SHILAP Revista de lepidopterología, 52 (205) marzo 2024: 101-105 eISSN: 2340-4078 ISSN: 0300-5267
https://doi.org/10.57065/shilap.849 https://shilap.org

Observations on nectar food plants of *Zizina otis* (Fabricius, 1787) from Gujarat, India (Lepidoptera: Lycaenidae)

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Abstract

Zizina otis (Fabricius, 1787) is a Lycaenidae widespread in Asia. The study site Anand district of Gujarat is rich in floral diversity and harbours flowering and nonflowering plants which appear throughout the year. At several locations within the Anand district, *Z. otis* was observed in huge numbers and those high-density areas were monitored to record the nectar plants utilized by them. During this study we were able to record 12 species of plants utilized by *Z. otis* as food/nectar plants.
Keywords: Lepidoptera, Lycaenidae, *Zizina otis*, new record, Gujarat, India.

Observaciones sobre plantas nectaríferas de *Zizina otis* (Fabricius, 1787) de Gujarat, India (Lepidoptera: Lycaenidae)

Resumen

Zizina otis (Fabricius, 1787) es un Lycaenidae muy extendido en Asia. El lugar de estudio, el distrito de Anand, en Gujarat, es rico en diversidad floral y alberga plantas con y sin flores que aparecen durante todo el año. En varios lugares del distrito de Anand se observaron grandes cantidades de *Z. otis* y se controlaron esas zonas de alta densidad para registrar las plantas nectaríferas que utilizan. Durante este estudio pudimos registrar 12 especies de plantas utilizadas por *Z. otis* como alimento/nectar.
Palabras clave: Lepidoptera, Lycaenidae, *Zizina otis*, nuevo registro, Gujarat, India.

Introduction

Zizina otis (Fabricius, 1787), is a small Lycaenidae distributed in Pakistan, India (widely including Islands), Nepal, and Myanmar and it reaches to Japan. The genus is widespread covering Ethiopian, Oriental and Australian Regions, with *Z. antanossa* (Mabille, 1877), *Z. otis* and *Z. labradus* (Godart, [1824]) being the representative species respectively (Varshney, 1997).

Material and Methods

The data was collected from VII-2016 to IV-2018 in Anand district. Opportunistic observations were made throughout the daytime (08,00 hrs to 18,00 hrs) and individuals of *Z. otis* were photographed using a Canon EOS 700D DSLR camera.

Results

It is observed that *Z. otis* breeds throughout the year, but the highest number of individuals were observed during the winter months. The most widely used host plant was found to be *Indigofera linnae* Ali. Early life stages of *Z. otis* was feeding on the tender leaves of *I. linnae*. Few eggs were collected for studying life cycle which suggests period of ca. 20 days to become an adult.

Z. otis flies close to the ground and was observed to visit the flowering herbs which are close to the ground i.e., weeds and grasses. Through this study we were able to record 12 nectar plants out of which we were able to identify 11 (Table). The proboscis inside the flowers is clearly visible in all observations (Figures 1-12). Earlier reported nectar plants for *Z. otis* are *Chromolaena odorata* (L.) King & Rob., *Cosmos bipinnatus* Cav., *Clerodendrum infortunatum* L., *Gomphrena pulchela* Mart., *Salvia sp., Rauwlfia serpentina* (L.) Benth. ex Kurz at Dhaka, Bangladesh (Begum et al. 2015). The results suggest that there are a large number of plants utilized by *Z. otis* and further studies like chemical composition and sugar content of nectar would give more insight into the nectar food plant preferences by Lepidoptera.

Table. List of nectar food plants of *Zizina Otis*.

Sl No.	Family	Species
1	Acanthaceae	*Peristrophe bicalyculata* (Retz.) Nees
2	Amaranthaceae	*Alternanthera sessilis* (L.) R.Br. ex DC.
3		*Gomphrena celosioides* Mart.
4		*Achyranthes aspera* L.
5	Asteraceae	*Cyanthillium cinereum* (L.) H. Rob.
6		*Tridax procumbens* (L.) L.
7		*Parthenium hysterophorus* L.
8	Convolvulaceae	*Convolvulus arvensis* L.
9	Fabaceae	*Indigofera linnaei* Ali
10	Malvaceae	*Sida rhombifolia* L.
11		*Sida glabra* Mill.
12		*Sida sp.*

Acknowledgements*:*

Authors thank Dr. A. S. Reddy, Post Graduate Department of Biosciences, Sardar Patel University, Anand, Gujarat and Mrs. Richa Chauhan for their help in identification of plants. Sincere thanks to Mr. Peter Smetacek, Butterfly Research Centre, Bhimtal, India for his guidance.

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(Recibido para publicación / *Received for publication* 27-V-2023)
(Revisado y aceptado / *Revised and accepted* 29-VII-2023)
(Publicado / *Published* 30-III-2024)

Figures 1-6. 1. *Peristrophe bicalyculata* (Retz.) Nees. **2.** *Alternanthera sessilis* (L.) R.Br. ex DC. **3.** *Gomphrena celosioides* Mart. **4.** *Achyranthes aspera* L. **5.** *Cyanthillium cinereum* (L.) H. Rob. **6.** *Tridax procumbens* (L.) L.

Figures 7-12. 7. *Parthenium hysterophorus* L. **8.** *Convolvulus arvensis* L. **9.** *Indigofera linnaei* Ali. **10.** *Sida rhombifolia* L. **11.** *Sida glabra* Mill. **12.** *Sida sp.*