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Monitoring of spider fauna in Tehsil Takht-E-Nusrati district Karak KP, Pakistan

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Abstract

This paper communicates the exploring of the spider fauna collected from Tehsil Takhti Nusrati District Karak Khyber Pakhtunkhwa, Pakistan. A survey was conducted over a period of one year from January 2015 to December 2015. A total 467 specimens of spider were collected from various sampling sites of Tehsil Takhti Nusrati. These sampling sites were Takhti Nusrati, Zarki Nusrati, Ganderi Khattak, Bogara and Khada respectively. The Specimens collected and identified belong to 1 Order, 7 Families, 13 genera and 13 Species respectively. Family Lycosidae was the largest family consisting 4 Species while Family Salticidae, Thomisidae and Araneidae comprising only of 2 species each, Family Clubionidae and Gniphosidae consisting only 1 species, each respectively. From the Present study, it is concluded that Takht-e-Nusrati Tehsil have a diverse spider fauna. Similar survey on large scales is recommended to fully evaluate the spider fauna in Tehsil Takht-i-Nusrati region of District Karak.

Keywords: Spider, fauna, exploring, family, Tehsil, region, Karak

1. Introduction

Takht-e-Nusrati is a famous Tehsil out of total three Tehsils of District Karak Khyber Pakhtunkhwa, Pakistan. Five sampling areas were selected which were Takhti Nusrati, Zarki Nusrati, Ganderi Khattak, Bogara and Khada. These areas are situated on the South West side of the Main Karak City as shown in the figure 1. Spiders are an ancient and successful group of invertebrate animals [1] also called poisonous arthropods [2]. Some scientists believed that the origin of spider take place in sea but later they believe that spider evolved and divided into two groups, one without and second with extensor leg muscles. Recent spiders have unsegmented abdomen, but earliest spider was with segmented bodies and larger in size. Most ancient types of spiders belonged to the suborder Mesothelae. In New York, USA oldest fossil of the Devonian period (410 to 360 million years) was found in rock. The fossil spiders with segmented abdomen were recognized from the Carboniferous period (360 to 290 million years). In the Mesozoic era (240 to 65 million years) little information about the spider is available. Newer spider for catching flying insects developed aerial web in flora and early built web near the ground. Spider evolution correlated to the insect's evolution [3]. Spiders belong to the class Arachnida, order Araneae and Phylum Arthropoda. They vary in size, shape and behavior. A body divided into cephalothorax, abdomen, have pedipalps, eight legs, no antenna, produce silk. They use the silk to wrap the prey, to hang from and to make egg sacs and nests [4, 5]. The aim of the research work was to find out the monitoring of spider fauna in tehsil Takht-e-Nusrati district Karak KP, Pakistan.



Fig 1: Map of Tehsil Takht-e-Nusrati District Karak KP, Pakistan

2. Materials and methods

2.1 Study site

The present study was conducted from January 2015 to December, 2015 at different study sites from Tehsil Takht-i-Nusrati Karak as shown in the Figure 1 above. A survey was conducted for 1 year from January 2011 to December, 2011 at different study sites. Spiders were collected by adopting standard sampling techniques such as sweep netting, beating sheets, active searching, hand picking and Umbrella collection. All surveys were conducted in the morning hours between 7:00 am to 3:00 pm. Collected spiders were photographed in livable condition. All the collected specimens were labeled and preserved in 70% alcohol with a few drops of glycerin. All specimens were identified using the taxonomic keys [6-9].

Table 1: Monitoring of Dragonfly fauna in Tehsil Takht-e-Nusrati in District Karak, Khyber Pakhtunkhwa Pakistan

Order	Family	Genus	Species
	Clubionidae	<i>Clubiona</i>	<i>drassodes</i>
		<i>Araneus</i>	<i>diadematus</i>
	Araneidae	<i>Neoscona</i>	<i>theis</i>
		<i>Gniphosidae</i>	<i>Scotophaeus</i>
	Pholcidae	<i>Artema</i>	<i>atlanta</i>
	Salticidae	<i>Marpissa</i>	<i>tigrina</i>
		<i>Plexippus</i>	<i>paykullii</i>
	Thomisidae	<i>Diaea</i>	<i>evanida</i>
		<i>Thomisus</i>	<i>pectabilis</i>
	Lycosidae	<i>Arctosa</i>	<i>littoralis</i>
		<i>Hippasa</i>	<i>partita</i>
		<i>Lycosa</i>	<i>madanensis</i>
		<i>Pardosa</i>	<i>bimanica</i>
Orders 01	Families 07	Genus 13	Species 13

3. Results

In the current survey, spider fauna was collected in the Tehsil Takht-e-Nusrati District Karak Khyber Pakhtunkhwa, Pakistan. During the present research, 467 specimens of spider were collected, Preserved and identified by key. Five sampling stations were selected for the present survey. These selected sampling sites of Tehsil Takht-e-Nusrati were Takhti Nusrati, Zarki Nusrati, Ganderi Khattak, Bogara and Khada respectively shown in the Figure 1. The Specimens collected and identified belong to 1 Order, 7 Families, 13 genera and 13 Species respectively. Family Lycosidae was the largest family consisting 4 Species while Family Salticidae, Thomisidae and Araneidae comprising only 2 species each, Family Clubionidae and Gniphosidae consisting only 1 species each respectively. Hence the present study revealed that Tehsil Takht-i-Nusrati is suitable for spider fauna.

4. Discussion

During the present research conducted in Takht-e-Nusrati 13 species of spider were recorded up to the species level and there proper systematic classification is given in the table 1 described in detailed above. The identified 13 species belong to 01 Orders, 7 Families, 13 Genera and 13 Species. In these 13 spider species Family Lycosidae was found the richest one over all the recorded families which comprising 4 species. From the literature study, it can be concluded that there was no previous record no data on spider fauna in this region and whole District Karak as well. A study was conducted on Faisalabad, Pakistan to find out the spider fauna and reported 124 species, 51 genera and 17 families respectively [10]. In the current study only 14 species of the spiders were recorded which show a high variation of the both areas spider fauna.

The variation in the previous work and the current work may be due to some ecological variation because each spider exhibits a particular ecological zone which is suitable for their survival. Butt (2001) conducted another study a new species of the spider was reported [11]. In the current study 14 species of the spider were recorded hence there was no new species to be recorded and all the 14 recorded were already recorded in the literature study. Hence the current study revealed that Tehsil Takht-e-Nusrati habitat is suitable for the survival of spider fauna. Previously there was no data available on this region. This study was based to explore the preexisting fauna and new one but no new species was identified during the current study. In future, this data will be very useful as record.

5. Conclusion

The present study concluded that Human activities badly affecting on spider fauna. Rich fauna of spider was recorded in those sampling sites where human activities and transport were found less. If the necessary spider fauna conservation steps are not taken to save their population, it will result in the endangering of spider fauna in Takht-e-Nusrati District Karak KP, Pakistan.

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7. References

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