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# A Preliminary Checklist of Entomo Fauna from Shri Shivaji College Campus Chikhli, district Buldhana, Maharashtra

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#### Abstract

Entomo fauna are found almost everywhere. Yet, their abundance and diversity in some eco systems is still undisclosed. The present study was conducted to assess and compare the abundan ce, species diversity from campus. We investigate the diversity of some insect fauna in different area of campus. Campus has 18 acres lush green vegetation, which is the good habitat for insects. The first complete checklist of insects is recorded, where 83 species belonging to 13 different orders were listed. This work is considered the first checklist of insects in Chikhli, district Buldhana.

The present study was an attempt to explore insect diversity and to find out the checklist of insect fauna from the campus area of Shri Shivaji Science and Art College Chikhli. During this study, various species of insects were collected, photographed, and identified to estimate the insect species diversity from gardens and the campus area of Shri Shivaji Science and Art College Chikhli. A total number of 71 insects were identified up to the order and family level.

A total of 83 species from 39 families, from 11 orders of insects were obtained during the sampling from January 2022 to October 2024. The contributions of different orders were as follows: Lepidoptera (29), Coleoptera (9), Hymenoptera (16), Orthoptera (11), Diptera (6), Mantodea (2), Blanttodea (3), Hemiptera (1), Zygentoma (1), Odonata (2), Scolopendromorpha (1)were collected. Lepidoptera were having highest species diversity which was followed by Hymenoptera.

Keywords: Insect, Hymenoptera, Diversity, Shannon Diversity Index (H), Evenness, Checklist.

#### **I. INTRODUCTION**

Insects are the largest and most widely distributed animal groupin the world and invertebrates of the class Insecta. They can be found under objects like soil and rock, on plants, around houses and buildings almost anywhere. Aquatic insects can be found in lakes, ponds, rivers, and streams. Many insects can be damage and destroy agriculture, and many are considered as pests many of those are parasitic and transmit diseases.

On the other hand, they introduce a great job in pollination of the flowering plants. Insects are an integral part of the food chain whether consumer, prey, or predator.

Insects are the largest and most diverse, successful, and dominant taxon group on the earth. Because of their diversity, they play an important role in ecology and influence agriculture, human health, and natural resources. Insects are from the class – Insecta, phylum – Arthropoda,



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and kingdom – Animalia (Linnaeus, 1758). Insect biodiversity is the variability among living organisms from all sources including terrestrial, marine, and other aquatic ecosystems.

Insects have a nervous system that makes them similar toours like they can see, hear, smell, taste, and feel. There are different kinds of insects according to their habits and habitats are as follows –

- Coleopterans- Beetles
- Lepidopteron-Butterflies and moths
- Dipterans- Flies
- Hymenoptera-Ants, bees and wasps
- Orthopteran-Grasshoppers

The insect possesses an amazing diversity in size and shape their ability to fly helps them to defend from enemies and scatter a new environment as an exoskeleton, protective cell, etc. They have a fine nervous system that makes them able to see, hear, taste, and feel. Vegetation in this area are trees, shrubs, fruit crops, grasses, and medicinal plants. The entomofauna is the most dominate and most group in the world. Due to their small size, persistent habit, fecundity, aerial respiration, food diversity, etc., they can survive anywhere.

In this study area different insect orders i.e. Lepidoptera, Coleopteran, Hymenoptera, Hemiptera, Diptera, Orthoptera, and Mantodea. Approx. 60,000 - 70,000 insect species known from India which is about 7 -10 % of the world's insect fauna. But Due to endemism, it is unique which is about a third of the known species.

Studies on insect fauna in Shri Shivaji Science and Art College Campus, Chikhli is not studied before. No such published works or studies were constructed to study or record insect fauna of the Shri Shivaji Science and Art College campus, Chikhli. The main aim of this study is to find out a checklist of insect fauna from the campus of Shri Shivaji Science and Art College campus, Chikhli.

## **II. Method and Material**

## Study site

The study was carried out on the campus of Shri Shivaji Science and Art College, Chikhli City, in the Buldhana district of Maharashtra state (Fig.1). located at 20.3505°N North to 77.2577E° East at an average elevation of 1988 feet. That city faces variation in temperature with hot summer and cold winter. The rainfall receives from monsoon mainly in the month of June to September. The average annual rainfall in the site is 800 mm and temperature arerecorded between 180C to 460C.

The majority of insects are in morning habit while very few are active in the evening and diurnal.All insects were observed and some were photographed and identified from the campus of Shri Shivaji Science and Art CollegeCampus, Chikhli in and around between morning (8:00-12:15am) and between evening (4:00 -7:00pm) in the month of January to December to know the diversity of insects oncampus of the college. Then collected insects were released wherethey were collected.Orders, families, scientific names, and common names were given to each after identification.

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# Fig. 1-Map showing location of study site-Shri Shivaji Senior College Chikhli Result and Discussion

S.N	Order	Family	Scientific name	Common name	
1	Orthoptera	Pyrgomorphidae	Atractomorpha crenulata	Tobacco grasshopper	
2		Gomphocerinae	Chrothippus branneus	Common field grasshopper	
3		Acrididae	Omocestus viridulus	Common green grasshopper	
4		Acrididae	Acrida cinerea	Chinese grasshopper	
5		Acrididae	Oedaleus infernalis	Band-winged grasshopper	
6		Acrididae	Melanoplus bivittatus	Two-striped grasshopper	
7		Acrididae	Schistocerca Americana	American bird grasshopper	
8		Tettigoniidae	Scudderia curvicauda	Curve-tailed bush katydid	
9		Tettigoniidae	Tettigonia viridissima	Leaf-mimic katydid	
11	Mantodae	Eremiaphilidae	Scjzocephala bicornis	Indian grass mantis	
12		Hymenopodidae	Creobrother gemmatus	Flower mantises	
13	Coleoptera	Carabidae	Lebia grandis	Ground beetle	
14		Chrysomelidae	Altica oleracea	Leaf beetle	
15		Tenebrionidae	Alphitobius	Darkling beetle	
16		Lampyridae	Photuris lucicrescens	Firefly beetle	
17		Coccinellidae	Harmonia axyridis	Asian lady beetle	
18		Scarabaeidae	Holotrichia consanguinea	Sugarcane Beetle	
19		Coccinellidae	Coccinella septempunctata	Seven-spot ladybird	
20		Coccinellidae	Anatis labiculata	Fifteen-spotted ladybird	
21		Coccinellidae	Coccinella novemnotata	Nine-spotted ladybird	
22	Diptera	Tabanidae	Tabanus sulcifrons	Horse-flies	
23		Polleniidae	Pollenia sp.	Grass flies	
24		Dolichopodidae	Chrysosoma	Long-legged flies	
25		Culicidae	Anopheles stephensi	Marsh mosquitoes	
26		Culicidae	Culex pipiens	Typical mosquitoes	
27		Culicidae	Aedes cinereus	Tiger mosquitoes	
28	Orthoptera	Gryllidae	Gryllus assimilis	Field-crickets	
29		Gryllidae	Acheta domesticus	House-crickets	
30	Hymenoptera	Apidae	Bombus pensylvanius	American bumble bee	
31		Apidae	Apis mellifera	European honey bee	
32		Apidae	Apis cerena indica	The Indian honey bee	
33		Apidae	Apis dorsata	Rock bee	
34	Lepidoptera	Nymphalidae	Danaus plexippus	Monarch butterfly	
35		Nymphalidae	Hypolimnas misippus	Danaid eggfly	
36		Nymphalidae	Hypolimnas bolina	Blue moon butterfly	

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37		Nymphalidae	Junonia hierta	Yellow pansy
38		Nymphalidae	Junonia lemonias	Lemon pansy
39		Nymphalidae	Phalanta phalantha	Common leopard
40		Nymphalidae	Euploea klugii	King crow
41		Nymphalidae	Tirumala limniace	Blue tiger
42		Nymphalidae	Limenitis archippus	Vicerov butterfly
43		Nymphalidae	Phalanta phalantha	Spotted rustic
44		Nymphalidae	Cethosiacvane	Leopard lacewing
45		Nymphalidae	Danaus chrysippus	Plain tiger
46		Lycaenidae	Psedozizeeriamaha	Pale grass blue
47		Papilionidae	Graphium doson	Common jay
48		Papilionidae	Papilio polytes	Common Mormon
49		Papilionidae	Papilio polyxenes	Black swallowtail butterfly
50		Pieridae	Kricogonialyside	Lysidesulphur
51		Pieridae	Eurema brigitta	Small grass yellow
52		Pieridae	Phoebis sennae	Cloudless Sulphur butterfly
53		Pieridae	Colias croceus	Clouded yellow butterfly
54		Pieridae	Pieris virginiensis	White butterfly
55		Pieridae	Appias libythea	Striped albatross
56		Riodinidae	Zizeeria karsandra	Dark grass blue
57		Riodinidae	Zizula hylax	Tiny grass blue
58		Cossidae	<i>Xyleutes strix</i>	Moth
59		Saturniidae	Antheraea paphia	Tasar silkworm moth
60		Geometridae	Aplochlora vivilaca	Moth
61		Sphingidae	Acherontia Lachesis	Death's hawkmoth
62		Sphingidae	Daphnis nerii	Army green moth
63		Bombycidae	Bombyx mori	Domestic silk moth
64	Blattodea	Blattidae	Periplaneta Americana	American cockroach
65		Ectobiidae	Blattella germanica	German cockroach
66		Rhinotermitidae	Coptotermes formosanus	termite
67	Hymenoptera	Vespidae	Ropalidia marginata	Red paper wasp
68		Vespidae	Polistes versicolor	Yellow paper wasp
69		Vespidae	Delta pyriforme	Potter wasp
70		Sphecidae	Chlorion aerarium	Steel-blue cricket hunter
71		Sphecidae	Sceliphron caementarium	Yellow-legged mud dauber
72		Chrysididae	Cuckoo	Cuckoo wasp
73		Evaniidae	Evania appendigaster	Blue-eyed ensign wasp
74		Crabronidae	Specious speciosus	Cicada killer
75		Formicidae	Formica pallidefulva	Ants
76		Formicidae	Lasius niger	Black garden ants
77		Formicidae	Atta geminate	Fire ants
78		Formicidae	Anoplolepis gracilipes	Yellow crazy ant
79	Hemiptera	Cercopoidea	Phymatostethadeschampsi	Froghoppers
80	zygentoma	Lepismatidae	Lepisma saccharium	silverfish
81	Scolopendromorpha	Scolopendridae	Scolopendra cingulata	Centipedes
82	Odonata	Aeshnidae	Anax ephippiger	dragonfly
83		Libellulidae	Sympetrum vulgatum	dragonfly
Total	13	43	83	

During this study, a total number of 71 species were identified belonging to 39 families. Table 1 shows the all identified insect's checklist. Orders, families, and scientific names, and common names of the insects collected during this study were arranged in a table (Table 1) followed by



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the scientific names of each insect. Higher insects' diversity of Lepidoptera was found H' = 1.75(Table 2)

Sr. No.	Order	Shannon Diversity Index (H)	Evenness
1.	Hymenoptera	1.78	0.91
2.	Orthoptera	1.41	0.87
3.	Coleoptera	1.58	0.88
4.	Mantodae	0.69	1.00
5.	Diptera	0.95	0.86
6.	Lepidoptera	1.75	0.80
7.	Blattodea	1.09	1.00
8.	Hemiptera	0.00	NaN
9.	Zygentoma	0.00	NaN
10.	Odonata	0.69	1.00
11.	Scolopendromorpha	0.00	NaN

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#### Fig. a. Number of Individuals of each Order of insect







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#### Conclusion

The Orders collected were Hymenoptera, Orthoptera, Coleoptera, Mantodae, Diptera, Lepidoptera, Blattodea, Hemiptera, Zygentoma, Odonata, Scolopendromorpha. The order Lepidoptera vespid wasps which consists insects was the most abundant order with 9 families and 29 species (Fig-a & b). This work was an attempt to describe the diversity of insect fauna. Apart from the distribution and species richness, there is a need to carry out extensive investigation into the species of insect in this area. This study is a preliminary step to explore the insect diversity from the campus of Shri Shivaji Science and Art College, Chikhli.

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