

## New record of Oriental Metalmark Moth *Choreutis sexfasciella* (Sauber) (Lepidoptera: Choreutidae: Choreutinae) in Egypt

Abu Ghonem, M. A.<sup>1</sup>; Ramadan, Hanan M.<sup>2</sup>; El-Abed, Y. G.<sup>3</sup> and  
Elsakhawy, Deena A.<sup>4</sup>

<sup>1</sup> Alexandria University Administration Gardens and Nurseries.

<sup>2</sup> Faculty of Agriculture, Alexandria University, Dept. of Applied Entomology and Zoology.

<sup>3</sup> Agricultural Bank of Egypt.

<sup>4</sup> Egyptian plant quarantine.

### ABSTRACT

During summer of months 2020, larvae and moths of *Choreutis sexfasciella* (Sauber) (Lepidoptera: Choreutidae: Choreutinae) were observed on *Ficus nitida*, *F. benjamina* and *F. Hawaii* trees in landscapes at Alexandria regions. It causes serious damage to *Ficus* trees leaves in resorts of Northern coast of Egypt since August 2020. This small metalmark moth is recorded for the first time in Egypt. Morphological and diagnostic characters were done to confirm identification at the new recorded moth.

**Key words:** Choreutidae, *Choreutis sexfasciella*, Egypt.

### INTRODUCTION

Family Choreutidae, or metalmark moths are one of the micro lepidoteran moths, their wings with metallic marks. It is previously belonging to four superfamilies Tortricoidea, Pyraloidea, Yponomeutoidea and Sesiioidea (Brock, 1968&Scoble, 1995). Recently, it is belonging to superfamiliy Choreutoidea. It includes about 406 described species. Family Choreutidae divided into three subfamilies, Millieriinae, Choreutinae and Brenthiinae (Heppner and Duchworth, 1981; Diakonoff, 1986 and Arita, 1987. Choreutinae is the largest subfamily with 50 genera including genus *Choreutis* which have 96 species; most members are tropical but many of them are distributed in temperate regions (Scoble, 1995; Rota, 2005&2008 a, bandSavela, 2019 a & b).

*Ficus* spp. (Moracea) are known as host of different species of *Choreutis* (Kearfott, 1902; Diakonoff, 1986; Zouba, 2010; Prins, 2014; Prins and Prins, 2014; Rota *et al.*, 2014; Imre, 2015 and Gielis & Bippus, 2016).

In Egypt El-Abbassi *et al.* (1997) recorded *Choreutis nemorana* (Hübner) attacking fig trees. Also, Gielis & Bippus, (2016) and Rittener (2019) mentioned that *Choreutisa egyptiaca* (Zeller) was recorded in Egypt 1867. Rittener (2019) recorded *C. sexfasciella* in Israel for the first time. He suggested that it may arrive with *Ficus* plants imported from Asia and then wide distributed there.

Aim of the present investigation is to describe the morphological and taxonomical features of this moth which is new in Egypt.

### MATERIALS AND METHODS

During summer of 2020 larvae and small moths were collected from *Ficus nitida*, *F. benjamina* and

*F. hawaii* trees leaves in gardens of Faculty of Science and Agriculture, Alexandria university and also, from arboretum of Faculty of Agriculture (31206319, 29919693). This moth identify as metalmark moth, *Choreutis sexfasciella* (Sauber). This identification was kindly confirmed by Dr. Jadranka Rota, Biological Museum entomology curator, Sweden who reported that this insect was not only first arrival in Egypt, but also it is spreading in Africa from Asia. Also, confirmation was made by Dr. Epstein, Plant Pest Diagnostics Branch, California Department of Food & Agriculture, U.S.A.. Illustrations and description of all stages were made by using stereoscopic binocular microscopy. Terminology of the adult forewing spots and other features are shown in Figure (1 A) according to (Barlow, 1982).

### RESULTS AND DISCUSSION

Figures (1 B&C) illustrate diagnostic characters of adult moth. It is small about 6 mm in length, diurnal moth with broad wings, wing span from 11 – 12 mm, filiform antenna and legs are banded with dark and light alternated bands. Head, thorax and basal part of forewing are light brown in color from dorsal side. Ante median fascia light brown in color surrounded by fine irregular silvery sheen bands. Pale brown band observed at the middle part of wing bounded by yellow irregular band surrounded by brown batches. The reniform stigma is yellow in color. Three triangular dark brown patches observed at middle part of wing. Light brown mixed with silvery fine zigzag lines between post median and subterminal fascia followed by dark brown wavy band then the light brown terminal fascia. Outer margin fringed with light brown cilia. Hind wing brown with terminal fascia dark brown and the outer margin fringed with

light brown cilia. Head and thorax whitish in color from ventral side while abdomen silvery in color (Fig.1, D).

Egg is about 0.5 mm in diameter, slightly convex, creamy in color with reddish circular plate (Figs. 2 A& B). Eggs are laid separately in batches (each 10-15 egg) on the lower surface of *Ficus* leaves.

Larvae are pale green in color with chestnut brown head capsule (Fig. 2 C). It is about 20 mm in length, slender with elongate abdominal prolegs. They live often under a silken web where pupation takes place. These webs spun between the sides of the upper surface of leaf causing the leaf to curl upwards; frass is caught in the silken web. Larvae

feed on the parenchyma from the upper surface of *Ficus* leaves which then turn brown.

Obtect pupae about 5 mm in length, inside white silken cocoon on the leaf surface (Figs. 2 D&E).

The pupal parasitoid *Pteromalus puparum* (Hymenoptera: Pteromalidae) was observed on *C. sexfasciella* pupae.

### ACKNOWLEDGMENT

The authors present deep thanks to Prof. Dr. Hedaya H. Karam, Applied Entomology and Zoology Department, Faculty of Agriculture (Al-Shatby), Alexandria University for her generous help in reviewing the manuscript.

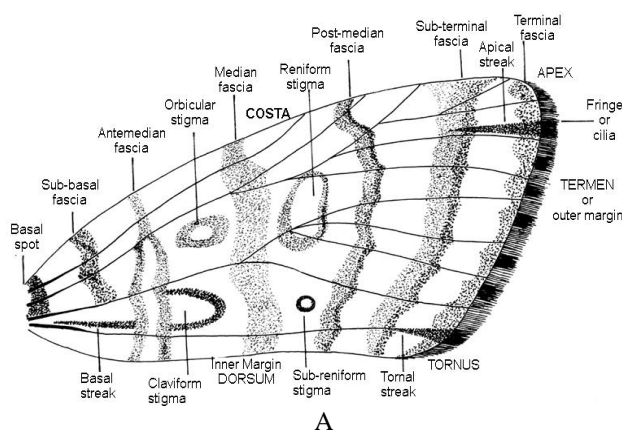
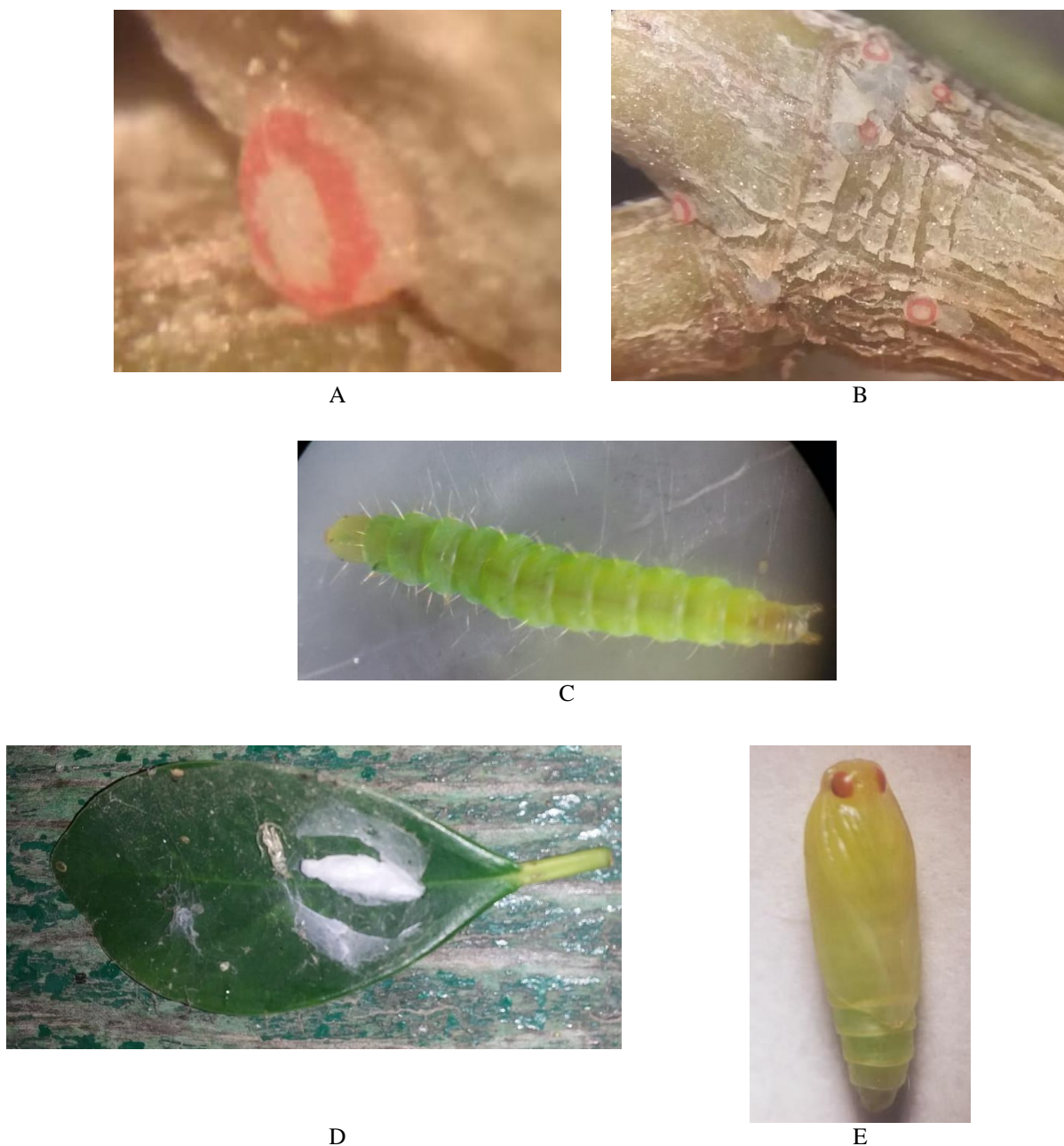


Figure 1: *Choreutis sexfasciella* A, wing pattern diagram B&C adult dorsal view, D, ventral view.



**Figure 2. *Choreutis sexfasciella* A & B eggs C, larvae D, silken cocoon & E, obtect pupae**

**REFERRNCES**

Arita Y. (1987). Taxonomic studies of the Glyphipterygidae and Choreutidae (Lepidoptera) of Japan. Transactions of the Shikoku Entomological Society **18**: 1-244.

Barlow, (1982). Elements of the lepidopteran forewing & hindwing from <http://www.pyralidsofborneo.org/index.php?wing-pattern>

Brock, J. P. (1968). The Systematic position of the Choreutinae (Lepidoptera: Glyphipterygidae). Entomologist's mon. Mag. **103**: 245- 246.

Diakonoff, A. (1986). Glyphipterygidae auctorumsensulato: (Glyphiterygidae sensumeyrick, 1913); Tortricidae: Hilarographini, Choreutidae, Brachodidae (partim), Immidae and glyphipterygidae. In: Amsel, H. G., Gregor, F. &Reisse, H. (eds), Microlepidoptera Palaearctica. Vol. 7. g. Braun, Druckerei und Verlage, Karlsruhe.436 pp.

- El-Abbassi, T. S.; El-Hamaki, M. A. and El-Gamal, M. M. (1997). The fig leaf roller, *Choreutis nemorana* Hubner (Choreutidae, Lepidoptera) as a new record in Egypt [1995]. Egyptian Journal of Agricultural Research **73**(3): 715 – 722.
- Gielis, C. and Bippus, M. (2016). On the identity and early stages of *Choreutis aegyptiaca* from Réunion Island (Lepidoptera, Choreutidae). Entomologische Berichten **76** (6): 206- 208.  
<https://www.nev.nl/pages/publicaties/eb/nummers/2016/76->
- Heppner, J. B. and W. D. Duckworth (1981). Classification of the superfamily Sesioidea (Lepidoptera: Ditrysia). Smithsonian Contributions to Zoology **314**: 1–144.
- Imre, F. (2015). *Choreutis nemorana* (Hubner, 1799) an adventive species in Hungary (Lepidoptera: Choreutidae). Microlepidopterans **8**: 3 – 10.
- Kearfott, W. D. (1902). A Revision of the North American species of the genus *Choreutis*. Journal of the New York Entomological Society **X**: 106 – 125.
- Prins, W. (2014). *Choreutis nemorana* (Lepidoptera: Choreutidae) well established in Belgium, Phegea. **42** (2): 29–32.
- Prins, W. and Prins, J. (2014). *Choreutis nemorana* (Hubner, 1799) (Lepidoptera: Choreutidae), a new adventive species to the British island. The Entomologist's Record and Journal of Variation **126**: 157 – 163.
- Rittner, O. (2019). The first documented report of metalmark moths (Lepidoptera: Choreutidae) in Israel, with the first record of oriental *Choreutis sexfasciella* (Sauber) in the Palearctic. Israel Journal of Entomology **49**(1): 63 – 67.
- Rota, J. (2005) Larval and pupal descriptions of the neotropical choreutid genera *Rhobonda* Walker and *Zodia* Heppner (Lepidoptera : Choreutidae). Annals of the Entomological Society of America **98**: 37–47. doi: 10.1603/0013-8746(2005) 098[0037: lapdot] 2.0.co;2
- Rota, J. (2008a) Immature stages of metalmark moths from the genus *Brenthia* Clemens (Lepidoptera: Choreutidae): morphology and life history notes. Journal of the Lepidopterists Society **62**: 121–129.
- Rota, J. (2008b). A new genus and new species of metalmark moths (Lepidoptera: Choreutidae) from Costa Rica. Zootaxa **1933**: 12–18.
- Rota, J., Aguiar, A. M. F. and Karsholt, O. (2014). Choreutidae of Madeira: review of the known species and description of the male of *Anthophila threnodes* (Walsingham, 1910) (Lepidoptera). Nota Lepidopterologica **37** (1): 91–103. <https://doi.org/10.3897/nl.37.7928>
- Savelle, M. (2019a). *Choreutis aegyptiaca* (Zeller, 1867).  
<http://www.nic.funet.fi/pub/sci/bio/life/insecta/lepidoptera/ditrysia/sesioidea/choreutidae/choreutis/#aegyptiaca> [accessed 28 October 2019]
- Savelle, M. (2019b). *Choreutis sexfasciella* (Sauber, 1902).  
<http://www.nic.funet.fi/pub/sci/bio/life/insecta/lepidoptera/ditrysia/sesioidea/choreutidae/choreutis/#sexfasciella>.
- Scoble, M. J. (1995). The Lepidoptera form, function and diversity. The Natural History Museum in association with Oxford University press. 404 pp.
- Zouba, A. (2010). First report of *Choreutis nemorana* (Lepidoptera: Choreutidae) in Tunisia. The African Journal of Plant Science and Biotechnology **4** (special issue 2): 96 - 97.

الملخص العربى

**تسجيل جديد لفراشة (*Choreutis sexfasciella* (Sauber) فى مصر (Lepidoptera: Choreutidae: Choreutinae)**

محمد علي ابو غنيم<sup>١</sup>، حنان محمد رمضان<sup>٢</sup>، ياسين جمال الدين العبد<sup>٣</sup>، دينا السخاوى<sup>٤</sup>  
إدارة الحدائق جامعة الاسكندرية.  
قسم الحشرات والحيوان التطبيقي - كلية الزراعة - جامعة الاسكندرية.  
<sup>٣</sup>البنك الزراعى المصرى.  
<sup>٤</sup>الحجر الزراعى المصرى.

تم ملاحظة يرقات وفراشات حشرة (*Choreutis sexfasciella* (Sauber) فى مصر خلال صيف ٢٠٢٠ على ٣ أنواع من أشجار الفيكس فى حدائق الاسكندرية. وقد وجد أن يرقات الفراشات تتغذى على اوراق اشجار الفيكس فى الحدائق العامة وبالقرى السياحية بالساحل الشمالى خلال اغسطس ٢٠٢٠. هذه الفراشات تم تسجيلها لأول مرة فى مصر وتم عمل الوصف المورفولوجى للحشرة الكاملة والأطوار غير الكاملة.