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A newly recorded species of the genus *Limothrips* (Thysanoptera: Thripidae) in China, with a key to Chinese species

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ABSTRACT. *Limothrips angulicornis* Jablonowski, 1894 is newly recorded for the fauna of China. The genus *Limothrips* Haliday, 1836 (Thysanoptera: Thripidae) now includes three species in China. In addition, two previously recorded *Limothrips* species were also distributed in Palaearctic region of China, and there is no record in south and east of China, Oriental region. A key is provided to identifying of Chinese species of the genus *Limothrips*.

Key words: Thysanoptera, *Limothrips*, new record, China

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Introduction

Thripinae is the largest of the four subfamilies in the family Thripidae which includes more than 200 species in China (Mirab-balou *et al*. 2011). The western Palaearctic genus *Limothrips* Haliday is one of the thripine genera, all of them are associated with grasses (Minaei & Mound 2010). Females of this genus can be distinguished easily from other genera of Thripinae by having abdominal tergite X with one pair of short, stout, spine-like median setae (Fig. 6) (Mirab-balou *et al*. 2013). This genus was recorded from China for the first time by Hu and Feng (2011), which represented the first records of *L. denticornis* Haliday, 1836. Subsequently, *L. consimilis* Priesner, 1926 was recorded from China as second species by Hu *et al*. (2012), and here, the third species *L. angulicornis* is recorded for this country for the first time.

Materials and Methods

Thrips specimens were collected from Yangling in Shaanxi Province, China (Fig. 1), by shaking plants to white dish and prepared and mounted onto slides following Mirab-balou and Chen (2010). Slides are deposited in the collection of Department of Plant Protection, College of Agriculture, Ilam University, Iran (ILAMU).

Results

Limothrips angulicornis Jablonowski

Limothrips angulicornis Jablonowski 1894: 45.

Material examined. CHINA: Shaanxi province: Yangling, Northwest Agricultural

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& Forestry University, 6 females, 5 males, on *Hordeum* sp. (Poaceae), 20.v.2010, Leg. M. Mirab-balou.

Diagnosis. Female macropterous. Body brown, tarsi yellow, antennal segment III light brown with pedicel yellow; fore wings light brown. Head longer than wide, with a projecting in front of eyes (Fig. 2); with three pairs of ocellar setae, pair III anterolateral to triangle and scarcely longer than distance between two ocelli; post-ocular setae small; ocelli present, for ocellus smaller than hind ocelli. Antennae 8-segmented (Fig. 4), segment II with apical external margin prolonged into tooth (Fig. 5), antennal segments III & IV with forked sense cone. Pronotum with one pair of long posteroangular setae, posterior margin with three pairs of setae (Fig. 3). Metanotum with irregularly reticulate sculpture, median setae arise behind anterior margin, metanotal campaniform sensilla present. Meso- and metafurca without spinula. Tarsi 2-segmented. Fore wing first vein with two distal setae, second vein with about nine setae. Abdominal tergites with reticulation medially, one pair of campaniform sensilla close to posterior margin, craspedum not developed; tergite VIII without comb on posterior margin; tergite X with 1 pair of stout thorn-like setae (Fig. 6). Sternites II–VII with discal setae, without craspeda; sternite II with 2 pairs and III–VII with 3 pairs of marginal setae; median pair on VII arising in front of margin.

Male apterous; head without ocelli; pterothorax transverse without wing buds; tergite IX with 2 pairs of equally small stout setae on tubercles, 1 pair medially and 1 pair laterally (Fig. 7); sternites without pore plates.

Distribution. China (Shaanxi); Iran, Italy, Poland, USA.

Key to species of *Limohrips* in China

1. Antennal segment II not strongly prolonged externally..... ..... ***L. consimilis*** **Priesner**

- Antennal segment II strongly asymmetric, prolonged externally.....**2**

2. Antennal segment III asymmetric, head with distinctly projecting in front of eyes; male tergite IX with 2 pairs of stout setae on tubercles, 1 small pair medially and 1 longer pair laterally. ....***L. denticornis*** **Haliday**

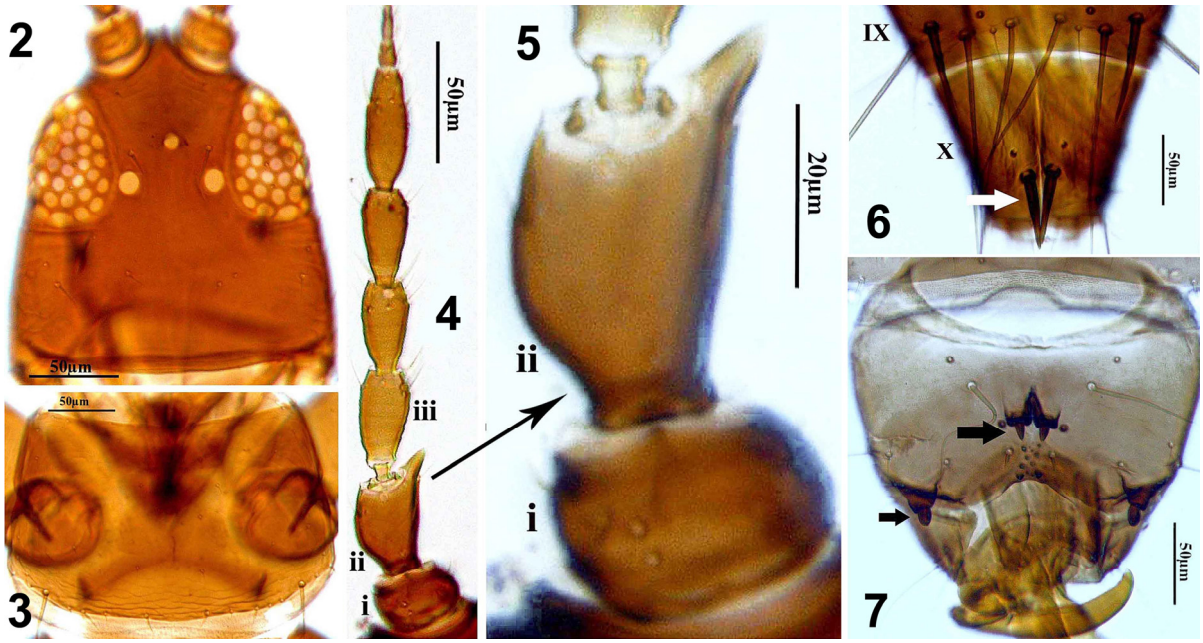
- Antennal segment III symmetric, head with projecting in front of eyes; male tergite IX with 2 pairs of small stout setae on tubercles, 1 pair medially and 1 pair laterally. .....***L. angulicornis*** **Jablonowski**

Discussion

China is one of the world's largest countries with an area of 9.6 million square kilometers, situated between two different geographical regions (Palaearctic and Oriental), which suggests a high level of biodiversity in these areas.

The genus *Limothrips* with only eight species in the world is one of the small groups in family Thripidae, all from Palaearctic region. In this study, *L. angulicornis* was collected in north of China that is located in Palaearctic region. In addition, two previously recorded *Limothrips* species were also distributed in Palaearctic region of China, and there is no record in south and east of China, Oriental region. All members of this genus are associated with grasses (family Poaceae) (Minaei and Mound 2010) and two previously recorded species (Hu and Feng 2011; Hu *et al*. 2012) and *L. angulicornis* all collected on grasses.

Figure 1. Distribution of *Limothrips* species in China.



Figures 2–7. *Limothrips angulicornis*: **2.** Head, **3.** Pronotum, **4.** Antennae, **5.** Antennal segments I & II, **6.** Abdominal tergite X (female), **7.** Abdominal tergite X (male).

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گزارش گونه‌ی جدیدی از جنس *Limothrips* (Thysanoptera: Thripidae) از چین، به همـــراه کلید گونه‌های چین

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چکیده: گونه‌ی *Limothrips angulicornis* Jablonowski, 1894 برای اولـین بـار از چـین گـزارش مـی‌شـود. جـنس *Limothrips* Haliday, 1836 (Thysanoptera: Thripidae) در حال حاضر دارای سه گونه در کشور چین می‌باشد. کلید شناسایی گونه‌های موجود در چین تهیه شده است.

واژگان کلیدی: بال‌ریشکداران، *Limothrips*، گزارش جدید، چین