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Exploring of dragonfly fauna in city Karak and its surrounding areas Khyber Pakhtunkhwa, Pakistan

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Abstract

Karak is located in the Khyber Pakhtunkhwa Province, Pakistan. The Dragonfly fauna in City Karak and its surrounding areas was first time explore during the present study 29 species from 17 families under 25 genera are being reported during February 2014 to October 2014. Salticidae were most commonly occurred species. Duration of the current study was one year, i.e., February 2014 to October 2014. A total of 725 specimens of the dragonfly 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 Specimen collected and identified belong to 1 Order Odonata, 3 Families Libellulidae Aeshnidae and Gomphidae, 6 genera *Orthetrum*, *Palpopleura*, *Pantala*, *Trithemis*, *Anax* and *Onychogomphus*. Family Libellulidae was the largest family consisting of 7 Species while Family Aeshnidae and Gomphidae comprising only one specie each. From the current study, it can be concluded that the City Karak and its surrounding areas having a diverse range of dragonflies. Furthermore, the same study on large scales is recommended to fully explore the dragon fly fauna in this region.

Keywords: Dragon fly, exploring, family, city, Karak

1. Introduction

The current research emphasis on Karak City and its surrounding areas (Tehsil colony, Gulshan Abad colony, Rehmania colony, Tappi, Jama, Kach Banda, PoranaBazra and main Karak city) as shown in the Figure 1 were monitored to explore preexisting and new fauna of dragonflies. The presence of odonates may be useful as an indicator of ecosystem quality and wide variety of microhabitats. Odonates are more tolerant to salinity than many other aquatic macro invertebrates. Dragonfly and damselfly naiads may be of substantial value as indicators of water quality as more information on their distribution and biology becomes available [1]. Aquatic invertebrates have been used as natural indicators in lotic habitats, but less commonly used in lentic environments. Dragonflies assure decisive factor for lentic indicators of grazing impacts [2]. Many workers have been worked on the diversity of the dragonfly fauna found in the various parts of world, furthermore, some work had also made their contribution in the study of the dragonfly fauna found in Pakistan. Therefore, a considerable amount of literature was available about dragonfly fauna from various parts of Pakistan, such as, Khalid *et al* 2017 [3], have recorded 5 species from Tehsil Takht-e-Nusrati District Karak KP, Pakistan, and in 2015, Muhammad *et al* reported 11 species from Tangai district Charsada [4]. The objective of the research work was to explore the dragonfly fauna in city Karak and its surrounding areas Khyber Pakhtunkhwa, Pakistan.

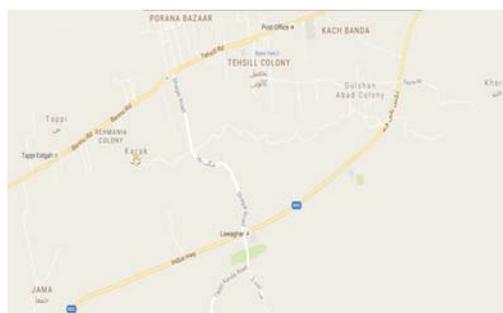


Fig 1: Map of City Karak and its surrounding areas KP, Pakistan

2. Materials and Methods

2.1 Collection and Preservation

Specimens was collected at noon and afternoon time because dragonflies prefer almost intense light and warm environment. Collection of the specimens was done throughout the year and maximum collection was carried out during the warm months of the year like May, June and July. From various selected sites dragonflies were collected by using aerial nets, killed in the cyanide bottle, pinned and their body parts were set on appropriate setting boards. On drying, these were properly labeled and mounted in the collection boxes. Naphthalene balls were placed in the boxes to keep them safe from the pests.

2.2 Identification and Description

Specimens were identified up to the species level by running them through key Fraser’s [5]. Valid names along with synonyms, distribution and ecological observations were

given for species already recorded from Pakistan.

3. Results

In the current research, dragon fly fauna was collected from the City Karak and its surrounding areas KP, Pakistan. During the current research 725 specimens of dragon fly 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, PoranaBazra and main Karak city) as shown in the Figure 1 mentioned above briefly. The Specimens collected and identified belong to 1 Order Odonata, 3 Families Libellulidae, Aeshnidae and Gomphidae, 6 genera *Orthetrum*, *Palpopleura*, *Pantala*, *Trithemis*, *Anax* and *Onychogomphus*. 9 specimens respectively. Family Libellulidae was the largest family consisting 7 Species while Family Aeshnidae and Gomphidae comprising only one specie each.

Table 1: Exploring of Dragonfly fauna in Karak City and its surrounding areas

Order	Family	Genus	Species
Odonata	Libellulidae	<i>Orthetrum</i>	<i>triangulare triangulare</i>
		<i>Orthetrum</i>	<i>Sabina</i>
		<i>Palpopleura</i>	<i>Sexmaculata</i>
		<i>Pantala</i>	<i>Flavescens</i>
		<i>Orthetrum</i>	<i>Pruinosum neglectum</i>
		<i>Trithemis</i>	<i>Festiva</i>
		<i>Trithemis</i>	<i>Aurora</i>
	Aeshnidae	<i>Anax</i>	<i>Immaculifrons</i>
	Gomphidae	<i>Onychogomphus</i>	<i>Bistrigatus</i>
Order 01	Families 03	Genus 06	Species 09

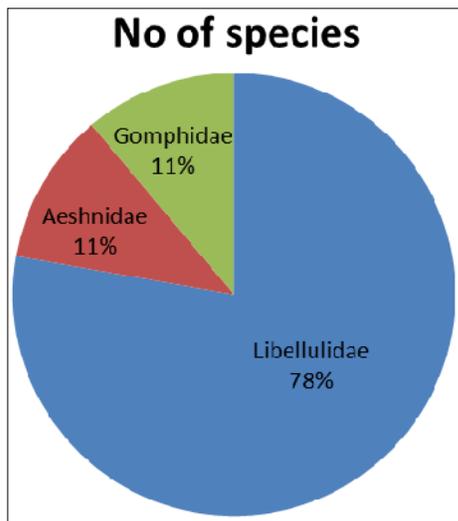


Fig 2: Pie Graph showing families wise percentage of dragonflies.

4. Discussion

The present study was conducted in City Karak and its surrounding areas to identify Dragon flies fauna. In the current study, 9 species of dragonfly were recorded is given in the table 1. The identified 9 species belong to 01 Orders, 03 Families, 6 Genera and 9 Species. In these 9 dragonfly species family Libellulidae 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 Odonata fauna in this region and whole District Karak as well, Laidlaw (1914) [6]. So the results of both the studies were different from one another after comparison. The reason of the variation in the results may be

due to seasonal variation or climatic factors.

Another study conducted by Kumar and Prasad (1981) reported 162 odonate species from Western Himalaya, with information on oviposition, adult flight period, larval habitat, emergence and latitudinal range [7]. The result of both the studies was not matching with each other. The variation of the both results may be due to topographical changes and geographical changes. Kanth (1985) conducted a study and described 39 species of dragonflies belonging to 22 genera from Azad Jammu and Kashmir [8]. Khalid *et al*, conducted studies on the dragonfly fauna collected from Tehsil Takhti Nusrati District Karak Khyber Pakhtunkhwa, Pakistan. A survey was conducted over a period of one year. A total 725 specimens of dragonfly were collected from various sampling sites of Tehsil Takhti Nusrati. These sampling sites were Takhti Nusrati, Zarki Nasrati, Ganderi Khattak, Bogara and Khada respectively. The Specimens collected and identified belonged to 1 Order, 3 Families, 6 Genera and 7 Species. Family Libellulidae was the largest family consisting 5 Species while Family Aeshnidae, and Gomphidae comprising only one species each. From the Present study, it is concluded that Takht-e-Nusrati Tehsil have a diverse dragon fly fauna. Similar survey on large scales is recommended to fully evaluate the dragon fly fauna in the Warana region of District Karak [3].

5. Conclusion

The results of the current study revealed that Karak City and its surrounding areas were found rich of the dragonfly’s population. The current data recoded would be helpful to provide a base line literature for the future Entomologist. Hence, from the current survey, we can conclude that dragonfly’s population is found chiefly in the Karak City and its surrounding areas.

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7. References

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