

Faunal diversity of Coleopteran, Orthopteran & Dipteran insects of College campus & Jhiri area; Jhalawar, District

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Abstract

Insects are powerful and rapid adaptive organisms with high fecundity rate and short life cycle. The present study was conducted from the year 2013-14 & 2014 -15. The total number of insects collected and identified from *Site A* -college campus were 13 nos.; which includes: Coleopteran belonging to family Buprestidae; Orthopateran belonging to families – Gryllidae, Acridiae & Tettigonidae and Diptera belonging to families – Asilidae, Tabanidae, Stratonyidae, Muscidae, Culicidae & Drosophilidae; *Site B* -Jhiri area were 07 nos.; which includes: Coleopteran belonging to families - Tenebrionidae, Carabidae, Meloidae; Orthopateran belonging to families - Acridiae & Tettigonidae; no Diptera was found. The most dominating species of Coleoptera was *Gryllus compestris* and Diptera was *Musca domestica*.

Keywords – *Diptera, Jhalawar, abundance, diversity*

Introduction

Insects create the biological foundation for all terrestrial ecosystem. One by one the natural sciences have found insects idol for the study. Their study has produced major advances in our understanding of bio mechanics, climate changes, developmental biology, ecology, evolution, genetics, paleolimnology and physiology.

Insect herbivory can affect nutrients cycling through food web interactions (Welsor and Slemann, 2004). Virtually any depiction of a food web in a terrestrial or fresh water ecosystem will show insects as a key component, all though food we architectures in these two ecosystems are quite different. A majority of species on earth are insects. They have invaded every niche, except the oceanic benthic zone (Grimaldi and Engel, 2005).

Jhalawar is in the south east part of the state; once it was the capital of the former princely state of Jhalawar district. It is 22nd largest district of Rajasthan. Jhalawar district is known by the nicknames of Cherrapunji of Rajasthan, Nagpur of Rajasthan, Brijnagar of Rajasthan, etc. It's known as Cherrapunji of Rajasthan because of the highest rainfall in the whole Rajasthan.

Material and methods

The present study was conducted in the two areas Site A - college campus and Site B – Jhiri area of Jhalawar district. The Site A is located along the National Highway 148N, it has approximately 30 rooms structural building, gardens and a botanical garden. The Site B is located in hilly area; with a temple at the base of hill and some bamboo trees at the entry along with shrubs at the base of Hills. Now after site selection, collecting of insects was done by various methods – sweeping net, beating method. To avoid killing too many insects; photographs were taken of the insect seen on sites. After collection the insects were stretched within 4 to 6 hours and identification was done at MPUAT Udaipur & IARI New Delhi. After collection & identification - abundance of insects found on the sites was calculated on both the Sites in the year 2012-13 & 2013-14.



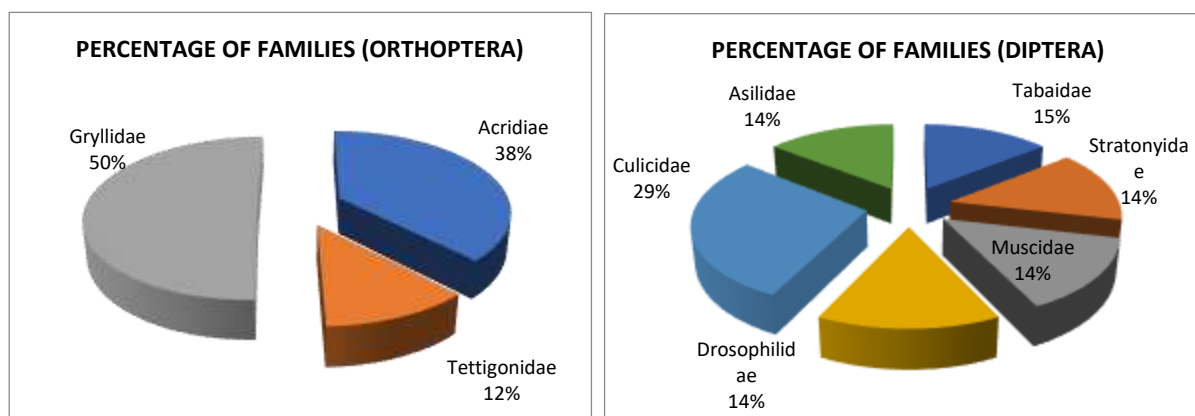
Site A - College campus



Site B – Jhiri area

Result and discussion

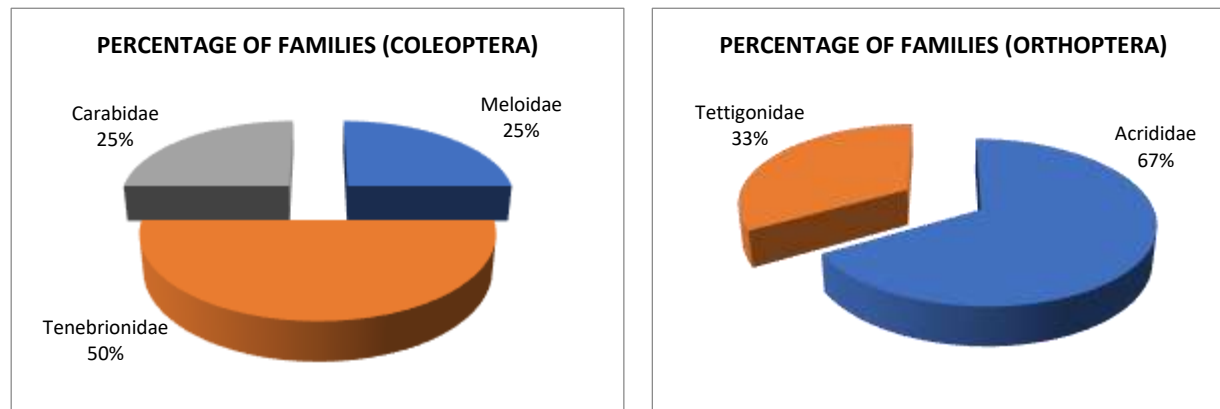
Site A - college campus we observed only 01 nos. Coleoptera species; 06 nos. Orthoptera species & 07 nos. Diptera species. The dominating species of Orthoptera was *Gryllus campestris* and Diptera was *Musca domestica*. There was only one coleoptera species found on the college campus. Chandra et. al. (2012) recorded some new species of beetle from Jabalpur, MP India. He also noticed 26 species of dung beetles belonging to 12 genera from Singhori wildlife sanctuary, Raisen, MP India. Scarabaeidae was dominating family.



The total number of insects collected and identified from *Site A* -college campus were 13 nos.; which includes: Coleopteran belonging to family Buprestidae; Orthopateran belonging to families – Gryllidae, Acridiae & Tettigonidae and Diptera belonging to families – Asilidae, Tabanidae, Stratonyidae, Muscidae, Culicidae & Drosophilidae. Limited study on Coleoptera was undertaken by Kumar and Mathew (1999). They recorded 78 species from Parambikulam wildlife sanctuary.

While at Site B – Jhiri area: 04 nos. Coleoptera species; 03 nos. Orthoptera species & 07 nos. Diptera species. The dominating species of Orthoptera was *Acrida exalata*; Coleoptera was *Mylabris puslutata* and no Diptera was found in Jhiri area. Similar type of study on scarab beetles was also conducted in Kolkas region of Melghat Tiger Reserve (MTR) Amravati, Maharashtra during 2011 by Thakare et. al. they recorded 26 species of scarab beetles belonging to 14 genera.

Site B- Jhiri area were 07 nos.; which includes:



Coleopteran belonging to families - Tenebrionidae, Carabidae, Meloidae; Orthopteran belonging to families - Acrididae & Tettigonidae; no Diptera was found. Thakare and Zade (2012) further worked on coleopteran species in and around Tarubanda village, Gugamal range. They observed and identified 16 species of beetles out of which 13 species belonged to 6 different families.

Weiss et. al. (2012) investigated that calcareous grasslands represent local hotspots of biodiversity in large parts of Central and Northern Europe. And the abundance of rare Orthoptera species correlated with bare ground cover and forb cover, both of which were greatest at south-facing pastures.

The number of Coleoptera species found in college campus (Site A) was only 01 nos.; as the campus had more anthropogenic activities like moments of students, vehicular movement, etc. Orthoptera & Diptera species were observed in the garden areas of campus, a favourable environment insect's habitat.

In the same way we observed species of Coleoptera in the Jhiri area (Site B) under the stones and some species of Orthoptera at the hill and at the base of hills; which had which various trees, shrubs, herbs, etc.

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