



SINCE 2010



NAAS Rating

2012:1.3; 2013-16: 2.69

2017-2020: 3.98



CiteFactor
Academic Scientific Journals

IMPACT FACTOR

2019-20: 2.40; 2021:1.09



IPIndexing
Indexing Portal

IPI Value

1.92

Received on:

14th May 2021

Revised on:

20th June 2021

Accepted on:

25th June 2021

Published on:

1st July 2021

Volume No.

Online & Print

137 (2021)

Page No.

06 to 09

*Life Sciences Leaflets
is an international open
access print & e
journal, peer reviewed,
worldwide abstract
listed, published every
month with ISSN, RNI
Free- membership,
downloads and access.*

STUDY OF ORTHOPTERA FROM TARANGA HILLS, GUJARAT, INDIA

DR. B. M. PARMAR

CENTRAL LABORATORY, DUDHESWAR
WATERWORKS, AHMEDABAD MUNICIPAL
CORPORATION, GUJARAT, INDIA.

Corresponding author's e-mail: parmarbhaveshkumar@gmail.com

ABSTRACT:

Present study explored the Bio-diversity of Orthopteran fauna from Taranga hills from 2016 to 2018 using hand picking collection and light trap method. A total of 281 individuals, 23 species under 19 genera belonging to 13 subfamily and six families of Orthopterans have been recorded. Family Acrididae was a numerically dominant family. Family Gryllotalpidae, Gryllidae, Tetrigidae were numerically less dominant families.

KEYWORDS: *Orthoptera, Diversity, Gujarat.*

INTRODUCTION:

Order Orthoptera is one of the diverse orders of the Insect. They are distributing in the habitats like grasslands, forests, and agricultural fields. They play very an important role in grassland ecosystems as primary herbivores and prey of primary and secondary consumers of the ecosystem. They play a significant role in the food chain of the ecosystem, as they are primary herbivores and establish good food sources for the other component of the ecosystem. Despite the economic benefits of Orthopteran, information on the characteristics of the biodiversity of Orthoptera for North Gujarat is incomplete or fragmentary. The study aims to provide a preliminary list of the biodiversity of Orthoptera Fauna in Taranga hills.

METHODOLOGY:

The study of the Orthopteran fauna was done from 2016 to 2018 in Taranga hills (23°57'51.34"N 72°45'13.57"E). Taranga Hills were falling under the semi-arid zone, covering thorny scrub-like vegetation^[1]. In weather conditions, the area accepts about 600-700 mm of rain; summer is very hot with a maximum of 44° C and winter with a minimum of 10° C.

The samples were collecting using handpicking and the light trap method. The photographs of living specimens were captured on the fields. After sample collection of insects were transferred into a plastic jar that contained cotton soaked in ethyl acetate, and then carried to the laboratory for preservation and identified through taxonomic literature and standard key^{[2],[3],[4],[5]}.

RESULTS AND DISCUSSIONS:

From a total of 281 individuals, 23 species of Orthoptera belonging to 13 subfamilies under six families of Orthopterans were recorded (Table: 1). According to the study of Orthoptera, the dominant family is Acrididae (13 species), followed by Tettigonidae (5 species), Pyrgomorphidae (2 species), Gryllotalpidae, Gryllidae, Tetrigidae (1 species).

The Taranga hills had terrestrial habitats i.e. forest, grasslands, and agricultural lands. However, Pyrgomorphidae and Gryllotalpidae were dominant in Grassland; Tetrigidae and Tettigoniidae were most frequently found in agricultural lands, and Gryllidae and Tettigoniidae were dominant in forestland.

The Orthopteran diversity in a study area is affected by climatic elements, seasonality, spatial heterogeneity, competition, predation, and habitat type, availability of resources, environmental stability, and productivity. Their occurrence was more predominant during monsoon and post-monsoon seasons, which allows the maximum growth of all types of vegetation. From this study, results show that the family-wise diversity was rich in all lands of the study area. Orthoptera is a significant assemblage of herbivorous insects existing in grassland ecosystems. Families Acrididae was most dominant in all families recorded from the study area. Orthopterans were present in terrestrial habitats such as grasslands, agricultural lands, and also in forestlands. This is the first attempt to provide information about the taxonomy and distribution of Orthoptera from Taranga hills, North Gujarat.

CONCLUSION:

This study concludes that Taranga Hills is a rich diversity of insects. The results of the study are providing the preliminary checklist of Orthopteran fauna in the Taranga hills, Gujarat. Hopefully, this documentation will provide baseline and reference information about the Orthopteran diversity of study area for further research.

REFERENCES:

- [1] **Parmar, B.M. and Patel, K.B., 2017.** Preliminary Study of Spiders (Order: Araneae) from Taranga Hills International Journal of Science and Research, Volume 6 Issue 11, November 2017, 23 – 25
- [2] **Kirk, K., and Bomar. R.C., 2005.** Guide to the Grasshoppers of Wisconsin. Bureau of Integrated Science Services Wisconsin Department of Natural Resources P.O. Box 7921 Madison, WI 53707.
- [3] **Srinivasan, G. and Prabakar, D. 2013:** A Pictorial Handbook on Grasshoppers of western Himalayas, *zoological survey of India*
- [4] **Thakkar B., Parmar, S., and Parikh, P., 2015:** Study on Diversity of Orthoptera Fauna in South Gujarat, India International journal of pure and Applied Zoology, volume 3, issue 4: 368-374
- [5] **Koli, Y., Bharmal, D., Aland, S., Patil, S., and Bhawane, G., 2010.** Orthopteran fauna of Chandoli National Park, Maharashtra. Lake 2010: Wetlands, Biodiversity and Climate Change, 1-7 (Ranunculaceae to Rhizophoraceae) BSI.

Table-1: Orthopterans of Taranga Hills

Sr. No.	Family	Subfamily	Scientific Name
1.	Acrididae	Acridinae	<i>Acrida conica</i> (Fabricius, 1781)
2.			<i>Acrida exaltata</i> (Walker, 1859)
3.			<i>Acrida ungarica</i> (Herbst, 1786)
4.			<i>Metaleptea brevicornis</i> (Johannson, 1763)
5.		Cyrtacanthacridinae	<i>chondracris</i> sp.
6.		Oedipodinae	<i>Oedaleus senegalensis</i> (Krauss, 1877)
7.			<i>Oedipoda</i> sp.
8.			<i>Trilophidia annulata</i> (Thunberg, 1815)
9.		Hemiacridinae	<i>Hieroglyphus nigrorepletus</i> (Bolívar, 1912)
10.		Catantopinae	<i>Ditopternis</i> sp.
11.		Oxyinae	<i>Oxya fuscovittata</i> (Marschall, 1836)
12.			<i>Oxya hyla hyla</i> (Serville, 1831)
13.			<i>Gesonula punctifrons</i> (Stål, 1861)
14.	Tetrigidae	Tetriginae	<i>Tetrix arenosa angusta</i> (Hancock, 1896)
15.	Tettigoniidae	Phaneropterinae	<i>Ducetia japonica</i> (Thunberg, 1815)
16.		Conocephalinae	<i>Neoconocephalus</i> sp.
17.		Phaneropterinae	<i>Amblycorypha rotundifolia</i> (Scudder, S.H., 1862)
18.			<i>Holochlora</i> sp.
19.			<i>Scudderia furcata</i> (Brunner von Wattenwyl, 1878)
20.	Pyrgomorphidae	Pyrgomorphinae	<i>Atractomorpha crenulata crenulata</i> (Fabricius, 1793)
21.			<i>Poecillocerus pictus</i> (Fabricius, 1775)
22.	Gryllidae	Gryllinae	<i>Acheta domesticus</i> (Linnaeus, 1758)
23.	Gryllotalpidae	Gryllotalpinae	<i>Gryllotalpa africana</i> (Palisot de Beauvois, 1805)