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## Biodiversity of beetles (Coleoptera) from district Mirpurkhas and its Adjoining areas Sindh, Pakistan

**Sidra Tul Muntha, Naheed Baloch, Riffat Sultana, Imran Ali Soomro, Abdul Sattar Kalhoro and Shamsher Ali**

### Abstract

Present study was carried out during the year 2018. Total over all 409 beetles were collected from the different localities of District Mirpurkhas namely Digri, Hussain Bux Mari, Judo, Kot Ghulam Muhammad, Mirpurkhas, Shujabad and Sindhri. The material were sorted out into 5 families, 09 genera and 10 species namely *Anthia sexguttata sexguttata* (Fabricius, 1775), *Carabus hortansis* (Linnaeus, 1758), *Calsoma chlorostictum* (Dejean, 1831), *Aneflus calvatus* (Horn, 1885), *Melelontha hippocastani* (Fabricius, 1801), *Melelontha pictoralis* (Magerls, 1812), *Euetheola humilis* (Burmeister, 1847), *Geotrupes stercorarius* (Linnaeus, 1758), *Eletica testacea* (Oliver, 1789), *Pimelia capito* (Krynicky, 1832). Above all species are first time recorded from given study area.

**Keywords:** Biodiversity, beetles, coleopteran, Mirpurkhas and Sindh

### 1. Introduction

Biodiversity is the variability of species in the world. It can be summarized with two of its component species richness and evenness. The “Richness” indicates the number of species present in particular areas. Whereas “evenness” stand for a relative abundance of species [1]. Biodiversity refers to the entire verity of life on earth [2]. Order Coleoptera is known as beetles and weevils. It is largest order of all insect groups [3]. 400,000 species has been described till date. Coleoptera means sheath wings having a pair of wings. The front pair is known as elytra and the hind wing are membrous. Diversity of beetles is very wide. They found in all major habitats. Beetles have long been successful group for the zoogeographical purpose. They are also broadly dispersed and biologically enhanced known than extra taxa of soil fauna, creation them an outstanding test container to explain and examine how communities respond to anthropogenic behavior. Based on preceding empirical mechanism and reviews, it can be forecasted that for ground beetles, absence of metathoracic wings, bigger body size and severely predatory diet are natural facial appearance unenthusiastically connected to habitat interruption [4-6]. Till date no work related to the distribution of Odonata in the District Mirpurkhas but So many researchers have been deliberated on this research from Pakistan as well as other countries [7-10]

### 2. Materials and Methods

The present study was conducted from different localities of District Mirpurkhas Sindh, Pakistan during in year 2018. Total 409 specimens were collected through Pitfall trapping system, Light Trapping and hand picking from different talukas like Digri, Hussain Mux Mari, Jhuddo, Kot Ghulam Mohammad, Mirpurkhas, Sindhri and Shujabad of district Mirpurkhas Sindh, Pakistan.

Collected specimens were preserved in the killing jar and brought in to the Advance entomology laboratory University of Sindh Jamshoro then specimen were killed in the killing jar with the help of chloroform. Preserved specimens finally kept in petidish for identification on the basis of species level one by one with the help of taxonomic key [11, 12], literature and different books under the stereoscopic binocular microscope and finally pinned and labeled with locality, family, genus, species time and date.

### 3. Results and Discussion

The research investigation was conducted from the January 2018. A total of 409 specimens were collected from different talukas and areas of District Mirpurkhas Sindh.

It Compares seven talukas (Digri, Hussain Bux Mari, Kot Ghulam Muhammad, Jhuddo, Mirpurkhas, Sindhri and Shujabad, material was sorted out into 06 families namely Carabidea, Scarabaeidae, Cerambycidae, Geotrupidae, Meloidae, Tenebrioidea. Family Carabidae have 03 genera such as *Anthia*, *Carabus* and *Calsoma* and 03 species were *Anthia sexguttata*, *Carabus hortansis*, *Calsoma chlorostictum*, Family Scarabaeidae have 02 Genra such as *Melelontha* and *Eutheola* with 03 species namely *Melelontha hippocastani*, *Melelontha pectoralis* and *Eutheola humilis*. Family Cerambycidae have 01 genera such as *Aneflus* along with only 01 species namely *Aneflus calvatus*. Family Geotrupidae have 01 genus such as *Geotrups* with 01 species such as *Geotrups stercoraius*. Family Meloidae have also 01 genus such as *Eletica* with also 01 species namely *Eletica testacea*. Family Tenebrioidea have 01 genus namely *Pimelia* along with species namel *Pimelia*

*capito*.

(Figure No: 1) Showing the map of District Mirpurkhas and its Talukas and (Table No: 01) showing the distribution of species in Taluka wise. The highest number species were found in taluka Kot Ghulam Muhammad. (Table No: 02) showing the richness and evenness of species from 2018. The highest number species were *Pimelia capito* (18.82%) and *Melelontha hippocastani* (18.09%) and the lowest species are found *Anthia sexguttata sexguttata* (2.93%) and *Carabus hortansis* (2.93%).

Dung Beetle plays a vital role in natural cleanness by consuming the dung. Scarabidea are the richest Family having genus *Melelontha* the major pest of trees as well as crops, due to this act of pests, the economic value of crops is Damage. *Eutheola humilis* are the serious pest of sugarcane and cause of damage to sugarcane field throughout the year in this area.

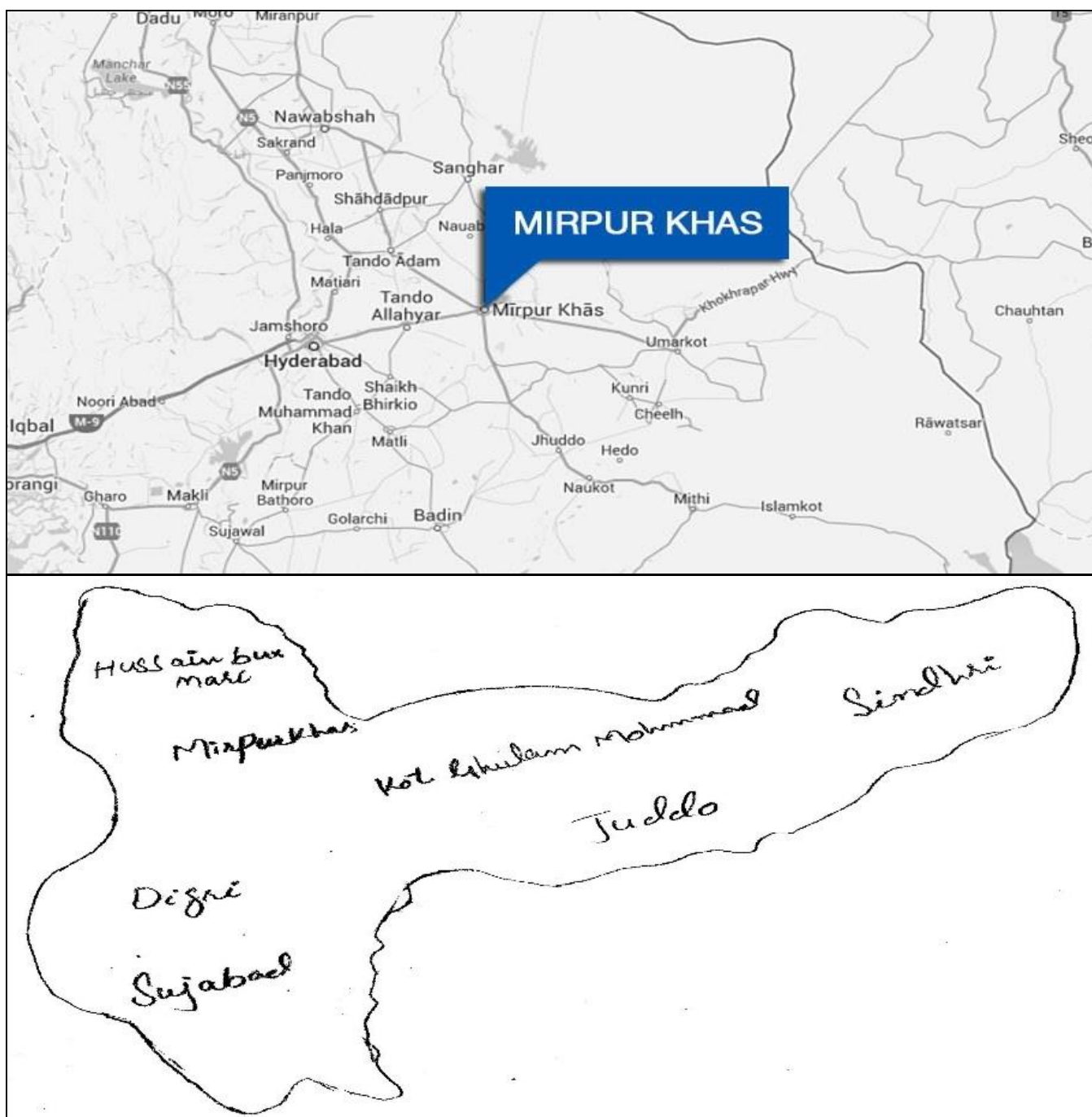


Fig 1: Showing the map of various Talukas of District Mirpurkhas.

**Table 1:** Showing total Species from Taluka wise

Name of specie	Digri	Hussain bux mari	Juddo	Kot Ghulam Mohammed	Mirpurkhas	Shujabad	Sindhri	Total no spp
<i>Anthia sexguttata sexguttata</i>	01	01	02	05	01	01	01	12
<i>Carabus hortansis</i>	01	03	01	01	01	04	01	12
<i>Calsoma Chlorosticum</i>	04	05	03	09	05	03	06	35
<i>Aneflus calvatus</i>	10	04	04	04	02	02	02	28
<i>Melelontha hippocastani</i>	09	22	07	06	10	10	10	74
<i>Melelontha pectoralis</i>	05	08	05	07	23	07	06	61
<i>Euetheola humilis</i>	05	05	16	04	05	06	04	45
<i>Geotrups stercorarius</i>	05	03	02	03	02	02	08	25
<i>Eletica testacea</i>	09	10	03	05	03	06	04	40
<i>Pimelia capito</i>	09	12	07	15	13	07	14	77
Total no of spp	58	73	50	59	65	48	56	409

**Table 2:** showing the richness and evens of species from various talukas

Species name	Digri	Hussain buxmari	juddo	Kot Ghulam Muhmmmed	Mirpurkhas	Shujabad	Sindhri	sp
<i>Anthia sexguttata sexguttata</i>	-	-	-	+	-	-	-	12
<i>Carabus hortansis</i>	-	+	-	-	-	+	-	12
<i>Calsoma chlorosticum</i>	-	-	-	+	-	-	-	35
<i>Aneflus Calvatus</i>	+	-	-	-	-	-	-	28
<i>Melelontha hippocastani</i>	-	+	-	-	+	+	+	74
<i>Melelontha pectoralis</i>	-	-	-	-	+	-	-	61
<i>Euetheola humilis</i>	-	-	+	-	-	-	-	45
<i>Geotrups stercorarius</i>	+	-	-	-	-	-	+	25
<i>Electica testacea</i>	+	+	-	-	-	-	-	40
<i>Pimelia capito</i>	+	+	-	+	+	-	+	77

#### 4. Conclusion

During the present study 409 beetles were collected from various localities of district Mirpurkhas during the year 2018. Material were sorted out into 06 families having 09 genera and 10 species and all species are given below such as *Anthia sexguttata*, *Carabus hortansis*, *Calsoma chlorosticum*, *Melelontha hippocastani*, *Melelontha pectoralis*, *Euetheola humilis*, *Aneflus calvatus*, *Geotrups stercorarius*, *Eletica testacea*, *Pimelia capito*. This research project will also increase the knowledge as well as awareness and also high-quality rank consequence in the scientific literature of Sindh, Pakistan.

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