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Rhomboderella scutata, Boliver, 1889 (Mantidae: Mantinae): A new record from Sindh Pakistan

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Abstract

Praying mantises belongs to Superfamily Mantodea feed on various insects and are regarded as predators. Due to their predatory nature mantises play an important role for the control of pest. Mantids are very unique and among the most easily recognized of all insects. At the present detailed surveys were conducted from several talukas of district Naushahro Feroze. *Rhomboderella scutata*, Boliver, 1889 is reported as new regional record for Pakistan. Additionally, photographs are provided for the first time. Finding of present study will contribute to the biodiversity of Pakistan.

Keywords: New record, Mantidae, predators, Pakistan, control

1. Introduction

Praying mantises belongs to Superfamily Mantodea feed on various insects and are regarded as predators. Due to their predatory nature mantises play an important role for the control of pest. Mantids are very unique and among the most easily recognized of all insects. The head is distinctly triangular with the large compound eyes set high up on either side. Three simple eyes or ocelli are normally present. The head is extra-ordinarily mobile with a very flexible articulation between the head and the prothorax. The front legs are long heavily spine, forming efficient traps for the capture of living prey, the only food taken by mantids^[1].

The praying mantis are amid the ultimate fascinating flesh eating insects, limited to the tropical regions that have about 15 families 436 genera and 2366 species^[2, 3]. After updated facts and figures of all mantodea species the order have nineteen families except one unmarked family, there are total eight families are well known in Sindh, Pakistan as Empusidae, Hymenopodidae, Metallyticidae, Amorphoscelididae, Mantoididae chaeteissidae, Eremiaphilidae and Mantidae while Sindh province have only 03 families: Mantidae, Emusidae and Eremiaphilidae that are widely found^[4, 5, 6]. Moreover, the current development species of mantodea from mantodea species online file (version 5.0; 5.0) gave us extravagant updation, interaction and access to whole community who are researchers of mantodea. Many of the researchers i-e: [7, 8, 9, 10, 11, 12, 13, 14, 15, 16] carried out significant work on mantids fauna of Indian continent. Present study contributes the first record of mantis species from district Naushahferoze Pakistan.

2. Materials and Methods

2.1 Study Area

The Naushahro Feroze became the district of Sindh in 1989. It is the most important district of Sindh province, Pakistan with respect to agriculture and canal system. Naushahro Feroze city is the district head quarter. Based on administration, it is sub divided into Moro, Naushahro, Bhria city, Kandiaro and Mehrabpur talkas. The district is situated at (26°50'0N 68°7'0E) with an altitude of (38) meters. The main N-5 & main Railway Track passes through the district. Mostly the climatic conditions of Naushahro Feroze is hot desert with hot summers and mild winters. Mostly rain falls from July to September in the season of monsoon, March and February also favorable for rain fall. The most common crops of Naushahro Feroze are cotton, wheat, sugarcane and citrus fruits (Fig. 1).

2.2 Sample collection

The mantis were collected from different localities of Naushahro Feroze. The mantis were captured by insect net, and hand picking from lawns, gardens and different crop fields.

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Collected specimens were brought to the Entomological Laboratory, Department of Zoology, SALU Khairpur.

Collected mantid species were killed by using KCN (potassium cyanide) in entomological air tight jars [4].

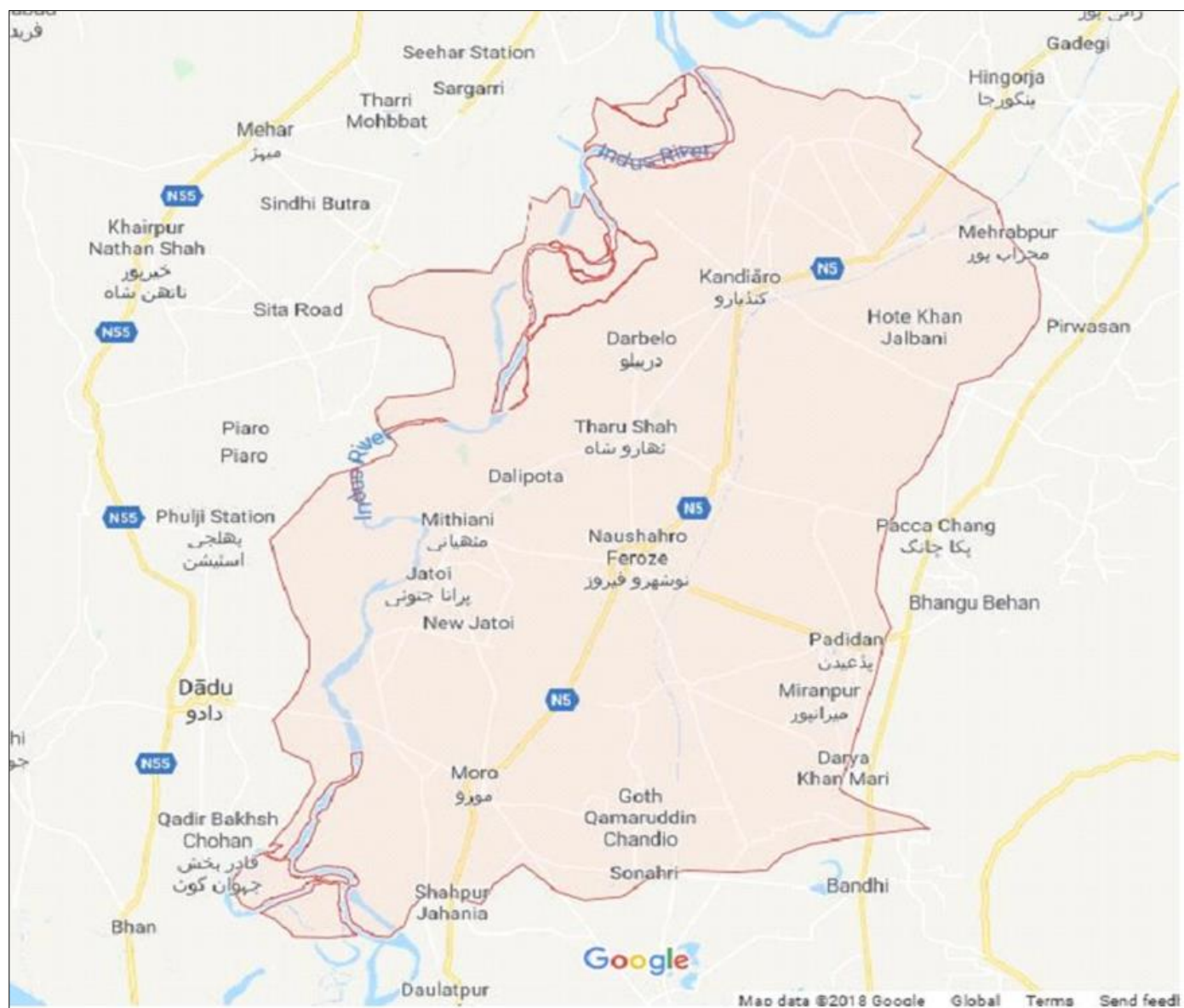


Fig 1: Map of District Naushahro Feroze

2.3 Killing of samples

The captured mantis species were killed by using KCN (potassium cyanide) in air tight plastic jars. Mantis species were stretched on the stretching board and pinned on the thorax region. Afterwards, samples were dried and shifted into insect cabinets/boxes with complete information (Date of collection, Collector's name and Locality name). Mounting and preservation of specimens were carefully done. Specimens were kept into specific wooden insect boxes and labeled as per standard procedure. Naphthalene balls were used to protect and preserve insects from predators (ants) and fungus.

2.4 Identification of samples

The samples were identified with the help of relevant literature. External characters were observed by using dissecting microscope. Identification was carried by regional taxonomic keys present in the literature and with assistance of Binocular [4, 5, 6].

2.5 Measurements and photography

All measurements were taken into mm (millimeters) by using scale divider. Images were taken with help of Digital camera [17].

3. Results

3.1 *Rhomboderella scutata*, Boliver, 1889

Fig.2 a & b

<http://mantodea.speciesfile.org/Common/basic/Taxa.aspx?TaxonNameID=1184036>

3.2 Taxonomic Hierarchy

Family: Mantidae

Subfamily: Mantinae

Tribe: Paramantini

Genus: *Rhomboderella*

Species: *scutata*

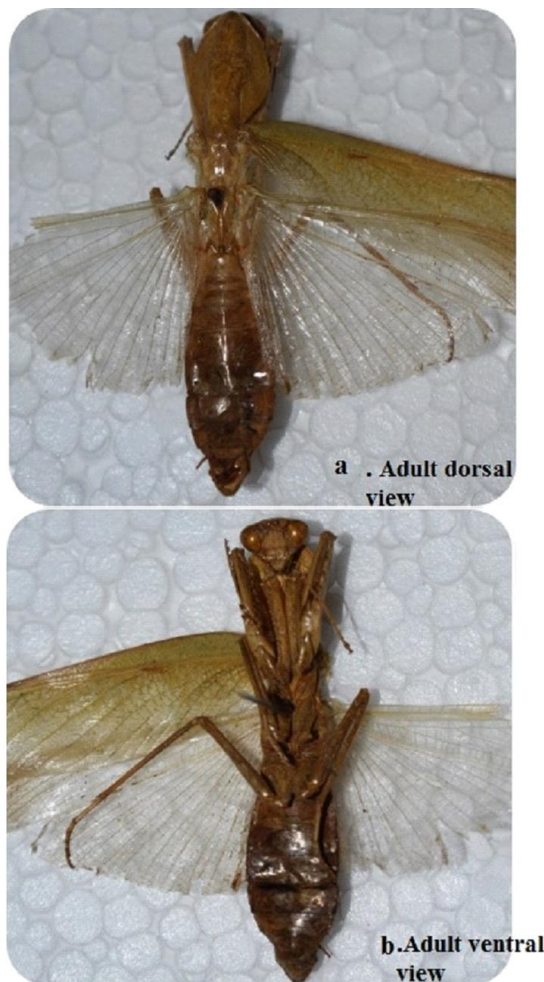


Fig 2: *Rhombohedral scutata*, Boliver, 1889; a. dorsal view b. Ventral view

3.3 Description

Body shiny green. Pronotum with serrated margins from lateral side Pronotum with median carina crossing throughout the dorsal surface. Golden brown eyes. Forelegs with numerous spines. Tegmina shiny green Wings hyaline. Forelegs are modified for preys. Hind legs with numerous spines. Tarsus with claws. Pre-tarsi fork like structure. Cerci short, pointed with minute hairs. Genital plate widened from base, slightly concave.

3.4 Morphometry (mm). Length of head=5, Length of pronotum=19, Length of femur=15, length of tibia=19, length of tarsi=12, length of tegmina=52, length of hind wing=45, total body length =65.

3.5 Material examined. Pakistan, Several specimens Sindh Province Nausheroferoze, 1.vii.2018 & 12.viii.2018.

3.6 Remarks: This species is first time reported from Pakistan.

4. Conclusion: This study concludes that district Naushahero Feroze is occupied with dense vegetation and fruits and its geography provides ideal situation for the breeding of praying mantises. Additionally, the results of current study add new record for the biodiversity of mantises to Pakistan.

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