



International Journal of Zoological Investigations

Contents available at Journals Home Page: www.ijzi.net



ISSN: 2454-3055

Global Distribution of Empusidae, Eremiaphilidae, Galinthiadidae and Iridopterygidae (Mantodea: Dictyoptera: Insecta): A Checklist

Shveta Patel¹, Garima Singh² and Rajendra Singh^{1*}

¹Department of Zoology, Deendayal Upadhyay Gorakhpur University, Gorakhpur – 273 009, U.P., India

²Department of Zoology, Rajasthan University, Jaipur

*Corresponding author

Received: 7th November 2016

Accepted: 30th November 2016

Abstract: The praying mantids are a group of over 2500 predatory insects (Order Mantodea: Superorder Dictyoptera) distributed in tropical and subtropical habitats of the world, from the rainforest to the desert ground. The order Mantodea comprises over 20 families, out of which the global distribution of 4 families: Empusiidae, Eremiaphilidae, Galinthiadidae and Iridopterygidae is provided in this compilation. The members of Empusiidae prefer xerothermic sites and are highly successful ambush predator and include 11 genera with 49 species distributed in Africa, Indomalaya, southwest Asia and Europe. Eremiaphilidae are ground-dwelling mantid family that have reduced wings and elongated legs suitable for their cursorial lifestyles. They comprise only 2 genera but with 73 species distributed in Africa and Asia. The members of Galinthiadidae are either forest-dwelling or lives on flowering plants where they hide motionless waiting for prey. Four genera and 24 species are assigned to this family which are distributed in Africa and southwest Asia. The family Iridopterygidae is comparatively large family consisting of 47 genera and 136 species mostly distributed all over the Tropical and Neotropical countries of the world except North and South America.

Keywords: Mantodea, Empusiidae, Eremiaphilidae, Galinthiadidae, Iridopterygidae, praying mantis, checklist.

Introduction

The praying mantids are a group of over 2500 predatory insects (Order Mantodea: Superorder Dictyoptera) distributed in tropical and subtropical habitats of the world, from the rainforest to the desert ground (Legendre *et al.*, 2015). Mantids were formerly placed along with stick insects (now order Phasmatodea), cockroaches (now order Blattodea) and rock crawlers (now order Grylloblattodea) in the order Orthoptera (Kristensen, 1995). Later on, it was placed with the cockroaches and

termites (now order Blattodea) into the order Dictyoptera, in the suborder Mantodea (Kristensen, 1995). Recently, the ordinal rank of Dictyoptera was elevated to Superorder including cockroaches and termites (now Order Blattodea), and mantids (now Order Mantodea) (Klass and Meier, 2006; Ware *et al.*, 2008; Legendre *et al.*, 2015).

Several taxonomists studied the taxonomy and distribution of Mantodea in several countries of the world, particularly

of Neotropical countries, Australia, Africa and Southeast Asia including India in the beginning of the 20th century (Agudelo and Rivera, 2015; Revera and Svenson, 2016). Most of the species described originally were subsequently synonymised during revision works (Kaltenbach, 1996; Ehrmann, 2002; Otte and Spearman, 2005). The suprageneric taxonomy of Mantodea was also revised considerably in the recent years on the basis of molecular data (Svenson and Whiting, 2004; Wieland, 2013; Agudelo and Rivera, 2015; Svenson *et al.*, 2015; Revera and Svenson, 2016). Most of the distributional records are scattered in literature. The checklists of Mantodea of different countries/continents/ecozones are published in recent past by several authors, but family-wise distribution pattern of the world is not compiled so far. Recently, Patel and Singh (2016a, b, c) provided the checklist of following 8 families of Mantodea: Acanthopidae (14 genera, 96 species/subspecies), Amorphoscelidae (15 genera, 95 species/subspecies), Chaeteessidae (1 genus, 6 species), Hymenopodidae (34 genera, 238 species), Mantidae (188 genera, 1261 species), Mantoidae (2 genera, 12 species), Metallyticidae (1 genus, 5 species), and Sibyllidae (3 genera, 17 species/subspecies) comprising 36 genera and 231 species/subspecies. In the present compilation, world distribution of 4 families: Empusidae, Eremiaphilidae, Galinthiadidae and Iridopterygidae are presented.

The members of Empusidae prefer xerothermic sites and tend to tackle smaller preys, and the females do not kill their mates while mating like most of the other mantids. Moreover, the adult males usually

die soon after mating, and the females after oviposition. They survive the winter months as young nymphs and, therefore, adults and young of these long-lived insects may be observed together during the late summer months (Gomboc, 2000). In general, empusid mantids are highly successful ambush predator and have specialised in preying on fast flying insects, such as flies and bees. Adult females often perch on flowers, where they wait to prey on honeybees. Insect prey can be captured upon landing, or even during flight, due to its fast strike and ability to rotate head and the raptorial forelegs more than 90° laterally, without moving the rest of its body. Distinct swinging movements are executed, which serve as camouflage in moving vegetation and also facilitate spatial vision (Kral and Devetak, 1999). Recently, the morphological descriptions and natural history of the family and its subfamilies are described by Svenson *et al.* (2015).

Traditionally, 10 genera of Empusidae (Roy, 2004) are assigned to two subfamilies: Blepharodinae (*Blepharodes* Bolivar, 1890; *Blepharopsis* Rehn, 1902; *Idolomantis* Uvarov, 1940) and Empusinae which includes 2 tribes: Empusini (*Dilatempusa* Roy, 2004; *Empusa* Illiger, 1798; *Gongylus* Thunberg, 1815; *Hypsicorypha* Krauss, 1892) and Idolomorphini (*Chopardempusa* Paulian, 1958; *Hemiempusa* Saussure and Zehntner, 1895; *Idolomorpha* Burmeister, 1838) (Ehrmann, 2002; Roy 2004). Empusinae can be distinguished by Blepharodinae by having strongly elongated prothorax (Beier, 1934; Kaltenbach, 1982; Roy, 2004). Gistel (1856) described one more genus, *Cephalomantis* with two species, *gracilis* and *rustica*. Caudell (1907)

considered these species valid, but at present they are considered *nomen dubium* due to their poor description (Otte *et al.*, 2016). The Empusinae is generally stated to exhibit the more derived character states (Beier 1934; Roy 2004). Members of the empusid subgroups (*Gongylus*, *Empusa*, *Blepharopsis*) were studied by Wieland (2006) and its relationship with other allied taxa was discussed by Wiedland (2010). In general, Empusidae are distributed in African countries, only certain species of *Blepharopsis*, *Empusa* and *Gongylus* are also distributed beyond Africa, particularly in southeast and southwest Asia (Fig. 1). None of the species is reported from North and South America and Australia (Werner, 1907; Giglio-Tos, 1917; Beier, 1934, 1953, 1968; Kevan, 1954; La Greca, 1954; Roy, 1964, 1970, 2004; Roy and Leston, 1975; Kaltenbach, 1979, 1982, 1996, 1998; Prost and Roy, 1986; Wang, 1993; Ciplak and Demirsoy, 1997; Lombardo, 1993, 1997; Gomboc, 2000; Ehrmann, 2002; Vijaynandi *et al.*, 2010; Koli and Bhawane, 2011).

Traditionally, 10 genera of Empusidae (Roy, 2004) are assigned to two subfamilies: Blepharodinae (*Blepharodes* Bolivar, 1890; *Blepharopsis* Rehn, 1902; *Idolomantis* Uvarov, 1940) and Empusinae which includes 2 tribes: Empusini (*Dilatempusa* Roy, 2004; *Empusa* Illiger, 1798; *Gongylus* Thunberg, 1815; *Hypsicorypha* Krauss, 1892) and Idolomorphini (*Chopardempusa* Paulian, 1958; *Hemiempusa* Saussure & Zehntner, 1895; *Idolomorpha* Burmeister, 1838) (Ehrmann, 2002; Roy 2004). Empusinae can be distinguished by Blepharodinae by having strongly elongated prothorax (Beier, 1934; Kaltenbach, 1982; Roy, 2004). Gistel (1856) described one

more genus, *Cephalomantis* with two species, *gracilis* and *rustica*. Caudell (1907) considered these species valid, but at present they are considered *nomen dubium* due to their poor description (Otte *et al.*, 2016). The Empusinae is generally stated to exhibit the more derived character states (Beier 1934; Roy 2004). Members of the empusid subgroups (*Gongylus*, *Empusa*, *Blepharopsis*) were studied by Wieland (2006) and its relationship with other allied taxa was discussed by Wiedland (2010). In general, Empusidae are distributed in African countries, only certain species of *Blepharopsis*, *Empusa* and *Gongylus* are also distributed beyond Africa, particularly in southeast and southwest Asia (Fig. 1). None of the species is reported from North and South America and Australia (Werner, 1907; Giglio-Tos, 1917; Beier, 1934, 1953, 1968; Kevan, 1954; La Greca, 1954; Roy, 1964, 1970, 2004; Roy and Leston, 1975; Kaltenbach, 1979, 1982, 1996, 1998; Prost and Roy, 1986; Wang, 1993; Ciplak and Demirsoy, 1997; Lombardo, 1993, 1997; Gomboc, 2000; Ehrmann, 2002; Vijaynandi *et al.*, 2010; Koli and Bhawane, 2011).

The members of the family Iridopterygidae, earlier included as subfamily of Manitidae, occur on open tree trunks, bare branches, twigs and sometimes on the ground and are generalist predators (use both ambush and cursorial strategies for predation) (Svenson *et al.*, 2015). Ehrmann (2002) placed 48 genera and 96 species. The family includes 5 subfamilies: Hapalomantinae, Iridopteryginae, Nanomantinae, Nilomantinae and Tropidomantinae.

Iridopterygidae, mostly distributed in the Afrotropical, Indomalayan and

Australasian regions and currently comprises 47 genera and 136 species: Hapalomantinae (7 genera, 39 species), Iridopteryginae (15 genera, 37 species), Nanomantinae (6 genera, 11 species), Nilomantinae (5 genera, 7 species), and Tropidomantinae (14 genera, 42 species) (Stål, 1877; Westwood, 1889; Giglio-Tos, 1915; Hebard, 1920; Uvarao, 1940; Beier, 1954; Kaltenbach, 1998; Ehrmann, 2002; Svenson and Roy, 2011; Roy and Svenson, 2011; Brannoch and Svenson, 2016). In Tropidomantini, one genus *Ormomantis*, described from India by Giglio-Tos (1915), was considered as a valid genus by Ehrmann (2002) and Mukherjee *et al.* (2014) but was considered as synonym of *Miromantis* Giglio-Tos, 1927 by Otte *et al.* (2016). In this checklist, it is considered as valid genus. The

family is distributed in Africa, southwest Asia, south and southeast Asia, and Australia (Fig. 4).

In the present compilation, global distribution of 4 families of Mantodea: Empusidae, Eremiaphilidae, Galinthiidae and Iridopterygidae is provided. The work will help to solve some needs pertaining to studies on world mantids of these families, such as synonymic handling and distributions, as well as lack of a complete and up-to date listing of the species. In preparing of this checklist, recent world literatures (published up to November, 2016) were scrutinized for synonymy of the species along with the information available at two websites (<http://mantodea.speciesfile.org> and <http://www.gbif.org/species>) accessed on 16 November, 2016.

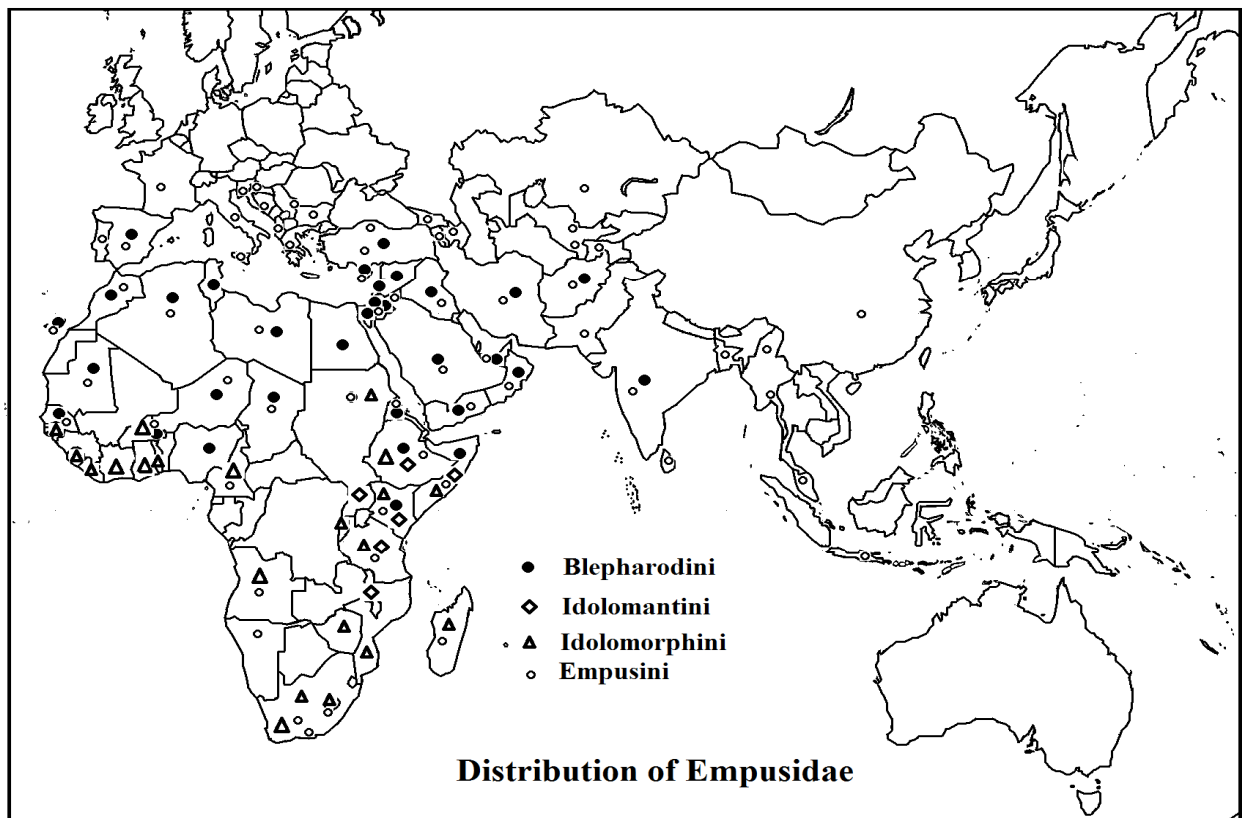


Fig. 1: Global distribution of the family Empusidae

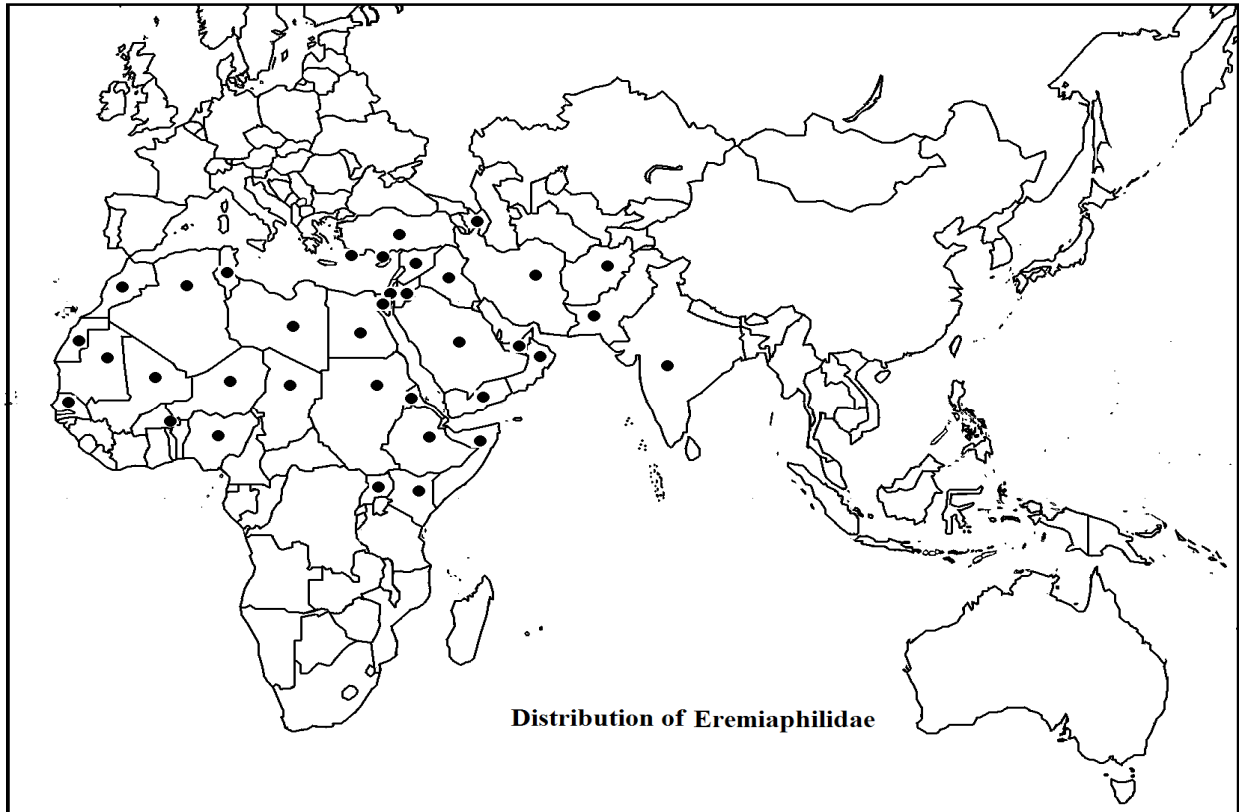


Fig. 2: Global distribution of the family Eremiaphilidae

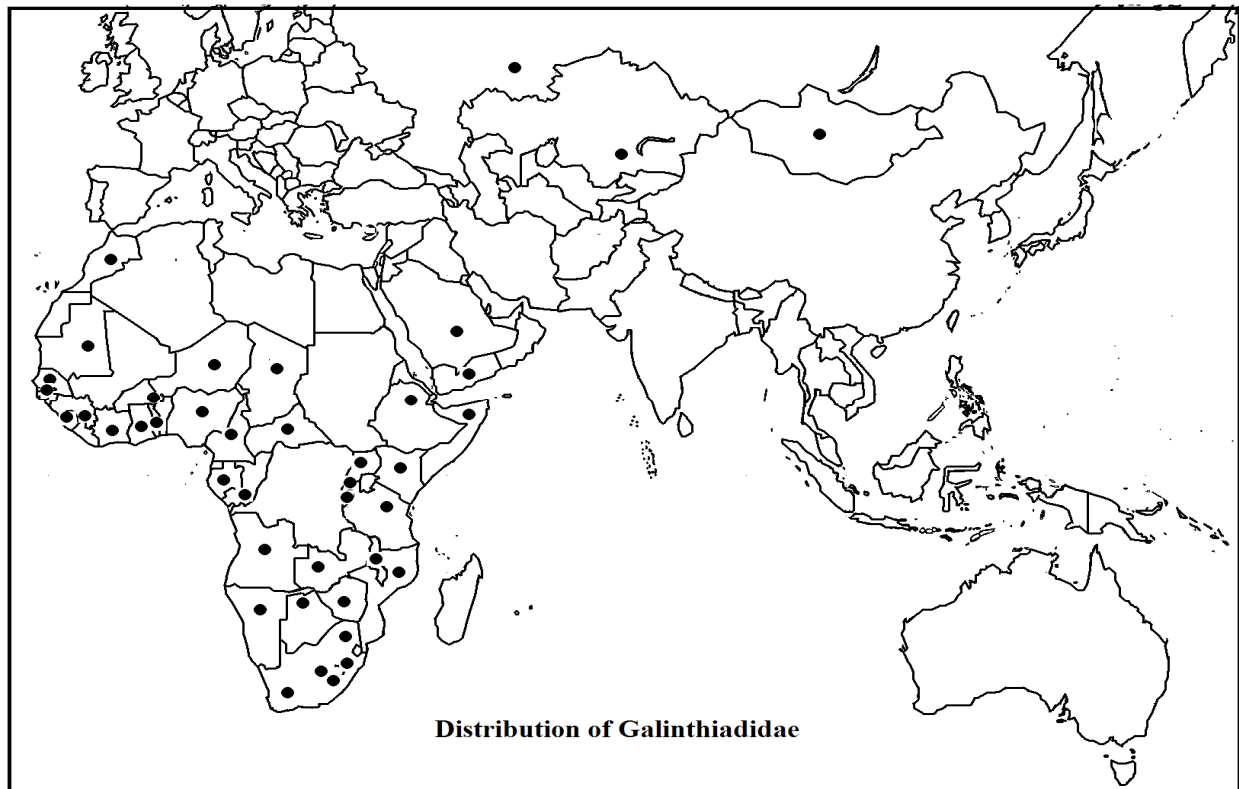


Fig. 3: Global distribution of the family Galinthiadidae

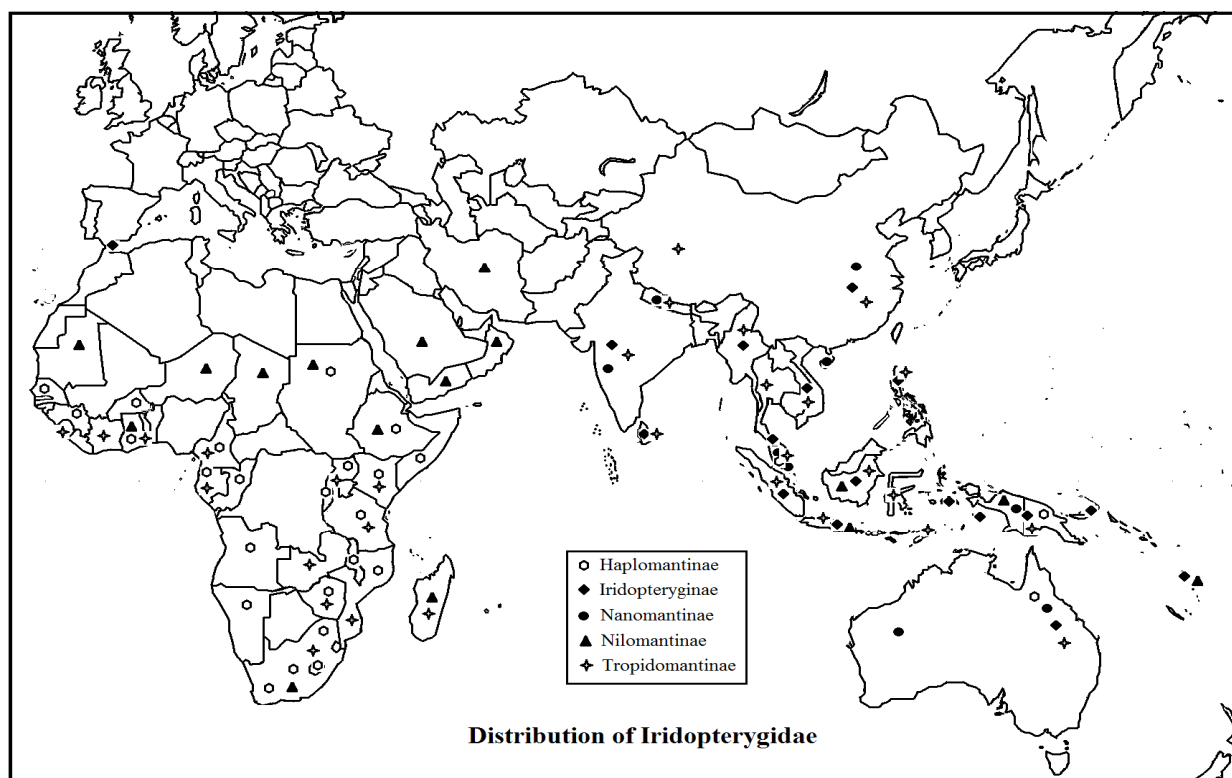


Fig. 4: Global distribution of Iridopterygidae

Outline Classification and Distribution Pattern

Due to continuous changes in the taxon nomenclature, variable number of genera was assigned to these families in past

(Ehrmann, 2002). The following table displays the outline classification and distribution pattern of the families, Empusidae, Eremiaphilidae, Galinthiidae and Iridopterygidae.

Table: Outline classification of the families Empusidae, Eremiaphilidae, Galinthiidae and Iridopterygidae and number of genera and species assigned to them and their global distribution

Family	Subfamily	Tribe	Genera	Species	Distribution
Empusidae (11 genera, 49 species)	Blepharodinae	Blepharodini	2	7	Africa, southwest Asia and Europe
		Idolomantini	1	1	Africa
	Empusinae	Empusini	5	35	Africa, Indomalaya, southwest Asia, South Europe
		Idolomorphini	3	6	Africa
Eremiaphilidae	Eremiaphilinae		2	73	Africa, southwest Asia
Galinthiidae			4	24	Africa, southwest Asia
Iridopterygidae (47 genera, 136 species)	Haplomantinae	Haplomantini	7	39	Africa, Australia, Indomalaysia
	Iridopteryginae	Iridopterygini	7	15	Southeast Asia, Indomalaya,
		Fulcinini	8	22	Australia, New Guinea
	Nanomantinae	Nanomantini	6	11	Australia, China, Indomalaya, New Guinea
	Nilomantinae	Nilomantini	5	7	Africa, Australia, China, Indiomalaya, Madagascar, New Guinea
	Trepidomantinae	Trepidomantini	14	42	
	Total		64	282	

Global Checklist

Following is the checklist of the global distribution of the families: Empusidae, Eremiaphilidae, Galinthiadidae and Iridopterygidae. Synonymy of the taxa were avoided and for that literature published in recent past may be consulted for synonymy (Paulian, 1957, 1958; Roy, 1969, 2009, 2013a, b, c, 2014; Marshall, 1975; Kaltenbach, 1976, 1979, 1982, 1996, 1998; Mukherjee and Hazra, 1985; Lombardo, 1993; Wang, 1993; Ehrmann, 2002; Roy and Svenson, 2007, 2011; Bragg, 2008; Mohammad et al., 2011; Zhu et al., 2012; Roy and Stiewe, 2013, 2014; Lombardo *et al.*, 2014; Mukherjee *et al.*, 2014; Svenson and Vollmer, 2014; Agudelo and Rivera, 2015; Svenson *et al.*, 2015; Revera and Svenson, 2016).

Family-1: Empusidae

Subfamily-1: Blepharodinae

Tribe-1: Blepharodini

1. Genus: *Blepharodes* Bolivar, 1890

1. *Blepharodes candelarius* Bolivar, 1890 [Chad, Ethiopia, Somalia]
2. *Blepharodes cornutus cornutus* (Schulthess, 1894) [Ethiopia, Kenya, Somalia, Sudan]
3. *Blepharodes cornutus minor* Kevan, 1954 [Kenya]
4. *Blepharodes parumspinosus* Beier, 1930 [Burkina Faso, Chad, Mauritania, Nigeria, Senegal, Sudan]
5. *Blepharodes sudanensis* Werner, 1907 [Kenya, Somalia, Sudan]

2. Genus: *Blepharopsis* Rehn, 1902

6. *Blepharopsis mendica mendica* (Fabricius, 1775) [Afganistan, Algeria, Canary Island, Chad, Cyprus, Egypt, Ethiopia, India, Iran, Iraq, Israel, Lebanon, Libya, Mauritania, Morocco, Niger, Oman, Pakistan, Spain, Somalia, Sudan, Syria, Tunisia, Turkey, Jordan]
7. *Blepharopsis mendica nuda* Giglio-Tos, 1917 [Afganistan, Eritrea, Ethiopia, Palestine, Saudi Arabia, Somalia, Yemen]

Tribe-2: Idolomantini

3. Genus: *Idolomantis* Uvarov, 1940

8. *Idolomantis diabolica* (Saussure, 1869) [Ethiopia, Kenya, Malawi, Somalia, Tanzania, Uganda]

Subfamily-2: Empusinae

Tribe-1: Empusini

4. Genus: *Cephalomantis* Gistel, 1856

9. *Cephalomantis gracilis* Gistel, 1856 [Egypt]
10. *Cephalomantis rustica* Gistel, 1856 [Egypt]

5. Genus: *Dilatempusa* Roy, 2004

11. *Dilatempusa aegyptiaca* (Giglio-Tos, 1917) [Burkina Faso, Egypt, Ethiopia, Mauritania, Sudan]

6. Genus: *Empusa* Illiger, 1798

12. *Empusa binotata* Serville, 1839 [Namibia]
13. *Empusa fasciata* Brulle, 1832 [Albania, Algeria, Armenia, Bulgaria, Crete, Croatia, Cyprus, Egypt, Ethiopia, Greece, Herzegovina, India, Iran, Israel, Italy, Jordan, Kleinasia, Nepal, Palestine, Romania, Slovenia, Turkey]
14. *Empusa guttula* (Thunberg, 1815) [Algeria, Angola, Burkina Faso, Cameroon, Cape province, Chad, Egypt, Ethiopia, India, Kenya, Libya, Madagascar, Mauritania, Morocco, Namibia, Senegal, Somalia, Tanzania, Transvaal, Tunisia]
15. *Empusa hedenborgii* (Stal, 1871) [Cameroon, Cape Town, Eritrea, Egypt, Ethiopia, Iran, Israel, Kenya, Saudi Arabia, Senegal, Somalia, Sudan, United Arab Emirates, Yemen]
16. *Empusa longicollis* Ramme, 1950 [Turkey]
17. *Empusa pauperata* (Fabricius, 1781) [China, India, Iran, Malaysia, Nepal, Sri Lanka]
18. *Empusa pennata* (Thunberg, 1815) [Algeria, Anatolia, Canary Islands, France, Italy, Jamaica, Libya, Mallorca, Morocco, Oman, Pakistan, Sardinia,

- Saudi Arabia, Sicily, Spain peninsula, Spain-Balearic Island, Sri Lanka, Tunisia, Yemen]
19. *Empusa pennicornis angulata* Lindt, 1978 [Uzbekistan]
 20. *Empusa pennicornis baysunica* Lindt, 1978 [Kazakistan, Uzbekistan]
 21. *Empusa pennicornis brevidorsa* Lindt, 1977 [Kazakistan, Tajikistan]
 22. *Empusa pennicornis buharica* Lindt, 1977 [Uzbekistan]
 23. *Empusa pennicornis caputobtusa* Lindt, 1979 [Tajikistan]
 24. *Empusa pennicornis condarinica* Lindt, 1977 [Tajikistan]
 25. *Empusa pennicornis copetdagica* Lindt, 1977 [Turkmenistan]
 26. *Empusa pennicornis hodshamuminica* Lindt, 1976 [Tajikistan]
 27. *Empusa pennicornis iliense* Lindt, 1977 [Kazakistan]
 28. *Empusa pennicornis lindti* Otte, 2004 [Kazakistan]
 29. *Empusa pennicornis longidorsa* Lindt, 1977 [Tajikistan]
 30. *Empusa pennicornis longoapicale* Lindt, 1979 [Kazakistan]
 31. *Empusa pennicornis luppovae* Lindt, 1979 [Tajikistan]
 32. *Empusa pennicornis mujuncumica* Lindt, 1976 [Kazakistan]
 33. *Empusa pennicornis pennicornis* (Pallas, 1773) [Afghanistan, Armenia, Azerbaijan, China, Iran, Georgia, Kazakistan, Pakistan, Syria, Tajikistan, Turkey, Turkmenistan, Uzbekistan]
 34. *Empusa pennicornis similis* Lindt, 1978 [Tajikistan]
 35. *Empusa romboidea nana* Lindt, 1976 [Tajikistan]
 36. *Empusa romboidea romboidea* Lindt, 1976 [Tajikistan]
 37. *Empusa simonyi* Krauss, 1902 [Socotra, Yemen]
 38. *Empusa spinosa* Krauss, 1902 [Natal, Oman, Saudi Arabia, Socotra, Yemen]
 39. *Empusa uvarovi* Chopard, 1921 [India, Iraq, Israel]
- 7. Genus: *Gongylus* Thunberg, 1815**
40. *Gongylus gongylodes* (Linne, 1758) [India, Java, Myanmar, Nepal, Sri Lanka, Thailand]
 41. *Gongylus pauperatus* (Fabricius, 1793) [France, Portugal]
 42. *Gongylus trachelophyllus* (Burmeister, 1838) [India, Bangladesh]
- 8. Genus: *Hypsicorypha* Krauss, 1892**
43. *Hypsicorypha gracilis* (Burmeister, 1838) [Algeria, Canary Islands, Egypt, Libya, Niger, Oman, Saudi Arabia, Somalia, Tunisia]
- Tribe-2: Idolomorphini**
- 9. Genus: *Chopardempusa* Paulian, 1958**
44. *Chopardempusa neglecta* (Paulian, 1958) [Medagaskar]
- 10. Genus: *Hemiempusa* Saussure & Zehntner, 1895**
45. *Hemiempusa capensis* (Burmeister, 1838) [Angola, Ethiopia, Cape Province, Congo, Ghana, Ivory Coast, Kenya, Pretoria, Ruanda, Tanzania, Transvaal, Uganda, Zimbabwe]
- 11. Genus: *Idolomorpha* Burmeister, 1838**
46. *Idolomorpha dentifrons* Saussure & Zehntner, 1895 [Cape Province, Ethiopia, Kenya, Mozambique, Natal, Rwanda, Somalia, Sudan, Tanzania, Transvaal, Uganda, Zanzibar]
 47. *Idolomorpha lateralis* Burmeister, 1838 [Angola, Burkina Faso, Ghana, Cameroon, Ivory coast, Kenya, Liberia, Mozambique, Senegal, Sierra Leone, Sudan, Tanzania, Togo]
 48. *Idolomorpha madagascariensis* Westwood, 1889 [Medagaskar]
 49. *Idolomorpha sagitta* Sjostedt, 1900 [Congo]
- Family-2: Eremiaphilidae**
- Subfamily-1: Eremiaphilinae**
- 12. Genus: *Eremiaphila* Lefebvre, 1835**

50. *Eremiaphila ammonita* Uvarov, 1933 [Jordan, Palestine]
51. *Eremiaphila andresi* Werner, 1910 [Egypt, Iran, Iraq, Libya]
52. *Eremiaphila anubis* Lefebvre, 1835 [Egypt]
53. *Eremiaphila arabica* Saussure, 1871 [Egypt, Israel, Pakistan, Saudi Arabia, Yemen]
54. *Eremiaphila aristidis* Lucas, 1880 [Egypt]
55. *Eremiaphila audouini* Lefebvre, 1835 [Egypt]
56. *Eremiaphila barbara* Brisout, 1854 [Algeria, Egypt]
57. *Eremiaphila berndstiewi* Stiewe, 2004 [Egypt]
58. *Eremiaphila bifasciata* Chopard, 1940 [Chad]
59. *Eremiaphila bovei* Lefebvre, 1835 [Chad, Egypt]
60. *Eremiaphila braueri* Krauss, 1902 [Baluchistan-Pakistan]
61. *Eremiaphila brevipennis* Saussure, 1871 [Egypt]
62. *Eremiaphila brunneri* Werner, 1905 [Israel]
63. *Eremiaphila cairina* Giglio-Tos, 1916 [Egypt]
64. *Eremiaphila cerisyi* Lefebvre, 1835 [Egypt, Iran, Iraq, Oman, Saudi Arabia, United Arab Emirates]
65. *Eremiaphila collenettei* Beier, 1930 [Somalia]
66. *Eremiaphila cordofana* Werner, 1907 [Kenya, Sudan, Uganda]
67. *Eremiaphila cycloptera* Uvarov, 1939 [Saudi Arabia]
68. *Eremiaphila dagi* Doganlar, 2007 [Turkey]
69. *Eremiaphila dentata* Saussure, 1871 [Egypt]
70. *Eremiaphila denticollis denticollis* Lucas, 1855 [Algeria, Tunisia, Morocco]
71. *Eremiaphila denticollis tunetana* (Werner, 1904) [Tunisia]
72. *Eremiaphila foureaui* Bolivar, 1905 [Algeria]
73. *Eremiaphila fraseri* Uvarov, 1921 [Iraq]
74. *Eremiaphila genei* Lefebvre, 1835 [Afganistan, Anatolia, Armenia, Egypt, Iran, Jordan, Palestine, Saudi Arabia, Syria, Turkey, Yemen]
75. *Eremiaphila gigas* Beier, 1930 [Egypt, Sudan]
76. *Eremiaphila hebraica* Lefebvre, 1835 [Egypt]
77. *Eremiaphila hedenborgii* (Stål, 1871) [Sudan]
78. *Eremiaphila heluanensis* Werner, 1904 [Egypt, Libya]
79. *Eremiaphila hralili* Lefebvre, 1835 [Egypt]
80. *Eremiaphila irridipennis* Mukherjee & Hazra, 1985 [India]
81. *Eremiaphila khamsini* Lefebvre, 1835 [Egypt, Yemen]
82. *Eremiaphila kheychi* Lefebvre, 1835 [Egypt]
83. *Eremiaphila klunzingeri* Werner, 1906 [Egypt]
84. *Eremiaphila laeviceps* Chopard, 1934 [Algeria, Libya]
85. *Eremiaphila lefebvrei* Burmeister, 1838 [Egypt]
86. *Eremiaphila luxor* Lefebvre, 1835 [Egypt]
87. *Eremiaphila maculipennis* Chopard, 1940 [Mauritania]
88. *Eremiaphila monodi* Chopard, 1941 [Algeria, Niger]
89. *Eremiaphila moretii maculata* Morales Agacino, 1947 [West Sahara]
90. *Eremiaphila moretii moretii* Bolivar, 1886 [Sahara]
91. *Eremiaphila murati* Chopard, 1940 [Morocco]
92. *Eremiaphila mzabi* Chopard, 1941 [Algeria]
93. *Eremiaphila nilotica* Saussure, 1871 [Egypt]

94. *Eremiaphila nova* Giglio-Tos, 1916
[Ethiopia, Eritrea]
95. *Eremiaphila numida* Saussure, 1872
[Algeria]
96. *Eremiaphila persica persica* Werner, 1905 [Azerbaijan, Iran, Iraq, Turkey]
97. *Eremiaphila persica sjostedti* Werner, 1930 [Iran]
98. *Eremiaphila petiti* Lefebvre, 1835
[Egypt]
99. *Eremiaphila pierreii* Chopard, 1954
[Algeria]
100. *Eremiaphila pyramidum* Werner, 1904
[Egypt, Libya]
101. *Eremiaphila rectangulata* Chopard, 1941 [Senegal]
102. *Eremiaphila reticulata* Chopard, 1941
[Burkina Faso, Mali, Morocco, Niger]
103. *Eremiaphila rohlfsi* Werner, 1906
[Egypt, Libya]
104. *Eremiaphila rotundipennis* Kirby, 1904
[Egypt, Libya]
105. *Eremiaphila rufipennis* Uvarov, 1929
[Egypt, Israel]
106. *Eremiaphila rufula* Chopard, 1941
[Morocco]
107. *Eremiaphila savignyi* Lefebvre, 1835
[Egypt, Libya, Saudi Arabia]
108. *Eremiaphila somalica* Rehn, 1901
[Somalia]
109. *Eremiaphila spinulosa* Krauss, 1893
[Algeria, Chad, Morocco]
110. *Eremiaphila tuberculifera* Chopard, 1941 [Algeria]
111. *Eremiaphila turcica* Westwood, 1889
[Anatolia, Iran, Iraq, Turkey]
112. *Eremiaphila typhon* Lefebvre, 1835
[Algeria, Chad, Egypt, India, Libya, Mauritania, Niger, Nigeria, Saudi Arabia, Syria]
113. *Eremiaphila uvarovi* Bodenheimer, 1933 [Jordan]
114. *Eremiaphila voltaensis* Sjostedt, 1930
[Burkina Faso, Senegal]
115. *Eremiaphila wernerii* Giglio-Tos, 1916
[Sudan]
116. *Eremiaphila wettsteini* Werner, 1918
[Sudan]
117. *Eremiaphila yemenita* Uvarov, 1939
[Yemen]
118. *Eremiaphila zetterstedti* Lefebvre, 1835 [Egypt]
- 13. Genus: *Heteronutarsus* Lefebvre, 1835**
119. *Heteronutarsus aegyptiacus* Lefebvre, 1835 [Egypt, Sudan]
120. *Heteronutarsus albipennis* Chopard, 1941 [Niger]
121. *Heteronutarsus arenivagus* Chopard, 1955 [Mauritania, Niger]
122. *Heteronutarsus zolotarevskyi* Chopard, 1940 [Chad]
- Family-3: Galinthiidae**
- 14. Genus: *Congoharpax* La Greca, 1954**
123. *Congoharpax aberrans* La Greca, 1954
[Cameroon, Congo, Ivory Coast, Gabon, Ghana, Guinea, Senegal, Togo]
124. *Congoharpax boulandi* Roy, 1972
[Central Africa Republic]
125. *Congoharpax coiffaiti* Roy, 1972
[Gabon]
126. *Congoharpax judithae* Roy, 1972
[Nigeria]
- 15. Genus: *Galinthias* Stal, 1877**
127. *Galinthias amoena* (Saussure, 1871)
[Angola, Cameroon, Congo, Kajakistan, Kenya, Malawi, Mangolia, Mozambique, Natal, Russia, Rwanda, Sierra Leone, Tanzania, Transvaal, Zimbabwe, Zanzibar]
128. *Galinthias memensis* Sjostedt, 1909
[Kenia, Malawi, Somalia, Tanzania]
129. *Galinthias meruensis* Sjostedt, 1909
[Rwanda, Tanzania]
130. *Galinthias occidentalis* Beier, 1930
[Cameroon, Ghana, Guinea, Ivory Coast, Morocco, Sierra Leone]
131. *Galinthias philbyi* (Uvarov, 1936)
[Saudi Arabia, Yemen]
132. *Galinthias rhomboidalis* Roy & Stiewe, 2014 [Kenya]
- 16. Genus: *Harpagomantis* Kirby, 1899**

133. *Harpagomantis discolor* (Stal, 1877) [Cape Province, South Africa Republic]
134. *Harpagomantis nana* (Lucas, 1849) [?]
135. *Harpagomantis tricolor* (Linne, 1758) [Botswana, Cape Province, Lesotho, Mozambique, Namibia, Natal, Orange Free State, Transvaal, Zimbabwe]
- 17. Genus: *Pseudoharpax* Saussure, 1870**
136. *Pseudoharpax abyssinicus* Beier, 1930 [Ethiopia, Kenya, Somalia]
137. *Pseudoharpax beieri* La Greca, 1950 [Ethiopia]
138. *Pseudoharpax crenaticollis* La Greca, 1954 [Burundi, Kenya, Rwanda, Tanzania]
139. *Pseudoharpax dubius* La Greca, 1954 [Congo]
140. *Pseudoharpax erythraeus* Giglio-Tos, 1915 [Ethiopia, Kenya]
141. *Pseudoharpax francoisi* Bolivar, 1908 [Angola, Cameroon, Guinea]
142. *Pseudoharpax nigericus* Giglio-Tos, 1915 [Niger]
143. *Pseudoharpax parallelus* La Greca, 1954 [Kenya]
144. *Pseudoharpax ugandanus* Giglio-Tos, 1915 [Angola, Kenya, Senegal, Uganda, Zambia, Zimbabwe]
145. *Pseudoharpax virescens centralis* La Greca, 1954 [Congo, Ethiopia, Rwanda, Senegal, Uganda]
146. *Pseudoharpax virescens virescens* (Serville, 1839) [Burkina Faso, Cameroon, Chad, Ethiopia, Gambia, Ghana, Guinea, Ivory Coast, Kenya, Mauritania, Niger, Nigeria, Senegal, Somalia, Sudan, Togo, Uganda]
- Family-4: Iridopterygidae**
- Subfamily-1: Hapalomantinae**
- Tribe-1: Hapalomantini**
- 18. Genus: *Bolbe* Stal, 1877**
147. *Bolbe lowi* La Greca, 1969 [Australia, Oceania]
148. *Bolbe maia* Tindale, 1923 [Australia, Oceania]
149. *Bolbe nigra* Giglio-Tos, 1915 [Australia, Oceania]
150. *Bolbe pallida* Tindale, 1923 [Australia, Oceania]
151. *Bolbe pygmaea* (Saussure, 1871) [Australia, Malaysia, Oceania]
- 19. Genus: *Bolbena* Giglio-Tos, 1915**
152. *Bolbena (Bolbena) assimilis* Kaltenbach, 1996 [Namibia]
153. *Bolbena (Bolbena) hottentotta* (Karny, 1908) [Angola, Kenya, Namibia, Republic South Africa]
154. *Bolbena (Bolbena) maraisi* Kaltenbach, 1996 [Namibia, Zimbabwe]
155. *Bolbena (Bolbena) minor* Giglio-Tos, 1915 [Namibia]
156. *Bolbena (Bolbena) orientalis* Beier, 1930 [Somalia]
157. *Bolbena (Bolboda) minutissima* (Karny, 1908) [Namibia, Transvaal, Zimbabwe]
- 20. Genus: *Bolbula* Giglio-Tos, 1915**
158. *Bolbula debilis* Giglio-Tos, 1915 [Tanzania]
159. *Bolbula exigua* Giglio-Tos, 1915 [Tanzania]
160. *Bolbula widenmanni* (Werner, 1906) [Tanzania]
- 21. Genus: *Hapalogymnes* Kaltenbach, 1996**
161. *Hapalogymnes gymnes* (Rehn, 1927) [Transvaal, Zimbabwe]
- 22. Genus: *Hapalomantis* Saussure, 1871**
162. *Hapalomantis (Bolbira) congica* Giglio-Tos, 1915 [Congo]
163. *Hapalomantis (Bolbira) katangica* Beier, 1935 [Angola, Congo, Tanzania]
164. *Hapalomantis (Bolbira) lacualis* Giglio-Tos, 1915 [Angola, Malawi]
165. *Hapalomantis (Bolbira) minima* (Werner, 1906) [Angola, Kenya, Rwanda, Tanzania, Zimbabwe]
166. *Hapalomantis (Hapalomantis) abyssinica* Beier, 1931 [Ethiopia, Somalia]
167. *Hapalomantis (Hapalomantis) orba* (Stal, 1856) [Kenya, Mozambique, Natal, Tanzania]

168. *Hapalomantis* (*Hapalomantis*) *rhombochir* Werner, 1908 [Angola, Bioko, Ghana, Kenya]
- 23. Genus: *Papubolbe* Beier, 1965**
169. *Papubolbe curvidens* Beier, 1965 [New Guinea]
170. *Papubolbe eximia* Beier, 1965 [New Guinea]
171. *Papubolbe flava* Beier, 1965 [New Guinea]
172. *Papubolbe gressitti* Beier, 1965 [New Guinea]
173. *Papubolbe longipennis* Beier, 1965 [New Guinea]
174. *Papubolbe picea* Beier, 1965 [New Guinea]
- 24. Genus: *Tarachina* Werner, 1907**
175. *Tarachina brevipennis* Beier, 1954 [Ethiopia, Kenya]
176. *Tarachina congica* Beier, 1954 [Congo]
177. *Tarachina constricta* Werner, 1923 [Namibia]
178. *Tarachina occidentalis* Giglio-Tos, 1915 [Burkina Faso, Guinea, Cameroon, Senegal]
179. *Tarachina rammei* Werner, 1928 [Cameroon]
180. *Tarachina raphidioides* Werner, 1907 [Ethiopia, Kenya, Somalia, Sudan, Tanzania, Uganda]
181. *Tarachina schultzei* Karny, 1908 [Cape Province, Namibia, Natal, Transvaal, Zimbabwe]
182. *Tarachina seriepunctata* Beier, 1954 [Angola, Congo]
183. *Tarachina transvaalensis* Beier, 1953 [Transvaal, Zimbabwe]
184. *Tarachina weneri* Chopard, 1914 [Ethiopia, Kenya, Somalia, Tanzania]
185. *Tarachina zernyi* Beier, 1954 [Tanzania]
- Subfamily-2: Iridopteryginae**
- Tribe-1: Iridopterygini**
- 25. Genus: *Hapalopeza* Stal, 1877**
186. *Hapalopeza* (*Hapalopeza*) *fulmeki* Werner, 1926 [Sumatra]
187. *Hapalopeza* (*Hapalopeza*) *nigricornis* Stal, 1877 [Halbinsel, Malaysia]
188. *Hapalopeza* (*Hapalopeza*) *nilgirica* Wood-Mason, 1891 [India]
189. *Hapalopeza* (*Hapalopeza*) *nitens* (Saussure, 1871) [Philippines]
190. *Hapalopeza* (*Hapalopeza*) *periyara* Mukherjee & Hazra, 1985 [India]
191. *Hapalopeza* (*Hapalopeza*) *tigrina* Westwood, 1889 [Borneo, Halbinsel, Malaysia, Sumatra]
192. *Hapalopeza* (*Spilomantis*) *occipitalis* Westwood, 1889 [China, Vietnam]
- 26. Genus: *Hapalopezella* Giglio-Tos, 1915**
193. *Hapalopezella maculata* (Kirby, 1904) [Sri Lanka]
- 27. Genus: *Iridopteryx* Saussure, 1869**
194. *Iridopteryx iridipennis* Saussure, 1869 [Sri Lanka]
- 28. Genus: *Micromantis* Saussure, 1870**
195. *Micromantis glauca* Saussure, 1870 [Sri Lanka]
- 29. Genus: *Muscimantis* Henry, 1931**
196. *Muscimantis montana* Henry, 1931 [Sri Lanka]
- 30. Genus: *Nemotha* Wood-Mason, 1884**
197. *Nemotha coomani* Chopard, 1930 [Vietnam]
198. *Nemotha metallica* (Westwood, 1845) [India, Bangladesh]
199. *Nemotha mirabiliis* Beier, 1935 [China]
- 31. Genus: *Pezomantis* Uvarov, 1927**
200. *Pezomantis henryi* Uvarov, 1927 [Sri Lanka]
- Tribe-2: Fulcinini**
- 32. Genus: *Calofulcinia* Giglio-Tos, 1915**
201. *Calofulcinia australis* La Greca, 1966 [Queensland]
202. *Calofulcinia elegans* Giglio-Tos, 1915 [New Guinea]
203. *Calofulcinia integra* Werner, 1928 [New Guinea]
204. *Calofulcinia oxynota* La Greca, 1969 [Queensland]

205. *Calofulcinia paraoxypila* Tindale, 1930 [Australia]
206. *Calofulcinia vidua* Beier, 1935 [?]
207. *Calofulcinia viridula* Giglio-Tos, 1915 [New Guinea]
- 33. Genus: *Fulcinia* Stal, 1877**
208. *Fulcinia alaris* (Saussure, 1871) [New Guinea, Maluku-Indonesia]
209. *Fulcinia exilis* Giglio-Tos, 1915 [New Guinea]
210. *Fulcinia lobata* Werner, 1928 [New Guinea]
211. *Fulcinia punctipes* Werner, 1928 [New Guinea, Indonesia]
212. *Fulcinia uxor* Werner, 1928 [New Guinea]
213. *Fulcinia variipennis* Westwood, 1889 [New Guinea]
- 34. Genus: *Fulciniella* Giglio-Tos, 1915**
214. *Fulciniella infumata* (Giglio-Tos, 1915) [New Guinea]
215. *Fulciniella loriae* Giglio-Tos, 1915 [Solomon Islands]
216. *Fulciniella verticalis* Beier, 1965 [New Guinea]
- 35. Genus: *Fulciniola* Giglio-Tos, 1915**
217. *Fulciniola snelleni* (Saussure, 1871) [Moluku Islands, New Guinea]
- 36. Genus: *Hedigerella* Werner, 1933**
218. *Hedigerella fasciatella* (Werner, 1932) [Bismarck Archipelago, Solomon Islands]
- 37. Genus: *Nannofulcinia* Beier, 1965**
219. *Nannofulcinia pulchra* Beier, 1965 [New Guinea]
- 38. Genus: *Pilomantis* Giglio-Tos, 1915**
220. *Pilomantis fusca* Giglio-Tos, 1915 [New Guinea]
- 39. Genus: *Tylomantis* Westwood, 1889**
221. *Tylomantis armillata* Beier, 1966 [Bismarck Archipelago]
222. *Tylomantis fuliginosa* (Westwood, 1889) [Aru Islands, Bismarck Archipelago]
- Subfamily-3: Nanomantinae**
- Tribe-1: Nanomantini**
- 40. Genus: *Ima* Tindale, 1924**
223. *Ima fusca* Tindale, 1924 [Queensland]
- 41. Genus: *Machairima* Beier, 1965**
224. *Machairima papua* Beier, 1965 [New Guinea]
- 42. Genus: *Nanomantis* Saussure, 1871**
225. *Nanomantis australis* Saussure, 1871 [Australia]
226. *Nanomantis gilolae* (Westwood, 1889) [Moluku Islands]
227. *Nanomantis lactea* Mukherjee, 1995 [India]
228. *Nanomantis yunnanensis* Wang, 1993 [China]
- 43. Genus: *Parananomantis* Mukherjee, 1995**
229. *Parananomantis brevis* Mukherjee, 1995 [India]
- 44. Genus: *Sceptuchus* Hebard, 1920**
230. *Sceptuchus baehri* Lombardo, 1993 [Nepal]
231. *Sceptuchus simplex* Hebard, 1920 [Malay Peninsula, Singapur]
- 45. Genus: *Sinomantis* Beier, 1933**
232. *Sinomantis denticulata* Beier, 1933 [China]
233. *Sinomantis maculata* Yang in Huang, Yin, Zeng, Lin & Gu, 2002 [China-Hainan]
- Subfamily-4: Nilomantinae**
- Tribe-1: Nilomantini**
- 46. Genus: *Epsomantis* Giglio-Tos, 1915**
234. *Epsomantis tortricoides* (de Haan, 1842) [Borneo, Java]
- 47. Genus: *Ilomantis* Giglio-Tos, 1915**
235. *Ilomantis thalassina* (Saussure, 1899) [Madagascar]
- 48. Genus: *Mimomantis* Giglio-Tos, 1915**
236. *Mimomantis milloti* Paulian, 1957 [Madagascar]
- 49. Genus: *Nilomantis* Werner, 1907**
237. *Nilomantis edmundsi* Roy & Leston, 1975 [Ghana, Republic South Africa]
238. *Nilomantis floweri* Werner, 1907 [Chad, Ethiopia, Iran, Mauritania, Niger, Oman, Saudi Arabia, Sudan, Yemen]
- 50. Genus: *Papugalepsus* Werner, 1928**

239. *Papugalepsus alatus* Beier, 1965 [New Guinea]
240. *Papugalepsus elongatus* Werner, 1928 [New Guinea, Solomon Islands]
- Subfamily-5: Tropidomantinae**
- Tribe-1: Tropidomantini**
- 51. Genus: *Chloromantis* Kaltenbach, 1998**
241. *Chloromantis impunctata* Werner, 1929 [Mozambique]
242. *Chloromantis rhombic* (Giglio-Tos, 1915) [Tanzania, Transvaal, Zimbabwe]
- 52. Genus: *Cornucollis* Brannoch & Svenson, 2016**
243. *Cornucollis masoalensis* Brannoch & Svenson, 2016 [Madagascar]
- 53. Genus: *Enicophlebia* Westwood, 1889**
244. *Enicophlebia hilara* Saussure & Zehntner, 1895 [Madagascar]
245. *Enicophlebia pallida* Westwood, 1889 [Madagascar]
- 54. Genus: *Hyalomantis* Giglio-Tos, 1915**
246. *Hyalomantis antsingica* Svenson & Roy, 2011 [Madagascar]
247. *Hyalomantis madagascariensis* (Saussure, 1870) [Madagascar]
248. *Hyalomantis murzini* Svenson & Roy, 2011 [Madagascar]
249. *Hyalomantis whitingi* Svenson & Roy, 2011 [Madagascar]
- 55. Genus: *Kongobatha* Hebard, 1920**
250. *Kongobatha diademata* Hebard, 1920 [Queensland]
251. *Kongobatha papua* Beier, 1965 [New Guinea]
- 56. Genus: *Melomantis* Giglio-Tos, 1915**
252. *Melomantis africana* (Werner, 1906) [Kenya, Sierra Leone, Tanzania]
253. *Melomantis asema* Beier, 1969 [Malawi]
- 57. Genus: *Miromantis* Giglio-Tos, 1927**
254. *Miromantis indica* (Giglio-Tos, 1915) [India, Nepal]
255. *Miromantis mirandula* (Westwood, 1889) [Borneo, Malay Peninsula, Sumatra, Sunda Islands]
256. *Miromantis thalassina* (Giglio-Tos, 1915) [Madagascar]
257. *Miromantis yunnanensis* (Wang, 1993) [China]
- 58. Genus: *Negromantis* Giglio-Tos, 1915**
258. *Negromantis gracilis* (Giglio-Tos, 1915) [Cameroon, Madagascar]
259. *Negromantis gracillima* Kaltenbach, 1996 [Rwanda, Zambia, Zimbabwe]
260. *Negromantis lutescens* (Sjostedt, 1900) [Cameroon]
261. *Negromantis modesta* Giglio-Tos, 1915 [Cameroon, Gabon, Ghana, Ivory Coast]
- 59. Genus: *Neomantis* Giglio-Tos, 1915**
262. *Neomantis australis* (Saussure & Zehntner, 1895) [Queensland]
263. *Neomantis hyaline* Tindale, 1924 [Queensland]
264. *Neomantis robusta* Beier, 1935 [New Guinea]
- 60. Genus: *Ormomantis* Giglio-Tos, 1915**
265. *Ormomantis indica* Giglio-Tos, 1915 [India]
- 61. Genus: *Oxymantis* Werner, 1931**
266. *Oxymantis punctillata* Werner, 1931 [India, Nepal]
- 62. Genus: *Platycalymma* Westwood, 1889**
267. *Platycalymma annulicornis* Roy & Svenson, 2011 [Madagascar]
268. *Platycalymma befasica* (Paulian, 1957) [Madagascar]
269. *Platycalymma dichroica* (Paulian, 1957) [Madagascar]
270. *Platycalymma latipennis* Westwood, 1889 [Madagascar]
271. *Platycalymma mahafalica* Roy & Svenson, 2011 [Madagascar]
272. *Platycalymma viettei* Roy & Svenson, 2011 [Madagascar]
- 63. Genus: *Tropidomantis* Stal, 1877**
273. *Tropidomantis (Eomantis) guttatipennis* Stal, 1877 [India, Myanmar, Nepal, China-Tibet, Vietnam]
274. *Tropidomantis (Eomantis) iridipennis* (Westwood, 1889) [India, Java, Sri Lanka]

275. *Tropidomantis (Eomantis) yunnanensis* (Wang, 1993) [China]
276. *Tropidomantis (Tropidomantis) gressitti* Tinkham, 1937 [China]
277. *Tropidomantis (Tropidomantis) tenera* (Stal, 1858) [Borneo, Flores, Java, Malaysia, Philippines, Sulawesi, Sumatra, Sumba, Thailand]
- 64. Genus: *Xanthomantis* Giglio-Tos, 1915**
278. *Xanthomantis bimaculata* Wang, 1993 [China]
279. *Xanthomantis flava* Giglio-Tos, 1915 [Borneo, Singapore]
280. *Xanthomantis malayana* Beier, 1931 [Malaysia]
281. *Xanthomantis mantispoides* (Hebard, 1920) [Borneo]
282. *Xanthomantis ornata* Beier, 1931 [Borneo]
- Conclusion**
- The distribution pattern of four families of Mantodea: Empusiidae, Eremiaphilidae, Galinthiidae and Iridopterygidae demonstrated that most of the species belong to Neotropical ecozone of the world except America, i.e. countries of Africa, southwest Asia and Europe, southeast Asia, and Australia. Out of 282 valid species of these families, only 19 belong to India.
- References**
- Agudelo AA and Rivera J. (2015) Some taxonomic and nomenclatural changes in American Mantodea (Insecta, Dictyoptera)—Part I. *Zootaxa* 3936 (3): 335–356.
- Battiston R, Piciu L, Fontana P and Marshall J. (2010) Mantids of the Euro- Mediterranean Area.- WBA Handbooks 2, Verona: 1-240.
- Beier M. (1934) Mantodea, Fam. Mantidae, Subfam. Sibyllinae, Empusinae. In: Wytzman, P. (ed.): *Genera Insectorum*, vol. 197. – Brussels: Verteneuil & Desmet. pp. 10.
- Beier M. (1953) Some new and interesting South African Mantids from the Transvaal Museum. *Annals of the Transvaal Museum* 22(2): 255-262.
- Beier M. (1954) Mantidea und Pseudophyllinae. *Exploration du Parc National de l'Upemba*, Mission G. F. de Witte, fase. 20: 1-77.
- Beier M. (1964) Ordnung: Mantodea Burmeister, 1838. In: Bronns Klassen und Ordnungen des Tierreichs, Bd. 5, III.Abt., Ins. (6), pp 849-970.
- Beier M. (1968) Mantodea (Fangheuschrecken). pp 1-47 in: Helmcke, J.-G., Starck, D. & Wermuth, H. (eds): *Handbuch der Zoologie*, 4(2), 2/12, Berlin: Walter de Gruyter.
- Bohra P and Rathore NS. (1966) 18. Dictyoptera of the Thar Desert. In: *Faunal diversity in the Thar Desert: Gaps in research* (Ed. Ghosh, AK, Baqri, QH and Prakash, I.), Scientific Publishers, Jodhpur I-XI, 410 : 167-170,
- Bragg PE. (2008) Records of the genus *Citharomantis* Rehn, 1909 from Borneo (Insecta: Mantodea: Hymenopodidae: Acromantinae). *Sepilok Bulletin* 8: 1-8.
- Brannoch SK and Svenson GJ. (2016) A new genus and species (*Cornucollis* gen. n. *masoalensis* sp. n.) of praying mantis from northern Madagascar (Mantodea, Iridopterygidae, Tropidomantinae). *Zookeys*. 556: 65–81. doi: 10.3897/zookeys.556.6906
- Caudell AN. (1907) On some unrecorded generic and specific names. *Psyche* 14(3): 58. <http://dx.doi.org/10.1155/1907/18108>
- Çiplak B and Demirsoy A. (1997) Mantodea (Insecta) fauna of Malatya vicinity (Turkey) and some remarks on the mantises of Anatolia. *Journal of Orthoptera Research* 6: 105-111.
- Edmunds M. (1972) Defensive behaviour in Ghanaian praying mantids. *Zoological Journal of the Linnean Society*, 51: 1–31. DOI: 10.1111/j.1096-3642.1972.tb00771.x.
- Ehrmann R. (2002) *Mantodea. Gottesanbeterinnen der Welt*. Münster: Natur und Tier-Verlag, pp. 519.
- Ghate HV, Jadhav SS, Sureshan PM and Sharma RM. (2012) Updated checklist of Indian Mantodea (Insecta). https://www.researchgate.net/publication/266590909_Updated_checklist_of_Indian_Mantodea_Insecta, pp. 1-31.
- Giglio-Tos E. (1915) Mantidi esotici. Generi e specie nuove. *Bullettino della Società Entomologica Italiana (Firenze)* 46: 31–108.
- Giglio-Tos E. (1917) Note al Catalogo dei Mantidi di Kirby. *Bullettino della Società entomologica italiana* 48: 139-163.

- Giglio-Tos E. (1927) Orthoptera Mantidae. In: Schulze, F.E. and Kükenthal, W. (eds): Das Tierreich, eine Zusammenstellung und Kennzeichnung der rezenten Tierformen. Fascicle 50. Berlin and Leipzig, de Gruyter and Co. pp707.
- Gillon Y and Roy R. (1968) Les mantes de Lamto et des savanes de Côte d'Ivoire. Bulletin de l'Institut Fondamental d'Afrique Noire (A), 30, 1038-1151.
- Gistel J. (1856) Die Mysterien der europäischen Insectenwelt. 12 mo, pp 12 and 532.
- Gomboc S. (2000) Bionomie, Verbreitung und Züchtungsversuche an *Empusa fasciata* Brulle, 1836 (Mantodea, Empusidae) in Slowenien. *Articulata* 15: 1-6.
- Hebard M. (1920) Studies in Malayan, Papuan and Australian Mantidae. Proceedings of the Academy of Natural Sciences of Philadelphia 71: 14-82.
- Kaltenbach AP. (1979) Die Mantodea der Kanarischen Inseln. Kritische Übersicht und ergänzende Beschreibungen. *Annalen des Naturhistorischen Museums in Wien* 82: 517-531.
- Kaltenbach AP. (1982) Insects of Saudi Arabia. Mantodea. *Fauna of Saudi Arabia* 4: 29-72.
- Kaltenbach AP. (1996) Unterlagen für eine Monographie der Mantodea des südlichen Afrika: 1. Artenbestand, geographische Verbreitung und Ausbreitungsgrenzen (Insecta: Mantodea). *Annalen des Naturhistorischen Museums in Wien (B)* 98: 193-346.
- Kaltenbach AP. (1998) Unterlagen für eine Monographie der Mantodea (Insecta) des südlichen Afrika: 2. Bestimmungstabellen für die höheren Taxa, Nachträge zum Artenbestand. *Annalen des Naturhistorischen Museums in Wien (B)* 100: 19-59.
- Kevan DKMcE. (1954) Mantodea from Northern Kenya and Jubaland. *Annals and Magazine of Natural History* 2, 7 (78): 455-473.
- Klass KD and Meier R. (2006) A phylogenetic analysis of Dictyoptera (Insecta) based on morphological characters. *Ent. Abhandl.* 63: 3-50.
- Koli YJ and Bhawane GP. (2011) Mantid Fauna of Chandoli National Park, Maharashtra, India. *The Bioscan*, 6 (1): 77-80.
- Kral K and Devetak, D. (1999) The visual orientation strategies of *Mantis religiosa* and *Empusa fasciata* reflect differences in the structure of their visual surroundings. *Journal of Insect Behavior* 12: 737-752.
- Kristensen NP. (1995) Forty years insect phylogenetic systematics. *Zoologische Beiträge* 36: 83-124.
- La Greca M. (1954) Mantodei del Congo Belga 1. Empusidae. *Annales du Musée royal du Congo belge, Tervuren, in-4°, Zool. 1 (Miscellana Zoologica H. Schouteden)* 440-443.
- Legendre F, Nel A, Svenson GJ, Robillard T, Pellens R and Grandcolas F. (2015) Phylogeny of Dictyoptera: dating the origin of cockroaches, praying mantises and termites with molecular data and controlled fossil evidence. *PLoS ONE*, 10, e0130127. DOI: 10.1371/journal.pone.0130127.
- Lombardo F. (1993) Studies on the Mantodea of Nepal (Insecta). *Spixiana* 16(3): 193-206.
- Lombardo F. (1997) New and little known Mantodea from Eastern and Central Southern Africa. *Journal of Orthoptera Research* 6: 69-81.
- Lombardo F, Stiewe M, Ippolito S and Marletta A. (2014) A taxonomic revision of *Otomantis Bolivar*, 1890 (Mantodea: Hymenopodidae, Acromantinae) with description of five new species. *Zootaxa* 3797: 169-193. DOI: 10.11646/zootaxa.3797.1.13.
- Marshall JA. (1975). A catalogue of the primary types of Mantodea (Dictyoptera) in the British Museum (Natural history). *Bulletin of the British Museum (Natural History) Entomology* 31(8): 307-329.
- Mohammad SK, Alla SMG, El-Hamouly H, Ehrmann R and El-Den Nasser MG. (2011) Mantodea of Egypt. *Zootaxa* 3044: 1-27.
- Mukherjee TK and Hazra AK. (1985) New record of a deserticolous Mantid Family (Mantodea: Eremiaphilidae) from India. *Entomon* 10(3): 245-247.
- Mukherjee TK, Hazra AK and Ghosh AK. (1995) The Mantid Fauna of India (Insecta : Mantodea). *Oriental Insects* 29 : 185-358.
- Mukherjee TK, Das BC and Hazra AK. (2005) Types of Mantodea (Insecta: Mantodea) in the collection of Central Entomological Laboratory of Zoological Survey of India, Kolkata, India. *Record zoological Survey of India* 104 (Part 3-4): 143-149.
- Mukherjee TK, Ehrmann R and Chatterjee P. (2014) Checklist of Mantodea (Insecta) from India. *Priamus* (Serial Publication of the Centre for

- Entomological Studies Ankara), (Suppl.) 30: 1-61.
- Otte D and Spearman L. (2005) Mantida-species file. Catalog of the Mantids of the World. Insect Diversity Association Publication, Philadelphia, PA., pp. 489.
- Otte D, Spearman L, Stiewe MBD and Eades DC. (2016) Mantodea Species File Online. URL <http://mantodea.speciesfile.org/HomePage/Mantodea/HomePage.aspx> [accessed on 10 November, 2016].
- Patel S and Singh R. (2016a) Updated Checklist and Distribution of Mantidae (Mantodea : Insecta) of the World. International Journal of Research Studies in Zoology 2(4): 17-54.
- Patel S and Singh R. (2016b) Updated checklist and global diversity of Chaeteessidae, Mantoididae, Metallyticidae, Acanthopidae, Amorphoscelididae and Sibyllidae (Mantodea: Insecta). International Journal of Research Studies in Zoology 2(4): 55-67.
- Patel S, Singh G and Singh R. (2016c) Checklist of global distribution of Hymenopodidae (Mantodea : Dictyoptera : Insecta). International Journal of Current Research 8: 42047-42054.
- Paulian R. (1957) Faune de Madagascar. V. Insectes Mantodea. Publications de l'Institut de Recherche Scientifique Tananarive - Tsimbazaza 5: 1-102.
- Paulian R. (1958) Mantides malgaches nouveaux ou méconnus. Naturaliste Malgache 10(1-2): 31-36.
- Picker M, Griffiths C and Weaving A. (2004) Field Guide to the Insects of South Africa. Struik, Cape Town.
- Prost A and Roy R. (1986) Les Mantes du Burkina Faso (ex-République de Haute-Volta). Bulletin de l'Institut fondamental d'Afrique noire, sér. A, 45 (1-2): 66-116.
- Ranade SP, Mukherjee S and Ghate HV. (2004) A note on desert mantis *Eremiaphila rotundipennis* Kirby (Insecta: Mantodea: Eremiaphilidae) from Rajasthan, India. Zoos Print Journal, 19(11): 1694-1696.
- Revera J and Svenson GJ. (2016) The Neotropical 'polymorphic earless praying mantises' - Part I: molecular phylogeny and revised higher-level systematics (Insecta: Mantodea, Acanthopoidea). Systematic Entomology 41: 607-649. DOI: 10.1111/syen.12178.
- Roy R. (1964) Les Mantes de la Côte d'Ivoire forestière. Bulletin de l'Institut français d'Afrique noire, sér. A 26 (3): 737-793.
- Roy R. (1969). Le Parc national du Niokolo-Koba (Sénégal), fascicule III. VII. Dictyoptera Mantodea. Mémoires de l'Institut Fondamental d'Afrique Noire 84: 97-112.
- Roy R. (1970) Contribution à l'étude biologique du Sénégal septentrional. IV. Dictyoptères Mantodea. - Bulletin de l'Institut Français d'Afrique Noire, (A) 32(4): 1019-1033.
- Roy R. (2004). Réarrangements critiques dans la famille des Empusidae et relations phylogénétiques [Dictyoptera, Mantodea]. Revue Française d'Entomologie (N.S.) 26: 1-18.
- Roy R. (2009) Révision des Toxoderini sensu novo (Mantodea, Toxoderinae). Revue Suisse de Zoologie 116: 93-183.
- Roy R. (2013a) Révision du genre *Pachymantis* Saussure, 1871 (Mantodea, Hymenopodidae). Bulletin de la Société Entomologique de France 118: 145-154.
- Roy R. (2013b) Mises au point sur le genre *Chrysomantis* Giglio-Tos, 1915 (Mantodea, Hymenopodidae). Bulletin de la Société Entomologique de France 118: 463-472.
- Roy R. (2013c) Révision du genre africain *Oxypiloidea* Schulthess, 1898 (Dictyoptera, Mantodea, Hymenopodidae). Zoosystema 35: 277-359. DOI: 10.5252/z2013n3a1.
- Roy R. (2014) A historical review of nomenclature and high-level classification of praying mantises (Mantodea), including a provisional checklist of the names associated to suprageneric ranks. Zootaxa 3797: 9-28.
- Roy R and Leston D. (1975) Mantodea of Ghana: new species, further records and habitats. Bulletin de l'Institut Fondamental d'Afrique Noire Serie A: Sciences Naturelles 37: 297-344.
- Roy R and Stiewe M. (2013) Bilan des Connaissances relatives Australia genre *Oxypilus* Audinet Servile (Mantodea, Hymenopodidae). Revue Française d'Entomologie (N.S.) 33: 27-54.
- Roy R and Stiewe M. (2014) Revision of the genus *Galinthias* Stal, 1877 (Mantodea, Galinthididae). Bulletin de la Société Entomologique de France 119(2): 199-215.
- Roy R and Svenson GJ. (2007) Revision of the Genus *Ceratantis* Wood-Mason, 1876 (Dictyoptera: Mantidae). Bulletin de la Société Entomologique de France 112(4): 433-444.

- Roy R and Svenson GJ. (2011) Revision of *Platycalymma* Westwood, 1889, and the synonymy of *Ichromantis* Paulian, 1957 (Mantodea, Iridopterygidae, Tropicodantinae). *Zootaxa* 3014: 1–25.
- Stål C. (1877) Systema Mantodeorum. Essai d'une systematization systématique nouvelle des Mantodées. *Bihang till Kongl. Svenska vetenskaps-akademiens handlingar* 4(10): 1–91.
- Svenson GJ and Roy R. (2011) Taxonomic Treatment of the Endemic Malagasy Praying Mantis Genus *Hyalomantis* Giglio-Tos, 1915, With a New Synonymy and the Description of Three New Species (Mantodea, Iridopterygidae, Tropicodantinae). *Zootaxa*, 2011, 2777: 1–24.
- Svenson GJ and Vollmer W. (2014) A case of the higher-level classification of praying mantises (Mantodea) obscuring the synonymy of *Majangella* Giglio-Tos, 1915 (Liturgusidae, Liturgusinae) and *Ephippiomantis* Werner, 1922 (Hymenopodidae, Acromantinae). *Zootaxa* 3797: 103–119.
- Svenson GJ and Whiting MF. (2004) Phylogeny of Mantodea based on molecular data: evolution of a charismatic predator. *Systematic Entomology* 29: 359–370.
- Svenson GJ, Hardy NB, Wightman HMC and Wieland F. (2015) Of flower and twigs: phylogenetic revision of the plant mimicking praying mantises (Mantodea: Empusidae and Hymenopodidae) with a new suprageneric classification. *Systematic Entomology* DOI: 10.1111/syen.12134.
- Uvarov BP. (1940) Twenty-eight new generic names in Orthoptera (13.). *Annals and Magazine of Natural History* serie 11 (5): 173–176.
- Vyjayandi MC, Rajeesh RS, Sajin John P and Dhanasree MM. (2010) On a collection of Praying mantids (Insecta: Mantodea) from Goa, India, with new distribution records. *Threatened Taxa* 2(12): 1325–1329.
- Wang T. (1993) Synopsis on the classification of Mantodea from China. Shanghai Scientific and Technological Literature Publishing House, Shanghai, pp. IV + 172.
- Ware JL, Litman J, Klass KD and Spearman LA. (2008) Relationships among the major lineages of Dictyoptera: the effect of outgroup selection on dictyopteran tree topology. *Systematic Entomology* 33: 429–450.
- Werner F. (1907) Ergebnisse der mit Subvention aus der Erbschaft Treitl unternommenen zoologischen Forschungsreise Dr. Franz Werner's in den ägyptischen Sudan und nach Nord-Uganda: Orthoptera Blattaeformia. VIII. aus der Kaiserlich-Königlichen Hof- und Staatsdruckerei. In Kommission bei Alfred Hölder. Published in: *Sitzungsberichte der kaiserlichen Akademie der Wissenschaften in Wien, Mathem.-naturw. Klasse, Abt. 1*, (Februar 1907), Bd. 116: 165–266 (separata: 1–102), Taf. I–III.
- Westwood JO. (1889) *Revisio Insectorum Familiae Mantidarum, speciebus novis aut minus cognitissimis descriptis et delineatis*. Gurney and Jackson, London, pp. 55.
- Wieland F. (2013) The phylogenetic system of Mantodea (Insecta: Dictyoptera). *Species, Phylogeny and Evolution* 3(1): 3–222.
- Wieland F. (2006) The cervical sclerites of Mantodea discussed in the context of dictyopteran phylogeny (Insecta: Dictyoptera). *Entomologische Abhandlungen* 63(1–2): 51–76.
- Wieland F. (2010) The phylogenetic system of Mantodea (Insecta: Dictyoptera). Ph. D. Thesis, Georg-August Universität zu Göttingen, pp. 306+xxix (appendix).
- Zhu Xiao-Yu, Chao Wu & Qin Y. (2012) Mantodea in China. Editor: ZHU Xiao Yu, WU Chao & YUAN Qin Zhu, Xiyuan Publishing House, Beijing, 1.e.d., pp. 331.