

# Insects Bio-Diversity of Taranagar Area in Churu District (Rajasthan)

Paper Submission: 03/04/2021, Date of Acceptance: 15/04/2021, Date of Publication: 24/04/2021

## Abstract

In the animal kingdom, insects are placed in the class insecta of Arthropoda Phylum. Insects are found in all the natural habitat and they are found throughout the world. Taranagar is a Tehsil /Block in Churu district of Rajasthan situated at 28degree41'N 75 degree3'E. The main objective of the study is to determine the insect diversity. This paper presents the Insect Biodiversity in Taranagar area of Churu district. The present study provides general information about different Order and Family of insect species belonging to this area. This research is conducted in Taranagar and surrounding areas. In this study more than 50 families and 14 orders of insects are found here like Orthoptera, Isoptera, Hemiptera, Lepidoptera, Diptera, Hymenoptera and Coleoptera order etc. Moth butterfly, wasp, beetle, bees, ants, termite, have been seen more in this study area.

**Keywords:** Insects, Natural Habitat, Biodiversity, Taranagar, Churu, Orders, Beetles, Termite.

## Introduction

Insects are the unique Arthropods and they are found in almost all ecological niches. Insects are cosmopolitan and they are found in all natural habitat like- Terrestrial, aquatic, aerial etc. Insects live in highly diverse habitats and can be found practically everywhere in the environment. So we can say that Insect biodiversity accounts for a large ratio of all the biodiversity on the planet earth. Approximately 1.5 million organism species described are classified as insects. In present investigation the insects were observed from everywhere.

Majority of the insects were collected from all sorts of plants, grass, flowers, weeds, shrubs and trees. Some insects were found around and on the walls of building blocks. Most of the insects in this study were collected manually by sweep netting and hand picking.

This research paper tries to identify the current status of insect biodiversity in Taranagar block of Churu district of Rajasthan.

## Aims of the Study

1. To identify current status of insect species in Taranagar region of Churu district.
2. To recognize different families and orders of insect.
3. To identify the particular habits and life cycle of insects.
4. To study the reproductive process of the insects.
5. To study the insects behavior.
6. To study the role of insects in the environment.
7. To enhance the scientific knowledge and public awareness about insects.

## Study Area

Rajasthan is the largest state in India. Taranagar is a block /area of Churu district of the Indian state of Rajasthan in Northern India. This area is completely deserted. It is known as Thar Desert. There is no river and lake here; there is golden dunes all around this area. The vegetation here is also very less.

There is a tropical monsoon climate in India but the Taranagar region of Churu has arid climate because of hot Desert area. There is a very low Rainfall during Monsoon season. Scarcity of water and food, dry winds (known as "Loo") and seasonal variation in temperature are the salient characteristics of this area.

For this research some villages of Taranagar tehsil such as Bhali, Buchawas, Changoi, Dabri, Nethawa, Sahwa, Satyun, Shyam Pandiya and Togawas were visited for the study of Insect biodiversity.

## Hans Raj Parihar

Assistant Professor,  
Dept. of Zoology,  
MJD Govt. College,  
Taranagar, Rajasthan, India

## Rajani

Research Scholar,  
Dept. of Zoology,  
MGSU, Bikaner, Rajasthan, India

**Material & Methods**

The field study carried out in Taranagar tehsil of Churu district, Rajasthan during monthly July 2019 to January 2020.

**Data Collection**

For this research paper data are collected by visiting in the above said villages. Field work, collection method, Survey method, Photography of insect and identification, direct observation, and many other procedures were followed.

**List of the insects' species observed at study area**

S.N.	Scientific Name	Order	Family	Common Name
1	<i>Pantala flavescens</i>	Odonata	Libellulidae	Dragonfly
2	<i>Bradinopyga</i>	Odonata	Libellulidae	Dragonfly
3	<i>Locusta migratoria</i>	Orthoptera	Accrididae	Locust
4	<i>Acrida</i>	Orthoptera	Accrididae	Silent slant faced Grasshopper
5	<i>Schistocerca gregaria</i>	Orthoptera	Accrididae	Locust
6	<i>Truxalis eximia</i>	Orthoptera	Accrididae	Grasshopper
7	<i>Crotogonus sp.</i>	Orthoptera	Accrididae	Surface Grasshopper
8	<i>Gryllus bimaculatus</i>	Orthoptera	Gryllidae	Cricket
9	<i>Gryllodes sigillatus</i>	Orthoptera	Gryllidae	House cricket
10	<i>Parktown prawn</i>	Orthoptera	Amostostomatidae	Tusked cricket king
11	<i>Tettigonia viridissima</i>	Orthoptera	Locustidae	Long horned grasshopper
12	Phasmids	Phasmida	Phyllidae	Stick insect
13	<i>Periplaneta americana</i>	Dictyoptera	Blattidae	Cockroach
14	<i>Mantis religiosa</i>	Mantodea	Mantidae	Praying mantis
15	<i>Gonatista</i>	Mantodea	Listurgusidae	Mantis
16	<i>Odontotermes obesus</i>	Isoptera	Termitidae	Fungus growing termite
17	<i>Macrotermes serrulatus</i>	Isoptera	Termitidae	Termite
18	<i>Coptotermes ceylonicus</i>	Isoptera	Rhinotermitidae	Wood destroying termite
19	<i>Lepisma</i>	Thysanura	Lepismatidae	Silverfish
20	<i>Pediculus humanus</i>	Siphunculata	Pediculidae	Sucking lice
21	<i>Rhabdomiris striatellus</i>	Hemiptera	Miridae	True bug
22	<i>Bagrada spieces</i>	Hemiptera	Pentatomidae	Painted bug
23	<i>Halyomorpha halys</i>	Hemiptera	Pentatomidae	Bug
24	<i>Cimex lectularius</i>	Hemiptera	Cimicidae	Bed bug
25	<i>Myrmeleon</i>	Neuroptera	Myrmeleontidae	Antlion
26	<i>Danaus chrysippus</i>	Lepidoptera	Nymphalidae	Plain tiger butterfly
27	<i>Papilio demoleus</i>	Lepidoptera	Papilionidae	Swallowtail butterfly
28	<i>Catopsilia pamona</i>	Lepidoptera	Pieridae	Common emigrant butterfly
29	<i>Virachola isocrates</i>	Lepidoptera	Lycaenidae	Anar butterfly
30	<i>Plusia species</i>	Lepidoptera	Noctuidae	Moth
31	<i>Cretonotos trasiens</i>	Lepidoptera	Erebidae	Moth
32	<i>Uthetheisa pulchella</i>	Lepidoptera	Erebidae	Moth
33	<i>Eldana saccharina</i>	Lepidoptera	Pyralidae	Moth
34	<i>Paranthrene</i>	Lepidoptera	Sesiidae	Moth
35	<i>Agrotis ipsilon</i>	Lepidoptera	Noctuidae	Gram cut worm
36	<i>Antigastra catalaunalis</i>	Lepidoptera	Pyralidae	Leaf & pod caterpillar
37	<i>Spilosoma oblique</i>	Lepidoptera	Arctiidae	Hairy caterpillar
38	<i>Amsacta moorei</i>	Lepidoptera	Erebidae	Red hairy caterpillar
39	<i>Acherontia styx</i>	Lepidoptera	Sphingidae	Bee robber/ head hawk moth
40	<i>Anopheles species</i>	Diptera	Culicidae	Mosquito
41	<i>Musca domestica</i>	Diptera	Muscidae	House fly
42	<i>Bactrocera</i>	Diptera	Tephritidae	Fruit fly
43	<i>Syrphus species</i>	Diptera	Syrphidae	Hover fly
44	<i>Dacus cucurbitae</i>	Diptera	Trypetidae	Fruit fly
45	<i>Carpomyia visuviana</i>	Diptera	Trypetidae	Ber fruit fly
46	<i>Apis indica</i>	Hymenoptera	Apidae	Honey bee
47	<i>Xylocopa latipes</i>	Hymenoptera	Apidae	Tropical carpenter bee
48	<i>Exaerete</i>	Hymenoptera	Apidae	Euglossine bee
49	<i>Chelonus</i>	Hymenoptera	Braconidae	Wasp
50	<i>Bracon</i>	Hymenoptera	Braconidae	Wasp
51	<i>Ammophila</i>	Hymenoptera	Sphecidae	Hunting wasp

52	Eumenes	Hymenoptera	Vespidae	Wasp
53	Ropalidia marginata	Hymenoptera	Vespidae	Wasp
54	Melophorus	Hymenoptera	Formicidae	Ants
55	Campomotus japonicus	Hymenoptera	Formicidae	Carpenter ant
56	Amegilla	Hymenoptera	Apidae	Bee
57	Derobrachus hovorei	Coleoptera	Cerambycidae	Palo verde beetle
58	Carabus coriaceus	Coleoptera	Carabidae	Beetle
59	Melolontha	Coleoptera	Scarabaeidae	European cockchafers beetle
60	Onitis	Coleoptera	Scarabaeidae	Scarab beetle
61	Lytta	Coleoptera	Meloidae	Blister beetle
62	Coccinella septampunctata	Coleoptera	Coccinellidae	Lady bird beetle
63	Pimeliinae	Coleoptera	Tenebrionidae	Beetle
64	Alphitobius species	Coleoptera	Tenebrionidae	Darkling beetle
65	Tribolium castaneum	Coleoptera	Tenebrionidae	Red rust flour beetle
66	Scarites	Coleoptera	Carabidae	Ground beetle
67	Anthia sexmaculata	Coleoptera	Carabidae	Beetle
68	Melanotus	Coleoptera	Elateridae	Click beetle
69	Trogoderma granarium	Coleoptera	Dermeestidae	Khapra beetle
70	Callosobruchus chinensis	Coleoptera	Bruchidae	Pluse beetle
71	Holotrichia consanguinea	Coleoptera	Melolonthidae	Beetle
72	Raphidopalpa foveicollis	Coleoptera	Chrysomelidae	Red pumpkin beetle
73	Protaetia	Coleoptera	Scarabeidae	Beetle



**Beetle**



**Butterfly**



**Moth**



**Stick insect**

**Result and Discussion**

In this research paper it is observed that most of the major orders of insects are found in this

area. Some of them represent different type of adaptations. Insects are cosmopolitan so they are adapted for all environments.

This Study conducted in Taranagar and surrounding areas finds that more than 50 families and 14 orders of insects are found here.

In this research, different orders of insects like Orthoptera, Isoptera, Hemiptera, Lepidoptera, Diptera, Hymenoptera and Coleoptera etc. were observed. Lepidoptera and Coleoptera are main orders of insects which are found in this area.

Moth and butterfly insects have been seen more in Lepidoptera order. In Hymenoptera order Wasps, Bees, and Ants have been seen more.

This research reveals that various types of beetles are present in this region, such as Red pumpkin beetle, Pluse beetle, Ground beetle, Lady Bird beetle, Darkling beetle, Khapra beetle, Blister beetle etc. in Coleoptera order.

The wood-destroying termite is also found in abundance, which is harmful to the materials of wood, it is an insect of the Isoptera order.

It has been revealed from this research work that many types of insects are present in this area.

Hence the biodiversity of Insects is quite rich here. These insects play an important role in balancing the ecosystem.

#### **Conclusion**

Insects play important role in ecosystem maintenance. This research provides the basic information about insects of different orders & families found in this region. These insects play an important role for the local & regional insect biodiversity. Thus this research paper provides a picture of environmental status of insects in Taranagar tehsil of Churu district.

#### **Acknowledgement**

The authors are thankful to the Head and Principal, MJD Govt. College, Taranagar, churu (Rajasthan) for providing necessary laboratory facilities.

#### **References**

1. Mathur, Y. K. and Upadhyay, K. D.: A TEXT BOOK OF ENTOMOLOGY, AMAN PUBLISHING HOUSE, MEERUT, Print.
2. Mathur, Yogesh Kumar and Upadhyay, KrishanDutt: AGRICULTURE ENTOMOLOGY, Rama Publishing House, Meerut, 1978, Print.
3. Trigunayat, M. M.: A Manual of Practical Entomology, Scientific Publisher, 2016, Print.
4. Chapman, RF: The Insects, CAMBRIDGE University press, 1998, print.
5. [https://www.academia.edu/12739579/Insect\\_Fauna\\_of\\_a\\_Desert\\_Pond\\_Ecosystem\\_in\\_Churu\\_District\\_Rukasana\\_and\\_Deepthi\\_Srivastava](https://www.academia.edu/12739579/Insect_Fauna_of_a_Desert_Pond_Ecosystem_in_Churu_District_Rukasana_and_Deepthi_Srivastava).
6. Srivastava, Meera&Saxena, M.M. 2004. Aquatic insects in the desert waters around Bikaner (NW Rajasthan). *Insect Environment*, 10(3) : 113-114.
7. Roonwal, M.L. 1982. Fauna of the Great Indian Desert. In: *Desert Resources and Technology Vol. 1*.ed. Alam Singh. Geo – Environ. Academia, Jodhpur: 1-86.
8. Kushwaha, K. S. and Sharma, L. S. 1961. Some common insect pests of vegetable crops in the state of Rajasthan, with brief notes on their infestation. *Proc. 48th Indian Sci. Congr. Calcutta. P. 3 : 1-428*.
9. RoopamKulshrestha and Nita Jain, 2016. A note on the biodiversity of insects collected from a college campus of Jhalawar District, Rajasthan
10. Kazmi, Sarfrazul & Ramamurthy, V.V. (2004). Coleoptera (Insecta) fauna from the Indian Thar Desert, Rajasthan. *Zoos' Print Journal*. 19. 10.11609/JoTT.ZPJ.1008.1447-8.