Department of Zoology

Dr.BRR Government College
Jadcherla

Student Study Project
On

"Abundance and diversity of Lepidopteran moth species in and around of Dr.BRR Government Degree College Jadcherla Town of Telangana State".

Academic Year 2021-22

Dr. BRR GOVERNMENT DEGREE COLLEGE
JADCHERLA – 509 301

(Accredited with B^{++} by NAAC)

Dr. CH.Appiya Chinnamma, M.Sc., Ph.D
Principal

The department of Zoology has conducted student study projects during the academic year 2021-22

Title: "Abundance and diversity of Lepidopteran moth species in and around of Dr.BRR Government Degree College Jadcherla Town of Telangana State".

Place of Work: Dr.BRR Bevernment Degree College Jadcherla T.S

Members of The Group Project:

1. C.Srikanth Goud	B.Sc.,(BZC) II year 20033006445522	C.Srik	6309701592
2.M.Ganesh	B.Sc., (BZC) II year 20033006445574	M. Ganesh	9701089764
3.G.Shiva Kumar	B.Sc., (BZC) II year 20033006445533	G.Shivakumar	7989822853
4.G.Shivalingam	B.Sc., (BZC) II year 20033006445535	G.Shiva	9100859636
5.K.Srisailam	B.Sc., (BZC) II year 20033006445559	K.Srisailam.	8688739205
6.D.Naresh	B.Sc., (BZC) II year 20033006445528	D.Naresh.	7816028162
7.B.Naresh	B.Sc., (BZC) II year 20033006445513	B.Naresh	7036705971

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A Group Project

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6.D.Naresh	B.Sc., (BZC) II year 20033006445528
7.B.Naresh	B.Sc., (BZC) II year 20033006445513

Supervised By

B.Ravinder Rao,Asst.Professor of Zoology

Supervisor

In-Charge of the Department

Principal

PRINCIPAL
Dr BRR Govt. College
Jadcherla-509 301

Dr. BRR GOVERNMENT DEGREE COLLEGE
JADCHERLA – 509 301

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Dr. CH.Appiya Chinnamma, M.Sc., Ph.D.
Principal

Student Study Project Certificate

CERTIFICATE

This to certify that,the project work Title: "Abundance and diversity of Lepidopteran moth species in and around of Dr.BRR Government Degree College Jadcherla Town of Telangana State".is a bonafideworkdonebyC.SrikanthGoud,M.Ganesh,G.ShivaKumar,G.Shivalingam,K.Srisailam,D.Naresh and B.Naresh the students of B.Sc (BZC) IV semester under my supervision in Zoology at the Department of Zoology Dr.BRR Government Degree College Jadcherla during the academic year 2021-22 and the work has not been submitted to any other college or university either par or full for the award of any degree.

Place Jadcherla

Date: 31/12/2021

B.Ravinder Rao

Asst,Prof,of Zoology

Department of Zoology

Dr.BRR Government Degree College Jadcherla

A Student Group Project

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Supervised by Ravinder Rao Bakshi, Asst.Professor, Department of Zoology Dr.BRR Government College Jadcherla

Acknowledgements:

The members of this project extend thanks to Dr.CH.Appiya Chinnamma, Principal for permitting to conduct this project.

The team is indebted to all the zoological student community for allowing us to use Animal album

Special thanks are due to K.Neeraja, lecturer in Zoology and Smt.K.Subhashini Asst.Prof, of Zoology for their help and advice to complete this project.

Finally thanks are also due to Sri B.Ravinder Rao,HOD for guiding the team to during period the project.

Objectives:

To Promote interest in research aptitude among students

To promote the concept of Biodiversity

To preserve the natural composition of Biota in the College garden

To know the niche of Lepidopterans in Nature

ABSTRACT

Moths are the lepidopteran insects.The present work is aimed to study diversity and abundance of Lepidopteran moths in Jadcherla in the surroundings of Dr.BRR Government Degree College Jadcherla. This study has been carried out for six months from July 2021 to December 2021. The team observed a total of 12 species of moths belonging to 6 families. The most abundant family was Erebidae comprising 4 species followed by Crambidae,Geometridae,Nolidae,Noctuidae and Hyblaeidae with two,two,two, one and one respectively

Key words: Diversity, Lepidopters,Moths and Dr.BRR Government Degree College Jadcherla

Introduction:

Moths are a paraphyletic group of insects belonging to the order Lepidoptera. Moths evolved earlier to butterflies. There are about 160,000 species of moths in the world. The wings, bodies, and legs of moths are covered with dust like scales that come off if the insect is handled. Compared with butterflies, moths have stouter bodies with pale colour. Moths also have distinctive feathery or thick antennae. Moths and their caterpillars are important food items for many other species, including amphibians, small mammals, bats and many bird species. Moth

caterpillars are especially important for feeding young chicks, including those of most familiar garden birds such as the Blue Tit and Great Tit, Robin, Wren and Blackbird. A serious decline in moth numbers could have disastrous knock-on effects for all these wildlife species. Already, research has indicated that a decrease in the abundance of bats over farmland is related to the decline in the moths that they depend on. Other things which may be causing problems for moths include changes in the way we manage our gardens, pesticides, herbicides and light pollution. Climate change is also affecting moths. Whatever the causes, the decrease in moth numbers is a warning to us that all is not well with our environment. Moths also play a vital role in telling us about the health of our environment, like the canary in the coalmine. Since they are so widespread and found in so many different habitats, and are so sensitive to changes, moths are particularly useful as indicator species. Monitoring their numbers and ranges can give us vital clues to changes in our own environment, such as the effects of new farming practices, pesticides, air pollution and climate change. Moth caterpillars have a great impact on plants by eating their leaves.

MATERIALS AND METHODS:

1) Study area:

Jadcherla Town is located 80KMs away from Hyderabad, the capital city of Telangana State. It is located on National Highway 44 south to Hyderabad. The topographical details are Longitude: 78.1442814,Latitude: 16.7629646,Elevation: 548m / 1798feet and Barometric Pressure: 95KPa.Population of Jadcherla in 2021 is 127,430. Dr.BRR Government Degree ollege is located at Signalgadda landmark with an area of around 15Acres of land. this college has good greenery with gardens covering 7 Acres of land.

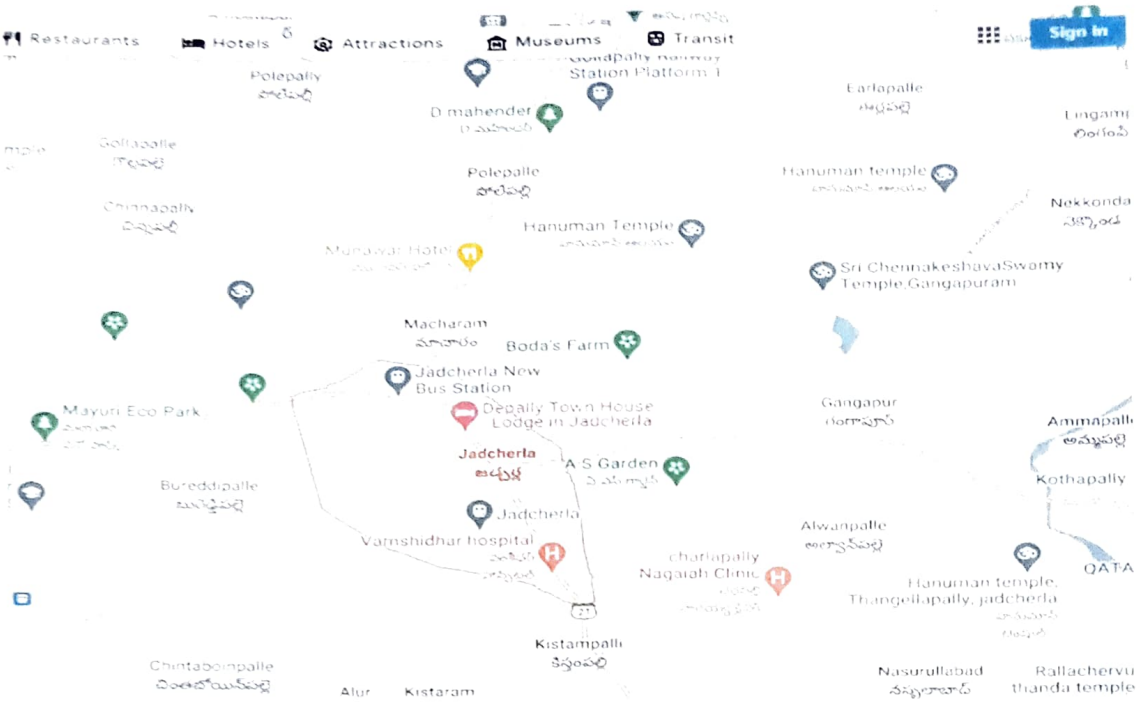


Fig.1: Map of Study area - Jadcherla

2) Specimen observations and photography:

The present study was done for six months from July 2021 to December 2021. Specimens of Moths were observed in the field with careful note on their habitats. Repeated visits to the field have been made in morning, afternoon and evening time. For diversity and abundance, specimen numbers of each species have been counted by visual observations.

The students studying biological science in this college are having a habit of preparing Animal albums with locally inhabiting faunal species to submit for their Practical lab study. In the present study project, the data of moth species is collected from the Animal albums of the Department of Zoology and compared with the available checklist. The findings presented here are based on a bi-weekly random survey in and around areas of Jadcherla town carried out by the members of this group project. moths were accessed in the study area by random observations during walking through the college garden and nearby crop fields based on habitats present in the study area as per COVID-19 precautions. In the field, photographs of the moths were taken with the mobile cameras of students for the identification purpose.

The specimens were identified in the field by using field guides. Most specimens were identified in the field by visual observations. The photography was done by using the Mobile phone cameras. Though the clarity of pictures is not satisfactory, the specimens are identified by using standard classification charts. Results were recorded by visualizing the specimens

Table.1: List spececies of Moths observed in the garden of Dr.BRR Government College Jadcherla

S.No.	Order	Family	Scientific name	Common name
1	Lepidoptera	Erebidae	Amata sp.	Wasp moth
2			Lamantria sp.	Gypsy moth
3			Zanclognatha sp	
4			Orgyia sp.	Tusssock moth
5		Geometridae	Hypomecis sp.	
6			Scopula sp.	
7		Crambidae	Synclera	variegated pearl
8			Spoladea	beet webworm moth
9		Nolidae	Nola sp.	
10			Eligma sp.	
11		Noctuidae	Arcte sp.	Ramie moth
12		Hyblaeidae	Hyblaea	Teak defoliator

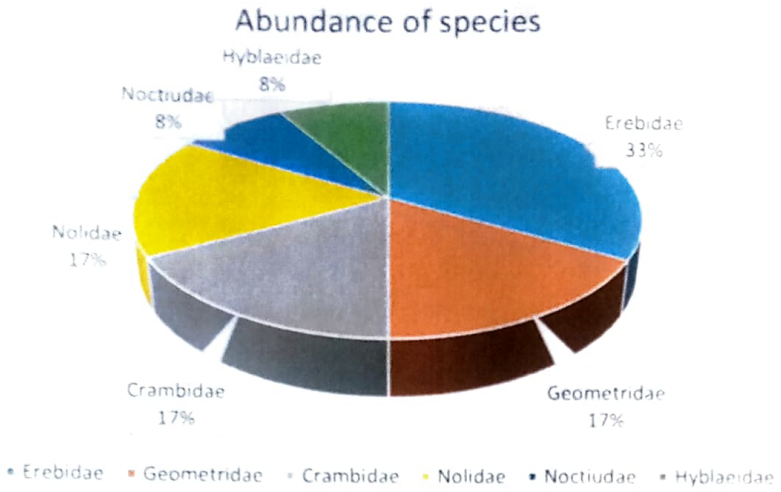


Fig.2 Abundance of moths species in the garden of Dr.BRR Government College Jadcherla

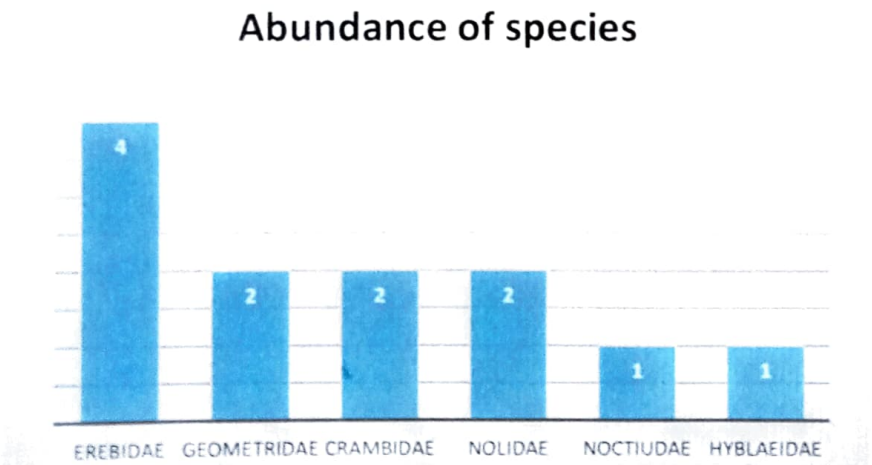


Fig.3 Abundance of Families moths species in the garden of Dr.BRR Government College Jadcherla

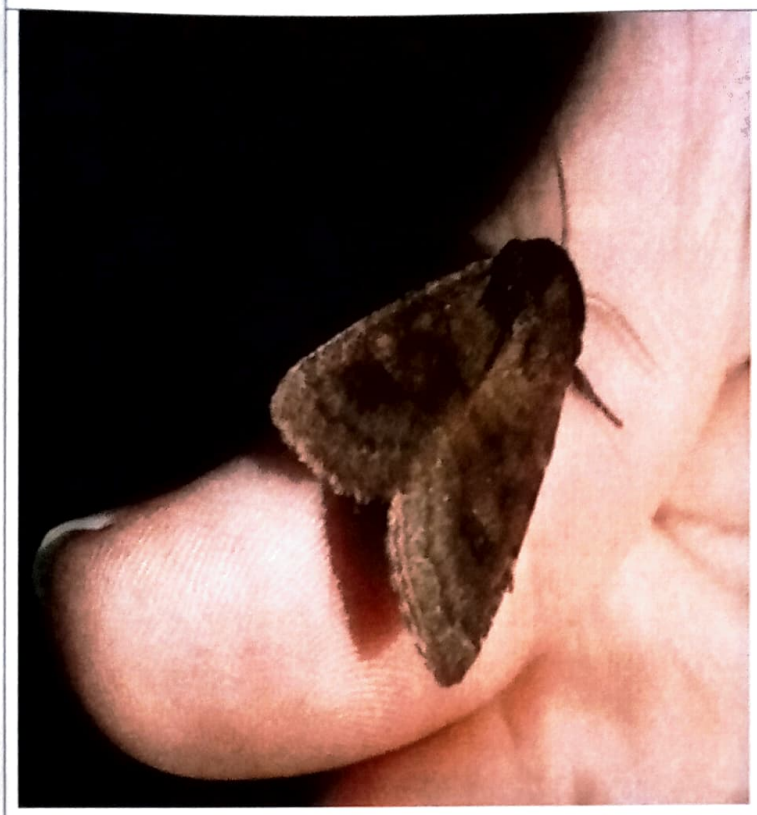
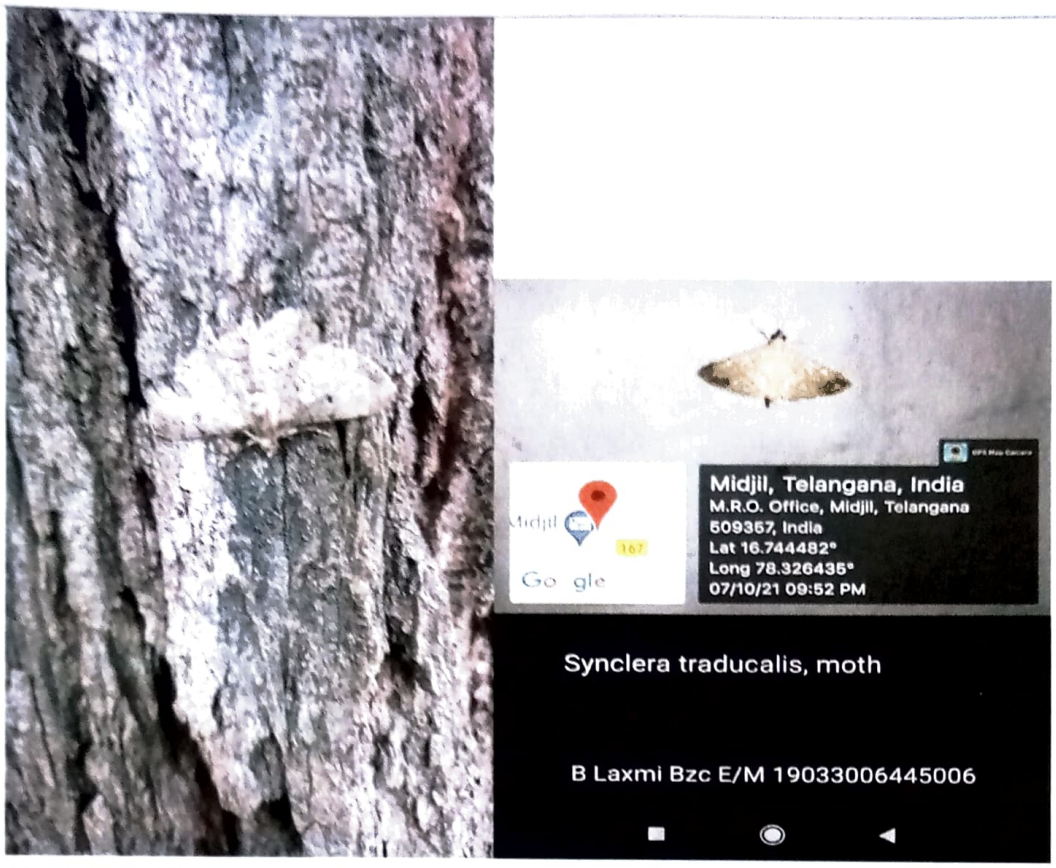
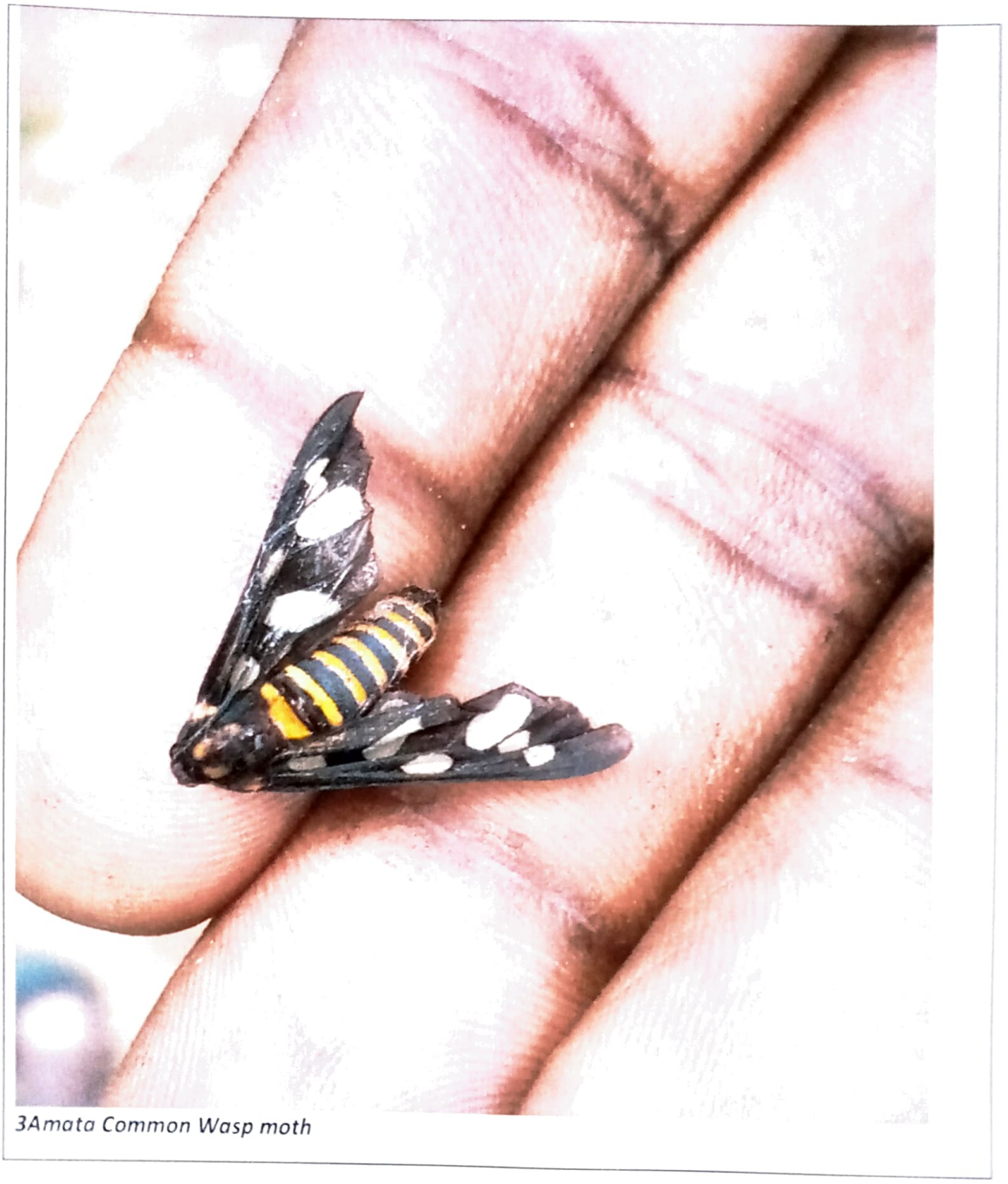


Figure 1Arcte coerula



Hypomecis sp



3Amata Common Wasp moth

4Spoladea, sp

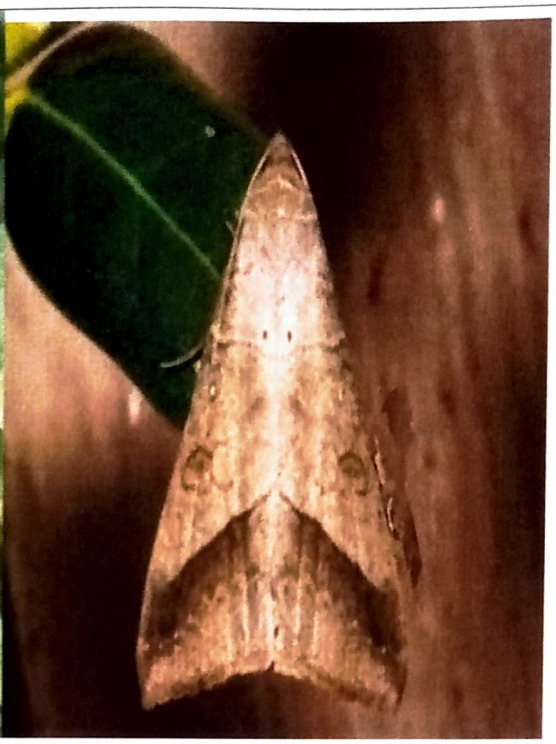
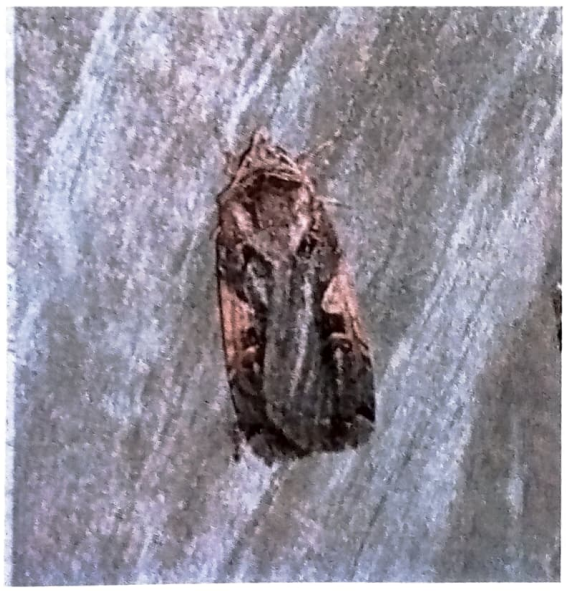


Figure 8 ***Zanclognatha lunalis***

5Gypsy moth



6Nola Sp

Figure 7 ***Eligma narcissus***

Figure 9 ***Hyblaea puera***

10 ***Scopula sp***

Fig.4: Some selected Moth species images

Results:

In the garden of Dr.BRR Government Degree Collge moth species of 12 genera belonging to 6 familiesare observed.. Among the 6 families erebidae emerged as the dominant family recording 4 number of species.followed by Crambidae,Geometridae,Nolidae,Noctuidae and Hyblaeidae with two,two,two, one and one respectively. This project report shall further help us strengthen our knowledge about the importance of moths in our environment and contribute towards its conservation at large.

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