Evaluation of grasshoppers fauna at Rehmat Abad district Karak Khyber Pakhtunkhwa, Pakistan

Khalid Usman, Hameed Ur Rehman, Sehrish Khudadad and Khalid Pervaiz

Abstract

The present study was based on assessing the diversity of Orthoroptera (Acridids: grasshoppers) at Rehmat Abad District Karak Khyber Pakhtunkhwa, Pakistan. A total of 567 specimens of grasshoppers were collected in the current study. The recorded grasshoppers fauna belongs to One Class Insecta; One Order Orthoroptera; Five sub Families Oedipodinae, Acridinae, Gomphocerinae, Cyrtacanthacridinae and Eyprepocnemidinae; Five Genera and Five Species respectively. The Sub Family Oedipodinae represented by two species Scintharistanotabilis and Sphingonotus rubescens while Sub families Acridinae, Gomphocerinae, Cyrtacanthacridinae and Eyprepocnemidinae comprising only one species each which were Acrida exaltata, Ochrilidia gracilis, Schistocerca gregaria, Heteracris illustris and illustris respectively. From the current study it can be revealed that Acridids almost prefer to hot environment and Grassy ground.

Keywords: Rehmat Abad, Karak, Acridids, Orthoroptera, Grasshoppers, recorded

1. Introduction

The protective part of this discharge has been tried in T. eques: grasshopper mice Onychomystorridus specifically abstain from eating T. eques when another, agreeable species Brachystola magna is available, however they additionally dismiss the last when people are covered with T. eques discharge [1]. Nonetheless, at any rate in R. guttata, this emission is not a general guard against predators: two reptiles, Anoliscarolinensis and Sceloporusundulates are not hindered by the discharge from assaulting and eating the grasshoppers, and don't build up repugnance for the emission [2]. Concerning utilization of vascular plants orthopterans are typically delegated graminivorous, forbivorous, or omnivorous each class demonstrating unique adjustments of their mouthparts, notwithstanding, orthopterans may eat distinctive plant structures, for example, leaves, blooms, natural products, dust, and so on [3]. For instance, eaters of Classopollis Pflug like dust (from a primitive Cheiro lepidaceae, a conifer) go back to the Jurassic as spoken to by the huge sort Aboilus Martynov (Prophalangopsidae) [4, 5].

The aim of the research work was to find out the Grasshoppers fauna at Rehmat Abad District Karak Khyber Pakhtunkhwa, Pakistan

2. Materials and Methods

2.1 Study Area

Rehmat Abad is one of the most beautiful land area of Karak Khyber Pakhtunkhwa, Pakistan especially for its beautiful buildings. Rehmat Abad is further divided into few tribes like Aziz Khel, Kimat Khel and Gowar Khel etc. Literacy ratio of this region is moderate that’s why majority of peoples in this area having their own business abroad and local. Water quality of this region is almost saline which adversely affected on health. The water of this area is only limited for washing purposes not for drinking. Bannu road is also situated in this area which link Karak to Soordag, Latamber and Bannu.

2.2 Collection and Preservation

The insects were collected from May 2016 to May 2017 by “Sweep Sampling Method”, as per Gadagkar et al. [6]. 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 into 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 [6].

Results and Discussion

The present research was conducted to evaluate the preexisting and new species of grasshopper’s fauna at Rehmat Abad District Karak Khyber Pakhtunkhwa. During this study a total of 567 specimens were collected which comprising 6 species of grasshoppers. The recorded 6 species of grasshoppers were Scintharistanotabilis, Sphingonotus rubescens, Acrida exaltata, Ochrilidia gracilis, Schistocerca gregaria, Heteracris and illustris respectively. In this study sub family Oedipodinae represented 2 species while the remaining sub families comprising one species each respectively. Grasshoppers fauna were reviewed from Uttar Pradesh condition of India amid the back to back years 2010 and 2011 from rice fields of both Rabi and Kharif season individually. 26 types of grasshoppers speaking to 14 genera having a place with 2 families, 8 sub families and 12 tribes have been recorded. Most extreme differing qualities appeared by family Acrididae (85%) trailed by pygromorphidae (15%). Every one of the types of genera Oxya, Hieroglyphus and Acridagathered from field were discovered nourishing on rice foliage. Serious harm appeared in the later phase of the yield development by these species and henceforth might be considered as significant vermin of rice [7]. In the present study only 6 species of grasshoppers were recorded belongs to 5 sub families. Results of the both study revealed that there is a big variation in the both study species numbering. In the present study only 6 species of grasshoppers were recorded while in the previous study 26 species of grasshoppers were identified. This variation in the numbering of the species may be due to change of the both study areas location. Furthermore, climatic factors greatly affected on the population of grasshopper fauna. Other overviews completed at month to month interims through the span of a year uncovered fleeting and spatial varieties in biodiversity and plenitude of grasshoppers. The inward zone is colonized by halophilic plants and just a single grasshopper animal varieties (Dericoryssmillierei) happens there consistently. Two polyphagous types of Calliptamus, which can feast upon halophilic plants, move from neighboring zones into the inward zone in August to eat the plants developing there. Alternate types of grasshoppers stay in external zones as they can't feast upon halophilic plants. The best wealth of grasshoppers from August to winter was recorded in the inward zone and in spring and early summer in the external zones. The reliance of D. millierei on shruberies of Amaranthaceae and its direct flight capacity, components of the family Dericorytidae, constrain this species capacity to colonize neighboring chotts [8]. In the current study similar all the grasshoppers were almost found in the same habitat. Khalid et al conducted study on Grasshoper of Ahmad abad and recorded five subfamilies of Grasshoppers (Insecta: Orthoptera; Acrididae) belonging to 9 species were collected from Ahmad Abad Districk 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, Oedipodinaewas the most dominant family with 5 species: Scintharistanotabilis, Sphingonotus rubescens, Aiolopus thalassinus, Acrotylushumbertianus and Oedaleusserenegalensis followed by, Acridinae, Gomphocerinae, Cyrtacanthacridinae and Eyprepocnemidinae which comprising only one species each like Acrida exaltata, Ochrilidia gracilis, Schistocerca gregaria and Heteracrisillustris respectively [9].

Acknowledgements

I am immensely thankful to HameedUr Rehman (Department of Chemistry) and all the group members. I am also thankful to my brother Dr. Wahid Raza (Department of Management Sciences ICUP) who has support me throughout in specimen collection.
6. References


