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Taxonomic status of grasshoppers fauna at Meta Khel District Karak Khyber Pakhtunkhwa, Pakistan

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Abstract

In the present investigation, grasshopper fauna was explored from May 2016 to May 2017 from Meta Khel District Karak Khyber Pakhtunkhwa, Pakistan. During the current study a total of 622 specimens of Grasshoppers were recorded and identified up to the species level. In this research a total of 7 species of Grasshoppers were recorded which were *Scintharistanotabilis*, *Sphingonotus rubescens*, *Aiolopus thalassinus*, *Acrotylushumbertianus*, *Acrida exaltata*, *Ochridia gracilis* and *Schistocerca gregaria*. The Sub family Oedipodinae was found the largest one over all the recorded Sub families.

Keywords: Meta Khel, Identification, recorded, exploring, Sub family, Grasshoppers

1. Introduction

The connection between Orthopteran sustaining propensities and dust has a fascinating inference ^[1] since; it has been viewed as that Orthoptera are not equipped for general fertilization. As of late nonetheless, another types of rough cricket (Gryllacrididae), *Glomeremusorchidophilus* endemic of Reunionisland (Mascarenes, Indian Ocean) has been accounted for as the sole pollinator of the orchid *Angraecumcadetti* ^[2-4]. Gryllacridids might be rapacious, herbivorous, florivorous, granivorous and artfully omnivorous ^[5]. Gut content examinations of *G. orchidophilus* uncovered mostly plant material including dust and seeds ^[3-4]. The creepy crawlies aresaltatorial, and phytophagous, having mandibulate, normally hypognathous mouthparts which bear a solid arrangement of pounding edges ^[6]. Species inside the different subfamilies tend to display expansive patterns in have plant choice. The Catantopinae which incorporates the New Zealand grasshoppers, were seen by ^[7] to be by and large of forbivorous (broadleaf nourishing) propensities as opposed to graminivorous. While grasshopper species shift in their bolstering propensities from unselective to exceedingly particular feeders ^[8] the lion's share, without being inflexible or comprehensive, show very much checked inclinations. Where nourishing propensities are general as opposed to particular the sustenance chosen by grasshoppers under regular conditions in extraordinarily reliant on the wealth of plant species in the environment ^[9]. The objective of the research work was to find out taxonomic status of Grasshoppers fauna at Meta Khel District Karak Khyber Pakhtunkhwa, Pakistan

2. Materials and Methods**2.1 Study Area**

Meta Khel is situated at Upper region of District Karak Khyber Pakhtunkhwa, Pakistan. This area is covered by green trees and cool wind is blowing often. This area comprising variety of unknown invertebrates and vertebrate's fauna. This area is very suitable for wild life fauna. The literacy ratio of Meta Khel is also average. Agriculture point of view this area is too much productive. Over here there is plenty of water resources. There is a very big market in the main city of Meta Khel. Peoples of Meta Khel are too much emotional, aggressive and become angry (Hot) very soon.

2.2 Collection and Preservation

The insects were collected from may 2016 to may 2017 by "Sweep Sampling Method", as per Gadagkar *et al.* ^[10].

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The net sweeps were carried to collect the insects. The net used in systematic sweeping were made of thick cotton cloth with a diameter of 30 cm at mouth and a beg length of 60 cm. Sampling was done at random and at an interval of 15 days. The collected Orthopteran insects were transferred into jars containing Ethyl Acetate soaked cotton. These jars were brought to the laboratory and the insects were stretched and pinned. The entomological pin number 1 to 20 was used according to the size of the specimen. These were oven dried at 60 °C for 72 hours to preserve them and then set in to wooden boxes and labeled according to their systematic position. After the collection and preservation the specimens were identified up to species level by available literature, already existing specimens in the museum and keys ^[10].



Fig1: Map of Meta Khel Karak Khyber Pakhtunkhwa, Pakistan.

3. Results and Discussion

In this study a total of 622 species were collected which comprising 4 sub families like Oedipodinae, Acridinae, Gomphocerinae and Cyrtacanthacridinae respectively. The identified species of grasshoppers were *Scintharistanotabilis*, *Sphingonotus rubescens*, *Aiolopus thalassinus*, *Acrotylushumbertianus*, *Acrida exaltata*, *Ochrilidia gracilis* and *Schistocerca gregaria*. The dominant Sub Family of grasshoppers was Oedipodinae which was represented by 4 species. The present study conducted at Meta Khel District Karak Khyber Pakhtunkhwa, Pakistan results revealed that the area under study habitat is optimum for the survival of grasshopper's fauna.

Melanoplusbowditchicanus is normally dull dark in shading and is regular in the northern Great Plains. Its favored nourishment plant is silver sagebrush, in spite of the fact that it has likewise been watched encouraging onother sagebrush species. It is typically found on taller plants until after oviposition, when it winds up noticeably inexhaustible on shorter plants. It is sometimes found on the ground ^[11]. In contrast with *M. Bowditchicanus*, *M. Bowditchi* has a bigger body estimate, brighter yellow and dark colored hues, and clear tegmina ^[12]. Hebard (1925) recommended that the dark designed tinge of *M. bowditchicanus* was an aftereffect of a cozy relationship to the *Melanoplus cinereus* assembles as opposed to different types of the *Melanoplus flavidus* aggregate ^[13]. Khalid *et al* conducted study on Grasshopper of Ahmad abad and recorded five subfamilies of Grasshoppers (Insecta: Orthoptera; Acridadae) belonging to 9 species were collected from Ahmad Abad District Karak Khyber Pakhtunkhwa, Pakistan. Duration of the study period was one complete year, i.e. January, 2016 to December 2016. On the basis of number of species, Oedipodinae was the most dominant family with 5 species: *Scintharista notabilis*, *Sphingonotus rubescens*, *Aiolopus thalassinus*, *Acrotylus humbertianus* and *Oedaleus senegalensis* followed by, Acridinae, Gomphocerinae, Cyrtacanthacridinae and Eyprepocnemidinae which comprising only one species each like *Acrida exaltata*, *Ochrilidia gracilis*, *Schistocerca gregaria* and *Heteracrisillustris* respectively ^[13]. In the present research conducted at Meta Khel District Karak Khyber Pakhtunkhwa Pakistan revealed that there were some variation in the grasshoppers collected in the present study and those which were recorded in the previous study. In some grasshoppers recorded in the present study their body coloration show variations. Grasshoppers collected during the current research show light gray and light green coloration. Some grasshoppers were found on the leaves of *Calotropis procera* while some were found in the green fields. Finally the results concluded that this zone having verity of grasshopper's species and previously there was no work done in his area.

Table 1: Grasshoppers fauna at Meta Khel Karak Khyber Pakhtunkhwa, Pakistan.

S. No.	Class	Order	Sub Families	Genus	Species
1	Insecta	Orthoptra	Oedipodinae	<i>Scintharista</i>	<i>notabilis</i>
2	Insecta	Orthoptra	Oedipodinae	<i>Sphingonotus</i>	<i>rubescens</i>
3	Insecta	Orthoptra	Oedipodinae	<i>Aiolopus</i>	<i>thalassinus</i>
4	Insecta	Orthoptra	Oedipodinae	<i>Acrotylus</i>	<i>humbertianus</i>
5	Insecta	Orthoptra	Acridinae	<i>Acrida</i>	<i>exaltata</i>
6	Insecta	Orthoptra	Gomphocerinae	<i>Ochrilidia</i>	<i>gracilis</i>
7	Insecta	Orthoptra	Cyrtacanthacridinae	<i>Schistocerca</i>	<i>gregaria</i>
	Class 1	Orders 1	Sub Families 4	Genus 7	Species 7

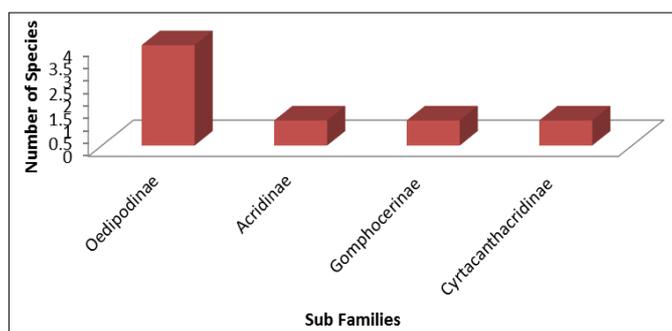


Fig 2: Families wise distribution of Grasshoppers fauna at Meta Khel Karak.

4. Conclusion

The results summarized that this area existing plenty of grasshopper's fauna. From the current study, it can be concluded that sub family Oedipodinae was the richest one comprising 4 species of grasshoppers. The remaining sub families of the grasshoppers consisting only one species each.

5. Acknowledgement

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