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Research Article

A consolidated account on six genera of Mantodea (Dictyoptera) from Sindh, Pakistan

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Abstract
The order Mantodea is updated, resulting in the recognition of ten species, of which four are described herein as new regional species i-e *Empusa fasicata* (Brulle, 1832), *Empusa spinosa* (Krauss, 1902), *Iris orientalis* (Wood-Mason, 1882) and *Rivetinula fraterna* (Saussure, 1871) are recorded as new country and state records. Differences from similar species and a taxonomic key to species of Sindh, Pakistan are provided.
Keywords: Mantodea, Consolidated, new record, Taxonomic key, difference

Introduction

Order Mantodea was considered a minor order of insects because it was based on a single family of mantidae in which a few species occurred. Previously Roy and Ehrmann (2002), Otte and Spearman (2005) estimated 2300–2450 species in Mantodea. But now this group is recognized as one of the major order of Dictyoptera, which consists of 33 families about 460 genera, and more than 2,500 species Svenson and Whiting (2004). Mantis is easily differentiated from other insects because of its large, triangular head and compound eyes. A joint neck is also remarkably flexible; can rotate the head nearly 180 degrees. Praying mantis visual range of up to 20 meters and have a dynamic vision for long distances. But the most probably fantastic body features are the grasping forelegs, folded under the thorax region “praying “gesture. The praying mantis is found in various habitats. Generally located in tropical, subtropical, arid forests, deserts, and grasslands, although

some others can be found in mild cold areas, where prey is available in great numbers. Praying mantis spend most of their time in the Paddy ecosystem, Pond ecosystem, Grassland ecosystem, Banana ecosystem, Mango ecosystem, home gardens, and forests and are also attracted to light during night time. Mantis change its feeding behavior during different stages of its life. In the first instar stage, mantis eat small insects such as tiny cockroaches, flies, and their siblings, etc. In the later instar stage, it captures much larger insects, but in the adultstage, it preys on a different type of insects i.e small scorpions, frogs, lizards, birds, fish, snakes, jassids, white flies, grasshoppers, caterpillars, psyllids, *Aphis craccivora* Koch, Mosquitoes (Culex sp., Aedes sp.), scale insects, mealy bugs, *Rhophalosiphum maidis Fitch*. *Helicoverpa armigera Hubn*, *Peregrinus maidis Aslma, caterpillars H. armigera,* homopterous insect pests. Mantis capture their prey with tricky, flexible, and thorny "grasping legs" Beckman et al. (2003)(Sathe and Patil 2014). All species of Mantodea have a natural tendency to camouflage attitude through which they can easily adapt to their environment Grimaldi and Engel (2005). The present work consists of 04 families' i.e. Empusidae, Eremiaphilidae, Mantidae, and Rivetinae. Approximately 40 species were reported from Pakistan. Some researchers i.e. Wagan and Mughal (1995), Wagan et al. (1995), Naheed (2000), Sultana et al. (2016), Fatima (2017), Fatimah et al. (2018), paid more attention to classification. Apart from that Soomro et al. (2001), Soomro et al. (2000a), Soomro et al. (2000b) and Naeem and Yousaf (1996-1999), Fatimah et al. 2016), Chandio (2019), Fatimah et al. (2021), Fatimah et al. (2022) and Fatimah et al.(2022) all above entomologists took intensive attempts on other parameters of mantis in recent years. The aim of the present study a consolidate new fauna of mantis from Sindh, Pakistan, because many families, subfamilies, tribes, genera, and species statuses were revised/ rearranged their classification so that we have extensively surveyed many new localities and also touched reported areas by earlier workers. We have collected rich numbers of species and also successfully found new regional recorded species. Sindh province is located at 25.8943^{o} N and 68.5247^{o} E. Sindh province is affluent with agricultural fields, where a variety of different seasonal crops are cultivated. During current research, we have surveyed 8 districts and 10 localities. The climate condition of upper Sindh is warm and dry, but middle and lower Sindh is warm and humid.

Material and methods

Many intensive field surveys of Jacobabad, Kashomr/kandkot, Qambar/ Shahdadkot, Larkana, Shikarpur, Ghotki, Sukkur, and Khairpur were carried out from June 2019 to September 2021. 138

specimens were collected with the help of an insect net, hand-picked method, and light trapping technique they were brought to the Entomology Biological Control Research Laboratory at the University of Sindh, Jamshoro. For a further detailed study, authentic information about the identification names of specimens and collected sites is given. Identification was carried out under a stereoscope binocular microscope and identified up to species level with the aid of Saussure (1871), Giglo-Tos (1919-, 1927), Wang (1993), Terra (1995), Maxwell et al. (1998), Ehrmann (2002) and Sex was differentiated on the bases of gender identification tools given by Fatimah et al. (2016) mostly the female possess 6 abdominal segments while have male with 8 segments.

The collected specimens were sprayed with potassium cyanide/chloroform and they died within 15-25 minutes after that pinned and stretched on the stretching board. Attention was paid to the position of antenna, wings, and legs to display important taxonomical characteristics. The fully dried specimen was removed from the stretching boards and stored in the insect's boxes and labeled showing locality, date, and collector's name. The collected samples were properly preserved and a drawing line of important taxonomic features was sketched and some photographs of the various species were also captured (SONY.CORP. DSC. W630).

Results

Superfamily Hymenopoidea

Family Empusidae

Subfamily Blepharodinae

Genus *Blepharopsis* Rehn, 1902

***Blepharopsis mendica* Fabricius, 1775**

Mantis mendica (Fabricius, 1775) (Figures 1-6, Table 1-3)

Material examined: PAKISTAN- **Sindh Prov.** • 2♂; Riffat, Sadaf; 4 Apr.2019; Kot Khrwali N 28.2440°, E 69.5646°, 4♂, 5♀; Sadaf, Riffat; 7 Apr.2019, Ghogharo N 27.6025°, E 67.4755°, 1♂ Riffat, Sadaf; 12 Apr. 2019; Dokri N 27.3800°, E 68.0925°, 1♂,1♀; Sadaf, Riffat; 14 Apr.2019; Hashim Ali Chang N 27.5256°, E 68.7551°, 1♀; Sadaf, Riffat;18 Apr.2019; Dasti N 28.0390°, E 68.4138°, 2♀; Riffat, Sadaf; 20 Apr.2019; Dakhan N 27.95°, E 68.63°.

Description

Body medium to large size; malachite green coloration, wide and heavy, pronotum diamond shape; robust; shorter and wide; enclosed with numerous spines; with covered bushy hair. Facial shield

with the median point of its dorsal margin produced and curving dorsal–cephalad, vertex less prominent, tegmina and wing fully developed; coxa, femur, trochanter, and tibia covered with hair, coxa triangular shape, and broad with spines.

Male. LH 4.0 ± 0.86(mm), LA 14.0 ± 1.87(mm), LP 14.0 ± 1.74(mm), LAB. 33.33 ± 3.90(mm), LT. 39.55 ± 3.04(mm), WT. 11.33 ± 1.32(mm), LW 37.55 ± 4.33(mm), WW. 20.44 ± 2.74(mm), LF.13.88 ± 1.05(mm), WF.5.22 ± 0.83(mm), TBL 58.55 ± 6.24(mm).

Female. LH. 525 ± 0.88(mm), LA 16.25 ± 0.70(mm), LP 14.62 ± 1.06 (mm), LAB 35.75 ± 2.37(mm), LT 38.62 ± 1.92(mm), WT 12.0 ± 0.92(mm), LW 39.5 ± 3.89(mm), WW 22.8 ± 1.12(mm), LF 15.62 ± 0.74(mm), WF 6.12 ± 0.83(mm), TBL 58.0 ± 5.87(mm).

Ecology

This species is widespread in various bushes and thorny fields of upper Sindh, Pakistan. Many crops that are affected by *B.mendica* are *S. vulgare, M.alba, Nicotiana tabacum L.* This species is mostly found in South Asia, the Middle East, and North African countries.

Global Distribution

Afghanistan, Algeria, Chad, China, Cyprus, Egypt, India, Iran, Israel, Jordan, Lebanon, Libya, Morocco, Niger, Oman, Pakistan, Portugal, Somalia, Canary Island, Sudan, Tunisia and USA.(Battiston, 2016)

Remarks

This species was first time founded by Fabricius, (1775). Ehrmann (2011) reported this species from Palestine's unidentified area and Kocak and Kema, (2017) collected it from Turkey. Furthermore, Naheed (2000) reported that from lower Sindh, and Fatima (2017) reported from central Sindh. During the present study I have collected (08) males and (09) females from various localities of upper Sindh, but particularly good numbers of specimens were collected from the field of Ladyfinger Ghogharo N 27.6025°, E 67.4755°.*B.mendica* very actively engages or assiduously performs mimic and cryptic coloration behavior in leaves and dry shrubs (Becerra et al. 2001). At the end of the winter season, the nymphal stage appears but in the spring season, it reaches the adult stage.Battiston et al. (2010). This species is globally known as Arab mantis, Devil's flower mantis, Egyptian flower mantis, and Thistle mantis Battiston (2016).

Subfamily Empusinae
Tribe Empusini

Subtribe Empusina

Genus *Empusa* Illiger, 1798

***Empusa pennata* Thunberg, 1815**

Empusabrachyptera (Fischer-Waldheim, 1846)

Mantis pauperata (Fabricius, 1781): 346-347.

Mantis pauperata (Thunberg, 1784): 61.

Mantis pauperata (Herbst, 1786): 187.

Mantis pauperata (Fabricius, 1787): 227.

Mantis pauperata (Olivier, 1792): 627.

Mantis pauperata (Fabricius, 1793): 17.

Mantis pauperata (Lichtenstein, 1802): 24.

Mantis pauperata (Stoll, 1813): 33-34.

Empusa pauperata (Roy, 2004): 8.

Empusa pauperata (Ehrmann, 2011): 11.

Gryllus unicornis (Linne, 1763: 396

Empusa unicornis (Bolivar, 1897): 315.

Mantis fronticornis (Stoll, 1813): 30, 31.

Empusa fronticornis (Audinet-Serville, 1839): 144.

Empusa humbertiana (Saussure, 1869): 60-61.

Empusa servillii (Saussure, 1872): 88.

Empusa servillii (Saussure and Zehntner 1895):239-240.

(Figures 1-6, Table 1-3)

Material examined: PAKISTAN- **Sindh Prov.•** 3♀; Sadaf, Riffat; 20 Apr.2019; Miro chandio N 27.7667°, E 68.1000°, 2♀; Riffat, Sadaf; 22 Apr.2019; Kot Khrwali N 28.2440°, E 69.5646°, 1♀; Sadaf, Riffat; 24 Apr.2019; Ghogharo N 27.6025°, E 67.4755°, 1♀; Sadaf, Riffat; 23 May.2019; Dokri N 27.3800°, E 68.0925°, 2♀; Riffat,Sadaf; 23Apr.2019; 24 Apr.2019; Hashim Ali Chang N 27.5256°, E 68.7551°, 1♀; Sadaf, Riffat; 26 Apr.2019; Mirpur mathalo N 28.0271°, E 69.3235°, 1♀; Sadaf, Riffat; 27 Apr.2019; Sumar chachar N 28.2457°, E 68.1797°, 1♀; Sadaf, Riffat; 28 Apr.2019; Naudero N 27.6670°, E 68.1161°, 1♀; Riffat, Sadaf; 4 May.2019; Warah N 27.4500°, E 67.7914°, 1♀; Riffat, Sadaf; 6 May.2019; Bero Chandio N 27.5789°, E 68.1161°, 1♀; Sadaf,

Riffat; 8 May.2019; Bangul Dero N 27.5639°, E 68.2151°, 1♀; Sadaf, Riffat; 12 May.2019; Garhi Sahib Khan N 27.5725°, E 68.3816°, 1♀; Sadaf, Riffat; 15 May.2019; Dakhan N 27.95°, E 68.63°, 1♀; Sadaf, Riffat; 20 May.2019; Dasti N 28.0390°, E 68.4138°.

Description

Body moderate, elongated in size, pear green coloration, head cone-shaped, two compound eyes spherical, antennal with 70-72 segments, vertex horn, pronotum long and slim, pronotal dilation, anterior part of pronotum crossed by a transverse sulcus, pronotum outer wall broad and rise upward along with small sharp hooks, tegmina ellipse shape, coxa triangular in shape, trochanter oval shape, tibia with 15-18 spines inner side and 20- 25 outer side, femur rod-shaped slightly tubercle, abdomen elongated and slender, pair of cerci attached on ending segment of the abdomen also.

Female: LH 7.83 ± 0.38 (mm), LA 11.94 ± 0.80 (mm), LP 26.05 ± 1.05(mm), LAB 42.5 ± 1.54(mm), LT 49.94 ± 1.76 (mm), WT 8.66 ± 0.76(mm), LW 41.11 ± 1.81(mm), WW15.44 ± 0.51(mm), LF 13.11 ± 0.32(mm), WF 1.41 ± 0.42(mm), TBL 70.38 ± 0.69(mm).

Ecology

Empusa pennata are broadly distributed in various fields. Agricultural fields affected by this species are *Sorghum vulgare* and *Morus abla* L.

Global Distribution

Algeria, Bangladesh, China, the Canary Islands, Europe, India, Iran, Libya, Morocco, Pakistan, Sardinia, Sicilian, Spain, and the USA. (Shveta et al.2016)

Remarks

This species was first time recorded from Jordan after it Chopard (1921) was recorded from Iraq. Thisspecies probably covers the widest distribution from the Mediterranean basin to the Middle East. Firstly Naheed (2000) collected male and female specimens of this species from Sindh. This species is considered very unique due to its lateral margin of pronotum which provides the guidelines to create a species or sub-species on the basis of pronatal spines. Observed extraordinary ability of this species to live indiverse habita*ts* such as Miro Chandio N 27.7667°, E 68.1000°, Kot Khrwali N 28.2440°, E 69.5646°, Ghogharo N 27.6025°, E 67.4755°, Dokri N 27.3800°, E 68.0925°, Hashim Ali Chang N 27.5256°, E 68.7551°, Mirpur mathalo N 28.0271°, E 69.3235°, Sumar chachar N 28.2457°, E 68.1797° but more numbers of specimens were founded from Miro

chandio. After *Mantis religoisa* and *Hierodula transcusica*, this speciesis considered as third dominant species in Sindh, Pakistan.

***Empusa fasciata* Brulle, 1832**

Figures 1-6, Table 1-3

Material examined. PAKISTAN-**Sindh Prov.**• 5♀; Sadaf, Riffat; 16 May.2019; Mar Jaffer kharto N 28.2442°, E 69.1834°, 3♀; Sadaf, Riffat 20 May.2019; Hashim Ali Chang N 27.5256°, E 68.7551°, 2♀;Riffat, Sadaf; 24 May.2019; Dokri N 27.3800°, E 68.0925°, 1♀; Sadaf, Riffat; 26 May.2019; Sumar chachar N 28.2457°, E 68.1797°, 1♀; Sadaf, Riffat; 30 May.2019; Ghogharo N 27.6025°, E 67.4755°.

Description

Body moderate, flat, sea green coloration, compound round eyes, antennae slightly bipectinate, head conical, a beak-like projection, vertex produced an ocular horn, two separate edges parallel constrictions, pronotum long and tapering, fore facial shield along with vertical carina, pointed three ocelli, tegmina and wings fully developed very exceed beyond the abdomen, tegmina much opaque rough thicker surface,abdomen shorter and wider regularly medusoid pattern, pair of cerci attached on ending of body segment.

Female: LH 7.75 ± 0.45 (mm), LA 11.91 ± 0.99 (mm), LP 26.25 ± 1.138(mm), LAB 36.75 ± 0.62(mm), LT 45.41 ± 0.51 (mm), WT 5.91 ± 0.66 (mm), LW 38.5 ± 0.52 (mm), WW 14.33 ± 0.49 (mm), LF 13.33 ± 0.49 (mm), WF 1.75 ± 0.33 (mm), TBL 68.41 ± 0.66 (mm).

Ecology

*Empusa fasciata*good numbers of specimens were collected from various fields of upper Sindh i.e Mar Jaffer kharto N 28.2442°, E 69.1834°, Hashim Ali Chang N 27.5256°, E 68.7551°, Dokri N 27.3800°, E 68.0925°, Sumar chachar N 28.2457°, E 68.1797°, Ghogharo N 27.6025°, E 67.4755°. *E. fasciata*first time recorded from this region, so the present study confirmed the occurrence of this species, crops are affected by this species are S. vulgare, Guava, Caster *Ricinus communis L.* Grasses.

Global Distribution

Afghanistan, Algeria, Bangladesh China, Georgia, India, Iran, Iraq, Kazakhstan, Pakistan, Russia, Syria, Turkey, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan (Shveta et al.2016).

Remarks

Previously this species was reported globally from various countries of Europe and Asia continents i.e. Afghanistan, Algeria, Bangladesh China, Georgia, India, Iran, Iraq, Kazakhstan, Pakistan, Russia, Syria, Turkey, Tajikistan, Turkmenistan, Ukraine, Uzbekistan Roy (2004) and Dannoun and Bader (2007) great numbers of nymphs reported from Jordon. During the present research, this species was first time recorded from Sindh, Pakistan.*E. fasciata* closely share common morphological characteristics with *Empusa unicornis* excluding tegmina, hind wing rough texture/ thicker surface, and shorter abdomen.

***Empusa spinosa* Krauss, 1902**

Empusa spinosa (Krauss, 1902)53-54.

Empusa spinosa (Mukherjee *et al.*, 2014):30: 51.

Empusa spinosa (Singh Yadav, 2018).6(2):1242-1246.

(Figures 1-6, Table 1-3)

Material examined. PAKISTAN-**Sindh Prov**. • 2♀; Sadaf, Riffat, 24 May.2019; Hashim Ali Chang N 27.5256°, E 68.7551° and 1♀; Sadaf, Riffat; 28 May.2019; Dad Ali 28.2505° N, 69.1768° E.

Description

Body slim and slender, greenish-yellow, head elongated, compound eyes oval in shape, filiform antennae of female, vertex conical protuberance with vertex, pronotum long and slender numerous spines, narrow apex, bifurcate apex, frontal sclerite carinated, fore coxae shorter than pronotum, elongated and prominent black band on apical, point edge of fore femora, fore femora slightly straightforward, mid and hind femora absent of ventral spines, pairs of wings fully developed, extended over abdomen.

Female: LH 0.57 ± 0.57 (mm), LA 13.66 ± 0.28 (mm), LP 27.33 ± 0.57 (mm), LAB 39.33 ± 0.57(mm), LT 44.33 ± 1.15 (mm), WT 5.66 ± 0.28 (mm), LW 39.6 ± 0.57 (mm), WW 13.33 ± 0.28 (mm), LF 13.66 ± 0.57 (mm), WF 13.33 ± 0.28 (mm), TBL 71.33 ± 0.57 (mm)

Ecology

Empusa spinosa consider a very active ambush predatory nature. This species was first time reported from district Khairpur, particularly at coordinate area Hashim Ali Chang N 27.5256°, E 68.7551°. Crops affected by this species are Mango *Mangifera indica L.*

Global Distribution

Africa, Afghanistan, Bangladesh China, Europe, India, Iran, Iraq, Kazakhstan, Malaysia, Natal, Oman, Pakistan, Saudi Arabia, Socotra, and Yemen (Shveta et al.2016) and (Singh et al. 2018).

Remarks

Earlier genus *Empusa* only 01 species out of 11 species was reported from Sindh Pakistan. Globally this species was reported from Africa, Asia, Australia, and Europe continent. (Ramesh et al, 2018) reported *E. spinosa* for the first time in India. According to his observations diagnosis characteristics of this species are internal spines of the fore femora have 3-4 spines and two small black spots on the costal margin. During the present study poor literature data availability regarding this species, but I have observed 4-5 spines inner side of the fore femora and no evidence of two small black spots on the coastal region.

Superfamily Eremiaphiloidea

Family Eremiaphilidae

Subfamily Iridinae

Tribe Iridini

Genus *Iris* Saussure, 1869

***Iris oratoria* (Linnaeus, 1758)**

Gryllus (Mantis) oratorius (Linne, 1758.

Mantis dentata (Goeze, 1778).

Mantis bella (Salzmann, 1817).

Ameles minima (Charpentier, 1825).

Mantis fenstrata (Brulle, 1832).

(Figures 1-6, Table 1-3)

Material examined. PAKISTAN- **SINDH Prov**.•1♂, 5♀; Sadaf, Riffat; 10 June. 2019; Goth Dulla Lakhan N 27.7244°, E 68.8228°, 1♀; Sadaf, Riffat; 12 June. 2019; Gheeralo N 27.8483°, E 67.9106°, , 1♂, 2♀; Riffat, Sadaf; 16 June.2019; Dokri N 27.3800°, E 68.0925°, 1♂,1♀; Sadaf,Riffat; 17 June.2019; Ghogharo N 27.6025°, E 67.4755°, 1♂, 2♀; Sadaf, Riffat; 18 June.2019; Garhi Sahib Khan N 27.5725°, E 68.3816°, 3♀; Sadaf, Riffat; 19 June. 2019; Dad Ali N 28.2505°, E 69.1768°, 1♂, 1♀; Riffat, Sadaf; 22 June.2019; Dakhan N 27.95°, E 68.63°, 1♂,

1♀; Sadaf, Riffat; 23 June. 2019; Sumar Chachar N 28.2457°, E 69.179°, 1♀; Sadaf, Riffat; 26 June. 2019; Naudero N 27.6670°, E 68.1161°, 1♂, Riffat, Sadaf; 28 June.2019. Garhi Sahib Khan N 27.5725°, E 68.3816°.

Description

Body male slim and slender, female much wider and short, male corn coloration, female mustard coloration, antennae setaceous, head transverse, broader, compound eyes conical, facial shield wider, high along with tubercles at the middle margin, facial clypeus faintly downturn at the middle, pronotum equal in both sides, prozona twice shorter than metazoan, intersected anterior margin, mid margin spherical, wings fully developed but tegmina slightly over pointed at abdomen tegmina longer than hind wings, dark brown extension eye spots at surface of tegmina, sub-genital plate wider than supra-genital plate.

Male. LH 3.94 ± 0.05 (mm), LA 17.97 ± 0.04 (mm), LP 7.97 ± 0.075 (mm), LAB 17.8 ± 0.08 (mm), LT 19.94 ± 0.078 (mm), WT 4.92 ± 0.095 (mm), LW 18.02 ± 0.07 (mm), WW 11.05 ± 0.07 (mm), LF 6.92 ± 0.075 (mm), WF 2.68 ± 0.069 (mm), TBL 31.8 ± 0.79 (mm).

Female. LH2.85 ± 0.13 (mm), LA 17.9 ± 0.06 (mm), LP 7.95 ± 0.087 (mm), LAB 17.81 ± 0.063 (mm), LT 19.76 ± 0.078 (mm), WT 4.788 ± 0.07 (mm), LW 18.02 ± 0.083 (mm), WW 10.105 ± 0.089 (mm), LF 6.74 ± 0.05 (mm), WF 2.74 ± 0.62 (mm), TBL 29.99 ± 0.06 (mm).

Ecology

Iris oratoria is widely distributed in the field. They complete their life cycle within 06 months. Crops affected by this species are Sarcopoterium spinosum, Ononis natrix, Scropholaria xanthoglossa, and Dittrichia viscose.

Global Distribution

Algeria, Albania, Bulgaria, Chad, Cyprus, Egypt, France, Greece, Italy, Israel, Iran, Jordan, Kosovo, Libya, Lebanon, Macedonia, Morocco, Pakistan, Portugal, Spain, Serbia, Syria, Tunisia, Turkey and Vojvodina. (Mukherjee et al. 1995), (Wagan et al. 1995), (Kment, 2012), (Sultana et al.2016).

Remarks

Iris oratoria (Linnaeus, 1758) commonly known as Mediterranean praying mantids. This species mostly dispersed from the west Mediterranean to India Battiston et al. (2010). (Maxwell, 1998)

the first time recorded from southern California. Presences of this species are also reported from ecological zones i.e. Ethiopian, Oriental, Palearctic, and Nearctic zones. *I. oratoria* is considered an African African-originated species particularly native to Algeria Uvarov (1931). Maxwell (1999), and Dannoun and Bader (2007) studied other parameters such as biology and cannibalism behavior. Life cycle duration from mid-March to December. Males of this species are more active and attracted to artificial light. Previously Wagan et al. (1995), Naheed (2000), Sultana et al. (2016), Fatima (2017), and Fatimah et al. (2018) were reported and provided account descriptions from Sindh Pakistan.

***Iris orientalis* Wood-Mason, 1882**

Iris orientalis (Wood-Mason, 1882): 32-33.
Iris orientalis (Uvarov, 1931): 237, 238.
Iris orientalis (Beier, 1935): 107.
Iris orientalis (Beier, 1962): 112.
Iris orientalis (Mukherjee, Hazra and Balderson 1992):68
Iris orientalis (Mukherjee et al. 1995): 286-287.
Iris orientalis (Mondal and Shishodia 1997):200
Iris orientalis (Koblik Ye. A. *et al*. 2000):12.
Iris orientalis (Ehrmann, 2002):195.
Iris orientalis (Mukherjee, Das and Hazra, 2005):146.
Iris orientalis (Otte and Spearman 2005):338.
Iris orientalis (Vyjayandi, 2007): 115, 152.
Iris orientalis (Mukherjee, Ehrmann and Chatterjee, 2014):17.

(Figures 1-6, Table 1-3)

Material examined. PAKISTAN-**Sindh Prov**. • 3♀; Sadaf, Riffat; 20 June.2019; Kot Khrwali N 28.2440°, E 69.5646°, 68.63°, 1♀; Riffat, Sadaf; 22 June.2019; Naudero N 27.6670°, E 68.1161°, 1♀; Sadaf, Riffat; 24 June.2019; Garhi Sahib Khan N 27.5725°, E 68.3816°.

Description

Body medium, stout, slender, emerald and brown coloration, head triangular, depression at mid, much wider than high, eyes rounded, and vertex slightly convex, pronotum elongated, sturdy, metazona twice longer than prozona, middle lateral curved, coxa shorter and narrow, femora

longer than coxae, femora slightly rounded external side, brachypterous winged, abdomen robust and elongated, cerci short, supra-anal plate longer than sub-anal plate.

Female. LH 4.98 ± 0.083 (mm), LA 18.96 ± 0.05 (mm), LP 8.56 ± 0.054 (mm), LAB 22.42 ± 0.083 (mm), LT 9.96 ± 0.054 (mm), WT 4.16 ± 0.054 (mm), LW 8.06 ± 0.054 (mm), WW 4.06 ± 0.08 (mm), LF 7.82 ± 0.083 (mm), WF 2.66 ± 0.089 (mm), TBL 31.02 ± 0.083 (mm).

Ecology

Iris orientalis (Wood-Mason, 1882) uncommonly exceeded in fields. Agricultural fields are affected by this species are Scropholaria xanthoglossa, China rose *Hibiscus rosa-sinensis.*

Global Distribution

Afghanistan, Croatia, Cyprus, Egypt, France, Greece, India, Israel, Italy, Java, Jordan, Morocco, Nepal, Pakistan, Portugal, Spain peninsula, Mallorca, Tunisia, Turkey, United States (Shveta et al. 2016).

Remarks

This species was the first time reported Wood-Mason (1882) from Kulu Valley N 31°57′28.82″ - E 77°06′34.11″E, 1231 West and Kangra N 32°06′04.91″ - E 76°16′22.65″E, 710 in North West Himalayans. Uvarov (1931), Beier (1935), Mukherjee et al.(1995), Ehrmann (2002), Vyjayandi (2007) and Mukherjee et al. (2014) recorded from India. Mukherjee et al. (1995) and Ehrmann (2002) reported from java. While that Beier (1962) and Mukherjee et al. (1992) described from NW-Himalaya. Therefore Beier (1962) and Ehrmann (2002) reported from Afghanistan. Ehrmann and Borer (2015) collected from Nepal. Apart from that Mukherjee et al. (2014) and Ehrmann (2002) recorded from unidentified localities of Pakistan. During present study I have collected and described *Iris orientalis* (Wood-Mason, 1882) first time from upper Sindh, Pakistan.

Family Rivetinida

Subfamily Rivetininae

Tribe Rivetinini

Genus *Rivetinula* La Greca, 1977

***Rivetinula fraterna* Saussure, 1871**

(Figures 1-6, Table 1-3)

Material examined: PAKISTAN- **SINDH Prov.**• 3♀; Sadaf, Riffat; 26 June.2019; Garhi Sahib Khan N 27.5725°, E 68.3816°, 1♀; Riffat, Sadaf; 27 June. 2019; Dasti N 28.0390°, E 68.4138°.

Description

Body long, stout very robust broader, and weighty, wood brown or dirty grey, head wider triangular, globular eyes, ommatidium prominent, front facial shield elevated and broader, antennae long and thicker, no carina, vertex faintly concave, pronotum long and oval elongated, sturdy with denticulated, pronotum jointed vertex oval in shape, the mid margin of pronotum much wider than anterior and posterior, metazona expended from the lateral region, 2 ventral plates of the prothorax along with oblique girdles, 7-8 spines inner side of coxa almost same in size and shape, femora lateral inner side straight and external rounder curved in shape with altered shape numerous spines, femora narrow and shorter than pronotum, coxa shorter and narrow than the femur, brachypterous wings, wings wood brown, contrasted with pale white coloration crescent spot at apex extended, hind wing eye spot shorter and rounded in shape, abdomen wider and weighty, elongated sub-genital plate.

Female: LH 3.37 ± 0.38 (mm), LA 27.57 ± 0.40 (mm), LP 18.7 ± 0.46 (mm), LAB 38.72 ± 0.48 (mm), LT 23.57 ± 0.33 (mm), WT 8.27 ± 0.12 (mm), LW 20.4 ± 0.33 (mm), WW 7.9 ± 0.2 (mm), LF 18.17 ± 0.17 (mm), WF 3.35 ± 0.20 (mm), TBL 68.97 ± 0.22 (mm).

Ecology

This species is distributed in upper Sindh. Agricultural fields are affected by *Rivetinula fraterna* (Saussure, 1871). Bamboo *Dendrocalamus strictus,* Caster *Ricinus.*

Global Distribution

India, Saudi Arabia and Pakistan. (Ehrmann, 2002), (Patel, and Singh, 2016)

Remarks

This species was first time reported by Saussure (1871) from India, after it more than 100 years gap, Ehrmann (2002) reported this species from India and Saudi Arabia. Later Mukharjee et al. (2005) also reported this species from west India. Fortunately, we have collected first-time specimens of this species from Pakistan. Mukharjee et al. (2005) do not mention apical sharp spines in the mid and hind femora, but during the present research, we have also not observed apical sharp spines in the mid and hind regions.

Superfamily Mantoidea

Family Mantidae

Subfamily Hierodulinae

Tribe Hierodulini

Genus *Hierodula* Burmeister, 1838

***Hierodula transcaucasica* Brunner Von Wattenwyl, 1878**

Hierodula transcaucasica (Brunner de Wattenwyl, 1878): 88.

Sphodromantis transcaucasica (Kirby, 1904b): 244.

Hierodula (H.) transcaucasica (Giglio-Tos, 1927): 444.

Hierodula (Sphodromantis) transcaucasica (Beier, 1935): 88.

Sphodromantis transcaucasica (Beier, 1962): 112.

Sphodromantis transcaucasica (Beier, 1967): 196-197.

Hierodula transcaucasica (Ehrmann, 2002): 183.

Sphodromantis transcaucasica (Otte and Spearman 2005): 274-275.

Hierodula transcaucasica (Ehrmann 2011): 17.

Hierodula transcaucasica (S.fatimah *et. al*., 2018): 2, 1, 19-23.

(Figures 1-6, Table 1-3)

Material examined. PAKISTAN-**SINDH Prov.** • 7♀; Sadaf, Riffat; 10 July. 2019; Dakhan N 27.95°, E 68.63°,1♀; Sadaf, Riffat; 12 July.2019; Dasti N 28.0390°, E 68.4138°, 2♀; Riffat, Sadaf; 14 July.2019; Kot Khrwali N 28.2440°, E 69.5646°, 1♀; Riffat, Sadaf; 17 July.2020; Sumar Chachar N 28.2457°, E 69.1797°, 2♀; Mar Jaffer Khan N 28.2442°, E 69.1834°, 1♀; Riffat, Sadaf; 18 Aug.2020; Ghogharo N 27.6025°, E 67.4755°, 2♀; Sadaf, Riffat; 25 Aug. 2020; Dokri N 27.3800°, E 68.0925°, 2♀ Miro Chandio N 27.7667°, E 68.1000°, 1♀; Sadaf, Riffat; 27 Aug. 2020; Gheeralo N 27.8483°, E 67.9106°,1♀; Riffat, Sadaf; 29 Aug.2020; Goth Dulla Lakhan N 27.7244°, E 68.8228°, 2♀; 5 Sep.2020; Mirpur Mathelo N 28.0721°, E 69.3235°, 2♀; 8 Sep.2020; Hashim Ali Chang N 27.5256°, E 68.7551°,1♀; 12 Sep.2020; Bangul Dero N 27.5639°, E 68.2152°.

Description

Body medium to large, heavy, stout, green coloration, head sturdy, broad, projected rounded eyes with tubercles at internal edges, setaceous antennae, protuberance of front facial shield faintly

extended, vertex with small lumps, pronotum robust, wider than longer, crenulated lateral at prozona, shorter than metazona, supra coxal dilation absent, wings extended slight over abdomen tegmina semi-transparent, white three-cornered patch or fleck located at near center margin, coxae yellowish green in color shorter than femora, femora obvious equal to pronotum, flat than pronotum, ventral upper margin of pronotum white band rounded shape, abdomen wider, supra anal plate small.

Female. LH3.56 ± 0.63 (mm), LA 18.48 ± 1.53 (mm), LP 16.08 ± 0.90 (mm), LAB 34.96 ± 2.35 (mm), LT 41.24 ± 1.42 (mm), WT 12.68 ± 1.14 (mm), LW 31.28 ± 1.06 (mm), WW 14.36 ± 1.03 (mm), LF16.2 ± 1.04 (mm), WF 6 ± 0.68 (mm), TBL 46.08 ± 18.35(mm).

Ecology

This species widely distributed various localities of upper Sindh, Pakistan. Several agricultural crops are affected i.e Grasses, *A. squmosa*, Bamboo *Dendrocalamus strictus*, *Psidium guajava L*, Subabul *Leucaena leucocephala.*

Global Distribution

Albania Afghanistan, Armenia, Aserbaidschan, Georgia, Greece, Kalmykia, Iran, Caucasus, Nepal, Pakistan, Turkestan, Turkey, Tajikistan, Ujbekistan, Kazakhstan. (Patel and Singh, 2016), (Naheed, 2000), (Fatima, 2017), (Fatimah et al. 2018).

Remarks

Hierodula transcaucasica widely spreaded species throughout world. Fatima (2017), Fatimah et al. (2018) and Chandio (2019) reported from lower and middle Sindh, Pakistan. Battiston et al. (2018) and Heyden (2018) collected fromAlbania, Afghanistan, Caucasus, Crimea, Iran, Ukraine, Turkey, and Greece. Recently Zlatkov et al. (2020) recorded this species first time from Bulgaria. At present study this species first time reported from upper Sindh. *H. transcaucasica* Brunner von wattenwyl (1878) noticed dominant species during current research.

***Hierodula coarctata* Saussure, 1869**

Hierodula coarctata (Saussure, 1869): 67.

Hierodula coarctata (Saussure, 1871a): 85-86.

Hierodula coarctata (Borre, 1883: 81.

Hierodula coarctata (Westwood, 1889: 34.

Parhierodula coarctata (Giglio-Tos, 1912):124.

Hierodula coarctata (Werner, 1916): 264-265.

*Parhierodula (Parhierodula) coarctata (*Giglio-Tos, 1927): 459.

Hierodula coarctata (Ehrmann, 2002): 177.

(Figures 1-6, Table 1-3)

Material examined. PAKISTAN- **SINDH Prov.** • 4♀; Sadaf, Riffat; 15 Oct.2020; Sumar Chachar N 28.2457°, E 69.1797°, 2♀; Riffat, Sadaf; 18 Oct.2020; Dokri N 27.3800°, E 68.0925°, 1♀; Sadaf, Riffat; Ghogharo N 27.6025°, E 67.4755°, 2♀ Nov.2020; Miro Chandio N 27.7667°, E 68.1000°, 1♀; Sadaf, Riffat; 25 Feb. 2021; Goth Dulla Lakhan N 27.7244°, E 68.8228°, 1♀; Sadaf, Riffat; 25 Mar. 2021; Mirpur Mathelo N 28.0721°, E 69.3235°, 1♀; Riffat, Sadaf; 30 Mar.2021 Bangul Dero N 27.5639°, E 68.2152°.

Description

Body medium to large, lemon yellow, head triangular robust and wider, compound eyes, ocelli very prominent, front facial shield smooth, pronotum wider, robust, oval like supra coxal, mid elongated carina, pronotum brown in color, coxa inner regular 4 spines, coxa longer than wider, femur inner side smooth and external 7 discoidal spines, outer side slightly rounded, tegmina and hind wings developed well, coastal area thick horizontal line center triangular white blotch or spot, surround light brown shade, abdomen yellowish brown**.**

Female. LH 3.41 ± 0.30 (mm), LA 15.65 ± 0.41 (mm), LP 15.94 ± 0.35 (mm), LAB 32.12 ± 0.27 (mm), LT 39.2 ± 0.74 (mm), WT 11.06 ± 0.40 (mm), LW 30.47 ± 0.27 (mm), WW 13.44± 0.20 (mm), LF 14.63 ± 0.26 (mm), WF 4.55 ± 0.12(mm), TBL 52.45 ± 0.31(mm).

Ecology

Good numbers of this species are distributed in different areas of upper Sindh, Pakistan. Some agricultural fields are affected i.e.Bamboo *Dendrocalamus strictus*, *M. alba*, Cajanus cajan Mill.

Global Distribution

India, Java, Nepal, Pakistan. (Patel and Singh, 2016), (Chandio, 2019)

Remarks

This species was first time reported by Saussure (1869) from India. Later Ehrmann (2002), Mukherjee et al. (1995), Mukherjee et al. (2014), Ghate (2005), and Singh et al. (2018) also reported from India, from Australia Giglio-Tos (1927). Apart from that Roonwal and Bhasin (1951) first time reported this species from Pakistan, after half-century Naheed (2000) collected from lower Sindh, and Chandio (2019) re-reported this species from District Dadu. But recently we have collected from different localities and habitats. Chandio (2019) gave a description of female specimens in green color, but at present research, we have collected and noticed lemon yellow female specimens of this species.

Subfamily Mantinae

***Statilia maculata* Thunberg, 1784**

Mantis maculata (Thunberg, 1784): 61-62.
Mantis maculata (Olivier, 1792): 634.
Mantis maculata (Thunberg, 1815): 291.
Mantis (Mantis) maculate (De Haan, 1842):77.
Pseudomantis maculate (Saussure, 1871a): 37.
Statilia maculata maculate (Beier, 1935): 92.
Statilia maculate (Joshi and Manandhar 2001): 37.
Statilia maculata (Ingrisch, 1987): 32.
Pseudomantis haanii (Saussure, 1871b): 37, 276-277.
Pseudomantis haanii (Saussure, 1872a): 24-25.
Pseudomantis haanii (Westwood, 1889):13.
Pseudomantis haanii (Brunner de Wattenwyl 1893):66.
Statilia haanii (Giglio-Tos 1912):6-8.
Statilia maculata var. hyaline (Giglio-Tos, 1927):410-411.
Statilia maculata var. hyalina (Beier, 1935):92.
Statilia maculata var. hyaline (Ehrmann, 2002):334.
Statilia haani var. major (Werner, 1922b):154.
Statilia maculata continentalis (Werner, 1935):495-496.
Statilia maculata continentalis (Ehrmann, 2002): 334.

(Figures 1-6, Table 1-3)

Material examined: PAKISTAN- **SINDH Prov.•** 4♀; Sadaf, Riffat; 14 Nov.2020; Sumar Chachar N 28.2457°, E 69.179°, 1♀; Riffat, Sadaf; 18 Nov.2020; Naudero N 27.6670°, E 68.1161°, 1♀; Sadaf, Riffat; 20 Nov.2020; Ratodaro N 27.8003°, E 68.2922°, 1♀; Sadaf, Riffat; 29 Dec. 2020 Garhi Sahib Khan N 27.5725°, E 68.3816°, 1♀; Riffat, Sadaf; 27 Dec.2020; Dad Ali N 28.2505°, E 69.1768°, 1♀; Riffat, Sadaf; 24 Dec.2021 Dakhan N 27.95°, E 68.63°.

Description

Body large fawn to granola coloration, head straightforward triangular, rounded vertex no evident bulge, brownish dots at clypus, filiform antennae, compound eyes spherical, slightly conical lateral side, pronotum elongated, robust, stout, midway prozona carinated, metazona short and narrow, mesosternum black blotch, black spots on coxal joint and at mid femora mid black band, sub-marginal spines triangular, spreading apical lobes, femora pale yellow patch encircle tiny black line, 4-5 outer, 3-4 discoidal, 12-13 internal spines, spines black at tips, coxae slim, narrow, femora longer, wider than coxa, wings fully developed, wings equal to abdomen, apex conical shape, hind wing semi-transparent, costal area fawn color.

Female. LH1.91 ± 0.12 (mm), LA 10.53 ± 0.12 (mm), LP 14 ± 0.122 (mm), LAB 31.01 ± 0.10 (mm), LT 32.87± 0.34 (mm), WT 6.98 ± 0.07 (mm), LW 26.02 ± 0.083 (mm), WW 14.05 ± 0.07 (mm), LF 13.05 ± 0.11 (mm), WF 297 ± 0.06 (mm), TBL 50.12 ± 0.08 (mm).

Ecology

Statilia maculata are commonly distributed in the field. Crops affected by this species are *S. vulgare*, Caster *Ricinus*, and Guava.

Global Distribution

Borneo, China, India, Japan, Java, Labuan, Laos, Myanmar, Malaysia, Maluku Islands, Nepal, New Guinea, Pakistan, Philippines, Sri Lanka, Sumatra, Thailand and Vietnam. (Patal and Singh, 2016), (Soomro et al. 2002), (Chandio, 2019)

Remarks

This species is known as the “Asian Jumping Mantis”. *Statilia maculata* holotypes males reported from Japan and India. Furthermore synotypes male collected from Java. Vyjayandi (2007) also reported from India. Soomro et al. (2013) reported from lower Sindh and Chandio (2019) reported

from middle Sindh. During the present work, we have collected this species first from upper Sindh. We agree to the account description of this species given by Chandio (2019) except for coloration.

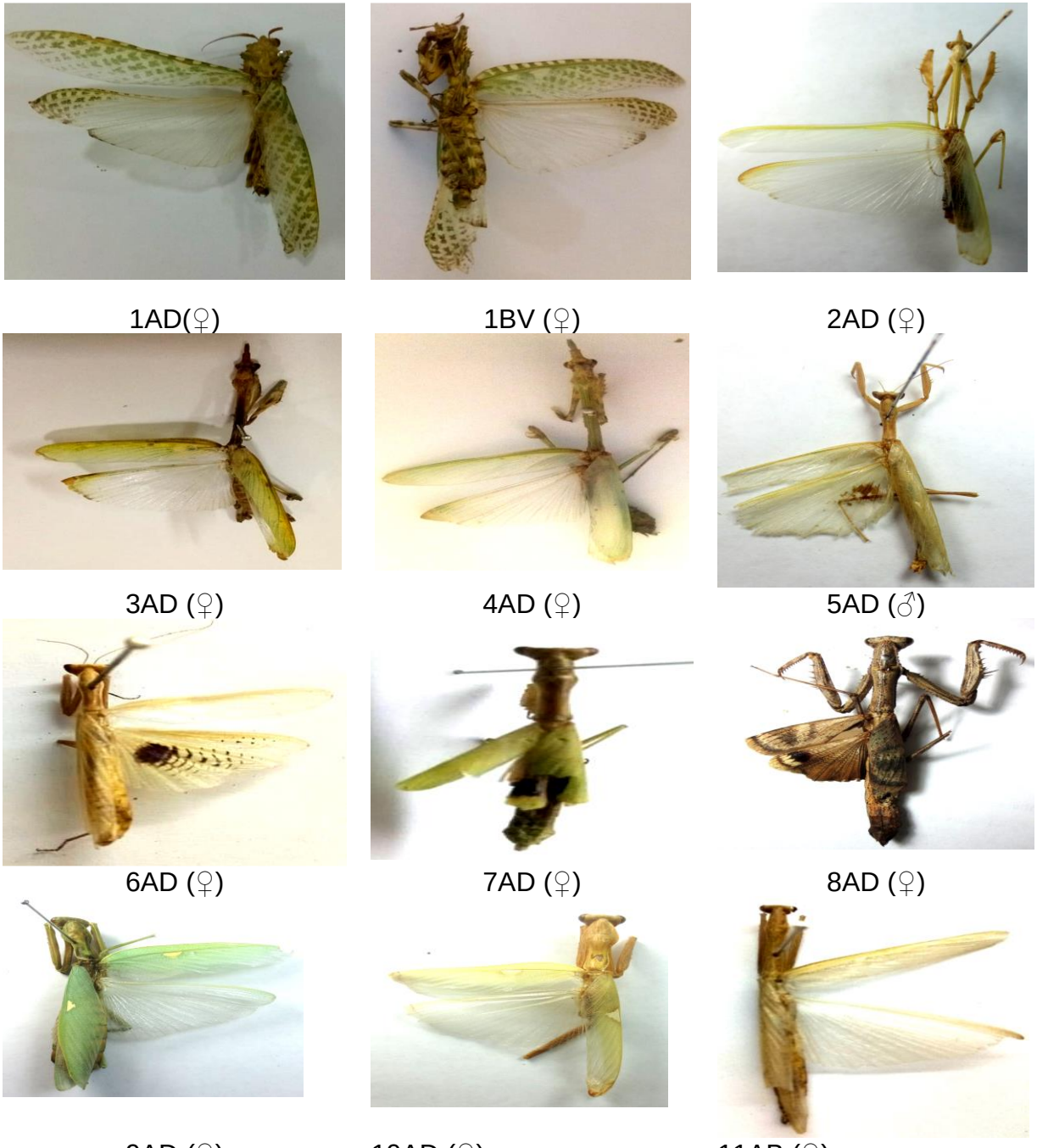

Figure 1. Male and Female dorsal view of.1 *Blepharopsis mendica* ♀, Female dorsal view of 2 *Empusa pennata* ♀, 3 *E. fasciata* ♀, 4 *E. spinosa* ♀, Male and Female dorsal view of 5, 6 *Iris oratoria* ♂♀, 7 *I. orientalis* ♀, Female dorsal view of. 8 *Rivetinula fraterna* ♀, Female dorsal view of.9 *Hierodula transcaucasica* ♀, 10 *H. coarctata* ♀ F Male and Female dorsal view of. 11 *Statilia maculata* ♀. Abbreviations: D, dorsal, L, lateral. Scale bars = 2 mm.

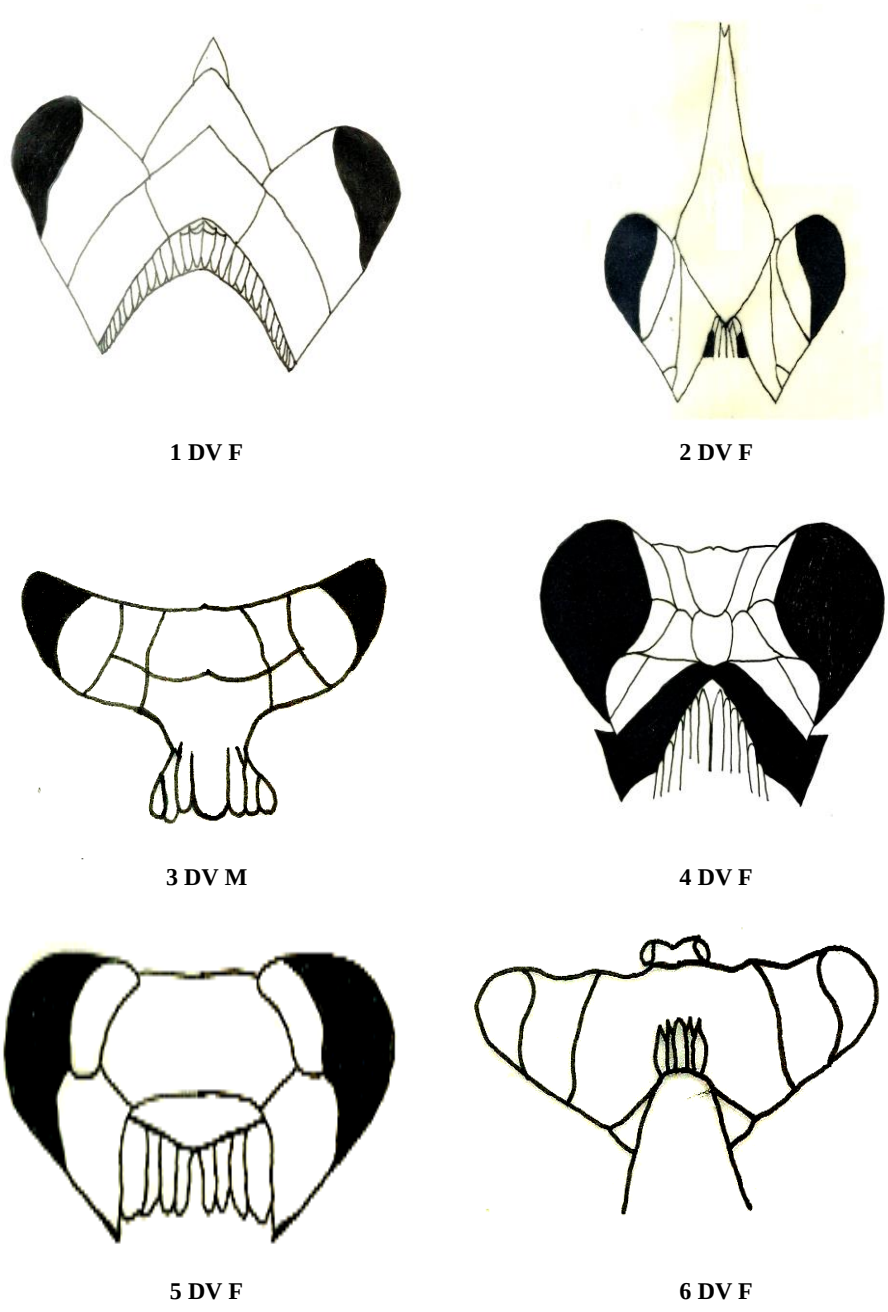

Figure 2. Head dorsal view of 1 *Blepharopsis* ♀, 2 *Empusa* ♀, 3 *Iris* ♂, 4 *Rivetinula* ♀, 5 *Hierodula* ♀, 6 *Statilia* ♀. Abbreviation D-Dorsal Scale bars = 2 mm.

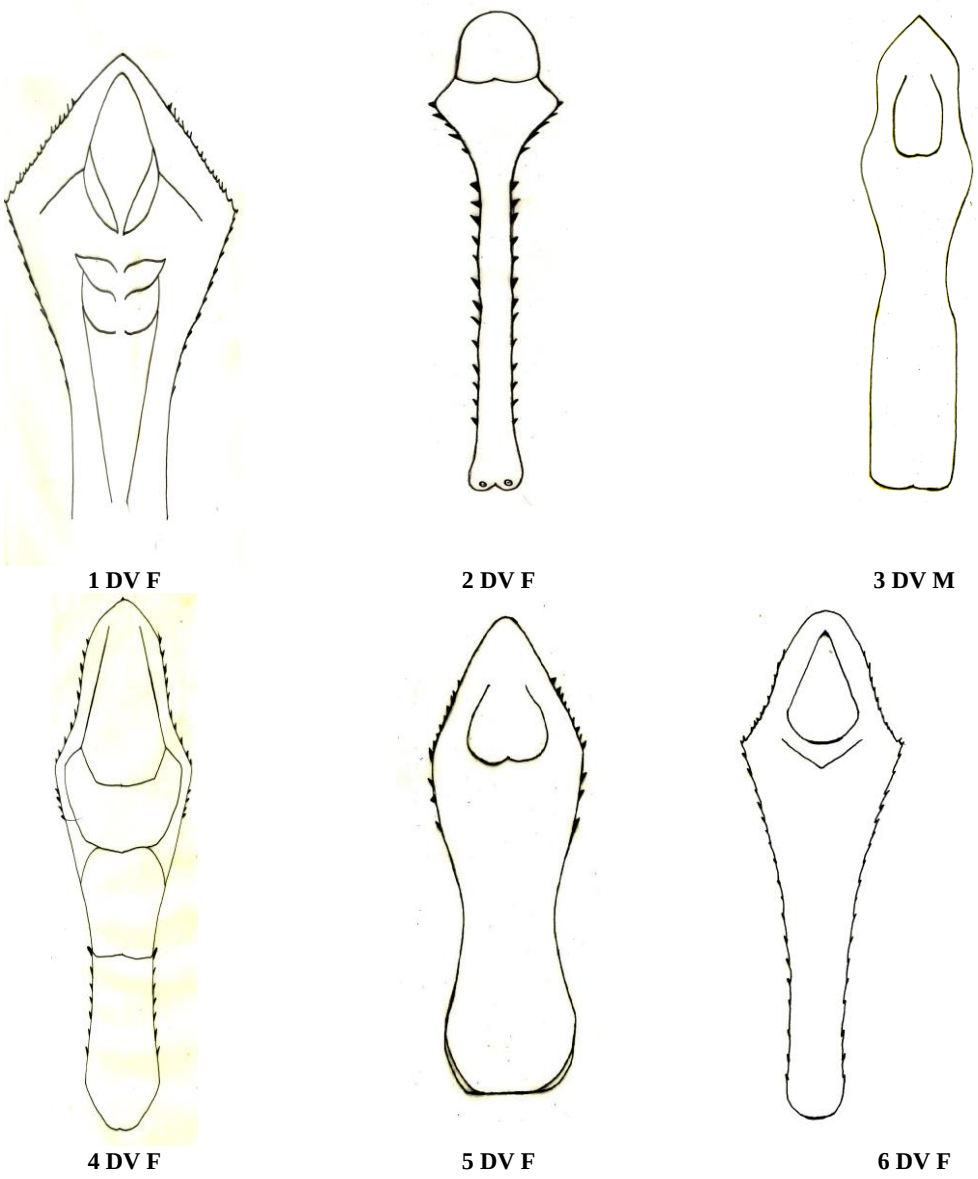

Figure 3. Pronotum dorsal view of .1 *Blepharopsis* ♀, .2 *Empusa* ♀, Pronotum dorsal view of .3 *Iris* ♂, Pronotum dorsal view of .4 *Rivetinula* ♀, Pronotum dorsal view of . *Hierodula* ♀, .6 *Statilia* ♀. Abbreviation D-Dorsal Scale bars = 2 mm.

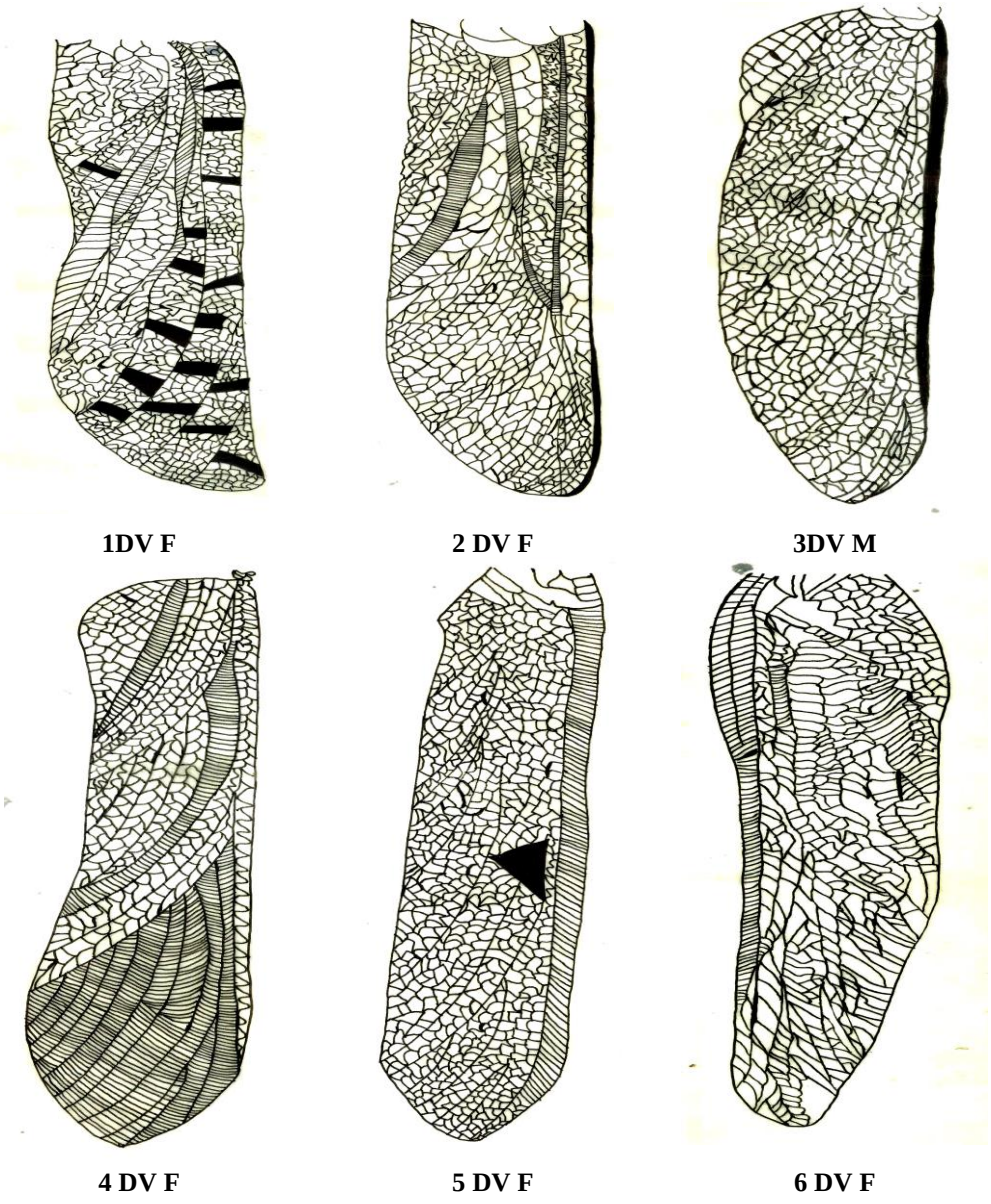

Figure 4. Tegmina dorsal view of 1 *Blepharopsis* ♀, 2 *Empusa* ♀, 3 *Iris* ♂, 4 *Rivetinula* ♀, 5 *Hierodula* ♀, 6 *Statilia* ♀. Abbreviations: D, dorsal, L, lateral. Scale bars = 2 mm.

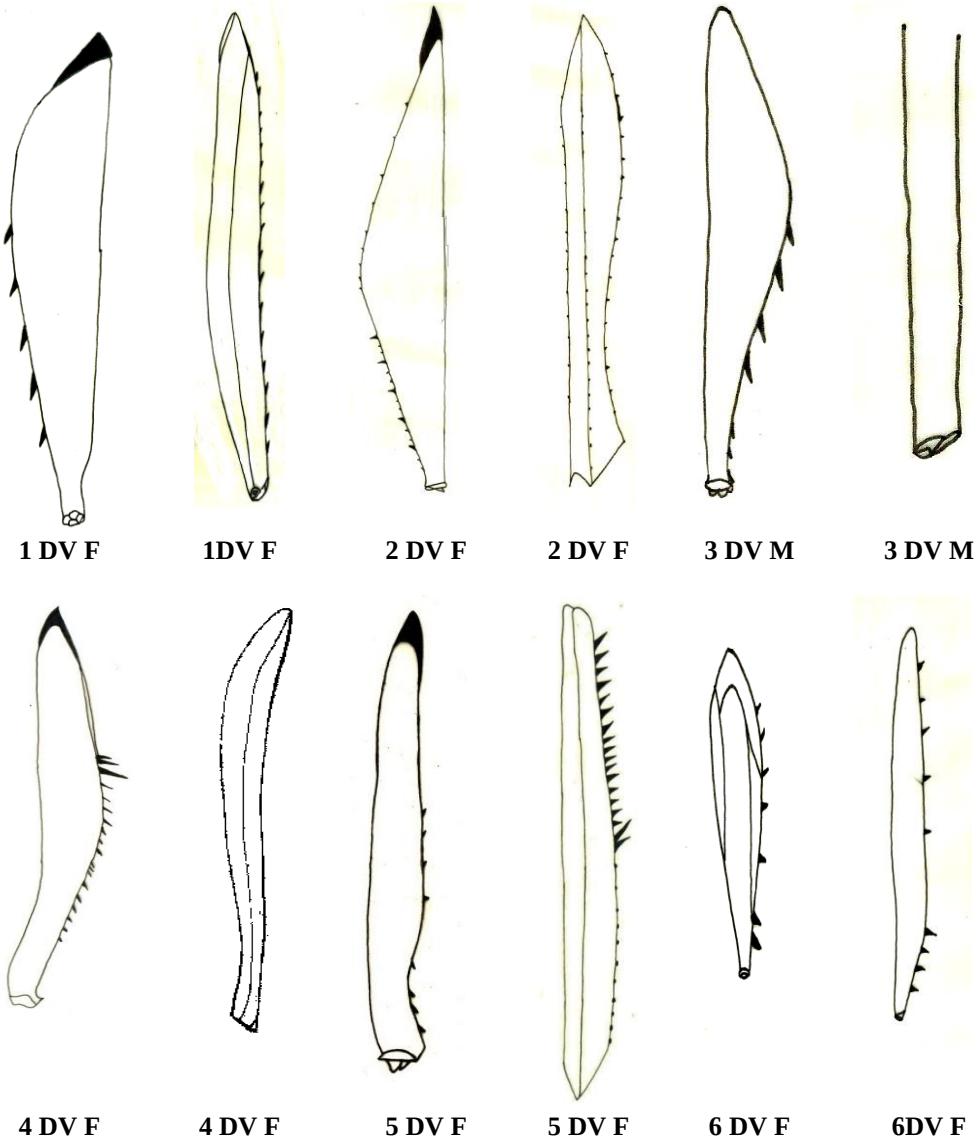

Figure 5. Femur and Coxa dorsal view of 1 *Blepharopsis* (F), 2 *Empusa* (F), 3 *Iris* (M), 4 *Rivetinula* (F), 5 *Hierodula* (F), 6 *Statilia* (F). Abbreviations: D, dorsal, M, male, F, female. Scale bars = 2 mm.

Key to the families of order Mantodea Sindh

1.	Body moderate to large, thin less elongated, wings hyaline, reddish near distal edges……..	Rivetinidae
-	Body small to large thick, more elongated, wings hyaline, dark green near the distal edges…….....	Mantidae
2.	Pronotum diamond/ rambos shaped, robust shorter and wider enclosed with numerous spines…….....…….	Empusidae
-	Pronotum wider, raise upward, internally enclosed with different rectangular patches…….....	Eremiaphilidae

Key to the genera of order Mantodea Sindh

1.	Vertex produced into a long horn; pronotum short and robust; pronotum with small numerous spines; antennae bipectinate in male……	*Blepharopsis*
-	Vertex produced into a short cone; pronotum long and narrow; pronotum enclose with long sharp spines; antennae never bipectinate in male……	*Empusa*
2.	Body large and weighty. Tegmina and wing brachypterous; less reaching apical third of abdomen…….	*Rivetinula*
-	Body short and light. Tegmina and wing reaching apical end of abdomen……..	*Iris*
3.	Body medium and broad, vertex prominently appear and with tegmina triangular white band…….	*Hierodula*
-	Body Large and slender, vertex less prominently appear and with no evident of tegmina triangular white band……..	*Statilia*

Key to the species order Mantodea Sindh

Table1. Distribution percentage-wise, Genera and Species from upper Sindh, Pakistan

1.	Fore femora with bright pale yellow patch posterior side, prosternum with 2 white spots at posterior area ……	*Statilia maculata*
-	Fore femora without bright pale yellow patch posterior side, prosternum without 2 white spots at posterior area……	*Rivetinula fraterna*
2.	Fore raptorial femora with 4 white external and 4 black discoidal spines……	*Hierodula coarctata*
-	Fore raptorial femora without 4 white external and 4 black discoidal spines…….	*Hierodula transcausica*
3.	Eye spot appeared on center margin of fore wing…….	*Iris oratoria*
-	Eye spot not appeared on center margin of fore wing……	*Iris orientalis*
4.	Body heavy, pronotum shorter, presence of sharp large thorny fore legs……	*Blepharopsis mendica*
-	Body slim, pronotum longer, absence of sharp large thorny forelegs……..	*Empusa pennata*
5.	Wings shorter than abdomen, thicker wings surface. …….....	*Empusa fasicata*
-	Wings much longer than abdomen, smooth wings surface…….	*Empusa spinosa*

No. S	Family	Genus	Genus %	No. of Species	Species %
1.	Empusidae	**2**	33.33%	4	40%
2.	Eremiaphilidae	1	16.66%	2	20%
3.	Mantidae	2	33.33%	2	20%
4.	Rivetinidae	1	16.66%	2	20%
Total	**4**	**6**	**100**	**10**	**100**

Table2. Distribution fauna of praying mantids from upper Sindh, Pakistan

	Family	Subfamily	Tribe	No. genera	Species
ORDER M	Mantidae	Hierodulinae	Hierodulini	**(1)**	*Hierodula coarctata* (Saussure, 1869)
					Hierodula transcaucasica (Brunner vonwattenwyl, 1878)
		Mantinae	-	**(1)**	*Statilia maculata* (Thunberg,1784)

A N T O D E A	Empusidae	Empusinae	Empusini	**(1)**	*Empusa fasicata* (Brulle, 1832)
					Empusa pennata (Thunberg, 1815)
					Empusa spinosa (Krauss, 1902)
		Blepharodinae	-	**(1)**	*Blepharopsis mendica* (Fabricius, 1775)
	Eremiaphilidae	Iridinae	Iridini	**(1)**	*Iris oratoria* (Linne, 1758)
					Iris orientalis (Wood-Mason, 1882)
	Rivetinidae	Deiphobinae	Rivetinini	**(1)**	*Rivetinula fraterna* (Saussure, 1871)
Total	**(4)**	**(5)**	**(5)**	**(6)**	**(10)**

Table 3. List of upper Sindh, visited localities and their coordinates

Country	Province	Region	Sector	Exact Site	Latitude	Longitude	Species
P A K I S T A N	**S I N D H**	S U K K U R	Shikarpur	Garhi Sahib Khan	27.5725° N	68.3816°E	*Rivetinula fraterna* Saussure, 1871)
				Dakhan	27.95° N	68.63° E	*Hierodula transcaucasica* (Brunner von wattenwyl, 1878)
			Kashmor	Kot Khrwali	28.2440° N	69.5646° E	*Iris orientalis* (Wood-Mason, 1882)
				Sumar chachar	28.2457° N	69.1797° E	*Hierodula coarctata* (Saussure, 1869)
				Mar jaffer Kharto	28.2442° N	69.1834° E	*Archimantis latistyla* (Serville, 1839)
							Empusa fasicata (Brulle, 1832)
			Kamber	Ghogharo	27.6025° N	67.4755° E	*Blepharopsis mendica* (Fabricius, 1775)
				Gheeralo	27.8483° N	67.9106° E	*Empusa pennata* (Thunberg, 1815)
			Sukkur	Goth Dulla Lakhan	27.7244° N	68.8228° E	*Iris oratoria* (Uvarov, 1922)
			Khairpur	Hashim Ali Chang	27.5256° N	68.7551° E	*Empusa spinosa* (Krauss, 1902)

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