

MANTIS (INSECTA: MANTODEA) FAUNA OF CHHATTISGARH, INDIA

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INTRODUCTION

Mantids belong to the Order Mantodea under Superorder Blattopteroidea. They are commonly found in humid climate of tropical region although few species occur in dry habitats of semi desert areas. The activity period of mantis depends on the habitat. In arid and semi-arid regions, mantids are generally active after sunset to avoid desiccation. They are well known as predators of many invertebrates and even smaller vertebrates. Territoriality, inter and intra-specific cannibalism are known in mantids and these may be some of the reasons for the decline of their population in nature. They constitute a natural biological control agent by feeding on other insects and thus play an important role in natural control of beneficial species, pest insects and others species in nature.

The history of mantis taxonomy probably started with the contribution of Linnaeus (1758), in Xth and XIIth editions of ‘*Systema Naturae*’. In India, scattered works on this group are available. The list of notable contributors includes Wood-Mason (1889-1891), Bolivar (1899), Werner (1931, 1933 and 1935), and few other works during the last century. After a long gap, the first consolidated account on mantid fauna of India was published by Mukherjee *et al.* (1995) which is being followed by many workers in India. Vyjayandi (2007) published an account on the mantis fauna of Kerala, India and she added some more knowledge on Indian mantis. Recently, Mukherjee *et al.* (2014) published an updated checklist of mantodea from India. According to this article, there are 169 species under 71

S. No	District	Locality 1	Locality 2
1	Surguja	Tara	Tara FRH
2	Surguja	Tara	Abhaya Nala
3	Surguja	Mainpath	Mainpath RH
4	Surguja	Ghui	Ghui Nursery
5	Surguja	Ambikapur	Ambikapur RH
6	Durg	Balod	Badbhun FRH
7	Koriya	GGNP	Sonhat RH
8	Koriya	GGNP	Dhawaipani Forest
9	Koriya	GGNP	Devidham
10	Koriya	GGNP	Kailashpur
11	Koriya	GGNP	Gehiapani Forest
12	Raipur	Barnawapara WLS	Barnawapara Camp
13	Raipur	Barnawapara WLS	Akalara Village
14	Raipur	Barnawapara WLS	Hardipathar
15	Raipur	Barnawapara WLS	Sainhabata
16	Raipur	Barnawapara WLS	Lalbandha Pond
17	Raipur	Barnawapara WLS	Gabod Village
18	Kabirdham	Bhoramdev WLS	Chilpa FRH
19	Kabirdham	Bhoramdev WLS	Jamunpani Forest
20	Kabirdham	Bhoramdev WLS	Sarodadalar
21	Kabirdham	Bhoramdev WLS	Chapri Watch Tower
22	Kabirdham	Bhoramdev WLS	Rajadhar Forest
23	Kabirdham	Bhoramdev WLS	Maharakundi
24	Kabirdham	Rengakhar	Rengakhar RH
25	Dhamtari	Sitanadi WLS	Mandargiri Forest
26	Dhamtari	Sitanadi WLS	Ghasiya Village
27	Dhamtari	Sitanadi WLS	Sankra RH
28	Dhamtari	Sitanadi WLS	Lelanz Village
29	Bilaspur	Achanakmar WLS	Achanakmar
30	Bilaspur	Khodia	Karidongri RH
31	Bastar	Jagdalpur	Sarnarpal Beat
32	Bastar	Jagdalpur	Makeli Range
33	Bastar	Jagdalpur	Nandpura Beat
34	Bastar	Jagdalpur	Sonarpal Beat
35	Bastar	Jagdalpur	Baniyaganon Beat
36	Bastar	Jagdalpur	Maleneta Beta
37	Bastar	Jagdalpur	Dharpumpi
38	Bastar	Jagdalpur	Turthgarh
39	Jashpur	Badalkhol WLS	Kushapani Watch Tower
40	Korba	Kudmura	Kudmura Nursery
41	Korba	Kudmura	Biakhara Nursery
42	Korba	Lemtu	Deopahari

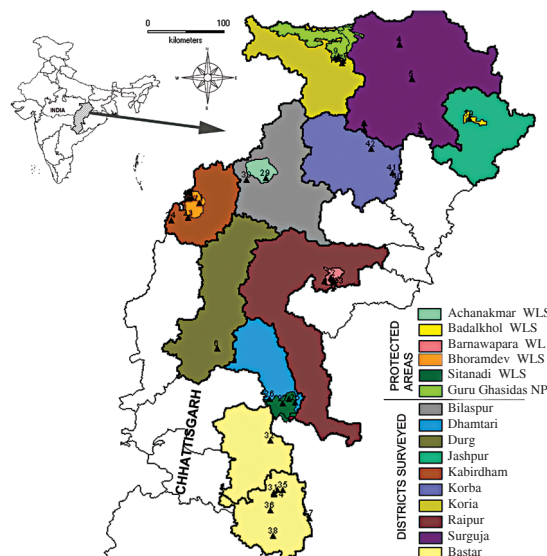


Fig. 1. Showing Collection localities of the specimens.

genera of 11 families and the total Indian species represents nearly 8.5% of the species known globally. It is easy to believe that more unknown species waiting for discovery still occur in India. Many parts of India still remained unexplored and exact diversity of mantis is unclear. Central India is one of such less surveyed areas of the country. Till date 16 species under 11 genera are documented from Madhya Pradesh, Central India (Mukherjee *et al.* 1995).

Chhattisgarh is a newly carved out state from Madhya Pradesh in 2001. The state extends between 17°46'-24°8' N latitude and 80°15'-84°24' E longitude in the Central Indian landscape with a total area of 1, 35,194 sq. Km. Nearly 44% of the state area is covered by forests and a major part, 35736.239 sq. Km., is outside Protected Areas. Biogeographically, the state belongs to the Deccan Plateau and includes provinces, 6D- Chota Nagpur Plateau, 6C- Eastern Highland and 6E- Central Highland (Rodgers *et al.* 2002). The vegetation of the state consists of both moist and dry deciduous forests. Major part of the forest is dominated by Sal (*Shorea robusta*) followed by mixed vegetation interspersed with bamboo patches.

Being a new state, the faunal composition of Chhattisgarh needs to be understood. Therefore, Zoological Survey of India conducted extensive surveys in forests and other parts of Chhattisgarh to document its faunal wealth. The present study is a part of this faunal exploration aimed at reporting and describing the mantid species collected from different parts of Chhattisgarh including their photographs. This taxonomic investigation is based upon the examination of 239 mantis specimens belonging to 34 species under 24 genera and 9 families. The species endemic to India and new records to the state of Chhattisgarh are marked by* and # respectively.

MATERIALS AND METHODS

The specimens were collected during the period from July 2011 to April 2014. Surveys were conducted throughout the year and all seasons.

Mantis were collected generally at night with the help of light trap. Mercury bulb of 160 Watt was used to attract insects on a white sheet of cloth measuring approximately 2 X 2 m. Some

specimens were collected during day from vegetations by hand picking and sweeping with insect net. Different size vials and glass jars were used as killing bottles in which ethyl acetate was used as killing agent. Mantis thus collected were kept in insect envelopes with proper label of date and site of collection. Specimens were brought back to ZSI, Kolkata, laboratory for stretching and pinning. Pinned specimens were preserved in insect boxes with sufficient naphthalene and carbolic acid (phenol and camphor mixture). The coordinates of the collection sites were recorded using GPS (Garmin Oregon 550) which were further used in preparing maps of the survey sites in DIVA-GIS (Fig. 6). The morpho-taxonomy of the specimens was done by Leica EZ4 HD binocular microscope. Identification was done following descriptions provided in Mukherjee *et al.* 1995 and classification scheme was followed after Mukherjee *et al.* 2014. The identified specimens were deposited in the National Zoological Collection, ZSI, Kolkata.

RESULTS

Taxonomic accounts on the Identified species collected during the surveys are provided below.

Class INSECTA

Order MANTODEA

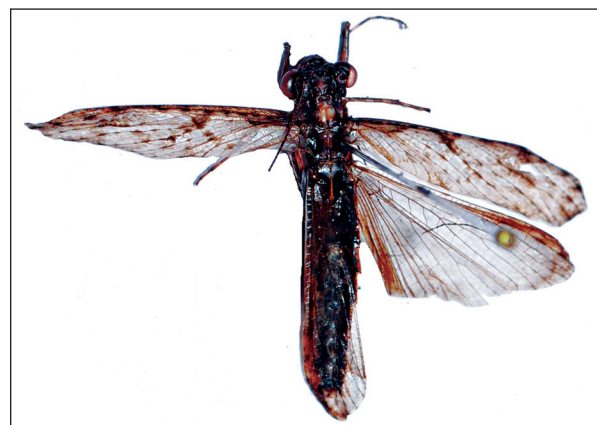
Family AMORPHOSCELIDAE Stål, 1877

Subfamily AMORPHOSCELINAE Stål, 1877

Genus *Amorphoscelis* Stål, 1871

1. #*Amorphoscelis annulicornis* Stål, 1871

1871. *Amorphoscelis annulicornis* Stål, *Ofvers. K. Vetensk. Akad. Forh.*, 28(3): 401. Holotype male (BMNH), paratype male (NHRS). Type locality: India.



Amorphoscelis annulicornis Stål, 1871

2014. *Amorphoscelis annulicornis*: Mukherjee *et al.*, *Priamus*, **30**: 5.

Material examined: Surguja: Tara, 16.ix.2012 (1♂) (Reg. no. 13391/H5), 15.ix.2012 (2♂) (Reg. no. 13392/H5, 13393/H5), Coll. A. Raha and Party; Durg: Baddhum FRH, 31.iii.2014 (1♂) (Reg. no. 13394/H5), Coll. S. Gupta and Party; Koriya: GGNP, Sonhat FRH, 06.iii.2013 (1♂) (Reg. no.13395/H5), Coll. A. Parida and Party.

Diagnosis: Male: this species is very small, bark coloured with paired conical protuberance on head. The foretibia with only single terminal claw and forecoxa with three black bands internally. The pronotum with paired tubercle at the both anterior and posterior border. Ventral side of the body black.

Distribution: India: Assam, Bihar, Chhattisgarh (Durg, Koriya, Surguja.), Daman and Diu, Maharashtra, Himachal Pradesh, Kerala, Meghalaya, Orissa, Tamil Nadu and West Bengal. *Elsewhere*: Malayasia, Nepal, Sri Lanka.

2. #*Amorphoscelis singaporana* Giglio-Tos, 1915

1915. *Amorphoscelis singaporana* Giglio-Tos, *Bull. Soc. Entomol. Ital.*, **46**: 32-33. Holotype male (BMNH). Type Locality: Singapore.

2014. *Amorphoscelis singaporana*: Mukherjee *et al.* *Priamus*, **30**: 5.

Material examined: Koriya: GGNP, Sonhat FRH, 13.v.2012 (1♀) (Reg. no.13687/H5), 14.v.2012 (1♀) (Reg. no.13688/H5), Coll. S. Gupta and Party.

Diagnosis: Male: The lateral protuberance of vertex swollen at base, more or less sharp at tip. Frontal sclerite black. Pronotum with anterior and posterior pairs of tubercles, latter being bigger and appears a little sharp; the front pair is blunt. In fore leg, the coxa internally uniformly deep brown and is without black bands. The internal distal part of the femur with a blackish patch and a similar patch on inner face of the tibia. The four posterior legs with 3 brown bands. Costal and discoidal area of fore wings including longitudinal veins are black spotted along length, the spots are bigger and black patch like at basal half. The ventral

side of the body now appears black, probably due to preservation.

Distribution: India: Assam and Chhattisgarh (Koriya). *Elsewhere*: Singapore, Sumatra, Vietnam, Borneo, Cambodia, Java, Thailand.

Family HYMENOPTERIDAE Giglio-Tos, 1915

Subfamily ACROMANTINAE Brunner de Wattenwyl, 1893

Tribe ACROMANTINI Brunner de Wattenwyl, 1893

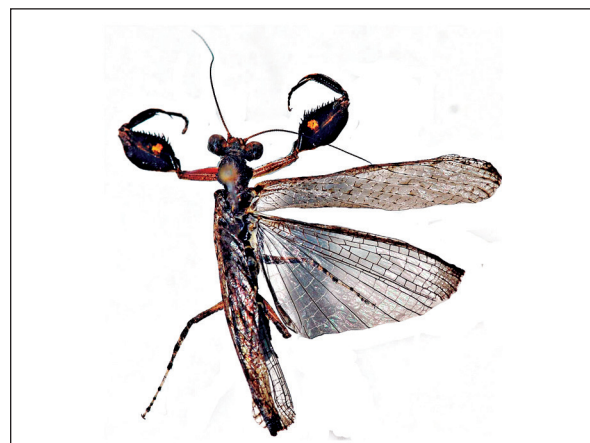
Genus *Ephestiasula* Giglio-Tos, 1915

3. #**Ephestiasula amoena* (Bolivar, 1897)

1897. *Pachymantis amoena* Bolivar, *Ann. Soc. Entomol. France*, **66** (2): 314-315. Holotype male, allotype female (MNMS). Type Locality: Kodaikanal, India. Syntype male and female (MSJC, probably lost, no trace).

1915. *Ephestiasula amoena*: Giglio-Tos, *Bull. Soc. Entomol. Ital.*, **46**: 101.

2014. *Ephestiasula amoena*: Mukherjee *et al.*, *Priamus*, **30**: 11.



Ephestiasula amoena (Bolivar, 1897)

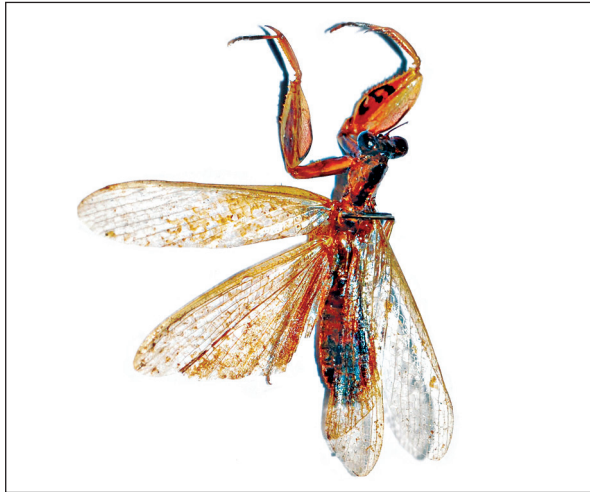
Material examined: Koriya: GGNP, Sonhat FRH, 6.iii.2013 (1♂) (Reg. no. 13614/H5), Coll. A. Parida and Party and Party; Jashpur: BadWLS, Kuhapani watch tower, 22.iii.2014 (6♂) (Reg. no.13615/H5, 13616/H5, 13617/H5, 13618/H5, 13619/H5, 13620/H5.), Coll. A. Raha and Party.

Diagnosis: Small bark inhabitant mantid with foliaceous fore femur. Frontal sclerite with deep groove in middle. Inside of fore femur with the upper edge with broad black patch.

Distribution: India: Chhattisgarh (Jashpur, Koriya), Kerala, Tamil Nadu, West Bengal.

4. #* *Ephestiasula intermedia* Werner, 1930

1930. *Ephestiasula intermedia* Werner, *Proc. Zool. Soc. London* : 689. Holotype male and paratype female (IFRI). Type Locality: Dehra Dun, India.
2014. *Ephestiasula intermedia*: Mukherjee *et al.*, *Priamus*, **30**: 11.



Ephestiasula intermedia Werner, 1930

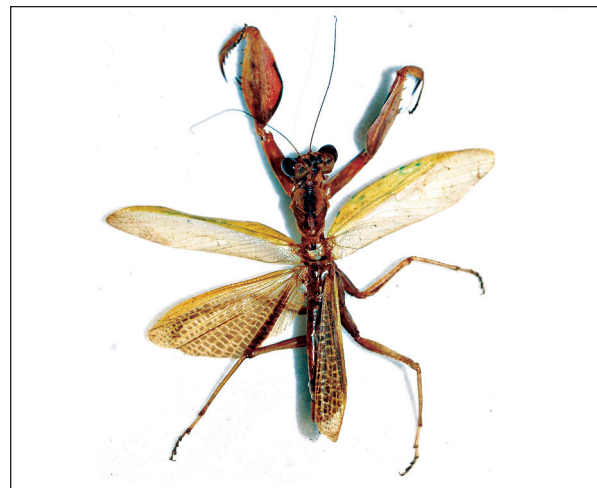
Material examined: Raipur: BarWLS, Barnawapara camp, 08.vii.2011 (1♂) (Reg. no.13398/H5), 26.vii.2011 (1♂) (Reg. no.13399/H5), 16.vii.2011 (1♂) (Reg. no.13400/H5), 09.ix.2011 (1♂) (Reg. no.13401/H5), 28.ix.2011 (1♂) (Reg. no.13402/H5), Akaltara village, 05.x.2011 (2♂) (Reg. no.13403/H5, 13404/H5), Hardi Pathar, 05.xi.2011 (1♂) (Reg. no.13405/H5), Barbandha Pond, 10.iv.2012 (1♂) (Reg. no.13406/H5); Kabirdham: BhWLS, Chilpi FRH, 27.viii.2011 (1♂) (Reg. no.13407/H5), 01.ix.2011 (1♂) (Reg. no.13408/H5), Jamunpani Forest, 22.xi.2011 (1♂) (Reg. no.13409/H5); Dhamtari: SWLS, Mandagiri Forest, 14.x.2011 (1♂) (Reg. no.13410/H5); Koriya, GGNP, Sonhat FRH, 13.v.2012 (2♂) (Reg. no.13411/H5, 13412/H5), 14.v.2012 (2♂) (Reg. no.13413/H5, 13414/H5), 15.v.2012 (1♂) (Reg. no.13415/H5), 20.v.2012 (1♂) (Reg. no.13416/H5), Coll. S. Gupta and Party; Bilaspur: AWLS, 11.06.2012 (4♂) (Reg. no.13417/H5, 13418/H5, 13419/H5, 13420/H5), Coll. A. Raha and Party.

Diagnosis: Male: Vertex between oval eyes a little concave; juxtacular lobes with a very small, but blunt tubercle. In forelegs, the internal face of superior lobe of fore femora with a thin black line at base half to 1/3rd the length; inferior lobe with 3 nearly transverse black patches which are supposed to enclose two paler spots. The transverse black patches may be reduced to even 2; sometimes the patches are connected along base of spines. However, none of the specimens have these patches connected dorsally.

Distribution: India: Andhra Pradesh, Chhattisgarh (Bilaspur, Kabirdham, Koriya, Raipur), Jammu and Kashmir, Karnataka, Madhya Pradesh, Orissa, Rajasthan, Uttar Pradesh.

5. # *Ephestiasula pictipes* (Wood-Mason, 1879)

1879. *Hestias pitipes* Wood-Mason, *Proc. Asiatic Soc. Bengal*: 258. Holotype male, allotype female (NZSI). Type Locality: Jabalpur- Marble Rocks, India.
1951. *Ephestiasula pictipes*: Roonwal & Bhasin, *Indian Forester*, **77**(5): 313-318.
2014. *Ephestiasula pictipes*: Mukherjee *et al.*, *Priamus*, **30**: 12.



Ephestiasula pictipes (Wood-Mason, 1879)

Material examined: Bastar: Jagdalpur, Samarpal Beat 1075, 17.x.2011 (1♀) (Reg. no.13421/H5), Coll. R. P. Gupta and Party; Bilaspur: AWLS, 11.vi.2012 (1♀) (Reg. no. 13422/H5), Coll. A. Raha and Party.

Diagnosis: Female: Vertex with minute tubercle with 3 longitudinal black stripes of which the median one continues of the pronotum. The

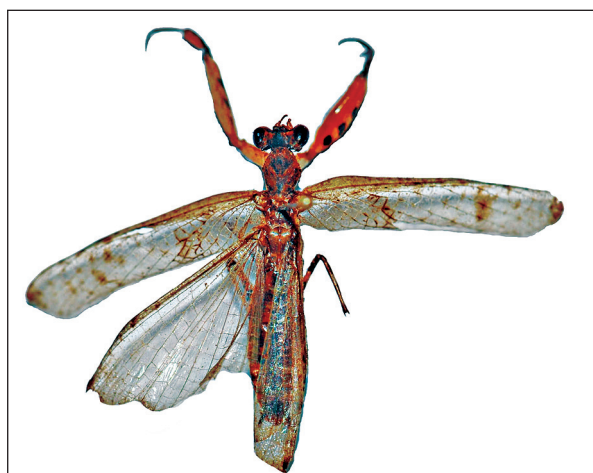
internal face of forefemur, the middle of upper and lower half, the edge along the spines and area from base to claw groove are jet black. The area above the spine and adjoining black patch is pale whitish which is divided into 3 or 2 transverse black patches.

Distribution: India: Chhattisgarh (Bastar, Bilaspur), Madhya Pradesh, Maharashtra, Orissa, Uttar Pradesh. *Elsewhere:* Nepal.

Genus *Hestiasula* Saussure, 1871

6. #*Hestiasula brunneriana* Saussure, 1871

1871. *Hestiasula brunneriana* Saussure, *Mem. Soc. Phys. Hist. Nat. Geneve*, **21**: 454-455. Holotype male (NHMW). Type Locality: Sylhet: Maikala-Berge, India.
2014. *Hestiasula brunneriana*: Mukherjee *et al.*, *Priamus*, **30**: 12.



Hestiasula brunneriana Saussure, 1871

Material examined: Kabirdham: BhWLS, Chilpi FRH, 01.ix.2011 (1♂) (Reg. no. 13423/H5), Coll. S. Gupta and Party, Sarodadadar, 1.iv.2014 (3♂) (Reg. no. 13424/H5, 13425/H5, 13426/H5), Chapri Watch Tower, 1.iv.2014 (1♂) (Reg. no. 13427/H5); Surguja: Mainpat FRH, 12.ix.2012 (1♀) (Reg. no. 13428/H5), Tara FRH, 16.ix.2012 (1♂) (Reg. no. 13429/H5); Jashpur: BadWLS, Kuhapani watch tower, 22.iii.2014 (4♂) (Reg. no. 13430/H5, 13431/H5, 13432/H5, 13433/H5), Coll. A. Raha and Party; Koriya: GGNP, Sonhat FRH, 13.v.2012 (1♂) (Reg. no. 13434/H5), 15.v.2012 (1♂) (Reg. no. 13435/H5), Coll. S. Gupta and Party, 6.iii.2013 (1♂) (Reg. no. 13436/

H5), Coll. A. Parida and Party; Durg: Baddhum FRH, 31.iii.2014 (3♂) (Reg. no. 13437/H5, 13438/H5, 13439/H5), 1.iv.2014 (1♀) (Reg. no. 13440/H5), Coll. S. Gupta and Party.

Diagnosis: Male & female: This small sized species has smooth transverse frontal sclerite. The pronotum short, the sides are elliptical. Forefemur foliaceous, oval with feebly serrated external border; internally with three black spots along superior edge and single black spot above the internal spines. Legs annulated by brown and without any lobes.

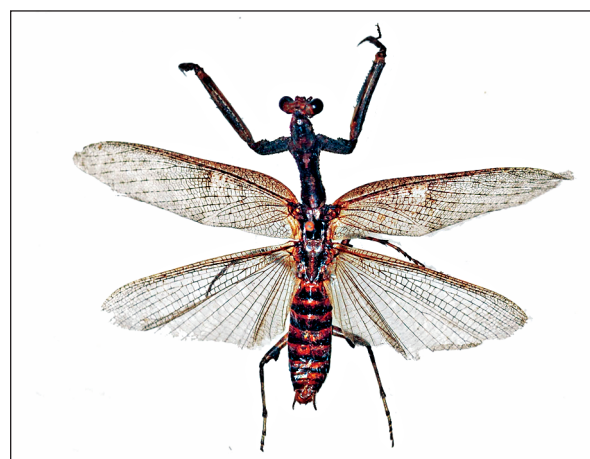
Distribution: India: Andhra Pradesh, Bihar, Chhattisgarh (Durg, Jashpur, Kabirdham, Koriya, Surguja), Maharashtra, Meghalaya, Orissa and West Bengal. *Elsewhere:* Bangladesh, Pakistan, Sri Lanka.

Tribe AMBIVINI Giglio-Tos, 1919

Genus *Ambivia* Stål, 1877

7. *Ambivia undata* (Fabricius, 1793)

1793. *Mantis undata* Fabricius, *Ent. Syst.* **2**: 88. Probable type, sex ? (NHRS). Type Locality: Kolkata, India.
2014. *Ambivia undata*: Mukherjee *et al.*, *Priamus*, **30**: 13.



Ambivia undata (Fabricius, 1793)

Material examined: Raipur: BarWLS, Hardi village, 14.iv.2012 (1♀) (Reg. no. 13569/H5); Koriya: GGNP, Sonhat FRH, 10.v.2012 (3♂) (Reg. no. 13570/H5, 13571/H5, 13572/H5), 12.v.2012 (2♂) (Reg. no. 13573/H5, 13574/H5), 13.v.2012, (1♂) (Reg. no. 13575/H5), 14.v.2012 (1♀, 1♂) (Reg. no. 13576/H5, 13577/H5), 16.v.2012 (Reg. no. 13578/H5), 17.v.2012

(1♂) (Reg. no. 13579/H5), 18.v.2012 (1♂) (Reg. no.13580/H5), 20.v.2012 (1♂) (Reg. no. 13581/H5), 21.v.2012 (2♂) (Reg. no. 13582/H5, 13583/H5), 07.vii.2012 (1♂) (Reg. no. 13584/H5), 23.vii.2012 (1♀) (Reg. no. 13585/H5), Devidham, 14.v.2012 (2♂) (Reg. no. 13586/H5, 13587/H5), Kailashpur, 15.v.2012 (1♂) (Reg. no. 13588/H5), Gehiapani Forest, 18.v.2012 (1♂) (Reg. no. 13589/H5), Coll. S. Gupta and Party, 06.vii.2012 (1♀) (Reg. no.13590/H5), 10.vii.2012 (1♂) (Reg. no. 13591/H5), 06.iii.2013 (2♀,1♂) (Reg. no. 13592/H5, 13593/H5, 13594/H5), 17.vii.2012 (1♂) (Reg. no. 13595/H5), Coll. A. Parida and Party; Kabirdham: Rengakhar, 06.vi.2012 (1♂) (Reg. no. 13596/H5), Coll. A. Raha and Party.

Diagnosis: Male & female: This medium sized species have dirty brown colour. Above ocelli is a sharp triangular horn. Eyes large, frontal sclerite narrow, superior edge middle with a minute sharp spine. Pronotum with distinct carina, strongly constricted behind coxal joint. In forelegs, upper edge of femora sinuate and with triangular lobes; middle and hind femora short and with pre apical lobes.

Distribution: India: Andhra Pradesh, Chhattisgarh (Bilaspur, Kabirdham, Koriya, Raipur) Kerala, Madhya Pradesh, Maharashtra, Sikkim, West Bengal. *Elsewhere:* Myanmar, Nepal, Sri Lanka, Sumatra, Thailand, Vietnam.

Subfamily HYMENOPODINAE Giglio-Tos, 1915

Tribe ANAXARCHINI Giglio-Tos, 1919

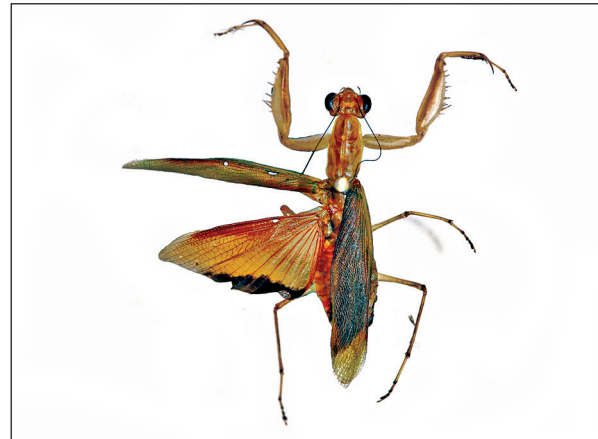
Genus *Euantissa* Giglio-Tos, 1927

8. #*Euantissa pulchra* (Fabricius, 1787)

1787. *Mantis pulchra* Fabricius *Mant. Ins.*,1: 229. Holotype male (?) (NHRS). Type Locality: Tranquebar, India.
1951. *Euantissa pulchra*: Roonwal & Bhasin, *Indian Forester*, 77(5): 313-318.
2014. *Euantissa pulchra*: Mukherjee *et al.*, *Priamus*, 30: 7.

Material examined: Bastar: Jagdalpur, Nandpura Beat, 20.x.2011 (1♀) (Reg. no. 13396/H5), Coll. R. P. Gupta and Party; Kabirdham: BhWLS, Chilpi FRH, 31.iii.2014 (1♀) (Reg. no.13397/H5), Coll. A. Raha and Party.

Diagnosis: Female: Small mantid. Metazona of pronotum almost parallel sided only a little narrowed behind. In forewing, the costal area is yellow with blackish line along sub-costa; discoidal area densely reticulated. Hind wing appears brownish, but the posterior area of discoidal and anal region with a broad deep reddish brown colour. Abdomen yellowish.



Euantissa pulchra (Fabricius, 1787)

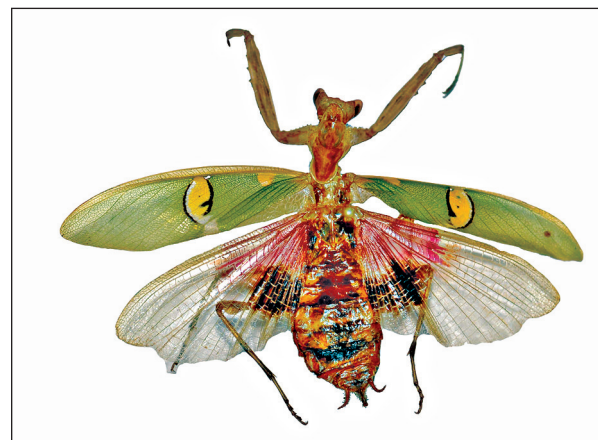
Distribution: India: Andhra Pradesh, Chhattisgarh (Bastar, Kabirdham), Tamil Nadu, Kerala, West Bengal. *Elsewhere:* China, Sri Lanka.

Tribe HYMENOPODINI Giglio-Tos, 1915

Genus *Creobroter* Audinet - Serville, 1839

9. *Creobroter apicalis* Saussure, 1869

1869. *Creobroter apicalis* Saussure, *Mitt. Schweiz. Entomol. Ges.*, 3: 73. Holotype female (MHNG). Type Locality: Assam, India.
2014. *Creobroter apicalis*: Mukherjee *et al.*, *Priamus*, 30: 9.



Creobroter apicalis Saussure, 1869

Material examined: Raipur: BarWLS, Barnawapara camp, 01.vii.2011 (2 ♀) (Reg. no. 13441/H5, 13442/H5), Coll. K. Chandra and Party, 15.viii.2011 (1 ♀) (Reg. no. 13443/H5), Hardi Village, 09.ix.2011 (1 ♀) (Reg. no. 13444/H5), 27.ix.2011 (1 ♀) (Reg. no. 13445/H5), Sainhabata, 03.x.2011 (1 ♀) (Reg. no. 13446/H5), Gabod Village, 04.x.2011 (1 ♀) (Reg. no. 13447/H5); Dhamtari: SWLS, Ghasiya village, 13.x.2011 (1 ♂) (Reg. no. 13448/H5), Sankra FRH, 21.x.2011 (1 ♂) (Reg. no.13449/H5), 22.x.2011 (1 ♂) (Reg. no. 13450/H5), Mandagiri Forest, 14.x.2011 (1 ♀) (Reg. no. 13451/H5); Kabirdham: BhWLS, Rajadhar Forest, 01.xi.2011 (1 ♂) (Reg. no. 13452/H5), Mahrajkundri, 27.xi.2011 (1 ♂) (Reg. no. 13453/H5), Coll. S. Gupta and Party, Rengakhar, 06.vi.2012 (1 ♀) (Reg. no. 13454/H5); Koriya: GGNP, Sonhat FRH, 21.v.2012 (1 ♂) (Reg. no.13455/H5), 22.v.2012 (1 ♂, ♀) (Reg. no. 13456/H5, 13457/H5), 21.vii.2012 (1 ♂) (Reg. no. 13458/H5), Dhawaipani forest, 18.v.2012, (1 ♂) (Reg. no. 13459/H5), Ghummamad, , 22.05.2012 (1 ♂) (Reg. no. 13460/H5); Bilaspur, AWLS, 11.vi.2012 (1 ♂) (Reg. no. 13461/H5), Coll. A. Raha and Party; Bastar: Jagdalpur, Makdi Range, 05.xi.2011 (1 ♀) (Reg. no. 13462/H5), Coll. R. P. Gupta and Party.

Diagnosis: Male & Female: This flower visiting small green species has conical eyes and tubercle above the ocelli. Frontal sclerite excavated and bicarinate. Pronotum with pronounced supra-coxal dilation. The external spines of foretibia numerous, close beset and bend at base. In forewing, the eyespot placed in the middle containing two black spots; near base is a small brown yellow spot; the anal membrane blackish.

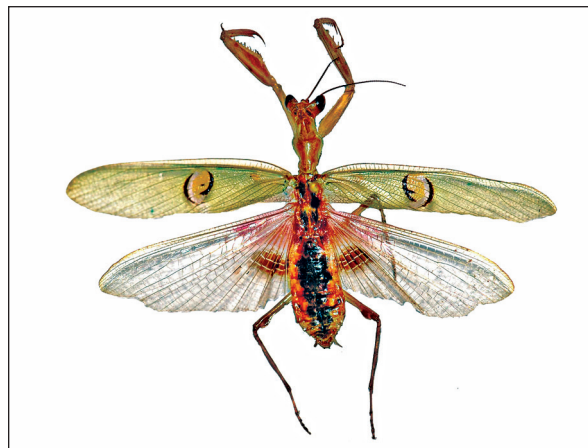
Distribution: India: Arunachal Pradesh, Assam, Chhattisgarh (Bastar, Bilaspur, Kabirdham, Koriya, Raipur), Karnataka, Kerala, Madhya Pradesh, Maharashtra, Manipur, Meghalaya, Orissa, Sikkim, West Bengal. *Elsewhere:* Bangladesh, China, Java, Nepal.

10. #*Creobroter laevicollis* (Saussure, 1870)

1870. *Creobotra laevicollis* Saussure, *Mitt. Schweiz. Entomol. Ges.*, 3: 242. Holotype female (MHNG), Type Locality: Java.

1985. *Creobroter laevicollis*: Mukherjee & Hazra, *Rec. zool. Surv. India*, 82(1): 38.

2014. *Creobroter laevicollis*: Mukherjee *et al.*, *Priamus*, 30: 9.



Creobroter laevicollis (Saussure, 1870)

Material examined: Raipur: BarWLS, Barnawapara Camp, 01.vii.2011 (2 ♂) (Reg. no. 13463/H5, 13464/H5), Coll. K. Chandra and Party, 25.vii.2011 (1 ♂) (Reg. no. 13465/H5), Gabod Village, 22.ix.2011 (1 ♂) (Reg. no. 13466/H5), 24.ix.2011 (1 ♂) (Reg. no. 13467/H5), 04.x.2011 (1 ♀) (Reg. no. 13468/H5), Aamagaon, 06.x.2011 (1 ♂) (Reg. no. 13469/H5); Dhamtari: SWLS, Sankra FRH, 14.x.2011 (3 ♂) (Reg. no. 13470/H5, 13471/H5, 13472/H5), 17.x.2011 (1 ♂) (Reg. no. 13473/H5), Jungad Forest, 17.x.2011 (2 ♂) (Reg. no. 13474/H5, 13475/H5), Coll. S. Gupta and Party; Jashpur: BadWLS, Narayanpur, 24.v.2012 (1 ♂) (Reg. no. 13476/H5), Coll. A. Raha and Party; Koriya: GGNP, Sonhat FRH, 01.viii.2011(1 ♂) (Reg. no. 13477/H5), 02.viii.2012 (1 ♂, 1 ♀) (Reg. no. 13478/H5, 13479/H5), 16.vii.2012 (1 ♂) (Reg. no. 13480/H5); Kabirdham, Lalpur, Sarodadam, 22.ix.2012 (2 ♂) (Reg. no. 13481/H5, 13482/H5). Coll. A. Parida and Party.

Diagnosis: Male: This species is similar to *C. apicalis*. In forewing, the eye spot is a little in front of middle and contains single black spot; anal membrane blackish. Hind wing pink at base and a less prominent smoky patch at the center.

Distribution: India: Andhra Pradesh, Assam, Bihar, Chhattisgarh (Dhamtari, Jashpur, Kabirdham, Koriya, Raipur) Jharkhand, Kerala,

Madhya Pradesh, Maharashtra, Meghalaya, Sikkim, West Bengal. *Elsewhere*: Java.

Family LITURGUSIDAE Giglio-Tos, 1915

Subfamily LITURGUSINAE Giglio-Tos, 1915

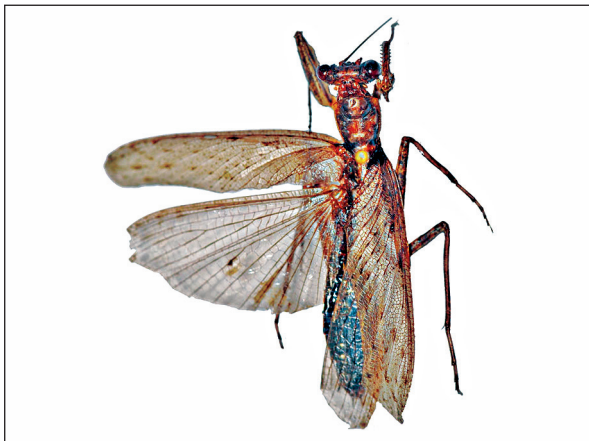
Tribe HUMBERTIELLINI Brunner De Wathhenwyl, 1893

Genus *Humbertiella* Saussure, 1869

11. #*Humbertiella ceylonica* Saussure, 1869

1869. *Humbertiella ceylonica* Saussure, *Mitt. Schweiz. Entomol. Ges.*, **3**: 62. Holotype male (MHNG). Type locality: Trincomalie, Sri Lanka.

2014. *Humbertiella ceylonica*: Mukherjee *et al.*, *Priamus*, **30**: 14.



Humbertiella ceylonica Saussure, 1869

Material examined: Surguja: GGNP, Baijanpath, 16.viii.2011 (1♂) (Reg. no. 13491/H5), Coll. A. Raha and Party; Kabirdham: BhWLS, Chilpi RH, 28.viii.2011 (1♂) (Reg. no. 13492/H5); Raipur: Bar WLS, Barnawapara Camp, 02.x.2011 (1♀) (Reg. no. 13493/H5); Dhamtari: SWLS, Lelanz Village, 22.x.2011 (1♀) (Reg. no. 13494/H5); Koriya: GGNP, Sonhat FRH, 14.v.2012 (1♀, 1♂) (Reg. no. 13495/H5, 13496/H5), 17.v.2012 (1♂) (Reg. no. 13497/H5), Coll. S. Gupta and Party.

Diagnosis: Male: this bark dwelling species is darker than *H. similis*. Frontal sclerite blackish. Procelous of pronotum well developed. The internal spines of forefemur totally black. Both wings longer than body.

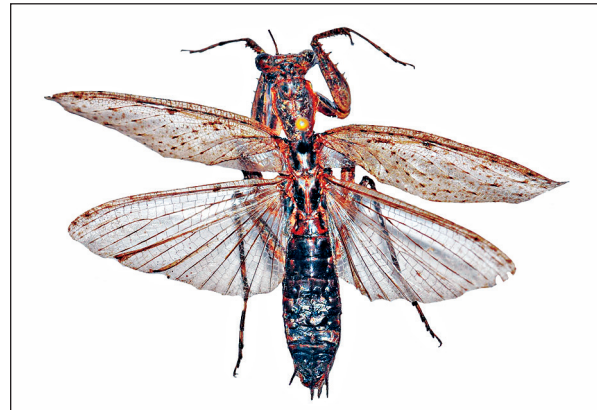
Distribution: India: Andhra Pradesh, Assam, Bihar, Chhattisgarh (Dhamtari, Kabirdham,

Koriya, Raipur, Surguja), Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Tamil Nadu, Uttar Pradesh, West Bengal. *Elsewhere*: Myanmar, Nepal, Sri Lanka.

12. *Humbertiella similis* Giglio-Tos, 1917

1917. *Humbertiella similis* Giglio-Tos, *Ann. Soc. Entomol. France*, **48**: 83-84. Holotype male, allotype female (ZMB), Type Locality: Nepal. Paratype female (ZMB), Type Locality: Sri Lanka.

2014. *Humbertiella similis*: Mukherjee *et al.*, *Priamus*, **30**: 15.



Humbertiella similis Giglio-Tos, 1917

Material examined: Raipur, BarWLS, Barnawapara Camp, 01.vii.2011 (1♂) (Reg. no. 13483/H5), Coll. K. Chandra and Party, 26.vii.2011 (1♂) (Reg. no. 13484/H5), 07.ix.2011 (1♂) (Reg. no. 13485/H5), 09.ix.2011 (1♂) (Reg. no. 13486/H5), 24.ix.2011 (1♂) (Reg. no. 13487/H5), Barbandha Pond, 10.iv.2012 (1♂) (Reg. no. 13488/H5), Coll. S. Gupta and Party; Koriya, GGNP, Sonhat FRH, 31.vii.2011 (1♂) (Reg. no. 13489/H5); Kabirdham: BhWLS, Chapri Watch Tower, 30.iii.2014, (1♂) (Reg. no. 13490/H5), Coll. A. Raha and Party.

Diagnosis: Male: Small bark dwelling species of blackish colour. Frontal sclerite brown and its superior edge nearly straight in the middle. Disc of pronotum with less prominent bosselles. In the forecoxa, internally there is a small black line distally and a black longitudinal patch on the external surface. In forefemur, the longer internal spines black at tips only. In forewing, the costal area with irregular veinlets; both wings longer than abdomen and smoky.

Distribution: India: Chhattisgarh (Kabirdham, Koriya, Raipur), Himachal Pradesh, Jammu, Kerala, Madhya Pradesh, Orissa, Uttar Pradesh.
Elsewhere: Nepal, Sri Lanka.

Family TARACHODIDAE Handlirsch, 1930

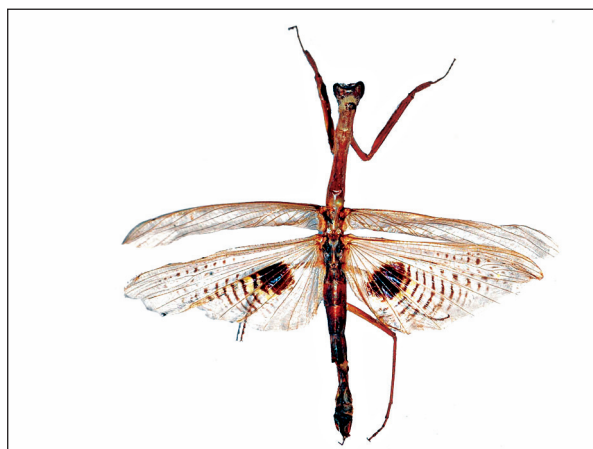
Subfamily IRIDINAE Westwood, 1889

Genus *Dysaules* Stål, 1877

13. #*Dysaules himalayanus* Wood-Mason, 1889

1889. *Dysaules himalayanus* Wood-Mason, *A Catalogue of the Mantodea...in the Collection of the Indian Museum*, 1: 1-48. Holotype male, allotype female (NZSI). Type Locality: Kulu Valley, Kangra, Mundi, India.

2014. *Dysaules himalayanus*: Mukherjee *et al.*, *Priamus*, 30: 17.



Dysaules himalayanus Wood-Mason, 1889

Material examined: Koriya: GGNP, Sonhat FRH, 19.vii.2012, (1♂) (Reg. no. 13498/H5), 20.vii.2012, (1♂) (Reg. no.13499/H5), 9.viii.2012 (1♂) (Reg. no. 13500/H5), 22.iii.2013, (2♂) (Reg. no. 13501/H5, 13502), Coll. A. Parida and Party. Raipur: BarWLS, Barnawapara camp, 1.vii.2011, (1♂) (Reg. no. 13503/H5), Bhimbhori, 26.vii.2011(2♂) (Reg. no. 13504/H5, 13505/H5). Coll. S. Gupta and Party

Diagnosis: Male: Medium sized insect. Vertex concave in between the oblong eyes. Frontal sclerite high, bicarinate. Longer internal spines black. Base of first internal spine with a black spot. In one male, there are two more black spots on the inner surface of the forefemur; one near extreme base of femur and the other on the

proximal bank of claw groove. In hind wing, the discoidal area with few brownish spots, otherwise, the area colourless; anal area with a rounded blackish brown spot and 7-9 concentric rings of some colour gradually fading distally.

Distribution: India: Chhattisgarh (Koriya, Raipur) Himachal Pradesh, Madhya Pradesh, Maharashtra. *Elsewhere:* Nepal.

Subfamily SCHIZOCEPHALINAE Saussure, 1869

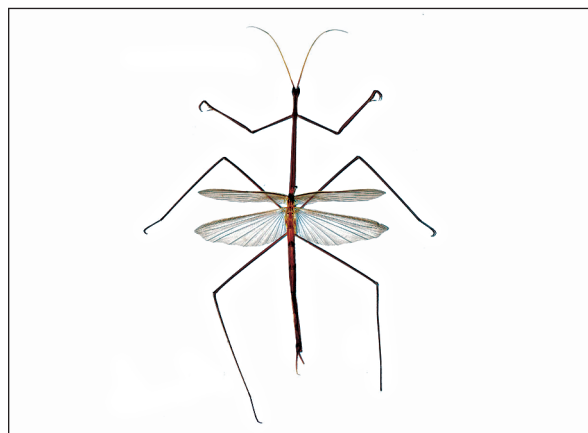
Genus *Schizocephala* Audinet-Serville, 1831

14. *Schizocephala bicornis* (Linnaeus, 1758)

1758. *Gryllus (Mantis) bicornis* Linnaeus, *Syst. Nat.* 10(1): 426.

1956. *Schizocephala bicornis*: Beier, *Berh. Naturf. Ges. Basel*, 67(1): 36.

2014. *Schizocephala bicornis*: Mukherjee *et al.*, *Priamus*, 30: 16.



Schizocephala bicornis (Linnaeus, 1758)

Material examined: Raipur: BarWLS, Barnawapara camp, 08.vii.2011 (1♂) (Reg. no. 13523/H5), 24.vii.2011 (Nymph) (Reg. no. 13524/H5); Coll. S. Gupta and Party; Koriya: GGNP, Sonhat FRH, 01.viii.2011 (1♂) (Reg. no. 13525/H5); Korba: Kudmura Nursery, 31.v.2012 (1♂) (Reg. no. 13526/H5), Bijakhara nala, 1.vi.2012 (1♂) (Reg. no. 13527/H5), Coll. A. Raha and Party.

Diagnosis: Male: Prosternum with two ridges on either sides of median ventral groove, the ridges are marked by black lines; mesosternum with black spots, some major and some minor, along entire length. Forecoxa externally with multiple round

bands; internally black near basal half; all spines black at tips. In forewing, anterior half of costal area, opaque, light green; the posterior half along length black up to half of the length. Hind wing transparent colourless, long veins dark.

Distribution: India: Andhra Pradesh, Bihar, Chhattisgarh (Bilaspur Korba, Raipur, Koriya), Kerala, Madhya Pradesh, Maharashtra, Orissa, Tamil Nadu, Uttar Pradesh and West Bengal. *Elsewhere:* Africa, Nepal, Thailand, Sri Lanka, Sunda Island.

Family IRIDOPTERYGIDAE Giglio-Tos, 1915
Subfamily TROPIDOMANTINAE Giglio-Tos, 1915

Genus *Eomantis* Giglio-Tos, 1915

15. #*Eomantis guttatipennis* (Stål, 1877)

1877. *Tropidomantis guttatipennis* Stål, *Vih. K. Svenska VetenskAkad Handl.*, 4(10): 51. Holotype male (NHRS). Type Locality: Nepal. Allotype female (NHMW).
1915. *Eomantis guttatipennis*: Giglio-Tos, *Bull. Soc. Entomol. Ital.*, 46: 47.
2014. *Eomantis guttatipennis*: Mukherjee *et al.* *Priamus*, 30: 21.



Eomantis guttatipennis (Stål, 1877)

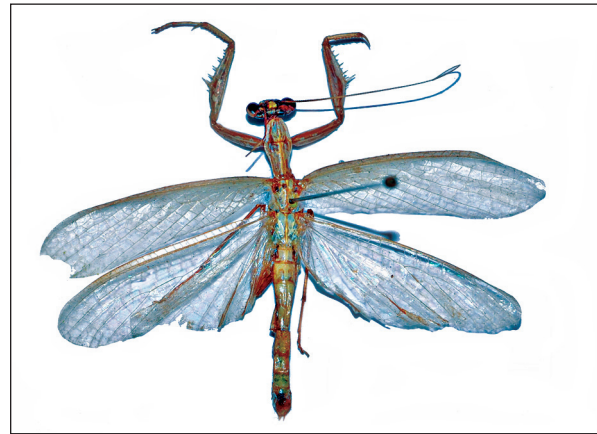
Material examined: Raipur: BarWLS, Barnawapara camp, 24.vii.2011 (1♂, 1♀) (Reg. no. 13512/H5, 13513H/5); Koriya: GGNP, Sonhat FRH, 14.v.2012 (1♂) (Reg. no. 13514/H5), 16.v.2012 (1♂) (Reg. no. 13515/H5), 20.v.2012 (1♂) (Reg. no. 13516/H5), Coll. S. Gupta and Party; Kabirdham: BhWLS, Chilpi FRH, 09.vi.2012 (1♂) (Reg. no. 13517/H5), Coll. A. Raha and Party.

Diagnosis: Male & female: Small species with slender body. Upper margin of the vertex a little above the eyes. Frontal sclerite narrow, upper margin arched in middle and sinuate laterally. Pronotum flattened, carina distinct. Wings longer than abdomen. In forewing, costal area with polygonal cells. In forelegs, discoidal spines 3, external spines 4 in number; tibia with 9-10 external spines.

Distribution: India: Assam, Bihar, Chhattisgarh (Kabirdham, Koriya, Raipur) Jharkhand, Gujarat, Karnataka, Madhya Pradesh, Maharashtra, Tamil Nadu, West Bengal. *Elsewhere:* Myanmar, Nepal, Tibet, Vietnam.

16. #*Eomantis iridipennis* (Westwood, 1889)

1889. *Miopteryx iridipennis* Westwood, *Revisio. Mantidarum.*: 38. Holotype female (OUMNH). Type Locality: India. Syntype 2 female (BMNH). Type Locality: South India.
1927. *Eomantis iridipennis*: Giglio-Tos, *Das Tierreich*, 50: 141.
2014. *Eomantis iridipennis*: Mukherjee *et al.*, *Priamus*, 30: 21.



Eomantis iridipennis (Westwood, 1889)

Material examined: Koriya: GGNP, Sonhat FRH, 10.V.2012 (1♂) (Reg. no.13511/H5), Coll. S. Gupta and Party.

Diagnosis: Male: Small delicate whitish mantis. Pronotum a little flattened with distinct carina. Wings longer than abdomen. Costal area of forewing with polygonal cells. In fore femur, claw groove basally situated, with 3 discoidal and 4 external spines; foretibia with 8 external spines of which 6th from apex longer than tip.

Distribution: India: Kerala, Chhattisgarh (Koriya) *Elsewhere:* Java, Sri Lanka.

Genus *Leptomantella* Uvarov, 1940

17. #* *Leptomantella parva* (Werner, 1933)

1933. *Leptomantis parva* Werner, *Proc. Zool. Soc. London*: 899. Syntype male and female (IFRI). Type Locality: Dehra Dun, 11 ix 1930, India.

2014. *Leptomantella parva*: Mukherjee *et al. Priamus*, **30**: 22.

Material examined: Dhamtari: SWLS, Sankra FRH, 21.x.2011 (1♂) (Reg. no. 13506/H5); Koriya: GGNP, Sonhat FRH, 10.v.2012 (1♂) (Reg. no. 13507/H5), 15.v.2012, (2♂) (Reg. no. 13508/H5, 13509/H5), 20.v.2012 (1♂) (Reg. no. 13510/H5), Coll. S. Gupta and Party.

Diagnosis: Male: Pronotum and trochanter without black lateral lines or spots. Costal area of forewing transparent and with parallel veinlets. All spines of femur black at tips. Foretibia with 7 external spines.

Distribution: India: Chhattisgarh (Dhamtari, Koriya), Kerala, Tamil Nadu, Uttar Pradesh.

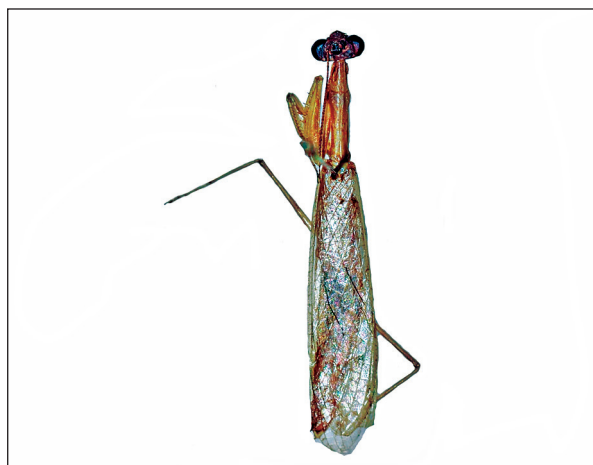
Subfamily NANOMANTINAE Brunner de Wattenwyl, 1893

Genus *Parananomantis* Mukherjee, 1995

18. #* *Parananomantis brevis* Mukherjee, 1995

1995. *Parananomantis brevis* Mukherjee, *Oriental Insect*, **29**: 260, fig. 69-71. Holotype male and paratype male (NZSI). Type Locality: Midnapore, West Bengal, India.

2014. *Parananomantis brevis*: Mukherjee *et al., Priamus*, **30**: 21.



Parananomantis brevis Mukherjee, 1995

Material examined: Surguja: Ambikapur, 14.ix.2012 (2♂) (Reg. no. 13597/H5, 13598/H5), Tara, Abhaya Nala, 17.ix.2012 (1♂) (Reg. no. 13599/H5); Bilaspur: Karidongri FRH, 19.ix.2012 (2♂, 1♀) (Reg. no. 13600/H5, 13601/H5, 13602/H5), Coll. A. Raha and Party.

Diagnosis: Male & female: Small very delicate body with transverse frontal sclerite and rounded eyes. Metazona of pronotum with fine carina and this as long as forecoxa. In forelegs, the claw furrow situated proximally, with 3 discoidal and 4 external spines; the external edge of the spines serrated; few external spines are longer.

Distribution: India: Assam, Chhattisgarh (Surguja, Bilaspur), Himachal Pradesh, Jammu, Karnataka, Manipur, Jharkhand, West Bengal.

Family THESPIDAE Saussure, 1869

SubFamily PARATHESPINAE Giglio-Tos, 1916

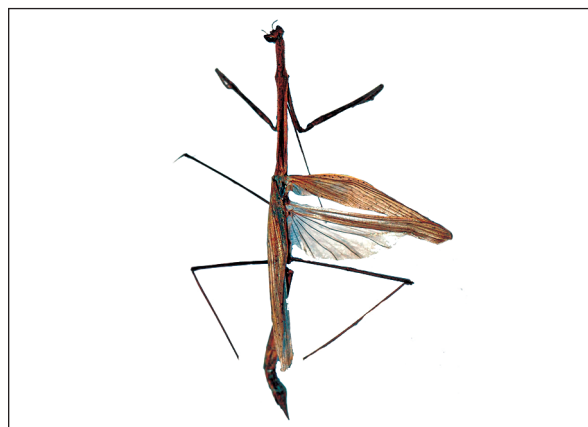
Genus *Parathespis* Saussure, 1869

19. # *Parathespis humberiana* Saussure, 1869

1869. *Parathespis humberiana* Saussure, *Mitt. Schweiz. Entomol. Ges.*, **3**(2): 71. Syntype 2 male (MHNG). Type Locality: Sri Lanka.

1889. *Thespis dissimilis* Westwood, **27**(5): 30-31. (nov. syn. Ehrmann and Mukherjee).

2014. *Parathespis humberiana*: Mukherjee *et al., Priamus*, **30**: 19.



Parathespis humberiana Saussure, 1869

Material examined: Bastar: Jagdalpur, Railway station to Adawal, 21.ix.2011 (1♂) (Reg. no. 13621/H5, 13622/H5), Bhanpuri Sonarpal Beat, 17.x.2011 (1♂) (Reg. no. 13623/H5), Baniyagaon

Beat, 19.x.11 (1♂) (Reg. no. 13624/H5), Nandpura beat, 20.x.2011 (1♀) (Reg. no. 13625/H5), Coll. R. P. Gupta and party.

Diagnosis: Male & Female: Delicate blackish brown and slender insect. Eyes laterally conical, frontal sclerite very narrow. In fore legs, femur with 4 discoidal and 4 external spines; the third discoidal spine very long; claw furrow of forefemur distally placed; all spines black at tips. Mid and hind legs simple and slender. Wings shorter than body. Supraanal plate long, triangularly elongated, carinated.

Distribution: India: Chhattisgarh (Bastar), Barkuda Island, Andhra Pradesh, Madhya Pradesh, Tamil Nadu. *Elsewhere:* Sri Lanka.

Family **MANTIDAE** Latreille, 1802

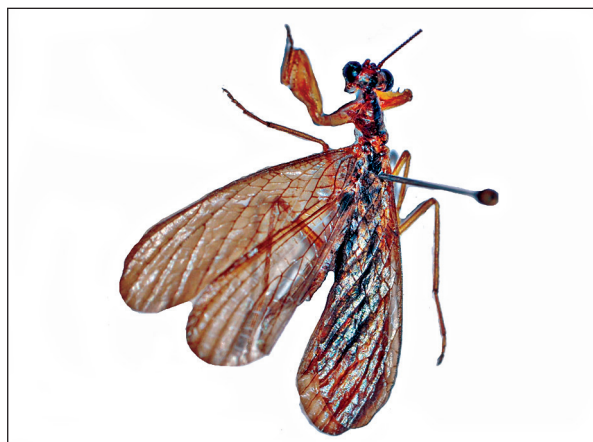
SubFamily **AMELINAE** Westwood, 1889

Genus: **AMANTIS** Giglio-Tos, 1915

20. #**Amantis indica* Giglio-Tos, 1915

1915. *Amantis indica* Giglio-Tos, *Bull. Soc. Entomol. Ital.*, **46**: 152. Holotype male (NZSI; not found, Mukherjee *et al.*, 2005). Type Locality: Sikkim, India. Type male (?) (MRSN).

2014. *Amantis indica*: Mukherjee *et al. Priamus*, **30**: 24.



Amantis indica Giglio-Tos, 1915

Material examined: Kabirdham: BhWLS, Chilpi FRH, 28.viii.2011 (2♂) (Reg. no. 13518/H5, 13519/H5), 29.viii.2011 (1♂) (Reg. no. 13520/H5), 01.ix.2011 (1♂) (Reg. no. 13521/H5), Coll. S. Gupta and Party.

Diagnosis: Male: Small blackish bark dwelling insect. Frontal sclerite higher than width and

feebly bicarinate. Pronotum with prominent supracoxal dilation. In forelegs, first and second external spines closer; 2nd segment of fore tarsus brown. Hind metatarsus longer than rest segment taken together.

Distribution: India: Kerala, Chhattisgarh (Kabirdham), Sikkim.

21. #**Amantis saussurei* (Bolivar, 1897)

1897. *Iridopteryx saussurei* Bolivar, *Anal. Soc. Entomol. France*, **66**: 305-307. Holotype male (MSJC Tiruchirapalli, not traced, probably lost). Type Locality: Kodaikanal, Madurai, India. Allotype female (MNMS).

1927. *Amantis saussurei*: Giglio-Tos, *Das Tierreich*, **50**: 171.

2014. *Amantis saussurei*: Mukherjee *et al. Priamus*, **30**: 25.

Material examined: Koriya: GGNP, Sonhat FRH, 06.iii.2013, (1♂) (Reg. no. 13522/H5), Coll. A. Parida and Party.

Diagnosis: Small bark coloured mantis with scattered black spots on vertex, frontal sclerite with 2 black spots; pronotum with black line. First tarsal segment brown. Stigma with black spot at either ends.

Distribution: India: Andhra Pradesh, Chhattisgarh (Koriya), Maharashtra, Karnataka, Kerala, Tamil Nadu.

Genus *Gonypetyllis* Wood-Mason, 1891

22. #*Gonypetyllis semuncialis* Wood-Mason, 1891

1891. *Gonypetyllis semuncialis* Wood-Mason, *A Catalogue of the Mantodea...*, **1**: 67, pl. 2. fig. 5, 5a, 5b. Holotype male (NZSI?). Type Locality: India.

2014. *Gonypetyllis semuncialis*: Mukherjee *et al. Priamus*, **30**: 26.

Material examined: Koriya: GGNP, Sonhat FRH, 13.v.2012, (1♂) (Reg. no. 13627/H5), Coll. A. Parida and Party.

Diagnosis: This is probably the smallest mantid and is known from India and Java only. This is bark coloured. The pronotum nearly smooth and rectangular and flat. Eyes round, longitudinal faint blackish lines on vertex. Ventrally the thoracic segments black. In fore femur, proximal two external spines close beset. Wings transparent, colourless.

Distribution: India: Chhattisgarh (Koriya), Gujarat, Maharashtra, Uttar Pradesh, West Bengal; Java. *Elsewhere:* Nepal.

Genus *Elmantis* Giglio-Tos, 1915

23. #*Elmantis trincomaliae* (Saussure, 1869)

1869. *Gonypeta trincomaliae* Saussure, *Mitt. Schweiz. Entomol. Ges.*, **3**: 63-64. Holotype male (MHNG). Type Locality: Trincomaliae, Sri Lanka.
1915. *Elmantis trincomaliae*: Giglio-Tos, *Bull. Soc. Entomol. Ital.*, **46**: 161.
2014. *Elmantis trincomaliae*: Mukherjee *et al. Priamus*, **30**: 25.



Elmantis trincomaliae (Saussure, 1869)

Material examined: Bastar: Jagdalpur, Makdi FRH, 04.xi.2012, (1 ♂) (Reg. no. 13528/H5), Coll. R. P. Gupta and Party.

Diagnosis: Male: Small brownish insect. In foreleg, proximal two external spines close beset; foretibia with 10 external spines. Hind metatarsus longer than rest segments together.

Distribution: India: Andhra Pradesh, Chhattisgarh (Bastar), Karnataka, Kerala, Maharashtra, Tamil Nadu. *Elsewhere:* Sri Lanka.

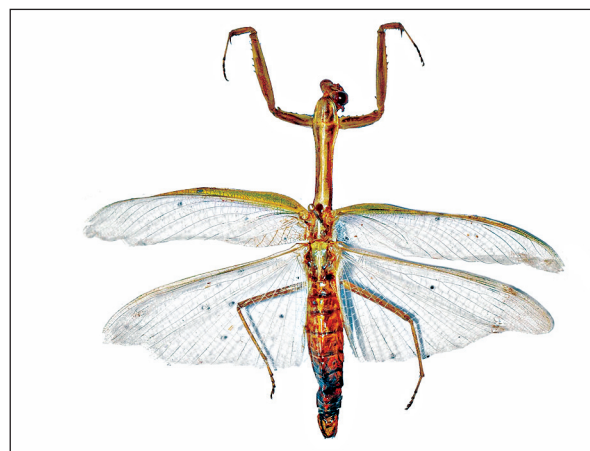
Subfamily HIERODULINAE Brunner de Wattenwyl, 1893

Genus *Hierodula* Burmeister, 1838

24. #**Hierodula doveri* Chopard, 1924

1924. *Hierodula (Hierodula) doveri* Chopard, *Rec. Indian Mus.*, **26**: 175. Holotype female (NZSI). Type Locality: Barkuda Island, India. (MSF- Holotype female, BNHS. Type locality India: Bombay).
2014. *Hierodula doveri*: Mukherjee *et al. Priamus*, **30**: 31.

Material examined: Bastar: Jagdalpur, Dharpunji, 22.vii.2012, (1 ♂) (Reg. no. 13529/H5), Tirathgarh, 25.vii.2012, (2 ♂) (Reg. no. 13530/H5, 13531/H5), Coll. R. P. Gupta and Party; Jashpur, BadWLS, Kuhapani Watch Tower, 22.iii.2014, (1 ♂) (Reg. no. 13532/H5), Gullu Waterfall, 21.iii.2014, (1 ♂) (Reg. no. 13533/H5), Coll. A. Raha and Party; Durg: Badbhum FRH, 31.iii.2014, (3 ♂, 2 ♀) (Reg. no. 13534/H5, 13535/H5, 13536/H5, 13537/H5, 13538/H5), Coll. S. Gupta & Party.



Hierodula doveri Chopard, 1924

Diagnosis: Male: Disposition of coxal and femoral spines similar to *Hierodula patellifera*. Coxal spines are 5-6 in number. The pronotum is longer and narrower than *Hierodula patellifera*; posterior margin of metazona with lateral brownish patches; metazona of pronotum with 2 pairs of brownish round spots.

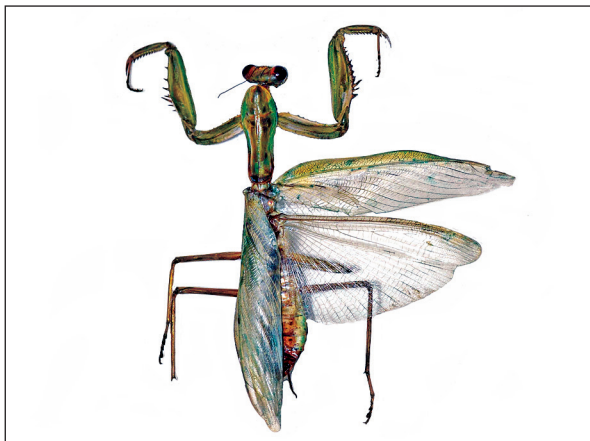
Distribution: India: Chhattisgarh (Bastar, Durg, Jashpur), Maharashtra, Karnataka, Kerala, Madhya Pradesh, Orissa, Tamil Nadu.

25. #*Hierodula patellifera* (Audinet-Serville, 1839)

1839. *Mantis patellifera* Audinet-Serville, *Hist. Nat. des Ins. Orthopteres* :185. Holotype male, allotype female (MNHN). Type Locality: Java.
1839. *Mantis bipapilla* Audinet-Serville, *Hist. Nat. des Ins. Orthopteres* : 188-189.
1995. *Hierodula (Hierodula) assamensis* Mukherjee, *Oriental Insect*, **29**: 290-291, Fig. 111-113. (nov. syn. Ehrmann and Mukherjee)
2014. *Hierodula patellifera*: Mukherjee *et al. Priamus*, **30**: 32.

Material examined: Raipur: BarWLS, Lalbandha Pond, 12.vii.2011, (1 ♂) (Reg. no.

13539/H5), Barnawapara Camp, 15.viii.2011 (1♂) (Reg. no. 13540/H5); Durg: Baddhum FRH, 01.iv.2014 (1♀) (Reg. no. 13541/H5), Coll. S. Gupta and Party; Bastar: Jagdalpur, Maleneta beat, 21.x.2011, (1♂) (Reg. no. 13542/H5), Coll. R. P. Gupta and Party; Jashpur, BadWLS, 27.v.2012 (1♂) (Reg. no. 13543/H5), Coll. A. Raha and Party; Koriya, GGNP, Sonhat FRH, 25.viii.2012, (1♂) (Reg. no. 13544/H5), 6.iii.2013, (1♂) (Reg. no.13545/H5), Coll. A. Parida and Party.



Hierodula patellifera (Audinet-Serville, 1839)

Diagnosis: Male: Body of medium construction. In foreleg, the coxal spines 4-5 in number, broad, triangular, pre-marginal, becoming smaller towards middle; the fourth one on left leg very minute, first 3 discoidal and longer internal spines blackish or black at tips. Interestingly, the coxa internally near distal end and the trochanter black. Prozona, anterior part of metazona and dorso-lateral margins of entire pronotum black. Costal area of forewing opaque, green with pale stigma. Hind wings colorless, membranous.

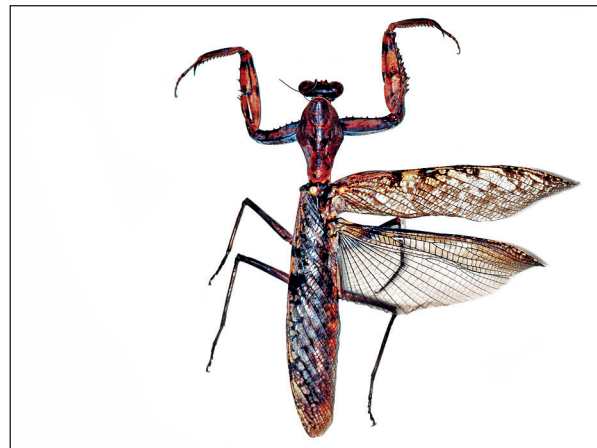
Distribution: India: Arunachal Pradesh, Bihar, Chhattisgarh (Bastar, Durg, Jashpur, Koriya, Raipur) Maharashtra, Madhya Pradesh, Himachal Pradesh, Kerala, Nagaland, Tamil Nadu, Uttar Pradesh, West Bengal. *Elsewhere:* China, Japan, Java, Korea, New Guinea, Philippines, Sumba, Taiwan, Vietnam.

Genus *Rhombodera* Burmeister, 1838

26. #*Rhombodera crassa* Giglio-Tos, 1912

1912. *Hierodula (Rhombodera) crassa* Giglio-Tos, *Bull. Soc. Entomol. Ital.*, **43**: 93-94. Holotype female (HNHM); Type male and female (MRSN). Type Locality: Sikkim, Darjeeling, NE India.

2014. *Rhombodera crassa*: Mukherjee *et al. Priamus*, **30**: 34.



Rhombodera crassa Giglio-Tos, 1912

Material examined: Koriya: GGNP, Sonhat RH, 17.v.2012 (1♂) (Reg. no. 13548/H5); Durg: Baddhum FRH, 31.iii.2014 (1♂) (Reg. no. 13549/H5), 1.iv.2014 (1♀) (Reg. no. 13550/H5), Coll. S. Gupta and Party; Kabirdham: BhWLS, Sarodadar, 01.iv.2014 (3♂, 1♀) (Reg. no. 13551/H5, 13552/H5, 13553/H5, 13554/H5), Coll. A. Raha and Party.

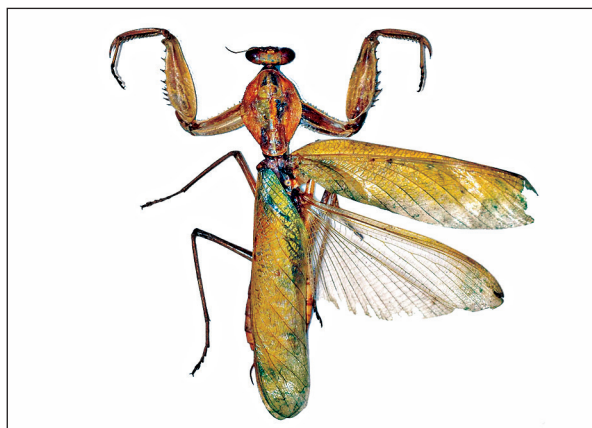
Diagnosis: Male: Body brown. Frontal sclerite at superior edge ends in blunt spiniform structure, with 2 small elongated carinae. Pronotum broadly blackish, dialation of pronotum less marked, maximum width in front of middle, margins less denticulated; prosternum without definite black dots. Mesosternum with transverse blackish patch. In foreleg, coxae with 6-7 with whitish small tubercular spines; coxae internally and externally whitish; femur with 3 indistinct brown patch, internally deep reddish band along lower margin, the longer internal spines completely black while the shorter spines distinctly white basal and black tips only, the basal 2 discoidal spines black, rest 2 partly black or black near their tips. In forewing, costal area densely reticulated, costal and part of discoidal area blackish brown, rest transparent but the veins blackish brown, stigma pale yellow bordered by blackish patches. In hind wing, the costal area blackish brown, discoidal and anal areas transparent.

Distribution: India: Chhattisgarh (Durg,

Kabirdham, Koriya, Bastar), Madhya Pradesh, Meghalaya and West Bengal. *Elsewhere*: Nagaland, Iran.

27. #*Rhombodera tectiformis* Saussure, 1870

1870. *Hierodula (Rhombodera) tectiformis* Saussure, *Mitt. Schweiz. Entomol. Ges.*, **3**(5): 232-233. Holotype female (MNHN). Type Locality: Bombay, India.
2014. *Rhombodera tectiformis*: Mukherjee *et al.* *Priamus*, **30**: 35.



Rhombodera tectiformis Saussure, 1870

Material examined: Koriya: GGNP, Sonhat FRH, 17.v.2012 (1♂) (Reg. no. 13546/H5); Durg: Badbhum FRH, 01.iv.2014 (1♂) (Reg. no. 13547/H5), Coll. S. Gupta and Party.

Diagnosis: Male: Frontal sclerite without spiniform tubercle at superior corner; the oval dialation of pronotum flat, maximum dilation just a little in front of middle, margins denticulate. In foreleg, coxae without bands, appears reddish on both side, with 9 whitish cylindrical major tubercular spines and 1 or 2 minor spines among them; femur internally with big reddish patch basally near claw groove and similar reddish separate small elongated patches at the base of longer internal spines which black at the tips only. Hind wings transparent, membranous; costal and discoidal areas green, former opaque.

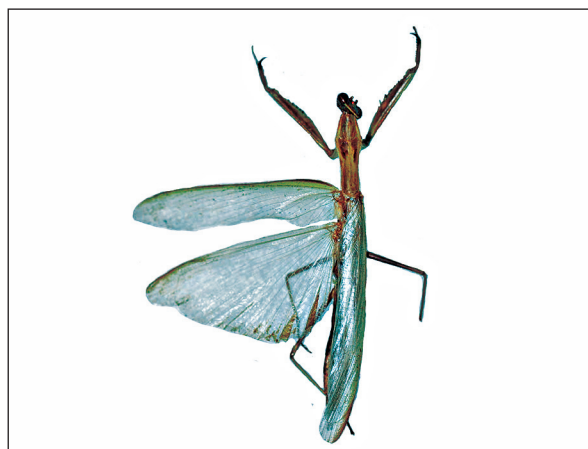
Distribution: India: Bihar, Chhattisgarh (Koriya), Karnataka, Sikkim, Tamil Nadu and West Bengal. *Elsewhere*: Myanmar, Nepal.

Subfamily MANTINAE Burmeister, 1838

Genus *Mantis* Linnaeus, 1758

28. #*Mantis religiosa religiosa* Linnaeus, 1758

1758. *Gryllus (Mantis) religiosa* Linnaeus, *Syst. Nat.*, **10** (1): 426. Holotype male, female (?) (UZI). Type Locality: Africa (?).
1979. *Mantis religiosa*: Kaltenbach, *Ann. Nat. Mus. Wien*, **82**: 530.
2014. *Mantis religiosa religiosa*: Mukherjee *et al.*, *Priamus*, **30**: 37.



Mantis religiosa religiosa Linnaeus, 1758

Material examined: Raipur: BarWLS, Barnawapara Camp, 01.vii.2011, (1♂) (Reg. no. 13555/H5), Coll. K. Chandra and Party, Furfundi Village, 21.ix.2011 (1♀) (Reg. no. 13556/H5); Koriya: GGNP, Ghummadad, 22.v.2012, (1♂) (Reg. no. 13557/H5), Coll. S. Gupta and Party; Kabirdham: BhWLS, Sarodadadar, 01.iv.2014, (1♂) (Reg. no. 13558/H5), Coll. A. Raha and Party.

Diagnosis: Male & female: In foreleg, claw groove in the middle of femur and very light yellow. Longer internal spines black; coxa with many minute spines and with scattered whitish minute rounded spots; internally near base with oval blackish or whitish patch. Wings light green transparent; costal area of forewing partly opaque.

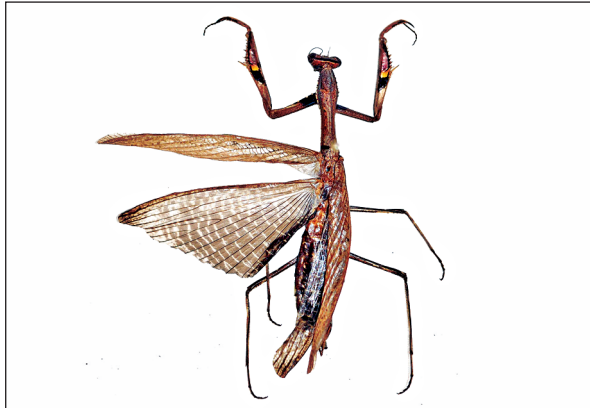
Distribution: India: Chhattisgarh (Kabirdham, Koriya, Raipur), Karnataka, Kerala, Madhya Pradesh, Maharashtra, Manipur, Orissa, Uttar Pradesh and West Bengal. *Elsewhere*: Asia, Africa, Europe, North America.

Genus *Statilia* Stål, 1877

29. #*Statilia maculata* (Thunberg, 1784)

1784. *Mantis maculata* Thunberg, *Nov. Ins. Spec.*, **3**: 61. Holotype male (UZI). Type Locality: Japan.

1985. *Statilia maculata*: Mukherjee & Hazra, *Rec. zool. Surv. India*, **82**(1-4): 34.
 2014. *Statilia maculata*: Mukherjee *et al.*, *Priamus*, **30**: 38.



Statilia maculata (Thunberg, 1784)

Material examined: Raipur: BarWLS, Barnawapara, 9.iv.2012 (1♂) (Reg. no. 13559/H5), Coll. S. Gupta and Party; Bilaspur: Khudia, Karidongri FRH, 19.ix.2012 (1♀) (Reg. no. 13560/H5), Coll. A. Raha and Party; Korba, Lemru, Deopahari, 25.iii.2014 (3♀, 1♂) (Reg. no. 13561/H5, 13562/H5, 13563/H5, 13564/H5), Coll. E. E. Jehamalar and Party; Durg, Badbhum FRH, 31.iii.2014, (1♂) (Reg. no. 13565/H5), Coll. S. Gupta and Party.

Diagnosis: Male: In foreleg, claw groove situated in front of the middle, shining pale yellow, a black patch adjacent to the claw groove. Internal spines with a black line along their bases; longer spines black at tips only. Mesosternum with a black patch proximal to coxal joints, anterior area deep smoky; discoidal area of forewing with brown patches on long veins; anal area transparent and colorless. Hind wing with scattered smoky patches in discoidal area, anal area entirely smoky with white transverse veins. Tip of hind wing with scattered black, smaller patches.

Distribution: India: Andaman Island, Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Chhattisgarh (Bilaspur, Durg, Korba, Raipur) Himachal Pradesh, Madhya Pradesh, Maharashtra, Meghalaya, Kerala, Orissa, Sikkim, Uttar Pradesh, West Bengal. *Elsewhere:* Annam, Borneo, China,

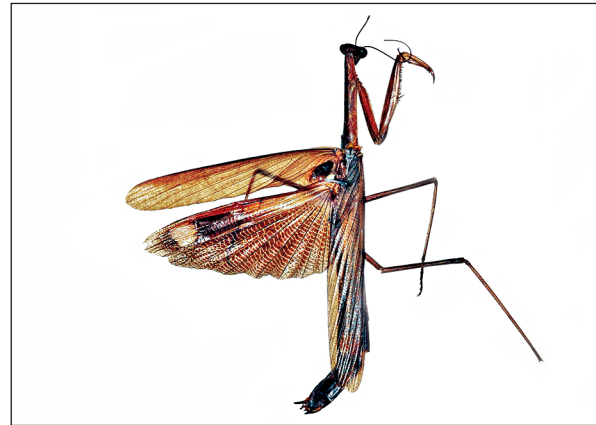
Japan, Java, Laos, Malayasia, Myanmar, Nepal, New Guinea, Pakistan, Palawan, Philippines, Sri Lanka, Sumatra, Thailand, Vietnam.

Subfamily MIOMANTINAE Westwood, 1889

Genus *Deiphobe* Stål, 1877

30. *Deiphobe infuscata* (Saussure, 1871)

1871. *Phasmomantis infuscata* Saussure, *Mem. Soc. Phy. Hist. Nat. Geneva*, **21**: 130.
 1951. *Deiphobe infuscata*: Roonwal & Bhasin, *Indian Forester*, **77**(5): 313-318.
 2014. *Deiphobe infuscata*: Mukherjee *et al.*, *Priamus*, **30**: 41.



Deiphobe infuscata (Saussure, 1871)

Material examined: Raipur: BarWLS, Hardi forest, 10.viii.2011 (1♂) (Reg. no. 13566/H5), Coll. A. Sarsavan and Party; Koriya: GGNP, Sonhat FRH, 09.vii.2012, (1♂) (Reg. no. 13567/H5), 22.iii.2013, (1♀) (Reg. no. 13568/H5), Coll. A. Parida and Party.

Diagnosis: Male: Metazona almost as long as forecoxa. Both wings just a little shorter than the body. In forewing, costal area opaque, anal area black. The hind wing smoky; with colorless cross veins; distal half of discoidal area more smoky, which is interrupted by a squarish colorless area. Supra-anal plate gradually narrowed behind, apex divided into broad rounded lobes.

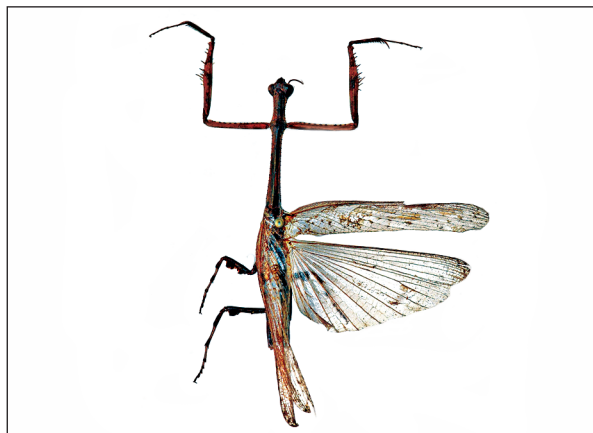
Distribution: India: Chhattisgarh (Bilaspur, Koriya, Raipur), Himachal Pradesh and Maharashtra. *Elsewhere:* Nepal.

Subfamily PHYLLOTHELINAE Brunner de
Wattenwyl, 1893

Genus *Phyllothelys* Wood-Mason, 1877

31. #*Phyllothelys decipiens* Giglio-Tos, 1915

1915. *Phyllothelys decipiens* Giglio-Tos, *Bull. Mus Torina*, **30**(702): 10. Holotype female (MZUF), Type Locality: Bombay, India. Paratype male (SMSM), Type Locality: Java, Buitenzorg, Indonesia. Paratype male (SMSM ?), Type Locality: Patu, Borneo.
2014. *Phyllothelys decipiens*: Mukherjee *et al.*, *Priamus*, **30**: 44.



Phyllothelys decipiens Giglio-Tos, 1915

Material examined: Raipur: BarWLS, Barnawapara camp, 01.vii.2011 (1♂) (Reg. no. 13603/H5), Coll. K. Chandra and Party; Koriya: GGNP, Sonhat FRH, 01.viii.2011 (1♂) (Reg. no. 13604/H5), Coll. A. Raha and Party.

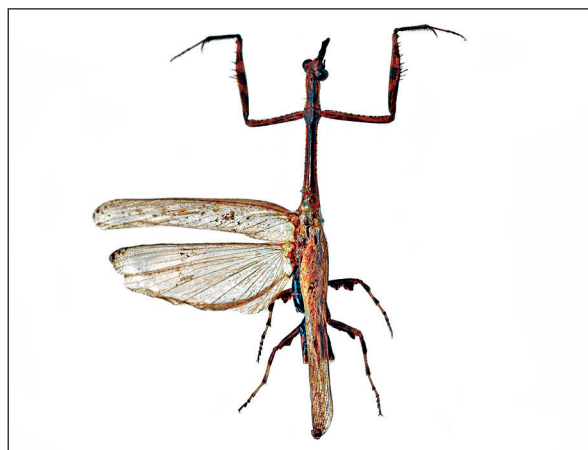
Diagnosis: Male: Protuberance of vertex big lobular blunt in front where it curves down overhanging the ocelli; the conical tip tricarinated. Pronotum minutely serrated along margins with 9-10 slightly bigger blackish tubercular spines. Metasoma feebly carinated. Fore wing a little shorter than hind wing, as long as abdomen. Both with transparent with scattered brown patches. Forecoxae with 8-9 minute black sharp spines; Femur externally with 3 brownish bands, internally with two major black bands; longer band extends from base to third longer internal spines excepting claw groove area and a small dorsal area in the middle of this band. Foretibia with 13-14 external spines. Claw grooved in the middle of femur, all spines black at tips, trochanter black

on inside. Mid femur ventrally with 2 lobes, basal one more triangular, distal one nearly squarish. The distal lobe on hind leg is similar but the proximal lobe is minute triangular. The hind tibiae swollen at base and at the apex, where they are marked by black.

Distribution: India: Chhattisgarh (Koriya, Raipur) Maharashtra, Tamil Nadu, West Bengal. *Elsewhere*: Borneo, Java.

32. #*Phyllothelys weneri* Karny, 1915

1915. *Phyllothelys weneri* Karny, *Suppl. Entomol.*, **4**: 106-107. Syntype male and female (SDEI). Type Locality: Banshoryo-Sokutsu, Taiwan.
2014. *Phyllothelys weneri*: Mukherjee *et al.*, *Priamus*, **30**: 44.



Phyllothelys weneri Karny, 1915

Material examined: Raipur: BarWLS, Barnawapara camp, 01.vii.2011 (1♂) (Reg. no. 13605/H5), Coll. K. Chandra and Party, 07.vii.2011 (2♂) (Reg. no. 13606/H5, 13607/H5), 11.vii.2011 (1♂) (Reg. no. 13608/H5), 16.viii.2011 (1♂) (Reg. no. 13609/H5), 25.vii.2011 (1♂) (Reg. no. 13610/H5), 26.vii.2011 (1♂) (Reg. no. 13611/H5), 08.ix.2011 (1♂) (Reg. no. 13612/H5), Coll. S. Gupta and Party; Koriya: GGNP, Sonhat FRH, 22. iii.2013 (1♂) (Reg. no. 13613/H5), Coll. A. Parida and Party.

Diagnosis: Bark coloured medium sized mantid. Vertex, in female, prolonged into a projection with its lateral edge divided into two lobules. Frontal sclerite pentagonal and bicarinated. Pronotum long and denticulated. The posterior femora with short lobes ventrally.

Distribution: India: Chhattisgarh (Koriya, Raipur), Madhya Pradesh, Uttar Pradesh. *Elsewhere:* China, Kuatun, Taiwan.

Family TOXODERIDAE Saussure, 1869

Subfamily TOXODERINAE Saussure, 1869

Genus *AETHALOCHROA* Wood-Mason, 1877

33. #*Aethalochroa ashmoliana* (Westwood, 1841)

1841. *Vates ashmolianus* Westwood, *Ann. Nat. Hist.* **8**(1): 272.

1951. *Aethalochroa ashmoliana*: Roonwal & Bhasin, *Indian Forester*, **77**(5): 313-318.

2014. *Aethalochroa ashmoliana*: Mukherjee *et al.*, *Priamus*, **30**: 47.



Aethalochroa ashmoliana (Westwood, 1841)

Material examined: Bastar: KVNP, Kotamsar Barrier, 15.iii. 2004 (1 ex.) (Reg. no. I6836), Coll. D.K. Harshey and Party.

Diagnosis: Long dark colored mantis with protruded eyes. Eyes with a very small dorsal tubercle. In middle and hind legs femora with triangular lobes – one dorso apical and two ventro apical; ventro basally the tibiae with a rounded lobe. Fore wing hyaline in male, sub opaque in female, costal area blackish near base with a large black band near base of discoidal area. The hind wing in male colorless but the anterior border blackish; in female sub opaque, the costal area and apex blackish, anal area with a large patch. Cerci flat, longer than wide and at apex rounded.

Distribution: India: Andhra Pradesh, Chhattisgarh (Bastar), Kerala, Maharashtra,

Orissa, West Bengal. *Elsewhere:* Iran, Malaysia, Sri Lanka.

Family EMPUSIDAE Burmeister, 1838

Subfamily EMPUSINAE Burmeister, 1838

Genus *Empusa* Illiger, 1798

34. *Empusa spinosa* Krauss 1902

1902. *Empusa spinosa* Krauss, *Anz. Ak. Wien.* **39**(7): 53-54. Holotype female (NMW). Type Locality: Ras Fartak, Saudi Arabia.

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



Empusa spinosa Krauss 1902

Material examined: Durg: Badbhum FRH, 30.iii.2014, (1 ♂) (Reg. no. 13626/H5), Coll. S. Gupta and Party.

Diagnosis: Slender long body with a conical protuberance on vertex. Antennae feathery. Pronotum long, slender distinctly spinous. Fore femur simple and upper edge straight.

Distribution: India: Chandigarh, Chhattisgarh (Durg) *Elsewhere:* Oman, Saudi Arabia, Yemen.

DISCUSSION

The present study is the first comprehensive account on the mantis of Chhattisgarh reporting 34 species under 24 genera of 9 families, the list includes 29 mantis species recorded for the first time from Chhattisgarh. Thus, the study contributed significantly to the knowledge on the entomo fauna of Central Indian landscape. Being situated at the central part of the country, the faunal characteristics

of Chhattisgarh are influenced by both northern and southern elements. As a consequence, endemic elements to Central India are rarely found. India being a mosaic of different habitats and climatic regions, the present exploration has delivered new distributional records in India. Moreover, the notable features of the specimens provided in the diagnosis will be helpful for future workers to identify the morphological variations in the species. More extensive as well as intensive surveys of ecologically important insect groups, like mantodea, are in immediate need before substantial portion of the fauna become extinct

from the area without being scientifically identified and documented.

ACKNOWLEDGEMENTS

Authors are grateful to the Director, Zoological Survey of India, for providing necessary facilities and encouragements. We are thankful to Chhattisgarh CAMPA (Compensatory Afforestation Fund Management and Planning Authority) for providing funds to carry out the work. Thanks are also due to Chhattisgarh Forest Department for providing necessary permissions and support to carry out the present work.

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