
Araştırma Makalesi / Research Article

A New Host-Plant for Larvae of *Hellula undalis* (Fabricius, 1781) in Turkey (Lepidoptera: Crambidae)

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Abstract

In this study, *Reseda aucheri* subsp. *rotundifolia* (Kotschy ex Müll.-Arg.) (Resedaceae) has been detected the first time as a new host-plant of *Hellula undalis* (Crambidae). Information on the distribution of *H. undalis* and its known host-plants are given. Caterpillar, pupa and adult of the species and new host-plant are illustrated.

Keywords: *Hellula undalis*, *Reseda aucheri* subsp. *rotundifolia*, host-plant, Batman, Turkey.

***Hellula undalis* (Fabricius, 1781) Larvaları İçin Türkiye'den Yeni Bir Konukçu Bitki (Lepidoptera: Crambidae)**

Öz

Bu çalışmada *Reseda aucheri* subsp. *rotundifolia* (Kotschy ex Müll.-Arg.) (Resedaceae) ilk kez *Hellula undalis* (Crambidae)'in yeni konukçu bitkisi olarak tespit edilmiştir. *H. undalis*'in yayılışı ve bilinen konukçu bitkileri hakkında bilgi verilmiştir. Türün tırtıl, pupa ve ergin bireyi ile yeni konukçu bitkisi resmedilmiştir.

Anahtar kelimeler: *Hellula undalis*, *Reseda aucheri* subsp. *rotundifolia*, konukçu bitki, Batman, Türkiye.

1. Introduction

The subfamily Glaphyriinae belongs to the family Crambidae is known with 345 species in the world [1]. In study of the phylogenetic classification of Pyraloidea by Reiger et al. [2], they mentioned Evergestinae and Noordinae were synonyms of Glaphyriinae and stated that the most distinctive features of these groups, the larvae of many of genera fed on mustard oil containing plants belonging the order of Brassicales.

Hellula undalis (Fabricius, 1781) is distributed in Europe, Africa, large part of Asia, Australia and Pacific Islands [3]. In Turkey, the species is known from Adana, Bitlis, Bursa, Gaziantep, Hakkâri, Hatay, İzmir, Mersin, Kahramanmaraş, Van, Şırnak and Düzce provinces [4-6]. It is generally known as a pest of crucifers, and so far known host-plants are as follows: *Armoracia rusticana*, *Brassica caulorapa*, *B. chinensis*, *B. juncea*, *B. nigra*, *B. oleracea*, *B. parachinensis*, *B. rapa*, *Coronopus* sp., *Diplotaxis* sp., *D. pendula*, *Moricandia* sp., *M. arvensis*, *M. suffruticosa*, *Raphanus* sp., *R. sativus*, *Rorippa* sp. *Sinapis alba* (Brassicaceae (Cruciferae)); *Cleome* sp., *C. arabica*, *C. gynandra*, *C. rutidosperma*, *C. viscosa*, *Polanisia* sp. (Capparaceae); *Clitoria* sp. (Fabaceae); *Hygrophila salicifolia* (Acanthaceae) [7-10].

On the biology of *H. undalis*, an important study was carried out by Yabaş and Zeren [5] in Turkey. They stated that in the field studies, the adult specimens emerged from the second half of June, the population reached the highest level in August and September, and the population decreased gradually following in October. In addition, they stated that the species has 5 generations and there are

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15-20 days between each generation depending on temperature and the adults of 5th generation emerge in 36 days.

Reseda aucheri Boiss. subspecies *rotundifolia* (Kotschy ex Müll.-Arg.) Rech. f. is known as “dicle gerdanlığı” in Turkey [11]. *R. aucheri* is distributed in Turkey, Iran, Iraq, Afghanistan, India and Pakistan [12]. It is used to remove the toxicity and sensitivity of bites of snake, insect and scorpions in Iran [13].

The aim of this study is to contribute to the host-plant and distribution of *H. undalis* from south-eastern Turkey.

2. Materials and Methods

The materials of the study consist of the larvae of collected by the second author on the *R. aucheri* subsp. *rotundifolia* from Batı Raman Campus of Batman University, Batman, Turkey (Figure 1), at 625 m, in 37°47'17" N, 41°03'53" E coordinates. The location is rich in herbaceous plants and, *R. aucheri* subsp. *rotundifolia* is intensively located in the habitat. During the researches in the field, a large amount of *H. undalis* larvae were found on the plants and six of these larvae were collected on 17.08.2018 for examination. After the feeding in the laboratory conditions, the larvae pupated on 23.08.2018 and, consequently, after 10 days only two adult specimens (high possibility due to hot and dry laboratory conditions, approx. 45 °C) emerged from pupas on 03.09.2018 (Figures 2-5). The adult specimens were identified by the first author. The larvae of the species were determined on the plant, over a long period of time from beginning of summer and to the nearly end of autumn, in the study region.

3. Results and Discussion

H. undalis, as mentioned above, feeds usually with plants belonging to the family of Cruciferae. Mewis et al. [8] stated that the species was sensitive to density of glucosinolate compound, which is a characteristic compound for the family of Cruciferae. They reported that this compound attracted female of *H. undalis*. Besides, Kalbfleisch [9] stated that this compound was detected in Brassicaceae and Capparidaceae and in other close families: Tovariaceae, Resedaceae, Tropaeolaceae and Limnanthaceae. On account of these, we think that most likely, the feeding of *H. undalis* with *R. aucheri* subsp. *rotundifolia* (Resedaceae), related to the compound of glucosinolate, which is noted by Mewis et al. [8] and Kalbfleisch [9].

According to the literature, members of Resedaceae family have not been reported as the host-plant for *H. undalis*. As results of this research, *R. aucheri* subsp. *rotundifolia*, belonging to Resedaceae family, is detected for the first time as a new host-plant for the species. Additionally, this study is contributed to distribution of *H. undalis* as it is discovered for the first time in Batman province.

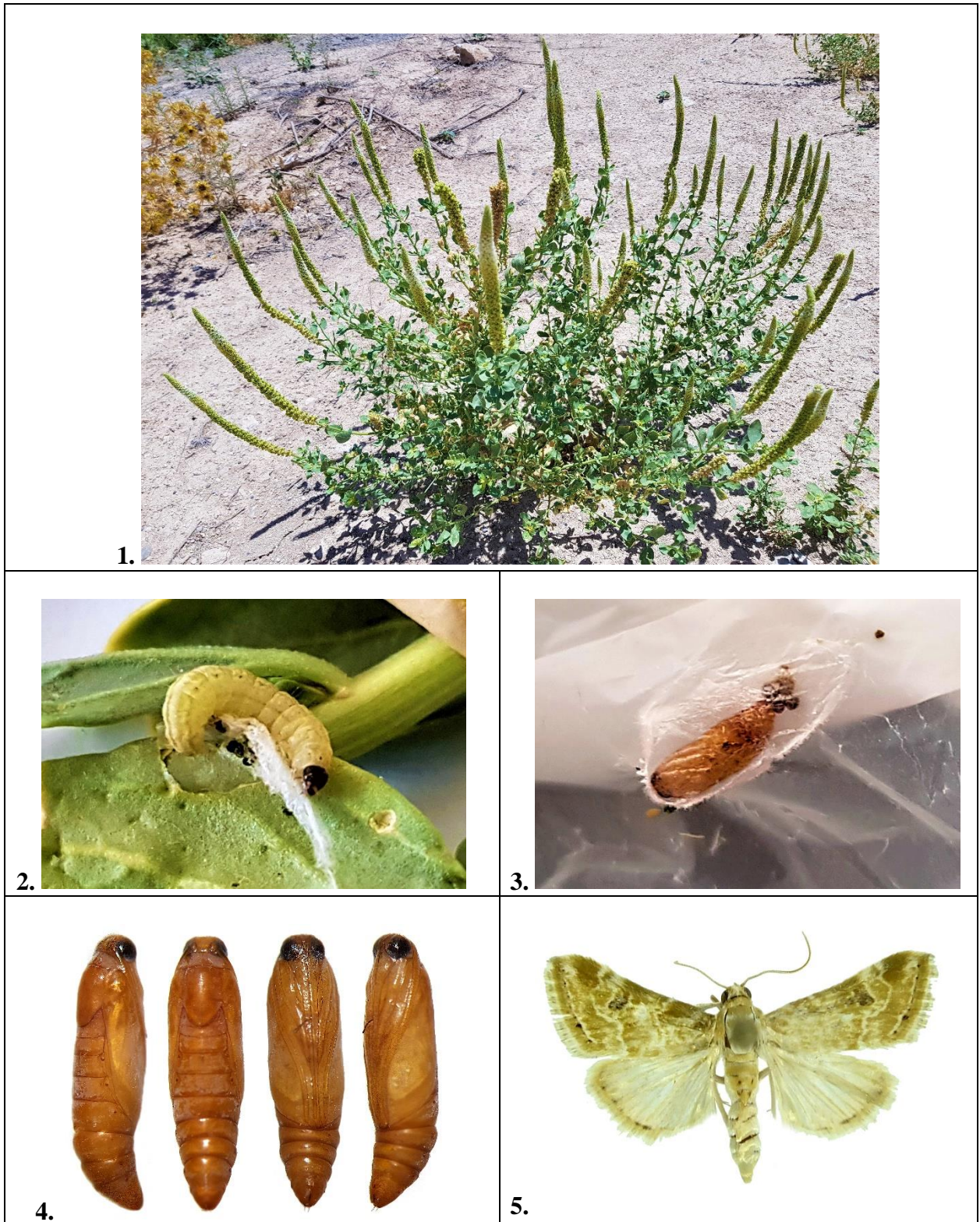
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Figures: 1. The host-plant, *R. aucheri* subsp. *rotundifolia*, **2-5.** Stages of *H. undalis*, **2.** Larva, **3-4.** Pupa, **5.** Adult