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Discovery of ensifera (orthoptera) from Khairpur Mir's

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Abstract

The Ensifera (long-horned) occurs in wide varieties of habitats i.e. trees, shrubs, herbs and grasses, vegetation, forest and swamps. They cause considerable damage to all. 03 extensive surveys were carried out in district Khairpur Mir's Sindh, during the year 2016-2017 in different seasons. In result of this a total of 242 specimens were come in collection which was sorted out into 03 sub families i.e. Phaneropterinae, Conocephalinae and Gryllinae pertaining to following species viz: *Acheta domestica* (Linnaeus 1758), *A. meridionalis* Uvarov, 1921, *Gryllus bimaculatus* De-Geer, 1773 of Gryllinae, 02 species namely *Trigonocorpha unicolor*, Stal, 1873, *T. angustata*, Uvarov, 1922 of Phaneropterinae and 01 species *Conocephalus maculatus* (Le Guillou, 1841) of Conocephalinae were captured. Besides this, highest ratio of *C. maculatus* (Le Guillou, 1841) with 26.85% followed by *A. domestica* with 23.55%, was observed, while least ratio of *T. angustata*, Uvarov, 1922 with 5.37% followed by *A. meridionalis* Uvarov, 1921 with 10.74% was calculated.

Keywords: Distribution, incidence, ensifera, khairpur, orthoptera

1. Introduction

Considerable taxonomic work has been done on Caelifera of Pakistan Ahmed ^[1], Wagan and Naheed ^[2], Yousaf ^[3] and Riffat and Wagan ^[4], but no attention has been paid to long-horned grasshoppers Ensifera. As some of the species belonging to Ensifera (Orthoptera) are important Pests of agricultural crops, Orchard and forest. Ensifera are generally phytophagous insects.

The present knowledge of taxonomic and diversified status of Ensifera is still insufficient for Khairpur and its surrounding. Khairpur is as one of the most varied environmental habit i.e. agriculture desert, rocky and plan. Therefore, present study is designed to collect, discover hidden wealth of this group then identify them accurately so that proper diagnosis of species could be possible. Such type of finding furnishes a definite basis to know the variation supra-generic category of Ensifera of Sindh. Certainly, present finding will be first of its kind and proved helpline for people associated with pest management and other control agencies in Pakistan as well as abroad. Additionally, the findings of the present study will be useful in making prediction about the relationship between the species and for accurate identification in the future.

2. Material and Methods

2.1 Sampling

The adults of Ensifera were collected from trees, shrubs, herbs and grasses, vegetation, forest and swamps with the help of traditional insect hand-net (8.89 cm in diameter and 50.8 cm in length) as well as by hand catching. The collection was made during the year 2016-2017 from various localities of Khairpur.

2.2 Killing and preservation of Samples

The following method has been adapted from Riffat *et al.*, ^[5]. Collected material brought in to the laboratory and was killed by means of potassium cyanide in standard entomological killing bottles. The specimens were not left too long (½ hours) in cyanide because the color changed particularly that of green specimens all collected specimens were thoroughly examined under the stereoscopic dissecting binocular microscope and sorted out according to sub-families and species wise. Pinning, preservation, and killing of specimen were made by adopting standard protocol described by Riffat and Wagan ^[4] for the longer protection of samples Naphthalene ball were placed into boxes to prevent the attack of other parasitoids.

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2.3 Identification of the specimens

Identification of specimen was carried out under the Stereoscopic Dissecting Binocular Microscope with the help of keys and description available in literature and on the “web site (http://www.orthoptera.org) Orthoptera Species File Online”.

2.4 Data analysis

Data was analyzed through excel.

3. Results and Discussion

During the present survey a total of 242 specimens were come in collection which was sorted out into 03 sub families i.e. Phaneropterinae, Conocephalinae and Gryllyllinae pertaining to following species viz: *Acheta domestica* (Linnaeus 1758), *A. meridionalis* Uvarov, 1921, *Gryllus bimaculatus* De-Geer, 1773 of Gryllinae, *Trigonocorpha unicolor*, Stal, 1873, *T. angustata*, Uvarov, 1922 of Phaneropterinae, *Conocephalus maculatus* (Le Guillou, 1841) of Conocephalinae were captured. Beside this, highest ratio of *C. maculatus* (Le Guillou, 1841) with 26.85% followed by *A. domestica* with 23.55% was observed, while least ratio of *T. angustata*, Uvarov, 1922 with 5.37% followed by *A. meridionalis*

Uvarov, 1921 with 10.74% was calculated (Table 1 and Fig 1).

Kocarek and Holusa [6] observed that Ensifera occupies a wide range of open habitats from exothermic to wetlands including rural habitats but it mostly consumed tall herb or lower shrub by vegetation everywhere present study is agreed with this statement while Kleukers *et al.*, [7] Decler *et al.*, [8] and Landeck *et al.*, [9] has reported its distribution in Western Europe. It is clear that the distribution and incidence of this group is insufficiently known from this region Riffat and Wagan [4] provided the distributional data about Caelifera fauna of Pakistan with few Ensifera occurrences. Riffat *et al.*, [10] provided description along with distribution of *Eupholidoptera* species from Pakistan. During the present study it was noticed that Ensifera are very fast flyers that make difficulties in capturing. Furthermore Phaneropterinae and Conocephalinae have very close resemblance with natural object which also make hurdle for the collection of specimen it was noted that Khairpur is occupied by many Ensifera. If more extensive survey would be carried out in different season helpfully many more specimens will he came in collection.

Table 1: Distribution and incidence of Ensifera in District Khairpur (Mir's)

Species of Sub family	Khairpur city (n=56)	Kotdji (n=65)	Thari mirwah (n=91)	Chundiko (n=30)	Total (n=242)	%
Subfamily Phaneropterinae						
<i>Trigonocorypha unicolor</i>	11	15	9	5	40	16.52
<i>T. angustata</i>	5	--	6	2	13	5.37
Subfamily Conocephalinae						
<i>Conocephalus maculatus</i>	8	22	27	8	65	26.85
Subfamily Gryllinae						
<i>Acheta domestica</i>	14	10	24	9	57	23.55
<i>A. meridionalis</i>	5	7	10	4	26	10.74
<i>Gryllus bimaculatus</i>	13	11	15	2	41	16.94

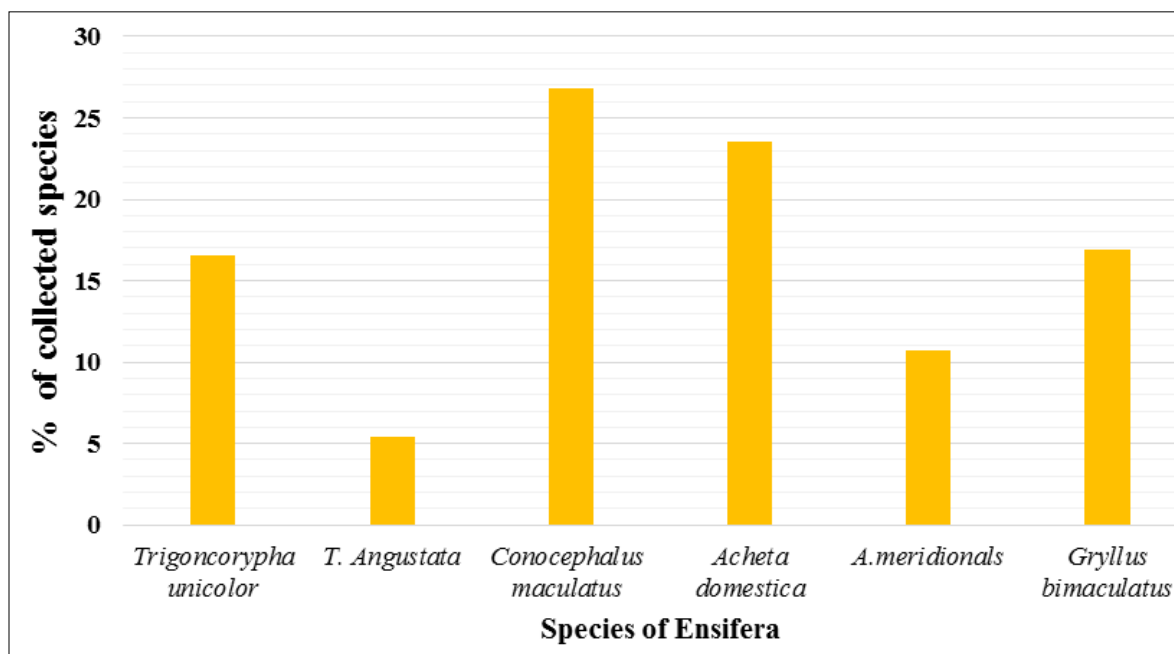


Fig 1: Distribution and incidence of Ensifera in District Khairpur (Mirs)

4. Conclusion

At the present of 06 species of Ensifera were captured from different habitat that suggest that if fragment survey will be carried out more diversity of Ensifera will be added in existing knowledge of Sindh.

5. Acknowledgement

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