



STUDY ON INSECT DIVERSITY IN AND AROUND MAHARANI'S SCIENCE COLLEGE CAMPUS, MYSURU, KARNATAKA

Priyadarshini	Guest Faculty, Postgraduate Department of Applied Zoology Maharani's Science College, J.L.B Road, Mysuru – 570 005. Karnataka, INDIA.
Raghunandan, K. S*	Guest Faculty, Postgraduate Department of Applied Zoology Maharani's Science College, J.L.B Road, Mysuru – 570 005. Karnataka, INDIA. *Corresponding Author
Suchitha, C.K	M.Sc., Student Postgraduate Department of Applied Zoology Maharani's Science College, J.L.B Road, Mysuru – 570 005. Karnataka, INDIA.
Sachidanandamurthy, K. L	Associate Professor, Postgraduate Department of Applied Zoology Maharani's Science College, J.L.B Road, Mysuru – 570 005. Karnataka, INDIA.

ABSTRACT

The study was conducted on the diversity of insect species at Maharani's Science College Campus, Mysuru, Karnataka during February to April, 2017. A total of 41 different species belonging to 22 families and 9 orders were recorded. This study shows that highest number of insect species belongs to order Hymenoptera (24.3%), followed by Coleoptera (21.9%), Orthoptera (9.8%), Lepidoptera (14.6%), Hemiptera (9.8%), Blattodea (7.3%), Mantodea (7.3%), Isoptera (2.5%) and Odonata (2.5%). The insect diversity was quite good (Shannon's Weaver index = 2.97). Although, study of this kind is a pioneer attempt, season wise study in future would throw more light on insect biodiversity greater in detail.

KEYWORDS

Insect diversity, Hymenoptera, Shanon weaver index, Maharani's Science College, Mysuru. Insect diversity, hymenoptera, Maharani's Science College.

Introduction

Insects are the most diverse group of animals on the planet earth, which includes more than a million described species (Gullan and Cranston, 2005). It accounts for over half of all living described organisms which have a very significant role in the ecosystem by affecting the diversity, abundance and distribution of plant communities (Wilson, 1988). Many insects are economically important, as pollinators and agents of plant dispersal and in the maintenance of soil structure and soil fertility, etc. Some are also useful as predators and parasites of insect pests of various crops (Khadijah et al., 2013). Their diversity and composition is largely dependent on vegetation (Raghunandan and Basavarajappa, 2014a) and any change in the habitat is likely to have an impact on their distribution and relative abundance (Holloway, 1977).

Biological diversity is one of the most fascinating aspects of biology. Evolution by natural selection has produced, and is still producing different insect species (Kyerematen et al., 2014). Insects and plants are becoming extinct because of habitat loss, over-exploitation, pollution, overpopulation and the threat of global climatic changes (Rajkumari et al., 2012). India is one among the twelve mega biodiversity countries of the world and 80% of the insects are endemic in India (Murugan, 2006). Insects have been used in landmark studies in different biology branches such as bio-mechanics, climate change, developmental biology, ecology, evolution, genetics and Paleolimnology (Footit and Adler, 2009). Although, literature pertaining to Insect diversity was available at different geographical regions, no reports related to Insect diversity at Maharani's Science College, Mysuru is available. In this regard, an attempt has been made to record few insect species present in and around the college campus.

MATERIALS AND METHODS

In present investigation the insects were collected at monumental edifice, Maharani's Science College (120 18 minute and 36 seconds N longitude and 760 38 minute and 35" E latitude.), Mysuru and few nearby places around the campus (Fig. 1) during February to April, 2017. Insect collection was done by using hand picking method and insect collection net (Wilson, 1988). Further, it is stored in 70% alcohol using storage box as per standard methods (Biony, 2009 and Raghunandan and Basavarajappa, 2014b) till further analysis. They were documented using photographs (Sony digital camera 12.0

Megapixels with 5X optical zoom) for future references. The Insects encountered were identified using the standard keys, literature based references and taxonomic experts.



Figure 1. Study area Map

RESULTS AND DISCUSSION

Table 1: Few insect species recorded in and around Maharani's Science College Campus, Mysuru

Order	Family	Scientific name
Hymenoptera	Apidae	<i>Apis dorsata</i>
	Formicidae	<i>Camponotus irritans</i>
		<i>Diacamma ceylonense</i>
		<i>Oecophylla smaragdina</i>
Coleoptera	Scarabaeidae	<i>Oryctes rhinoceros</i>
Lepidoptera	Erebidae	<i>Asota ficus</i>
	Lycaenidae	<i>Jamides celeno</i>
	Papilionidae	<i>Graphium agamemnon</i>
	Nymphalidae	<i>Junonia iphita</i>
Orthoptera	Acrididae	<i>Acrida exaltata</i>
Blattodea	Blattidae	<i>Blatta orientalis</i>
		<i>Periplaneta americana</i>
	Ectobidae	<i>Blattella germanica</i>
Mantodea	Hymenopodidae	<i>Crebrater gemmatus</i>
	Mantidae	<i>Mantis religiosa</i>
* Shannon- Weaver diversity Index = 2.97		

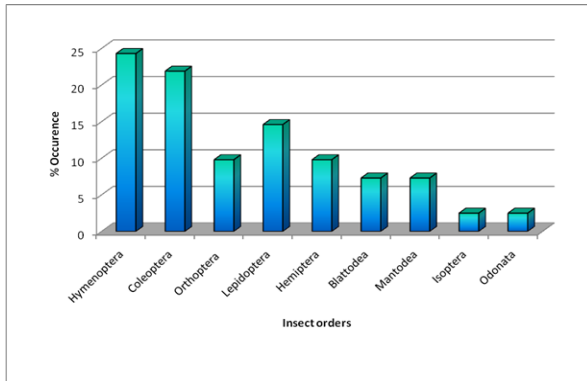


Figure 2: Percentage contribution of different insect orders recorded in and around Maharani's Science College Campus, Mysuru

Few insect species recorded in and around Maharani's Science College, Campus was represented in Table 1. During the study, total of 41 different species belonging to 22 families and 9 orders were recorded. Of the total recorded species, the highest number of species belongs to Hymenoptera (24.3%), followed by Coleoptera (21.9%), Orthoptera (9.8%), Lepidoptera (14.6%), Hemiptera (9.8%), Blattodea (7.3%), Mantodea (7.3%), Isoptera (2.5%) and Odonata (2.5%) (Fig.2). Interestingly in the present study, amongst the Insect diversity species, order hymenoptera were more which constitutes insects such as ants, wasps, bees, etc. The diversity of insects varies with different ecological role, the natural resources, climate change including availability of food plants and topographic features etc. The existences of insects diversity in Maharani's Science College Campus seems to abundant from present study. This may be due to the prevailed virtual environmental factors like temperature, daylight, humidity, vegetation, etc., which makes necessitation for the Insect diversity at this urbanized condition inspite of anthropogenic interferences. The insect diversity is quite good (Shannon-Weaver diversity index = 2.97) when we compared with the results of similar studies conducted by several researchers like Binoy (2009), Khadiniah *et al.*, (2013), Harinath *et al.*, (2014), Kyerematen *et al.*, (2014), Rajkumari *et al.*, (2014) Muthukumaravel *et al.*, (2015), Usha and Jhon (2015) and Kulshrestha and Jain (2016) and at different geographical areas. Since, the study of this kind is a preliminary attempt, focused season wise studies in future would help access and understand the insect biodiversity at this place greater in detail.

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