Journal of Wildlife and Ecology (2022). 6(1):48-57

Review Open Access

An annotated checklist of praying mantises (Mantodea) from Pakistan-a review

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SUMMARY

Praying mantises are beautiful creatures in the universe. At present, an updated checklist of 49 species of praying mantises (Mantodea) belonging to 23 genera under 11 families and 14 subfamilies has been listed in Pakistan for the first time. This work may prove to be a base line for future studies.

Keywords: Mantodea, Diversity, Pakistan

Citation: Panhwar, W.A., R. Sultana, I. Khatri. 2022. An annotated checklist of praying mantises (Mantodea) from Pakistan-a review. Journal of Wildlife and Ecology. 6: 48-57.
Received: January, 2022**; Accepted**: March, 2022

INTRODUCTION

Praying mantises are a Polyneopteran group. They belong to the order Mantodea, which is the most colorful and fascinating group of insects. Praying mantises are carnivorous, so they feed on small vertebrates, insects such as moths, butterflies, aphids, flies, grasshoppers, and spiders (Helmkampf *et al.,* 2007).

They play an important role in controlling the pest population and saving agricultural crops from severe damage. The praying mantises have high camouflage potential and mimic like species of the mantids found on flowers. Other species mask their color patterns and mimic those that make them attractive to their prey. Praying mantises help in the control of different ecosystems, including terrestrial ecosystems (Pashaie Rad and Mirzaee, 2018). In Arabian countries, they are well known as "Lord's Horse" or "Prophet's Horse" (Handal *et al.,* 2018). In the Sindhi language, they are known as "Bibi Jo Ghoro". Presently, a world database "The Mantodea Species File" (MSF) of mantodean fauna confirms the facts and figures of living and fossil species of mantids. There are about 2400 valid species falling into 25 families found worldwide (Otte *et al.,* 2020). Wood-Mason (1878) first carried out the taxonomic work on the praying mantis fauna of Pakistan. Later on many workers :Ara *et al.,* 2019; Beier,1953; Fatimah *et al.,* 2016, 2018; Gul *et al.,* 2017; Kausar *et al.,* 2017; Khan *et al.,* 2019; Khokhar and Soomro, 2009; Khokhar, 2017; Khokhar *et al.,* 2016; Murray 1880; Naeem and Yousuf, 1996; Patel and Singh, 2016; Shar and Panhwar, 2020; Soomro, 2000; Soomro *et al.,* 1999, 2000,2001, 2002; Sultana *et al.,*

2016; Ursani *et al.,* 2017; Uvarov,1922, 1931; Wagan, and Mughal, 1995-1996; Wagan *et al.,*1995 ; Wieland, 2008; Wood-Mason, 1889; 1878 carried work on praying mantises fauna of Pakistan. More recently, Panhwar *et al.* (2020) reviewed the praying mantis fauna of Pakistan and reported 40 species falling into 5 families. But no checklist of praying mantises is provided by Pakistan. The present paper presents the first checklist of praying mantises from Pakistan.

MATERIALS AND METHOD

The present study is based on a comprehensive search of the literature of the praying mantises from Pakistan, following the studies of: Ara *et al.,* 2019; Beier,1953; Fatimah *et al.,* 2016, 2018; Gul *et al.,* 2017; Kausar *et al.,* 2017; Khan *et al.,* 2019; Khokhar and Soomro, 2009; Khokhar, 2017; Khokhar *et al.,* 2016; Murray 1880; Naeem and Yousuf, 1996; Patel and Singh, 2016; Shar and Panhwar, 2020; Soomro, 2000; Soomro *et al.,* 1999, 2000,2001, 2002; Sultana *et al.,* 2016; Ursani *et al.,* 2017; Uvarov,1922, 1931; Wagan, and Mughal, 1995-1996; Wagan *et al.,*1995 ; Wieland, 2008; Wood-Mason, 1889; 1878 but so far no comprehensive account of Mantodea is available from Pakistan.

SYSTEMATIC ACCOUNT

Superorder Dictyoptera
Order Mantodea
Family Toxoderidae
Subfamily Toxoderinae
Tribe Aethalochroaini
Genus *Aethalochroa* **Wood-Mason, 1877**
Type species: *Vates ashmolianus* Westwood (= *Aethalochroa ashmoliana*)

1. ***Aethalochroa affinis*** **Wood-Mason, 1889**
Wood-Mason. 1889; Soomro, 2000; Khokhar and Soomro, 2009; Khokhar, 2017

2. ***Aethalochroa spinipes*** **Wood-Mason, 1889**
Wood-Mason, 1889
Tribe Toxoderini

Genus ***Toxoderopsis*** **Wood-Mason, 1889**
Type species: ***Toxoderopsis spinigera*** **Wood-Mason**

3. ***Toxoderopsis taurus*** **Wood-Mason, 1889**
Wood-Mason. 1889

Family Empusidae
Subfamily Blepharodinae
Genus ***Blepharopsis*** **Rehn, 1902**
Type species: *Mantis mendica* Fabricius (= *Blepharopsis mendica mendica*)

4. *Blepharopsis mendica* (Fabricius, 1775)
Soomro, 2000; Khokhar and Soomro, 2009; Khokhar 2017; Fatimah *et al.,* 2018

Subfamily Empusinae
Tribe Empusini
Genus *Empusa* Illiger, 1798
Type species: *Empusa pauperata* Fabricius (= *pennata*)

5. *Empusa pennata* (Thunberg, 1815)
Synonym *Empusa unicornis* Saussure, 1871
Synonym *Empusa pauperata* Fabricius, 1781 (Khokhar 2017)
Soomro, 2000; Khokhar and Soomro, 2009; Fatimah *et al.,* 2018; Khokhar 2017

6. *Empusa pennicornis* Pallas, 1773
Khokhar, 2017

Family Eremiaphilidae
Subfamily Eremiaphilinae
Genus *Eremiaphila* Lefebvre, 1835
Type species: *Eremiaphila audouini* Lefebvre

7. *Eremiaphila arabica* Saussure, 1871
Wood-Mason,1882; Soomro, 2000; Fatimah *et al.,* 2018; Khokhar 2017

8. *Eremiaphila braueri* Krauss, 1902
Synonym *Eremiaphila laevifrons* Uvarov, 1922
Soomro, 2000; Khokhar 2017

Family Amorphoscelidae
Subfamily Amorphoscelinae
Tribe Amorphoscelini
Genus *Amorphoscelis* Stal, 1871
Type species: *Amorphoscelis annulicornis* Stal

9. *Amorphoscelis annulicornis* Stal, 1871
Khokhar, 2017

Family Hymenopodidae
Subfamily Oxypilinae
Tribe Hestiasulini
Genus *Hestiasula* Saussure, 1871
Type species: *Hestiasula brunneriana* Saussure

10. *Hestiasula brunneriana* Saussure, 1871
Wagan *et al.,* 1995; Khokhar, 2017

Subfamily Hymenopodinae
Tribe Hymenopodini
Genus *Creobroter* Westwood, 1889
Type species: *Creobroter discifera* Serville

11. *Creobroter sp.*
Wagan *et al.,* 1995

Family Iridopterygidae
Subfamily Tropidomantinae
Tribe Tropidomantini
Genus *Miromantis* Giglio-Tos, 1927
Synonym *Ormomantis* Giglio-Tos, 1915
Type species: *Miromantis mirandula* Westwood

12. *Miromantis indica* Giglio-Tos, 1915
Note: *As Ormomantis indica* Giglio-Tos, 1915
Khokhar, 2017

Family Liturgusidae
Subfamily Liturgusinae
Tribe Liturgusini
Genus *Humbertiella* Saussure, 1869
Type species: *Humbertiella ceylonica* Saussure

13. *Humbertiella affinis* Giglio-Tos, 1917
Khokhar, 2017

14. *Humbertiella indica* Saussure, 1869
Soomro, 2000; Khokhar and Soomro, 2009; Fatimah *et al.,* 2018; Khokhar, 2017

15. *Humbertiella sindhica* Soomro, Soomro & Wagan, 2001 (*Theopompula sindica)***
Soomro *et al.,* 2001

Family Mantidae
Subfamily Mantinae
Tribe Polyspilotini
Genus *Tenodera* Burmeister, 1838
Type species: *Tenodera fasciata* Olivier (= *fasciata fasciata*)

16. *Tenodera aridifolia* Stoll, 1813
Naeemand Yousuf (1996)

17. *Tenodera aridifolia aridifolia* Stoll, 1813
Murray, 1880; Wagan *et al.,* 1995; Soomro 2000, Khokhar 2017 (Murray reported as *Mantis ardifolia*)

18. *Tenodera fasciata* Olivier, 1792
Khokhar, 2017

19. *Tenodera fasciata fasciata* Olivier, 1792
Synonym *Tenodera fasciata attenuata* Stoll, 1813 (*Tenodera attenuata* from Pakistan reported in this name)
Khokhar and Soomro, 2009; Soomro, 2000; Khokhar 2017; Ursani *et al.,* 2017

Tribe Mantini
Genus *Mantis* Linne, 1758
Type species: *Gryllus religiosus* Linne (= *Mantis religiosa religiosa*)

20. *Mantis religiosa* (Linne, 1758)
Wagan *et al.,* 1995; Gul *et al.,* 2017; Fatimah *et al.,* 2018

21. *Mantis religiosa religiosa* (Linne, 1758)
Soomro, 2000; Khokhar, 2017

22. *Mantis religiosa inornata* Werner, 1930
Synonym *Mantis religiosa akbari* Soomro, Soomro & Wagan, 2001
Soomro 2000; Soomro *et al.,* 2001; Khokhar and Soomro, 2009; Khokhar, 2017

23. *Mantis noblis* Brunner, 1878 (No data found on Mantodea species file)
Khokhar, 2017

Genus *Statilia* Stal, 1877
Type species: *Statilia nemoralis* Saussure

24. *Statilia ocellata* Uvarov, 1922
Uvarov, 1922; Beier, 1953; Wagan *et al.,* 1995; Soomro, 2000; Khokhar, 2017; Fatimah *et al.,* 2018

25. *Statilia maculata* Thunberg, 1784
Khokhar, 2017

Tribe Paramantini
Genus *Sphodromantis* Stal, 1871
Type species: *Sphodromantis viridis* Forskal (*viridis viridis*)

26. *Sphodromantis viridis* Forskal, 1775
Khan *et al.* (2019)

27. *Sphodromantis transcaucasica* (Brunner, 1878) (No record available on Mantodea species file)
Soomro, 2000; Khokhar and Soomro, 2009; Khokhar, 2017

Genus *Hierodula* Burmeister, 1838
"Synonym" *Rhomboderula* **Giglio-Tos, 1912**
"Synonym" *Parhierodula* **Giglio-Tos, 1912**
Type species: *Hierodula membranacea* Burmeister

28. *Hierodula coarctata* Saussure, 1869
Synonym *Parhierodula coarctata* Saussure (Wagan *et al.,* 1995 reported)
Wagan *et al.,* 1995; Soomro, 2000; Khokhar, 2017

29. *Hierodula transcaucasica* Brunner von Wattenwyl, 1878
Soomro, 2000; Fatimah *et al.,* 2016-2018

30. *Hierodula patellifera* Serville, 1839
Ara *et al.,* 2019

Genus *Rhomboderella* Giglio-Tos, 1912
Rhomboderella scutata Bolivar

31. *Rhomboderella scutata* Bolivar, 1889
Shar and Panhwar, 2020

Tribe Archimantini
Genus *Archimantis* Saussure, 1869
Type species information not available

32. *Archimantis monstrosa* Wood-Mason, 1878
Fatimah *et al.,* 2018

33. *Archimantis latistyla* (Serville, 1839)
Fatimah *et al.,* 2018

34. *Archimantis sobrina* Saussure, 1872
Fatimah *et al.,* 2018

Tribe Polyspilotini
Genus *Polyspilota* Burmeister, 1838
Type species: *Mantis aeruginosa* "Goeze" (= "*Polyspilota aeruginosa aeruginosa"*), by subsequent designation; authority: "Ehrmann, 2002"

35. *Polyspilota aeruginosa* (Goeze, 1778)
Fatimah *et al.,* 2018

Subfamily Miomantinae
Tribe Rivetinini
Genus *Microthespis* Werner, 1908
Type species: *Microthespis dmitriewi* Werner

36. *Microthespis dmitriewi* Werner, 1908
Uvarov, 1931; Soomro, 2000; Khokhar *et al.,* 2016; Khokhar, 2017

37. *Microthespis sindhensis* Soomro, Soomro & Wagan, 2001
Soomro, 2000; Soomro *et al.,* 2001; Khokhar, 2017

38. *Microthespis oderai* Khokhar *et al.,* 2016
Khokhar *et al.,* 2016; Khokhar, 2017

Genus *Rivetina* Berland & Chopard, 1922
Type species: *Rivetina baetica* Rambur (= *baetica baetica*)

39. *Rivetina baetica* Rambur, 1839
Fatimah *et al.,* 2016-2018

40.*Rivetina rasheedi* Soomro *et al.,* 2000
Soomro *et al.,* 2000

41. *Rivetina fasciata* Thunberg, 1815
Soomro, 2000; Khokhar, 2017

Genus *Deiphobe* Stal, 1877
Type species: *Deiphobe ocellata* Saussure (= *infuscata*)

42. *Deiphobe infuscata* Saussure, 1870
Fatimah *et al.,* 2016-2018

Family Tarachodidae
Subfamily Tarachodinae
Tribe Tarachodini
Genus *Iris* Saussure, 1869
Type species: *Iris oratoria* Linne

43. *Iris oratoria* (Linne, 1758)
Wagan *et al.,* 1995; Soomro 2000; Khokhar 2017; Fatimah *et al.,* 2016; 2018

44. *Iris splendida* Uvarov, 1922
Uvarov 1922; Soomro 2000; Khokhar 2017; Fatimah *et al.,* 2016; 2018

45. *Iris nana* Uvarov, 1930
synonym *Iris radians* Uvarov, 1931
Soomro 2000; Khokhar, 2017

46. *Iris tiflisina* Giglo-Tos 1917
Khokhar, 2017

Family Metallyticidae
Genus *Metallyticus* Westwood, 1835
Type species: *Metallyticus splendidus* Westwood

47. *Metallyticus violaceus* Burmeister, 1838
Wieland, 2008

48. *Metallyticus* sp.
Wieland, 2008

Family Thespidae
Subfamily Oligonicinae
Tribe Oligonicini
Genus *Thesprotiella* Giglio-Tos, 1915
Type species: *Thesprotiella festae* Giglio-Tos, by original monotypy

49. *Thesprotia graminis* Scudder, 1878
Kausar *et al*. (2017)

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***Competing interests**:* Authors have declared that no competing interests exist.

***Funding**:* Authors have no source of funding for this work.

Authors' contributions: Panhwar has designed this project, collected data and written this article; while Sultana and Khatri have critically analyzed this article and approved as final.