

# MANTID FAUNA OF CHANDOLI NATIONAL PARK, MAHARASHTRA, INDIA

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## ABSTRACT

A year-long survey was conducted to assess the mantid species assemblage in various natural and anthropogenic habitats of Chandoli National park. Total of 11 Mantid species belonging to 11 genera, 7 subfamilies and 3 families were recorded. The family Mantidae (7 species) was found to be dominant in the study region, followed by families Hymenopodidae and Empusidae (2 species each).

## INTRODUCTION

Mantids belonging to the top predators of the arthropoda community. They play valuable role in checking the number of some insects group and form an order of exclusively carnivorous insects, living solitarily in the vegetation or more rarely on the ground. They ambush insects, spider and occasionally even small vertebrates (Prete *et al.*, 1999).

There are approximately 2300 species known worldwide (Ehrmann, 2002), occurs in almost all tropical and semitropical habitats but rarer in colder climate regions. India has a moderately diverse fauna of mantids with 162 species under 68 genera and 6 families (Mukherjee *et al.*, 1995). Out of 162 species 52 species of mantids are known to occur in Maharashtra (Ghate and Ranade, 2002).

The abundance and variety of the mantid in Maharashtra always attracted the attention of entomologists. Several entomologists published important articles that described and identified many of the species of Maharashtra (Nadkerny, 1965, 1974; Mukherjee and Hazra 1983; Chaturvedi *et al.*, 2000; Ghate *et al.*, 2000, 2001; Ghate and Ranade, 2002; Sureshan *et al.*, 2004 and Jadhav *et al.*, 2006).

The study proved that the mantid fauna of Chandoli national park is very rich but not explored fully. Being an active predatory insect of fascinating group of animals. They play a vital role in the natural control of insects.

The objective of this study is to contribute to the knowledge of biodiversity of praying mantid in Chandoli national park.

## MATERIALS AND METHODS

Chandoli national park is one of the largest national park in India. The area of the Chandoli national park is 317.67 km<sup>2</sup> and lies between latitudes 73°40'E and 73°53' E and

17°53'N and 17°30'N. Total annual rainfall is recorded as 3,500 mm at the dam site and gradually increasing to 6,000 to 4,000 mm at the cret line.

The collection was made from 2008 to 2009 using insect net or were hand picked. Species preferring dens shrubby, bushes in plains and hills. They were collected during late evening and in the night. The collected specimens were preserved by dry/ wet preservation method. The specimen were measured in mm and identified according to Mukherjee *et al.*, (1995), Vyjayandi (2007). Some identification was confirmed by Dr H.V. Ghate.

## RESULTS AND DISCUSSION

During present study in Chandoli national park, the order Mantodea is represented by 11 species belonging to 11 genera 7 subfamilies and 3 families. Among these, family Mantidae is represented by 7 species (*Humbertiella ceylonica* Saussure, *Hierodula ventralis* Giglio-Tos, *Mantis religiosa inornata* Werner, *Tenodera aridifolia* Stoll, *Statilia maculata* Thunberg, *Schizocephalus bicornis* Linnaeus and *Toxoderopsis taurus* Wood-Mason) and formed to be dominant in the study region. The family Empusidae is represented by 2 species (*Gongylus gongyloides* Linnaeus and *Empusa guttula* Thunberg) and family Hymenopodidae is represented by 2 species (*Euantissa pulchra* Fabricius and *Creobroter apicalis* Saussure).

The existence of 11 species from Chandoli national park, it can be very safely said that the diversity of Mantid of this region is considerably rich. This is also evident from some earlier works carried out on the Mantid fauna of the region. Mukherjee *et al.*, (1995) who reported 14 genera and 17 species of Mantid from Maharashtra. There is also a list of 11 Mantid species from Sanjay Gandhi National Park, Mumbai (Chaturvedi *et al.*, 2000). Jadhav *et al.*, (2006) recorded 19

species from Pench National park, Maharashtra. Ghate and Ranade, (2002) reported 29 species of Mantid from Pune (Western Ghats) and other regions of Maharashtra. Sureshan et al., (2007) reported 33 species of Mantid with some new records from the Orissa. Vyjayandi (2007) studied on the mantid fauna of Kerala and reported 66 species.

### Family- Empusidae

#### Subfamily - Empusinae

##### 1) *Gongylus gongyloides* (Linnaeus): (Fig. 1)

1758. *Gryllus*(*Mantis*) *gongyloides* Linnaeus *Syst.Nat.* 10: 426  
1767. *Mantis gongyloides* Linnaeus *Syst.Nat.* 2(10): 610  
1793. *Mantis flabelicornis* Fabricius *Entomol.Syst.* 2:16  
1871. *Gongylus gonyloides* Saussure *Mem.Soc.Genere.*21: 185  
1927. *Gongylus gongyloides* Giglio-Tos *Tierreich.*50: 635  
Material examined: 1 male, 17xii.09, Ambaiwada (Lat-17.1168 and Lon-73.8524)  
CNP, Kolhapur District, Coll. Y.J. Koli  
Distribution: India- Andhra Pradesh, Kerala, Maharashtra, Tamil Nadu, Orissa, West Bengal, Indonesia and Sri Lanka  
Measurements: BL-78 mm, PL-42 mm, FC-22 mm and FF-15 mm  
Remarks: Earlier reported from Maharashtra from SGNP Mumbai collected by Chaturvedi et al., (2000)

##### 2) *Empusa guttula* (Thunberg): (Fig. 2)

1815. *Gongylus guttula* Thunberg. *Mem. Acad. Sci. St. Petersburg.*5:294.  
1927. *Empusa guttula* Giglio-Tos *Tierreich*, 50:636.  
Material examined: 1 female, 9.i.10, Ambaiwada (Lat-17.1168 and Lon-73.8524)  
CNP, Kolhapur District, Coll. Y.J. Koli  
Distribution: Maharashtra, Orissa.  
Measurements: BL-55 mm, PL-25 mm, FC-13 mm and FF-15 mm  
Remarks: Earlier reported from Maharashtra from Pune collected by Ghate and Ranade, 2002

### Family- Hymenopodidae

#### Subfamily- Acromaninae

##### 1) *Euantissa pulchra* (Fabricius) : (Fig. 3)

1787. *Mantis pulchra* Fabricius *Mant. Ins.*, 1 :299.Type Hab. Tranquebariae  
1927. *Euantissa pulchra* Gigilio-Tos *Tierreich* 50 :541.  
Material examined: 1 male, 1.iii.10, Niwale (Lat-17.1176 and Lon-73.8089) CNP,  
Kolhapur District, Coll. Y.J. Koli  
Distribution: India- Kerala Maharashtra, Eastern and North Eastern India and Sri Lanka.  
Measurement: BL-25mm, PL-11mm, FC-06mm and FF-07mm  
Remarks: A very common and widely distributed species.

#### Subfamily: Hymenopodinae

##### 2) *Creobroter apicalis* (Saussure): (Fig. 4)

1869. *Creobroter apicalis* Saussure *Mitt.Schweiz.Entomol.Ges.*, 3:73 Holotype India  
Material examined: 1 female, 25.vi.08, Khundlapur (Lat-

17.1749 and Lon-73.8776)  
CNP, Sangli District, Coll. Y.J. Koli.  
Distribution: India- Assam, Kerala, Karnataka, Maharashtra, Manipur, Meghalaya, Orissa, Sikkim and West Bengal.  
Measurement: BL-21mm, PL-07mm, FC-07mm and FF-09mm  
Remark: Yellow spot on fore wing.

### Family-Mantidae

#### Subfamily-Litrugusinae

##### 1) *Humbertiella ceylonica* (Saussure): (Fig. 5)

1869. *Humbertiella ceylonica* Saussure *Mitt.Schweiz.Entomol.Ges.*, 3:62 Holotype Sri Lanka  
1891. *Theopompa sepentrionum* Wood-Mason. *A catalogue of Mantodea* 2:61.  
Material examined: 2 female, 1male, 19.vii.08, 17.xii.09, 1.iii.10 Ambaiwada (Lat- 17.1168 and Lon-73.8524) CNP, Kolhapur District. Coll. Y. J. Koli  
Distribution: India- Assam, Bihar, Karnataka, Madhya Pradesh, Tamil Nadu, Uttar Pradesh, Kerala, West Bengal, Maharashtra, Myanmar and Sri Lanka.  
Measurement: BL-29 mm, PL-07 mm, FC-08 mm and FF-10 mm  
Remark: Very common Bark Mantid.

#### Subfamily-Mantinae

##### 2) *Hierodula ventralis* (Giglio-Tos) : (Fig. 6)

1912. *Hierodula (Hierodula) ventralis* Giglio-Tos. *Bull.Soc.Entomol.*,43:82.  
Material examined: 1female,02.vi.08, Zolambi (Lat-17.2032 and Lon 73.8326 )  
CNP, Satara District. Coll. Y. J. Koli.  
Distribution: India- Chandigarh, Kerala, Madhya Pradesh, Maharashtra and Orissa  
Measurement: BL-72 mm, PL-19 mm, FC-15 mm and FF-19 mm  
Remark: Very common seen among green vegetation.

##### 3) *Mantis religiosa inornata* (Werner): (Fig. 7)

1930. *Mantis inornata* Werner.*Proc.Zool.Soc.London*, 1930:689.  
2002. *Mantis religiosa inornata* Werner in. Ehrmann, *Mantoeda*, 216  
Material examined: 1 male, 22. v. 09, Ambaiwada (Lat-17.1168 and Lon- 73.8524)  
CNP, Kolhapur District. Coll. Y. J. Koli  
Distribution: India- Maharashtra, Orissa and Uttar Pradesh.  
Measurement: BL-60 mm, PL-11 mm, FC-12 mm and FF-15 mm  
Remark: Very common seen among Paddy field.

##### 4) *Tenodera aridifolia* (Stoll): (Fig. 8)

1813. *Tenodera aridifolia* Stoll  
1869. *Tenodera aridifolia angustipennis* Saussure  
1871. *Tenodera aridifolia siensis* Saussure  
1933. *Tenodera aridifolia brevicillis* Beier  
Material examined: 1 male, 14. v. 09, Ambaiwada (Lat-17.1168 and Lon-73.8524)  
CNP, Kolhapur District. Coll. Y. J. Koli  
Distribution: India-Andhra Pradesh, Arunachal Pradesh and Maharashtra.

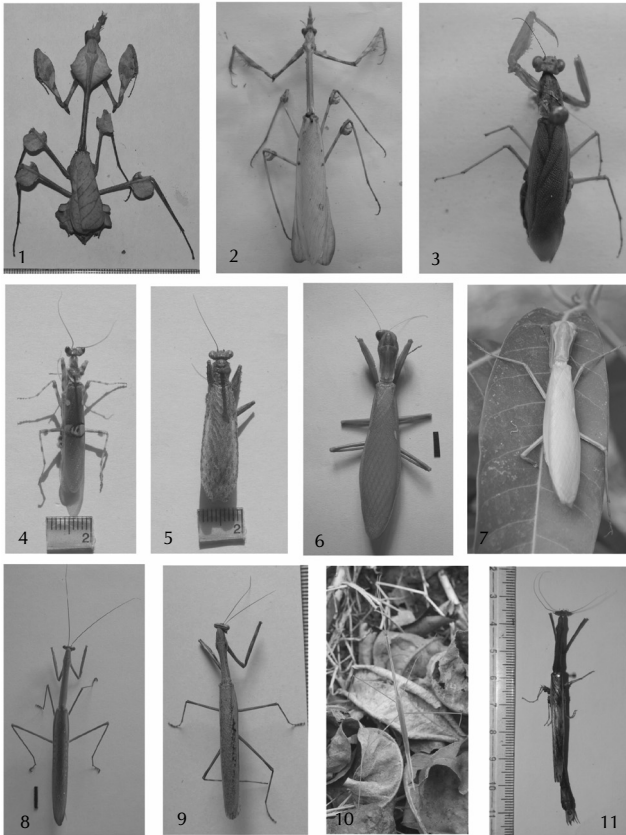


Figure 1 to 11: Mantid fauna of Chandoli National Park

Measurement: BL-77 mm, PL-30 mm, FC-15 mm and FF-17 mm  
 Remark: This species is very common in Western India.

**5) *Statilia maculata* (Thunberg): (Fig. 9)**

1784. *Mantis maculata* Thunberg *Nov. Ins. Spec.*, 3:61  
 1871. *Pseudomantis maculata* Hanni. Saussure  
*Mem. Soc. Geneva*, V.21.p. 37-276  
 1897. *Statilia maculata*

Boliver. *Ann. Soc. Entomol. France.*, 66:309

1872. *Statilia Hanii* Giglio-Tos. *Bull. Soc. Ent. Ital.* V.43 P.6

Material examined: 1 male, 12. vi. 09, Zolambi ( Lat-17.2032 and Lon-73.8326 )

CNP Satara District. Coll. Y. J. Koli

Distribution: India- Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Himachal Pradesh, Madhya Pradesh, Maharashtra, Meghalaya, Sikkim, Uttar Pradesh and West Bengal.

Measurement: BL-41 mm, PL-14 mm, FC-09 mm and FF-12 mm

Remark: Black line in front of claw groove. Common species in India

**Subfamily: Schizocephalinae**

**6) *Schizocephalus bicornis* (Linnaeus): (Fig. 10)**

1758. *Grillus (Mantis) bicornis* Linnaeus *Syst. Nat.*, 1(10) : 426  
 Holotype : India

1781. *Mantis oculata* Fabricius *Spec. Ins.*, 1 : 348

1881. *Schizocephalus striata* Audinet-Serville  
*Ann. Sci. Nat.*, 22:56

1927. *Schizocephalus bicornis* Giglio-Tos *Das Tierreich.*, 50:237

Material examined: 2 male, 1 female. 02. vi. 08, 12viii.08, 09.xii.09 Niwale

(Lat-17.1176 and Lon-73.8089) CNP, Kolhapur District. Coll. Y. J. Koli

Distribution: India- Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Himachal Pradesh, Madhya Pradesh, Maharashtra, Meghalaya, Sikkim, Uttar Pradesh and West Bengal.

Measurement: BL-94 mm, PL-31 mm, FC-15 mm and FF-20 mm

Remark: Widely distributed species

**Subfamily- Toxoderinae**

**7) *Toxoderopsis taurus* (Wood-Mason): (Fig. 11)**

1889. *Toxoderopsis taurus* Wood-Mason. *J. Asiatic Soc. Bengal.* 58:320

1927. *Toxoderopsis taurus* Giglio-Tos *Tierreich.* 50:569

Material examined: 1 female, 14. xi. 10, Khundlapur (Lat-17.1749 and Lon-

73.8776) CNP, Sangli District. Coll. Y. J. Koli

Distribution: India- Kerala, Maharashtra and Orissa.

Measurement: BL-75mm, PL-30mm, FC-11mm and FF-15mm.

Remark: Very common species in Maharashtra.

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