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Identification of spider fauna in city Karak and its surrounding areas Khyber Pakhtunkhwa, Pakistan

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Abstract

The current study was conducted in City Karak Khyber Pakhtunkhwa to find out spider fauna. Duration of the current study was one year, i.e., January 2011 to December, 2011. A total of 433 specimens of spider were collected from various sampling sites of City Karak. These sampling sites were Tehsil colony, Gulshan Abad colony, Rehmania colony, Tappi, Jama, Kach Banda, Porana Bazra and main Karak city respectively. The Specimens collected and identified belongs to 1 Order Araneae, 7 Families Scytodidae, Clubionidae, Araneidae, Gnphosidae, Salticidae, Thomisidae and Lycosidae respectively. They have 14 genera and 18 species respectively. Family Lycosidae was the largest family consisting 7 Species while Family Thomisidae comprising 3 species, while Family Araneidae, Gnphosidae and Salticidae comprising only 2 species, each while family Scytodidae and Clubionidae consisting only one species each respectively. From the present research work, it can be concluded that the City Karak and its surrounding areas having a diverse range of spider fauna.

Keywords: Spider, fauna, identification, family, city, Karak

1. Introduction

In the current study, the main Karak City and its surrounding areas (Tehsil colony, Gulshan Abad colony, Rehmania colony, Tappi, Jama, Kach Banda, Porana Bazra and main Karak city) as shown in the Figure 1 were monitored to explore preexisting and new fauna of spider. Spiders are widespread and diverse predators that are part of the terrestrial Arthropod assemblage [1] and Arthropod comprise more than half of the known species. Two distinct types of population structures are present in many spider species, each with different characteristics regarding dynamics and behavior [2]. Spiders belonging to the order Araneae, which is one of the grasping animal group [3]. Spiders are ubiquitous in terrestrial ecosystems and abundant in both natural and agricultural habitats [4]. They play an important role in regulating insect pests in agriculture ecosystems. Spider feed on insect and other Arthropods. They can play important roles in pest control. 35000 species of spiders have been identified in the world [5]. For instance, some research were performed on spider fauna and abundance of rich field in cotton field [6] Sugarcane field, paddy field and terrestrial land. Some spiders dig holes in the ground for hiding. Many spiders prefer dark and shaded location with high humidity [7]. The aim of the research work was the first effort to find out the identification of spider fauna in city Karak and its surrounding areas Khyber Pakhtunkhwa, Pakistan.

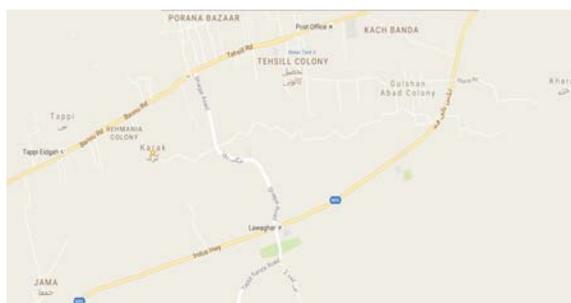


Fig 1: Map of City Karak and its surrounding areas KP, Pakistan

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2. Materials and Methods

2.1 Study site

The present study was conducted from January 2011 to December, 2011 at different study sites from City Karak and its surrounding areas as shown in the Figure 1 above. 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 [8-11] respectively.

Table 1: Identification of Spider fauna in city Karak and its surrounding areas KP, Pakistan

Order	Family	Genus	Species
Arena	Scytodidae	Scytodes	<i>horacica</i>
	Clubionidae	<i>Clubiona</i>	<i>drassodes</i>
	Araneidae	<i>Araneus</i>	<i>diadematus</i>
		<i>Neoscona</i>	<i>theis</i>
	Gnaphosidae	<i>Gnaphosa</i>	<i>eucalyptus</i>
		<i>Scotophaeus</i>	<i>aisalabadiensis</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>pugilis</i>
			<i>pectabilis</i>
	Lycosidae	<i>Arctosa</i>	<i>littoralis</i>
		<i>Hippasa</i>	<i>partita</i>
		<i>Lycosa</i>	<i>maculate</i>
<i>madanensisi</i>			
<i>Pardosa</i>		<i>bimanica</i>	
		<i>distincta</i>	
	<i>bimanica</i>		
Orders 01	Families 07	Genus 14	Species 18

3. Results

In the current research, Spider fauna were collected from the City Karak and its surrounding areas KP, Pakistan. During the current research 433 specimens of Spider were collected, Preserved and identified by key. Eight sampling areas were selected for the present survey, which were (Tehsil colony, Gulshan Abad colony, Rehmania colony, Tappi, Jama, Kach Banda, Porana Bazra and main Karak city) as shown in the Figure 1 mention above briefly. The Specimens collected and identified belong to 1 Order Araneae, 7 Families Scytodidae, Clubionidae, Araneidae, Gnaphosidae, Salticidae, Thomisidae and Lycosidae respectively. They have 14 genera and 18 species respectively. Family Lycosidae was the largest family consisting 7 Species while Family Thomisidae comprising 3 species, while Family Araneidae, Gnaphosidae and Salticidae comprising only 2 species, each while family Scytodidae and Clubionidae consisting only one species each respectively. From the present research, it can be concluded that the City Karak and its surrounding areas, climatic factors are suitable for Spider fauna. Furthermore, the same study on large scales is recommended to fully explore the spider fauna in this region shown in Table, 1.

4. Discussion

The current study was carried out to identify preexisting and new specimens of the Spider from City Karak and its surrounding areas as shown in the Figure 1 above. During the

present survey, 18 species of Spider were identified up to the species level and their proper systematic classification is given in the table 1 described in detail above. The recorded 18 species belong to 01 Orders, 07 Families, 14 Genera and 18 Species respectively. In these 18 Spider species family Lycosidae was found the richest one over all the recorded families which comprising 7 species. From the literature study, it can be concluded that there was no previous record on Araneae fauna in this region and whole District Karak as well. Thomisidae spiders of India, comprising two subfamilies, 25 genera and 115 species [12]. In the current study conducted on Karak city and its surrounding areas shown a great variation in species numbers. The variation in the both results may be due to the climatic changes and topography as well. Another main reason of the variation may be the feeding habitat because each spider species specified to a proper feeding habitat. Another study was conducted in the Parabikulam Wildlife Sanctuary, Kerala to find out the spider fauna and described 91 species belonging to 53 genera respectively [13]. In the current study only 18 species of the spider were recorded which less than the previous work were. This huge variation of the spider fauna may be due to different climatic factors, which adversely affected the population of the spider fauna. The spider fauna is very sensitive to intense environment so that climatic differences may create such a huge variety. Another study was conducted in the Puma wildlife Sanctuary to find out the spider population and reported 17 species [14].

5. Conclusion

From the present study, it can be concluded that the majority of the Spider fauna was recorded in those areas 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 the City Karak and its surrounding areas KP, Pakistan.

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