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## Grasshopper fauna (Acrididae) of three zones of district Dadu, Sindh, Pakistan

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### Abstract

Present studies conducted in the month of August 2016 to January 2018. 674 specimens were collected and sorted out into six sub-families with thirteen genera and twenty species. All species are first time recorded from three zones of district Dadu, Sindh, Pakistan namely river belt, deserted and mountain zone agriculture land but *Oxya hyla hyla* species is a major pest in this area.

**Keywords:** Grasshopper, Acrididae, Dadu and Sindh

### 1. Introduction

Grasshoppers are the main important part of the class insecta and family Acrididea which are harmful in the agricultural field for the crops. Pakistan is the most significant agricultural country in this world; it comprised the major zone of our financial system. There are so many cash crops, fruits, vegetables are cultivated but these crops are more or less low due to serious harm of insects [1]. They are present worldwide but most of the species are grassland habitat and some species are forest habitat, tundra habitat, river belt habitat, deserted and mountain habitat, agriculture land etc. Grasshoppers are top secret as grass-feeders (graminivorous) as well as forb-feeders (forbivorous) [2]. Family Acrididea is one of family of grasshoppers as well as locusts with order Orthoptera. They are commonly known as the short horned grasshopper included with Caelifera (sub-order). Species which change color and activities at a high rate of population are called locusts. Grasshoppers with antennae are always smaller than body and little ovipositors. Locusts are a number of species of short horned grasshoppers with family Acrididae [3]. Full adult male grasshoppers develop up to 28- 37 mm whereas female develop up to 34-50 mm [4] So many researchers have been working on the different activities of the grasshopper from the Pakistan [5, 6, 7, 8].

### 2. Materials and methods

This survey of District Dadu was carried out from August 2016 January 2018. During this period on each Sunday strips were made on different dates in the various localities (taulkas) and zones. Over all 674 specimens were captured from the different zones of district Dadu through hand picking method and net (8" diameter and 50" depth). Specimens were preserved into boxes as a conventional method for lab: work and moved to entomological laboratory, Department of zoology, University on Sindh, Jamshoro for the further observation. During the laboratory work all preserved specimen researched out one by one with the help of [9] under the microscope. After the microscopic work all specimens were permanently labeled and preserved in the boxes.

### 3. Results and Discussion

Present studies carry out in the month of August 2016 to January 2018. 674 specimens were observed into 20 species belongs to 13 genera under the subfamilies i-e Subfamilies Oxyinae (5 species), Euthyminae (2 species), Eripocnemidinae (1 species), locustinae (oedonopodinae) (7 species), Acridinae (4 species) Cyrtacanthacridinae (1). These identified species were *Oxya hyla hyla*, *Oxya fuscovitata*, *Oxya bidentata*, *Oxya velox*, *Oxya japonica*, *Hieroglyphus perpolita*, *Spathosternum prasiniferum*, *Cataliopus cognatus*, *Aiolopus thalassinus thalassinus*, *Aiolopus thalassinus tumulus*, *Aiolopus obariensis*, *Helithera aelopoides*, *Locusta migratoria*, *Sphingnotus savignyi*, *Trilophidia annulata*, *Acrida exaltata*,

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*Genista tridentata*, *Truxalis eximia eximia*, *Truxalis fitzerlidi*, *Anacridium rubrispinum* [table no.03].

All species with genus and sub-families are first time recorded from three zones [table no.01] namely agricultural land zone, River belt zone and the desert mountain zone of district Dadu, Sindh, Pakistan but *Oxya hyla hyla* species is a

major pest in rice field of this area and they are maximum numbers were collected from the agricultural zone but rare in other remaining two zones such as desert mountain zone and river belt zone. So many scientists have been afforded on the different feature of the grasshopper from the Pakistan, India [4, 5, 6, 7 & 8].



**Fig 1:** Pictures captured during the research work

**Table 1:** Status of collected Grasshoppers at Localities Level.

S. No	Locality	Number of specimens	% of specimens
1	Agricultural land zone	399	59.19
2	River zone	188	27.29
3	Deserted and mountain zone	87	12.90

**Table 2:** Monthly status of collected Grasshoppers.

Month	Collected specimens	% of collected specimens
August-2016	15	2.22
Septetember-2016	49	7.27
October -2016	56	8.30
November-2016	64	9.49
December-2016	34	5.04
January-2017	23	3.41
February-2017	29	4.30
March-2017	57	8.48
April-2017	55	8.16
May-2017	20	2.96
June-2017	24	3.56
July-2017	19	2.81
August-2017	13	1.92
September-2017	63	9.34
October-2017	60	8.90
November-2017	53	7.86
December-2017	26	3.85
January-2018	14	2.07

**Table 3:** Status of collected Grasshoppers at species Level.

S. No	Name of species	Collected specimens	%
1	<i>Oxya hyla hyla</i>	216	32.04
2	<i>Oxya fuscovittata</i>	67	9.94
3	<i>Oxya bidentata</i>	111	16.46
4	<i>Oxya velox</i>	104	15.43
5	<i>O. japonica</i>	3	0.44
6	<i>Hieroglyphus perpolita</i>	4	0.59
7	<i>Spathostrum prasiniferm prasiniferm</i>	23	3.41
8	<i>Cataliopus cognatus</i>	4	0.59
9	<i>Aiolopus thalassinus thalassinus</i>	55	8.16
10	<i>Aiolopus thalassinus tumulus</i>	30	4.45
11	<i>A. oberensis</i>	1	0.14
12	<i>Hilethera aeolopoides</i>	10	1.48
13	<i>Locusta migratoria</i>	8	1.18
14	<i>Sphingonotus savignyi</i>	5	0.74
15	<i>Trilophidia anulata</i>	10	1.48
16	<i>Acrida exaltata</i>	5	0.74
17	<i>Gonista rotundata</i>	5	0.74
18	<i>Truxalis eximia eximia</i>	5	0.74
19	<i>Truxalius fitzerlidi</i>	5	0.74
20	<i>Anacridium rubrispinum</i>	3	0.44
Total		674	

**Table 4:** Diversity of grasshoppers collected from three Zones of district Dadu, Sindh, Pakistan.

S. No.	Genera	No. of species	% of species
1	<i>Oxya</i>	05	74.33
2	<i>Hieroglyphus</i>	01	0.59
3	<i>Spathostrnum</i>	01	3.41
4	<i>Cataliopus</i>	01	0.59
5	<i>Aiolopus</i>	03	12.75
6	<i>Hilethera</i>	01	1.48
7	<i>Locusta</i>	01	1.18
8	<i>Sphingonotus</i>	01	0.74
9	<i>Trilophidia</i>	01	1.48
10	<i>Acrida</i>	01	0.74
11	<i>Gonista</i>	01	0.74
12	<i>Truxalius</i>	02	1.48
13	<i>Anacridium</i>	01	0.44

#### 4. Conclusion

During bio-diversity of short horned grasshoppers of family Acrididae in district dadu, all species with genus along with family are first time recorded from three Zones of District Dadu, namely river zone, deserted and mountain zone and the last one is agricultural zone. All species and genus with family are researched out on the basis of morphology with the help of [9]. This study will give basic knowledge, data and awareness among people's concerned area as well as cultivator, farmers and researchers about the fauna of grasshopper that will be helpful to instigate and calculate the management exercise for river belt, deserted and mountain zone and last one is agriculture land of Dadu district. This study is also high-quality in the field of scientific literature of Pakistan.

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