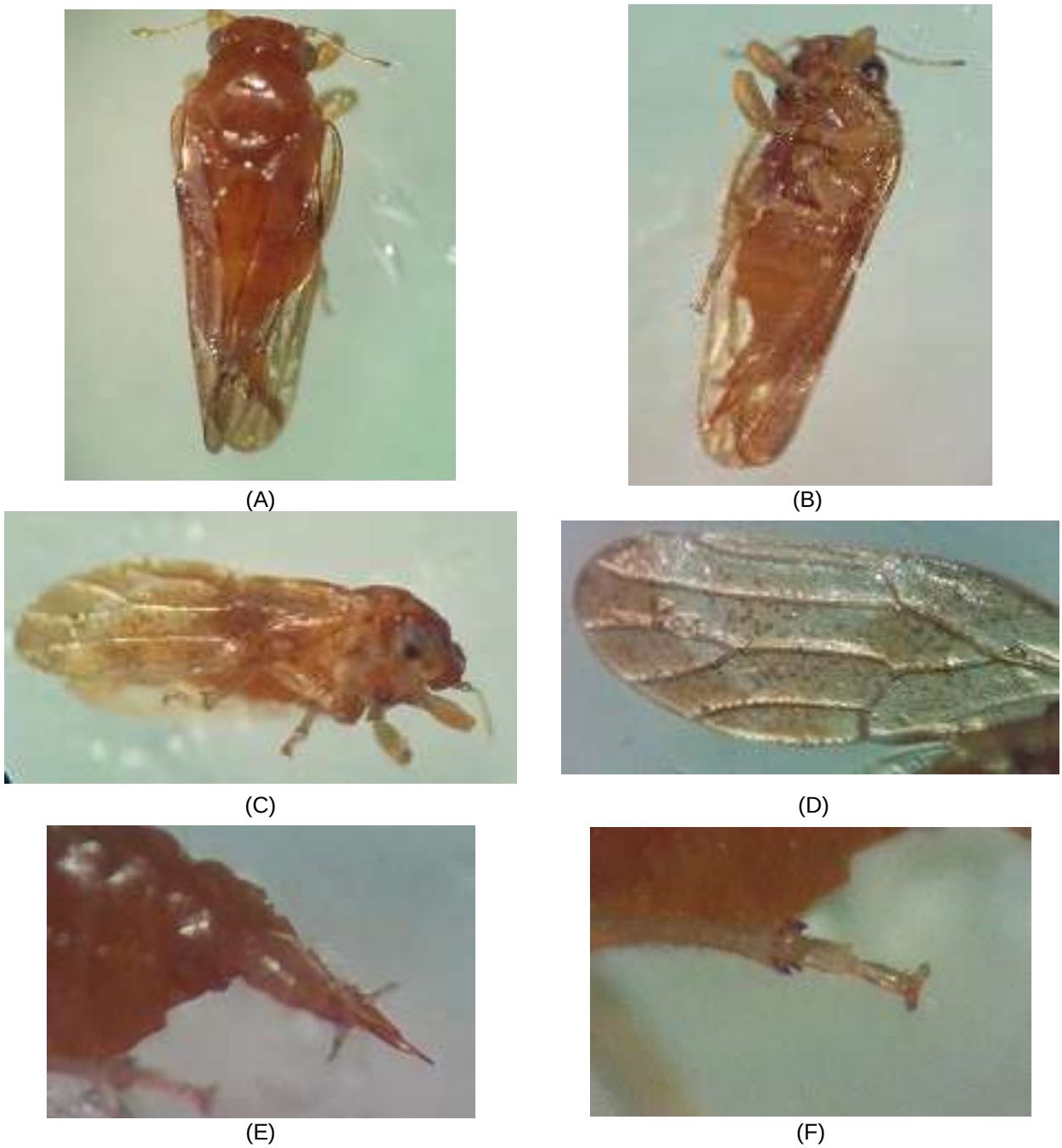

Figure 1. *Camarotoscena trjapitzini* (female): A) dorsal view (×20), B) ventral view (×20), C) lateral view (×20), D) forewing (×40), E) genitalia and F) hindtibia and hindtarsus (×40) (Original)

Table 2. Some morphological features of males and females of *Camarotoscena trjapitzini*

Feature	Male (mm)	Female (mm)
Body length	2.05-2.27	2.35-2.50
Vertex length	0.22	0.24-0.26
Vertex width	0.58-0.60	0.62-0.65
Vertex width between the front corners	0.37-0.40	0.42-0.45
Vertex width between the hind corners	0.32-0.35	0.35-0.37
Antenna length	0.49-0.52	0.52
Forewing length	1.67-1.75	1.87-2.00
Forewing width	0.67-0.75	0.78-0.82

Abaii and Adeli (2000) reported two species of psyllids, namely, *C. fulgidipennis* and *C. speciosa* (Flor 1861), feeding on poplar leaves in Iran. Based on their report, both species are of medium economic importance and have been found in northern, northwestern, and central provinces of Iran. Poplar psyllids are considered significant poplar-sucking pests in Iran, especially in Zanjan province, causing twisting of the leaves and galls due to adult and immature feeding of phloem sap (Tarasi *et al.,* 2005).

MATERIALS AND METHOD

The samples were collected from poplar trees of Malkeshan Sofla village of Sanandaj, the center of Kurdistan province, by an aspirator and then were immediately placed in 70% ethanol and were finally delivered to insect systematics laboratory of Department of Plant Protection, Azarbaijan Shahid Madani University, Tabriz, Iran for further studying and identification. The samples were studied using Leica binocular microscope MZ12. The samples were identified using Burckhardt and Lauterer (1993), Brown and Hodkinson (1998), Burckhardt and Hodkinson (1986), Burckhardt and Mifsud (1998, 2003), and Burckhardt and Önuçar (1993) and were confirmed by Dr. D. Burckhardt, Natural History Museum Basel, Switzerland.

RESULTS AND DISCUSSION

Camarotoscena trjapitzini Loginova, 1968, was first collected from *Populus* sp. through the study (Table 1).

Morphological characteristics

The head is down-curved, without genal processes. The thorax is wider than the head. The vertex is flat, but largely curved antero-posteriorly. Central part of each section of vertex shows small depressions. The compound eyes of males are brown-grey and those of the females are a bit reddish. The antennae are amber in color, and the legs are light yellow. The head and thorax are orange dorsally and yellow ventrally, such as the abdomen. However, these parts are covered by brown spots in male species (Loginova 1968) (Figure 1).

The forewings are leathery, covered by surface spinules, and have brown patterns. The hindwings are membranous, shiny and yellow with bold lines at the costal margin. The marginal veins of the wings and pterostigma are mostly light and rather transparent, but the other veins of the wings are mostly light brown. The pterostigma is relatively membranous in origin. Meracanthus is horn-shape. Metatibia is relatively short, without basal spine, weakly widening apically, bearing an incomplete crown of 11 sclerotized apical spurs. Metabasitarsus is without black spurs (Loginova 1968).

Male paramere is lamellar and simple; distal portion of aedeagus is relatively short and rounded. The postal margin of the subgenital plate in male is sharp. Female genitalia are cuneate with thick hairs of various sizes. The subgenital plate apex of female is sharp (Loginova 1968). Some measurements of males and females are provided in Table 2.

Distribution

C. trjapitzini was reported by Loginova on the *Populus sp*. along the Aras River in Armenia in 1968 (Loginova 1968). However, this is the first record of the species from Iran. This species was collected from Malkeshan Sofla village (35°, 15', 24.79" N; 46°, 52', 4.74" E; 1089m; 8.viii.2013, 2♂&3♀, on *Populus* sp., Salicaceae) of Sanandaj, the center of Kurdistan province, Iran (Table 2), and its adults and immature stages are feeding from phloem sap of *Populus* sp. leaves. The amount of damage cause by the species should be further investigated in this region.

ACKNOWLEDGEMENT

We would like to express our great appreciation to Dr. D. Burckhardt, Natural History Museum Basel, Switzerland, for his valuable identifications on this research work.

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