

**ENTOMO TAXONOMY LAB [ETL]**



**CHRIST COLLEGE (AUTONOMOUS)  
IRINJALAKUDA**





IRINS Profile

**DR. ABHILASH PETER**  
**ASSISTANT PROFESSOR &**  
**RESEARCH SUPERVISOR**  
**ZOOLOGY DEPARTMENT**

**Entomo Taxonomy Lab** was established on November 2020 with an aim to inculcate entomo research in young aspirants. ETL mainly focus on taxonomic and life cycle studies of moths (Lepidoptera: Heterocera) which are sister group of butterflies. It also give prime importance to research on the association of natural enemies particularly parasitic hymenopterans (Hymenoptera) with moth's developmental stages (egg, larva and pupa) and thereby its application as biological control agents in agroecosystems.

### **Research Area**

- Taxonomy studies on Parasitic Hymenoptera.
- Taxonomic and diversity studies on moths.
- Life cycle studies on moths.
- Published many new species of parasitic hymenoptera (click IRINS)
- Published new host plant records for moths.



## Research Students



**Mr. Adarsh P. K.**

RESEARCH AREA: ON THE  
SUPERFAMILY NOCTUOIDEA  
(LEPIDOPTERA: HETEROCERA)



**Miss. Joslin Treesa Jacob**

RESEARCH AREA: TAXONOMIC  
AND BIOLOGICAL STUDIES OF  
NOCTUID MOTHS

## Lab Facility



Entomo Taxonomy Lab



Labomed Microscope  
for identification of  
specimens



Ample working space

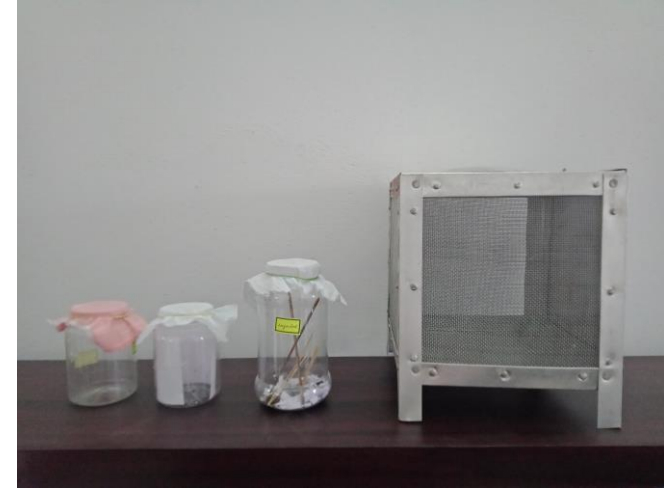




Spreading board for proper wing spreading of moths.



Insect Box- Used to preserve dried moth specimens in air tight box to avoid damage.




Rearing- Plastic jars and rearing cages are used to study developmental stages of moths and associated parasitic hymenopterans





## Services

- Identification of insects particularly moths of BSc students UG project on request.
- Cataloguing of moths as part of MSc dissertation of PG students from various colleges on request.

 **GOVERNMENT COLLEGE, MADAPPALLY**  
Vadakara-673102, Kerala, India

**Head**  
Post Graduate & Research Department of Zoology Date: 26-03-2018

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To

Dr. Abhilash Peter  
Assistant Professor,  
Department of Zoology  
Christ College (Autonomous)  
Irinjalakkuda, Thrissur 680 133


Sub: Identification of insect specimens – request reg:

Sir,

One of our students, Kavya K (4<sup>th</sup> semester M.Sc) is currently working on her final year project on '*The Diversity of Moth fauna in the Government Madappally College Campus*' under the supervision of Dr. P K Sumodan, Assistant Professor of this department. As a part of the study, some insect specimens have to be identified taxonomically. Since our college lacks the facility and expertise for this particular task, I humbly request you to provide your valuable time and expertise in taxonomy to identify these specimens.

The specimens or photos of specimens can be sent to your laboratory as per your directions.  
Thanking you

Yours faithfully,

  
Smt. Vanaja C  
Head of the Dept. of Zoology,  
Govt. College, Madappally  
Vadakara - 673 102

Tel: Office: 0496-2512587 Mobile: 9207238088, 9447478088 Email: vanajac1988@gmail.com

From

DR.Thejass P  
Assistant Professor of Zoology  
Govt. College Madappally  
Vatakara, Calicut

To

DR.Abhilash Peter  
Assistant Professor of Zoology  
Christ College Irinjalakkuda

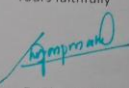
Sir

Sub: Request for identification of Insect Specimens (Moths)

Asna Beevi, III<sup>rd</sup> Semester MSc Zoology student of Govt.College, Madappally is interested in studying the taxonomy of Moths and as part of her MSc Project, she collected some Moths from Calicut. As you are a scholar in the taxonomy of Moths, kindly help us to identify the specimens.


Thanking You

Yours faithfully

  
Dr.Thejass P

Madappally

10.10.2017

 **KONGUNADU ARTS AND SCIENCE COLLEGE**  
(AUTONOMOUS)  
Re-accredited by NAAC with 'A' Grade (4th Cycle)  
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**Dr. M. LEKESHMANASWAMY,** Office : 0422-2642095 Per. : 0422-2647633  
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PRINCIPAL E-mail : principal@kongunaducollege.ac.in  
Website : www.kongunaducollege.ac.in

Coimbatore

21/09/2021

To


Dr. Abhilash Peter  
Assistant Professor  
Department of Zoology  
Christ College (Autonomous)  
Irinjalakkuda, Kerala

Sir,

Sub: Project work for 'Identification of moths in Kerala'. Request for rendering free consultancy service – regarding

Abhirami. B is a second year M.Sc Zoology student, who is doing the project work on 'Diversity of Moths'. She is in need of help from you as a free consultancy for the project.

Kindly do the needful.

  
PRINCIPAL  
KONGUNADU ARTS & SCIENCE COLLEGE  
COIMBATORE-641 029.



Post Graduate and Research Department of Zoology

## GOVERNMENT COLLEGE, MADAPPALLY

(Accredited at A level (third cycle) by NAAC)

VATAKARA, KOZHIKODE-673102

KERALA, INDIA

**Dr.Thejass P**  
Assistant Professor

[thejassp@gmail.com](mailto:thejassp@gmail.com)

09947361321

Date: 15 March 2022

To

Dr. Abhilash Peter

Assistant Professor of Zoology

Christ College Irinjalakkuda

Thrissur

Sir,

Sub: Identification of Moths for BSc Project.

Final year BSc students of this college has been doing a project related to diversity of moths as part of their curriculum under my supervision. As you are an expert in studies related to Moths, I humbly request your help for the identification of Moth specimens collected by my students.

Thanking You

Yours sincerely

## Services

# Publications

## A Partial List of Moths (Lepidoptera: Heterocera) from Kozhikode District, Kerala, India

Abhilash Peter<sup>1</sup> and Adarsh P. K.<sup>2</sup>

### Abstract:

The present paper deals with the moths collected from different localities of Kozhikode district, Kerala. The information presented in this paper is based on the insect surveys conducted from 01-07 2004 to 28-02-2005. Of the total 300 specimens collected, 139 species belonging to 108 genera under 18 families were identified to the species level. Family Erebiidae was found to be dominant in terms of number of species when compared to the other families. An updated systematic account is provided for all the identified specimens.

Key words: list, moths, Kozhikode, Kerala.

### Introduction

Kozhikode district lies between 11° 08'N and 11° 50'N latitudes and 75°30'E and 76°8'E longitudes. District is bor-

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2 Department of Zoology, Christ College (Autonomous), Irinjalkuda-680125

dered by Kannur district to the North, Malappuram to the South, Wayanad to the East and Arabian Sea to the West. The region receives an appreciable amount of rainfall every year (South-West and North-East Monsoon). The district is blessed with lush green vegetation in the Western Ghats comprising trees, shrubs, herbs, climbers etc. and forms a hiding place for many animal species.

Lepidoptera includes butterflies and their sister group, moths. Though harmless, moths are serious pests of many agricultural crops and commercial plants. This study is an attempt to know the species of moths from Kozhikode district.

### Methodology

Moths were collected from different localities of Kozhikode district which includes plains, hilly areas and forests during the period 01-07 2004 to 01-02-2005. Live specimens from Kakkayam forest, Chalappuram, Janakkadu, Thushragiri, Nadakkavu, East Hill, and Chalappuram were collected mainly by hand picking method. Those specimens attracted to light were collected by using an insect net. A light trap was operated overnight during the mothing season and occasional collection was also done from other areas of Kozhikode district. Live specimens were killed in a killing jar filled with ethyl acetate vapours. The specimens were then dried and preserved in air tight insect boxes with appropriate data labels.

Identification of moths was done with the help of relevant literatures like, Hampson (1892-96), Bell and Scott (1937, Holloway (1983-2005), Barlow and D'Abreu (1982), Robinson et al. (1994), Kendrick (2002, 2004) and Pittaway and Kitching (2004). The classification followed here is based on the literature published by Nieuwerkerken et al. (2011) and Zahiri et al. (2012). The specimens were identified using Leica APO Stereozoom microscope. A digital camera Canon A620 was used for taking the photos of moths.

|   |   |
|---|---|
| <b>Family: Erebiidae</b>                      | <b>Family: Lasiocampidae</b>                                    |
| <b>Subfamily: Calpininae</b>                  | <b>Subfamily: Lasiocampinae</b>                                 |
| <i>Eudocima phatonis</i> Clerck (Fig.47,53)   | <i>Mesocrista acoryta</i> Cramer                                |
| <i>Eudocima hypermestra</i> (Cramer) (Fig.33) | <b>Family: Spingidae</b>  |
| <i>Eudocima materna</i> Linnaeus              | <b>Subfamily: Macroglossinae</b>                                |
| <i>Eudocima homaeta</i> (Hübner)              | <i>Macroglossum paricolor</i> Rothschild & Jordan               |
| <i>Phylodes consobrina</i> Westwood           | <i>Macroglossum insipida</i> Butler                             |
| <i>Oracisa emarginata</i> (Fabricius)         | <i>Macroglossum gyrans</i> Walker                               |
| <i>Achaea janatha</i> (Linnaeus)              | <i>Acosmeryx anceus subidentata</i> Rothschild & Jordan (Fig.3) |
| <b>Subfamily: Buletinae</b>                   | <i>Lopharctus comprimens</i> Walker (Fig.25)                    |
| <i>Egnaia ephrydatis</i> Walker (Fig.2)       | <i>Angonyx testacea</i> (Walker)                                |
| <b>Subfamily: Scoliopteryginae</b>            | <i>Hippotion celerio</i> (Linnaeus)                             |
| <i>Calesta haemorrhua</i> Guenee              | <i>Hippotion boerhavia</i> (Fabricius) (Fig.24)                 |
| <i>Anomis flava</i> Fabricius                 | <i>Theretra lycetus</i> Cramer (Fig.41)                         |
| <i>Anomis sabulifera</i> Guenee               | <i>Theretra oldenlandae</i> (Fabricius) (Fig.31)                |
| <b>Subfamily: Pangrapinae</b>                 | <i>Theretra palliosta</i> (Walker) (Fig.50)                     |
| <i>Egnaia accingula</i> Walker                | <i>Theretra sibiricus</i> Walker (Fig.40)                       |
| <i>Egnaia ephrydatis</i> Walker (Fig.2)       | <i>Theretra lateralis</i> (Macleay)                             |
| <b>Subfamily: Erebiinae</b>                   | <i>Theretra nessus</i> (Drury)                                  |
| <i>Ischnia manlia</i> (Cramer) (Fig.28)       | <i>Theretra gnoma</i> (Fabricius)                               |
| <i>Dysgonia stiposa</i> Fabricius             | <i>Theretra alecto</i> (Linnaeus)                               |
| <i>Bastilla crameri</i> Moore (Fig.14)        | <i>Pergesa actus</i> (Cramer) (Fig.46)                          |
| <i>Grammodes geometrica</i> (Fabricius)       | <i>Nephele hespera</i> (Fabricius) (Fig.26)                     |
| <i>Hulodes curvatus</i> Cramer                | <i>Maramba dyas</i> (Walker) (Fig.15)                           |
| <i>Ercheia cyllaria</i> Cramer (Fig.17)       | <b>Subfamily: Spinginae</b>                                     |
| <i>Ercheia diversipennis</i> Walker           | <i>Acherontia styx</i> Westwood                                 |
| <i>Ocyodes scrobiculata</i> Fabricius         | <i>Acherontia lachesis</i> (Fabricius) (Fig.19)                 |
| <i>Erebus hieroglyphica</i> Drury (Fig.49)    | <i>Psilogramma</i> sp. ( <i>mesophora</i> agg.) (Fig.34)        |
| <i>Thyas coronata</i> Fabricius               | <i>Agris convolvuli</i> Linnaeus (Fig.32)                       |
| <i>Thyas honesta</i> Hubner (Fig.18)          | <b>Subfamily: Smerinthinae</b>                                  |
| <i>Lygniodes vampyrus</i> (Fabricius)         | <i>Amphipterus panopus</i> Cramer (Fig.27)                      |
| <i>Ariena submiria</i> Walker                 | <i>Daphnia nera</i> (Linnaeus) (Fig.37)                         |
| <i>Trygonodes hypostia</i> Cramer             | <i>Amblyx belli</i> (Jordan) (Fig.23)                           |
| <i>Erebus macrops</i> Linnaeus (Fig.9)        | <b>Family: Eupterotidae</b>                                     |
| <i>Ericia inangulata</i> (Guenee)             | <b>Subfamily: Eupterotinae</b>                                  |
| <i>Dierna panibulum</i> Fabricius             | <i>Eupterote undata</i> Blanchard                               |
| <i>Anatha hubei</i> (Geyer) (Fig.11)          | <i>Eupterote mollifera</i> Walker                               |
| <i>Serrodus campana</i> Guenee                | <i>Eupterote primularis</i> Moore                               |
| <i>Sphingomorpha chlorea</i> (Cramer)         | <b>Family: Lasiocampidae</b>                                    |
| <i>Spirama reitoria</i> Clerck (Fig.5)        | <b>Subfamily: Lasiocampinae</b>                                 |
| <i>Mocis undata</i> Fabricius (Fig.45)        | <i>Trabala vishnou</i> Lefebvre (Fig.13)                        |
| <b>Subfamily: Aganainae</b>                   | <b>Family: Uranidae</b>   |
| <i>Asota producta</i> Butler (Fig.6)          | <b>Subfamily: Epipleminae</b>                                   |
| <i>Asota corvica</i> Fabricius                | <i>Orndalza proactularia</i> Walker                             |
| <i>Asota heliconia</i> (Linnaeus)             | <i>Epiplema irrorata</i> (Moore)                                |
| <i>Asota plana</i> (Walker)                   | <b>Subfamily: Microoniinae</b>                                  |
| <i>Asota ficus</i> Fabricius                  | <i>Micronia aculeata</i> Guenee                                 |
| <i>Asota ficus</i> Fabricius                  | <b>Family: Geometridae</b>                                      |
| <i>Neochera inops</i> (Walker) (Fig.1)        | <b>Subfamily: Geometrinae</b>                                   |
| <b>Subfamily: Aretinae</b>                    |   |







## A PRELIMINARY CHECKLIST OF HYMENOPTERAN LARVAL AND PUPAL PARASITIDS OF MOTHS (LEPIDOPTERA: HETEROCERA) FROM INDIA

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## AUTHORS' CONTRIBUTIONS

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

## Article Information

## Editors:

- (1) Dr. Juan Carlos Troiano, University of Buenos Aires, Argentina.  
 (2) Mahendran B, Indian Council of Agricultural Research (ICAR), India.  
 (3) Ibrahim El-Sayed Shehata, National Research Centre, Egypt.  
 (4) Carlos Henrique Marchiori, Instituto Federal Goiano, Brazil.

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Review Article

## ABSTRACT

The present paper, based on the study of published literatures, provides an updated checklist of 54 species of pupal and 197 species of larval hymenopteran parasitoids associated with the larva and pupa of moths from India. Though the literatures pertaining to the above research work are available in various published journals and books, a compiled list is not so far published from India. The present paper also included the systematic status of both host (moth) and its natural enemies (hymenopteran parasitoids), which would be helpful for biological control workers in future.

**Keywords:** Larval; pupal parasitoids; moths; heterocera; India.

## 1. INTRODUCTION

Lepidoptera, one of the largest insect orders after beetles, comprises more than 160,000 described species globally. According to van Nieukerken et al. [1], there are 15,578 described genera and 157,424 species worldwide. They are treated as sister group of butterflies and have an unwelcome impact on crops and other economically important flora. Many moth species are polyphagous and are major pests of

agroecosystems. The conventional way of controlling these pests is by the use of insecticides or other chemicals which could bring about a non reversible damage to the genetic machinery of other fauna [2-20].

To reduce crop production losses and to diminish insecticide use, entomologists provided an eco-friendly method namely, biocontrol agents in which the natural enemies of the pests are used to control its



## A checklist of Erebininae (Lepidoptera, Erebiidae) from India

Adarsh Panichal Kuniyil and Abhilash Peter\*

Department of Zoology, Christ College (Autonomous Affiliated to University of Calicut), Irinjalakuda 680125, Thrissur, Kerala, India.  
 Email: abhilashpeter@gmail.com

**ABSTRACT:** Species under the subfamily Erebininae in India has been compiled and updated. A total of 250 species under 65 genera is enumerated. Current systematic status of the species based on the molecular phylogenetic studies by Zahiri et al. (2011) is given along with their type species and generic synonyms. © 2022 Association for Advancement of Entomology

**KEY WORDS:** Morphology, redescription, variation, Western Ghats, distribution species, genera, synonyms, systematic status

Family Erebiidae, one of the diverse families of moths of superfamily Noctuoidea comprises about 25000 described species all over the world (Van Nieukerken et al., 2011). Erebininae, a major subfamily of the family Erebiidae of the superfamily Noctuoidea, consists of more than 10,000 described species (Singh and Ranjan, 2016; Zahiri et al., 2011). Erebininae has a very complex taxonomic history. Fibiger and Lafontaine (2005) divided Noctuoidea into nine families including Erebiidae, and redefined Noctuoidea including five families namely Ocnosandriidae, Doidae, Notodontidae, Micronoctuidae and Noctuidae under it. All quadrifid groups including Erebininae were shifted to the family Noctuidae. The current taxonomic status of Erebininae is based on the molecular phylogenetic studies by Zahiri et al. (2011).

Data regarding species of the subfamily Erebininae from India is remain scattered in literature. Many genera of the Erebininae subfamily are placed under outdated classification (Homziak et al., 2016). In 1894 Hampson recorded many Erebininae species in his book 'Fauna of British India: Moths' (volume 2 and 3) under the subfamilies Quadrifinae and

Focillinae of Noctuidae. In a study on the moth fauna of Orissa, Mandal and Maulik (1991) reported several species of Erebininae belonging to the genera *Lagoptera* Guenée, *Speiredonia* Hubner, *Anua* Walker, *Paralltelia* Hubner and *Chalciope* Hubner. However, many of these genera are not valid now. Genus *Lagoptera* is considered as a synonym of *Thyas* Hübner (Poole, 1989). Similarly, species of the genus *Anua* were shifted to the genus *Ophiusa* Ochsenheimer (Poole, 1989). Smetacek (2008) recorded 887 species at different elevations of Nainital district (Utharkhand, India) mainly from Kummon (Himalaya). *Bastilla matuscens* Walker, *B. praetermissa* William Warren and *B. analis* (Guenée) reported by Smetacek (2008) are now considered as synonyms of species of *Dysgonia* Hubner (Poole, 1989). Gadhihar et al. (2015), Paul et al. (2017), Gurule (2013) and Sondhi and Sondhi (2016) also reported *Bastilla* Swinhoe moths from India. Some of the moth species of *Bastilla* are now shifted to the genus *Dysgonia* while some are retained in the *Bastilla* genus itself. Genus *Caranilla* Moore and *Pindara* Fabricius are also synonymized to *Dysgonia* by Poole 1989. *Caranilla* and *Pindara* species reported by Rose

\* Author for correspondence

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Report on pupal parasitism of *Mocis undata* (Fabricius) (Lepidoptera: Erebiidae) by *Brachymeria lasus* (Walker) from Kerala

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Department of Zoology, Christ College, Irinjalakuda, Thrissur, Kerala, India

## Abstract

*Mocis undata* (Fabricius), commonly called brown-striped semilooper, feeds on many economically important plants and crops such as longkong, citrus, pomelo, soybean, *Shorea*, *Hevea*, *Gossypium*, *Nephelium*, *Solanum* etc. Here, we report pupal parasitism by the parasitoid *Brachymeria lasus* with a detailed biology of *Mocis undata* from Kerala, India.

**Keywords:** pupal parasitism, *Mocis undata*, erebiidae, *Brachymeria lasus*

## Introduction

*Mocis undata*, moth species of the family Erebiidae is distributed in the Afrotropical and Oriental regions (Holloway, 2005) [1] of the World. Moth commonly known as brown-striped semilooper is the pest of longkong, citrus, pomelo and soybean (Ngampongsai et al., 2005, Bhamare et al., 2019 and Singh et al., 2013) [2, 3]. The genus is represented by 40 species (Poole, 1989) [4]. Larval hostplants include mostly Leguminosae and *Shorea*, *Hevea*, *Gossypium*, *Nephelium* and *Solanum* (Robinson et al., 2001) [5]. *Brachymeria lasus* is a polyphagous solitary pupal parasitoid of the family Chalcididae with a host range of 104 species of Lepidoptera, Hymenoptera and Diptera (Mao et al., 1994; Narendran et al. 2006) [6, 7]. In this paper, we report the pupal parasitoid, *Brachymeria lasus* parasitizing pupa of *Mocis undata* from Kerala.

## Materials and Methods

An adult female moth and three pupae of *Mocis undata* collected from the rubber plantation at Pachila, Idukki, Kerala, India (N09°58'22.9" E076°48'08.3") on 6<sup>th</sup> February 2022 were brought to the ETL (Entomo Taxonomy Lab), Christ College, Irinjalakuda. A female moth was transferred to a clean jar covered by a cotton cloth. After a day, the adult female laid patches of round pale eggs. After two days, the larvae were separated into four bottles (6cm height x 3cm diameter). The lid of the bottle was covered with muslin cloth. The larvae in the bottles were fed with *Pueraria phaseoloides* (Roxb.) Benth. leaves. The jar was cleaned every day in the morning. A parasitoid emerged from one of the pupae on 13<sup>th</sup> February 2022 and two live moths emerged from the remaining two pupae on 15<sup>th</sup> February 2022. The emerged adult moths were allowed to mate in the lab conditions. The complete life cycle of the moth, starting from egg (laid eggs on February 2022) to the transformation into the adult (adult emerged on March 2022) was also recorded. The specimens were then killed using ethyl acetate, dried, pinned and stored in an airtight insect box.

Moths were identified using the literature of Hampson G.F. (1894), Singh et al. (2017) [12] and Sivasankaran et al. (2017) [13]. The taxonomic arrangement of the moth followed Zahiri et al. (2010) [8] and Van Nieukerken et al.

(2011) [1]. The morphological features of the immature stages of moths were studied using the Labomed Luxco 4D model microscope.

## Results and Discussion

*Brachymeria lasus* is a polyphagous pupal parasitoid attacking mainly lepidopteran species. Tegula black in colour with yellow. All coxae and trochanters are black. Mesosoma and all femora are black with the apices yellow. Yellow hind tibia with base and inner ventral marginal area black. All tarsi yellow and telotarsi are black in colour. Forewing hyaline with dark brown veins present. T<sub>1</sub> smooth and shiny with metasoma ovate. Hind femur with a row of several teeth on the outer ventral margin.

## Adult

The head is dark brown with labial palpi upturned and the antennae ciliated. Tufts of dark brown hair are present in the collar and tegula region. Forewing is pale red-brown. Thorax is pale brown. Abdomen is also pale brown with the anal tuft ochreous and extending beyond the hindwings. Forewing with a dark brown subbasal line extending from the costa to the anal vein. An oblique anteromedial dark brown band and two sinuous dark brown medial lines. The first medial line ends with a dark black spot above the inner margin. A small black spot is present after the basal area and just above the inner margin. A dark brown diffused postmedial band on which a sinuous dark brown line is present beyond the cell. The hindwing is ochreous fuscous with long hairs from basal to medial region. Diffused narrow fuscous medial and broad submarginal bands are present. Legs rufous and covered with hairs.

## Egg

0.65mm in diameter. Female species deposited 60 spheroidal eggs in a cluster on 6<sup>th</sup> February 2022. The flattened base of the egg is firmly attached to the surface of the bottle. The chorion of the eggs possessed numerous vertical ridges. Each of the vertical ridges extended from the micropylar area to the base of the egg. The colour of the eggs changed from light green to dark green and finally to black prior to hatching. The eggs hatched in the evening on 9<sup>th</sup> February 2022. It took 4 days to hatch.

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Assistant Professor;

\*Corresponding author: Email: abhilashpeter@gmail.com.

## First report of *Eudocima cajeta* (Cramer) (Lepidoptera: Erebidae) from Kerala, India with notes on male and female genitalia

Adarsh P.K. and Abhilash Peter\*

Entomo Taxonomy Lab, Department of Zoology, Christ College (Autonomous), Irinjalakuda, Thrissur 680 125, Kerala, India (Affiliated to University of Calicut)

(Received 7 October, 2022; Accepted 10 December, 2022)

### ABSTRACT

A report on the fruit piercing moth *Eudocima cajeta* (Cramer) (Lepidoptera: Erebidae) is authenticated for the first time from Kerala, India. In addition to the morphology of the adults, detailed notes on the male and female genitalia structures are also provided in this paper.

**Key words :** *Eudocima cajeta*, Erebidae, Genitalia, Kerala

### Introduction

The genus *Eudocima* Billberg includes approximately 50 species of fruit piercing moths which are distributed tropical, subtropical and neotropical regions (Zaspel and Branham (2008); Zilli *et al.* (2017). Many species of neotropical and oriental regions were earlier placed under other genera such as *Othreis* Hübner, *Ophideres* Boisduval and *Trissophaes* Hübner. Currently, all the fruit piercing moths were placed under the genus *Eudocima* (Sergio Vargas-Fonseca *et al.* (2020). Unlike other moth pests, many adult *Eudocima* species are reported as major pests of pomegranate, citrus, orange and papaya (Shendge and Chavan (2019). Adults pierce and suck juice using its strong sclerotized proboscis, which leave behind scars and color change on fruits gradually leading to rotting of fruits.

*E. cajeta* (Cramer), *E. srivijayana* (Banziger) and *E. talboti* (Prout A.E.) are the morphologically similar and sexually dimorphic species reported from the Indo- Australian regions. (Zilli *et al.* (2017). It is man-

datory to do genitalia analysis for the species level authentication. 12 species of *Eudocima* have been reported so far from India (Singh *et al.* (2019); Shendge, and Chavan, 2019). The genitalia feature of *Eudocima* moths of India is not well recorded. Most of the species level identifications were done without genitalia study, even for species groups with similar morphology. Singh *et al.* 2019 conducted genitalia studies of *E. materna* and *E. phalonia* from India. This species has also been reported from other parts of India (Assam, Rose (2002); Tamil Nadu, Sivasankaran *et al.* (2017). In this manuscript, we authenticate *Eudocima cajeta* for the first time from the state of Kerala, India based on the study of both male and female genitalia.

### Materials and Method

The adult male and female specimens of *E. cajeta* were collected from Kattungachira, Irinjalakuda, Thrissur, Kerala on 3rd of February 2022 (100 22'08" N 76012'50"E) and Panamaram, Wayanad

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