

Short communication

### *Pealius mori* (Hem.:Aleyrodidae): A new whitefly species record for Iran

Shahab Manzari<sup>1&\*</sup>, Raziieh Ahmadipour<sup>2</sup>, Nasrin Shahbazvar<sup>2</sup> & Shahram Farrokhi<sup>2</sup>

1- Insect Taxonomy Research Department, Iranian Research Institute of Plant Protection, Agricultural Research, Education and Extension Organization (AREEO), Tehran, Iran, & 2- Biological Control Research Department, Iranian Research Institute of Plant Protection, Agricultural Research, Education and Extension Organization (AREEO), Tehran, Iran.

\* Corresponding author, E-mail: manzari@iripp.ir

#### گزارش جدید سفیدبالک (*Pealius mori* (Hem.: Aleyrodidae)) از ایران

شهاب منظری<sup>۱\*</sup>، رازییه احمدی‌پور<sup>۲</sup>، نسرن شهبازوار<sup>۲</sup> و شهرام فرخی<sup>۲</sup>

۱- بخش تحقیقات رده‌بندی حشرات، موسسه تحقیقات گیاه‌پزشکی کشور، سازمان تحقیقات، آموزش و ترویج کشاورزی، تهران، ایران و ۲- بخش تحقیقات کنترل بیولوژیک، موسسه تحقیقات گیاه‌پزشکی کشور، سازمان تحقیقات، آموزش و ترویج کشاورزی، تهران، ایران.

\* مسئول مکاتبات، پست الکترونیکی: manzari@iripp.ir

#### چکیده

سفیدبالک (*Pealius mori* (Takahashi)) برای اولین بار از ایران گزارش می‌شود. این سفیدبالک از روی درخت توت سفید، (*Morus alba* L. (Moraceae)) از استان تهران، تهران، در آبان ماه ۱۳۹۵ جمع‌آوری شد. ویژگی‌های تشخیصی به‌همراه تصاویر مربوطه و اطلاعات در مورد پراکنش و گیاهان میزبان این گونه ارائه شده است. واژگان کلیدی: *Pealius mori* (Aleyrodidae), *Morus alba* و ایران.

دریافت: ۱۳۹۶/۱/۲۳، پذیرش: ۱۳۹۶/۳/۲.

White mulberry, *Morus alba* L., is a fast-growing, moderate-sized and deciduous plant belonging to the family Moraceae. It is native to Asia or of Asian origin but currently cultivated in most countries around the world (Devi *et al.*, 2013; Flaczyk *et al.*, 2013). In recent years, it has become widely established in urban green areas in major Iranian cities, especially in the capital city, Tehran.

More than 20 whitefly species have hitherto been reported on *M. alba* (Wang *et al.*, 2014). In Iran, prior to the current study, four species, viz. *Aleurolobus marlattii* (Quaintance), *Bemisia afer* Priesner & Hosny, *Bemisia tabaci* (Gennadius) and *Aleuroclava jasmini sensu lato*, have been collected on white mulberry (Manzari, unpublished data), of which the latter species have currently heavily infested mulberry trees in Tehran and its population reaches almost in outbreak status in late summer.

In October 2016, a few mulberry trees in Tehran were found to be infested by a whitefly species feeding on the lower surface of the leaves in very low numbers. Some leaves had only been infested by this species but the pupae were usually among the different instar larvae of *A. jasmini s. l.*, the currently dominant whitefly species in Tehran

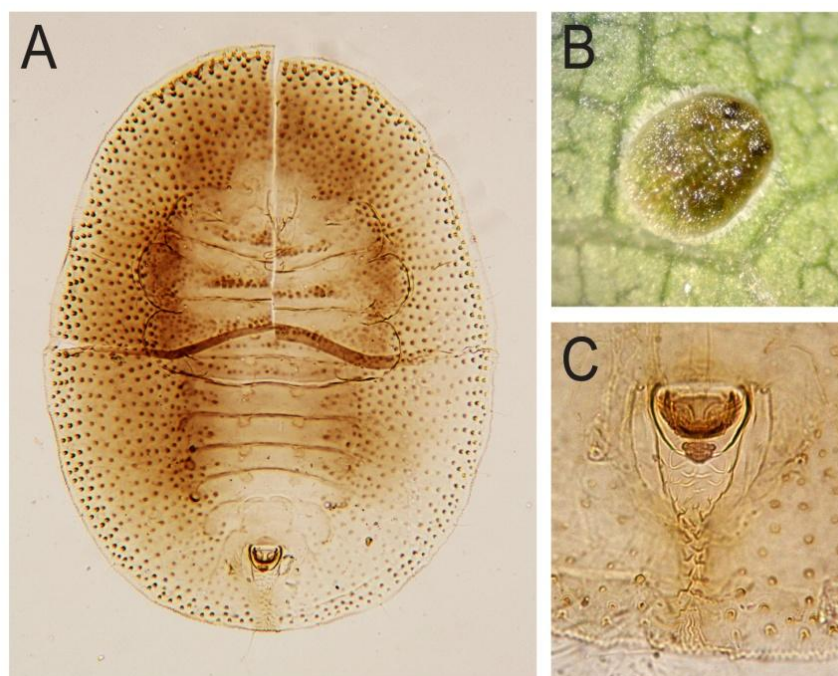
(see above). The collected specimens were identified by the first author as *Pealius mori* (Takahashi), which is here newly recorded from Iran. Voucher specimens have been deposited in the Hayk Mirzayans Insect Museum, Iranian Research Institute of Plant Protection, P.O. Box 1454, Tehran 19395, Iran.

The genus *Pealius* Quaintance & Baker includes 45 species (Martin & Mound, 2007) and is mainly characterized by vasiform orifice situated at the anterior part of a shallow pit that is patterned with transverse striations or imbrications (Martin, 1999). *Pealius mori*, commonly known as mulberry whitefly, was originally described from Taiwan as *Trialeurodes mori* by Takahashi (1932) and is now widely distributed in Thailand, India, China, Egypt and Greece (Abd-Rabou & Evans, 2013; Wang *et al.*, 2016).

### *Pealius mori* (Takahashi, 1932)

(Fig. 1, A-C)

**Material examined** – ca. 35 puparia, Iran: Tehran province, Tehran, Tehran Municipality, Zone 15, Shahrak-e Boroujerdi, 24.x.2016, leg. R. Ahmadipour, on *Morus alba* (Moraceae); Tehran Municipality, Zone 12, Park-e Shahr, 3.x.2016, leg. N. Shahbazvar, on *M. alba*; Tehran Municipality, Zone 12, 30-Tir street, 3.x.2016, leg. N. Shahbazvar, on *M. alba*.



**Fig. 1.** *Pealius mori*: A, puparium; B, habitus photograph of puparium; C, vasiform orifice and caudal furrow.

**Diagnosis** – Puparia oval, somewhat narrowed anteriorly; both longitudinal and transverse moulting sutures reaching margin; dorsal disc, except the median and

submarginal areas, with many small circular pores densely scattered; submargin with about three irregular rows of papillae directed mesad and an even row of about 14 pairs setae which may be minute; vasiform orifice typical of the genus.

**Host plants** – Euphorbiaceae: *Euphorbia* sp., *Glochidion phillipicum*; Moraceae: *Ficus* sp., *Morus australis*, *M. alba*; Salicaceae: *Salix* sp. (Abd-Rabou & Evans, 2013).

#### Addendum in proof

While our manuscript was in press, *Pealius mori* was collected in other Municipality Zones in Tehran, including 3, 4, 6, 7, 8, and 11 (see also material examined), being active from June 2017 with a considerable population increase.

#### References

- Abd-Rabou, S. & Evans, G.** (2013) *Pealius mori* - a new invasive whitefly to Egypt (Hemiptera: Aleyrodidae). *Acta Phytopathologica et Entomologica Hungarica* 48 (2), 333-334.
- Devi, B., Sharma, N., Kumar, D. & Jeet, K.** (2013) *Morus alba* Linn: a phytopharmacological review. *International Journal of Pharmacy and Pharmaceutical Sciences* 5 (Supplement 2), 14-18.
- Flaczyk, E., Kobus-Cisowska, J., Przeor, M., Korczak, J., Remiszewski, M., Korbas, E. & Buchowski, M.** (2013) Chemical characterization and antioxidative properties of Polish variety of *Morus alba* L. leaf aqueous extract from the laboratory and pilot-scale processes. *Agricultural Sciences* 4 (5B), 141-147.
- Martin, J. H.** (1999) The whitefly fauna of Australia (Sternorrhyncha: Aleyrodidae), a taxonomic account and identification guide. *Division of Entomology, Commonwealth Scientific and Industrial Research Organization, Canberra, Technical Paper*, No. 38, 1-197.
- Martin, J. H. & Mound, L. A.** (2007) *An annotated check list of the world's whiteflies* (Insecta: Hemiptera: Aleyrodidae). *Zootaxa* 1492, 1-84.
- Takahashi, R.** (1932) Aleyrodidae of Formosa, Part I. *Report, Department of Agriculture, Government Research Institute, Formosa*, 59, 1-57.
- Wang, J. R., Perdikis, D., Chalkia, C., Harizanis, P., Kalaitzaki, A., Tsagkarakis, A., Xu, Z. H. & Du, Y. Z.** (2016) The occurrence of *Pealius mori* (Takahashi), *Pealius machili* Takahashi and *Paraleyrodes minei* Iaccarino (Hemiptera: Aleyrodidae) infesting *Morus alba* L. in Greece. *Annales de la Société entomologique de France (Nouvelle série)* 52 (5), 281-288.
- Wang, J. R., Song, Z. Q. & Du, Y. Z.** (2014) Six new record species of whiteflies (Hemiptera: Aleyrodidae) infesting *Morus alba* in China. *Journal of Insect Science* 14 (274), 1-5.