

New records of antlions (Neuroptera: Myrmeleontidae) from Chhattisgarh, India

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ABSTRACT

Three species of Antlions (Neuroptera: Myrmeleontidae) are reported for the first time from Chhattisgarh, India. Among them, *Stenares improbus* (Walker, 1853) is reported for the first time from central India. Detailed diagnostic character along with photographs and a consolidated check list of Myrmeleontidae of Chhattisgarh has also been provided.

Key words: Insecta, Neuroptera, Antlion, Chhattisgarh, India.

Abbreviations : Coll.: Collected by.; ZSI: Zoological Survey of India; RH: Rest House; NP- National Park; WLS- Wild life Sanctuary

INTRODUCTION

Insects belonging to the family Myrmeleontidae (Order: Neuroptera) is commonly known as antlions. This is the largest and widespread family of Neuroptera with about 2000 species known throughout the world [2]. This group comprises small to large soft bodied insects having variable wing patterns. Being carnivorous, this group serves as biological agent to destroy the harmful pests. There are approximately 5000 species of neuropteran recorded worldwide among which 335 species belonging to 125 genera and 13 families are known from India [6]. In India, scattered works are done on this group by several workers viz. Walker [10], MacLachlan [8], Needham [9], Fraser [1], Ghosh [4, 5, 6, and 7]. From Madhya Pradesh and Chhattisgarh 33 species of Neuroptera are reported among which 17 species belong to the family Myrmeleontidae [3]. The present study deals with diagnostic characters along with illustrations of three species belonging to the family Myrmeleontidae, recorded for the first time from Chhattisgarh.

MATERIALS AND METHODS

Study area: Chhattisgarh is carved out state from Madhya Pradesh in 2001 with a total area of about 1,35,194 sq. Km. Approximately 44% of the state is covered by forests the major part (35736.239 sq. Km.) of which is outside Protected Areas. The vegetation type of the state consists of both Dry and Moist Deciduous forests.

Methodology: Specimens were collected during faunistic surveys in Chhattisgarh conducted by the Zoological Survey of India from June 2011 to November 2012. Neuroptera are usually found in herbages, bushes, trees and also in crop lands due to its pest feeding habits. Usually these insects are active after sunset. Specimens are collected during day by sweeping with insect net and also at night by trapping with artificial light. GPS coordinates of the surveyed sites were recorded by Garmin Oregon 550 device. Map of the recorded sites was prepared by using the

program DIVA-GIS. Specimens were studied under Leica EZ4 HD binocular microscope. Morphological characters like wing, head, eyes, abdomen and thorax were compared for identification following Ghosh [5 and 7]. Photographs of whole specimens were taken with Nikon D300s and 105 mm Nikkor lens. The studied specimens were deposited in the National Zoological Collection of ZSI, Kolkata.

RESULTS

Family: MYRMELEONTIDAE

Subfamily: MYRMELEONTINAE

Tribe: ACANTHACLISINI

1. *Stiphoneura inclusa* (Walker, 1853)

1853. *Myrmeleon inclusus* Walker, *Cat. Brit. Mus. Neur.*, **2**: 327.

1886. *Stiphoneura inclusus* Gerstaecker, *Mitt. naturw. Var. neu. Vorpom. u. Rugen.*, **16**: 91.

2000. *Stiphoneura inclusa* Ghosh. *Rec. zool. Surv. India. Occ. Paper no 184*: 80.

Material examined: Koriya, Guru Ghasidas NP, Rajbewra, 11.viii.2011 (1♂), Coll. A. Raha and party; **Kabirdham**, Bhoramdev WLS, Sarodadadar, 27.viii.2011 (1♀), Coll. S. Gupta and party.

Diagnosis: Large, average length 55 mm, (Wing length- Forewing 67mm, Hind wing 70mm); Antennae small black; Frons yellow, vertex, pronotum, mesonotum and metanotum dark brown covered with long hairs; Wings having whitish pterostigma, forewings with marginal limpid spots alternating with a few light brown spots and one dark brown spot present between the apical portion of first sector of radius and cubitus vein, hind wings also with some pale brown spots alternating with limpid spots towards the tip, on the surface of hind wings two large rounded spots present at the end of the median and radial vein towards the wing apex; Legs black, stout covered with grayish pubescence; Abdomen is paler than thorax, long but half of the wings.

Subfamily: PALPARINAE

Tribe: PALPARINI

2. *Stenares improbus* (Walker, 1853)

1853. *Myrmeleon improbus* Walker, *Cat. Brit. Mus. Neur.*, p. 326.

1868. *Stenares improbus* MacLachlan, *J. Linn. Soc.*, **9**, p. 276

1909. *Stenares improbus* Needham, *Rec. Indian Mus.*, **3**, p. 200

Material examined: Raipur, Barnawapara WLS, Domorpani, 26.iv.2012 (1♀), Coll. S. Gupta and party.

Diagnosis: Large, stout insects of average length 55 mm, (Wing length - Forewing 66.48mm, Hindwing 61.53mm); antennae black, club shaped; Vertex pale brown with small dark brown median longitudinal stripe at base and marked with small dark brown spots throughout, pronotum rusty brown sparsely hairy with a broad median dark brown band, two small black spots at the sides of the median band, lateral sides with dark brown angular band, mesonotum and metanotum also with a broad median stripe with shiny silvery hairs on two lateral sides and few on its upper surface; Forewings little larger than hind wings in length, cross veins of forewings marked with brownish markings throughout, radial vein and median vein of fore wing much darker, the margins of hind wings fringed with soft and small bristles and upper surface of hind wings are infuscated in some regions, brown markings of the cross vein on hind wing not prominent, markings broader and darker towards the apex and on the radial vein of the hind wing; Venter with dense silvery hairs, femur dark brown with yellowish white bristles, while tibiae with black tough bristles; Abdomen stout, blackish brown.

3. *Palpares pardus* (Rambur, 1862)

1862. *Myrmeleon pardus* Rambur *Hist. Nat. Ins. Neur.*: 375

1868. *Palpares pardus* MacLachlan *J. Linn. Soc.* **9**: 275

1984. *Palpares pardus* Ghosh. *Rec. Zool. Surv. India. Occ. Paper No. 52*: 2

Material examined: Koriya, Guru Ghasidas NP, Ramgarh RH, 1.viii.2011 (1♂), Sonhat RH, 9.xi.2012 (2♂, 4♀); **Surguja**, Lalpur, Saroda Dam, 22.ix.2012(1♂), Tara RH, 16.ix.2012 (1♂, 1♀), Tara Abhaynala, 17.ix.2012 (3♂, 1♀); **Bilaspur**, Karidongri RH, 19.09.2012(1♂), Coll. A. Raha and party; **Raipur**, Barnawapara WLS, 1.x.2011 (1♀), 16.viii.2011 (1♀); **Kabirdham**, Bhoramdev WLS, Sarodadadar, 27.viii.2011 (1♀), Coll. S. Gupta and party.

Diagnosis: Variable in size, 40- 52 mm long, (Wing length – Forewing 45-65mm-, Hind wing 40mm- 62 mm); antennae club-shaped, base with sparse black hairs; apex of the vertex with black band, sparsely covered with black hairs; Pronotum yellowish, hairy with a black median stripe, mesonotum and metanotum with three black stripes densely covered with long hairs; two wings almost sub equal and margin of wings fringed with bristles, there are many brown spots present on the wing surface, a series of longitudinal bands between the costal margin and radial vein arranged in a similar manner, the spots relatively larger on hind wings than fore wings, the smaller spots arranged on lower portion of forewings while larger spots arranged on the upper portion, a large brown band at the middle of hind wing, apex with broad brown bands; abdomen dark brown; Venter densely covered with hairs; femur and tibia dark brown with black setae, tarsi black.

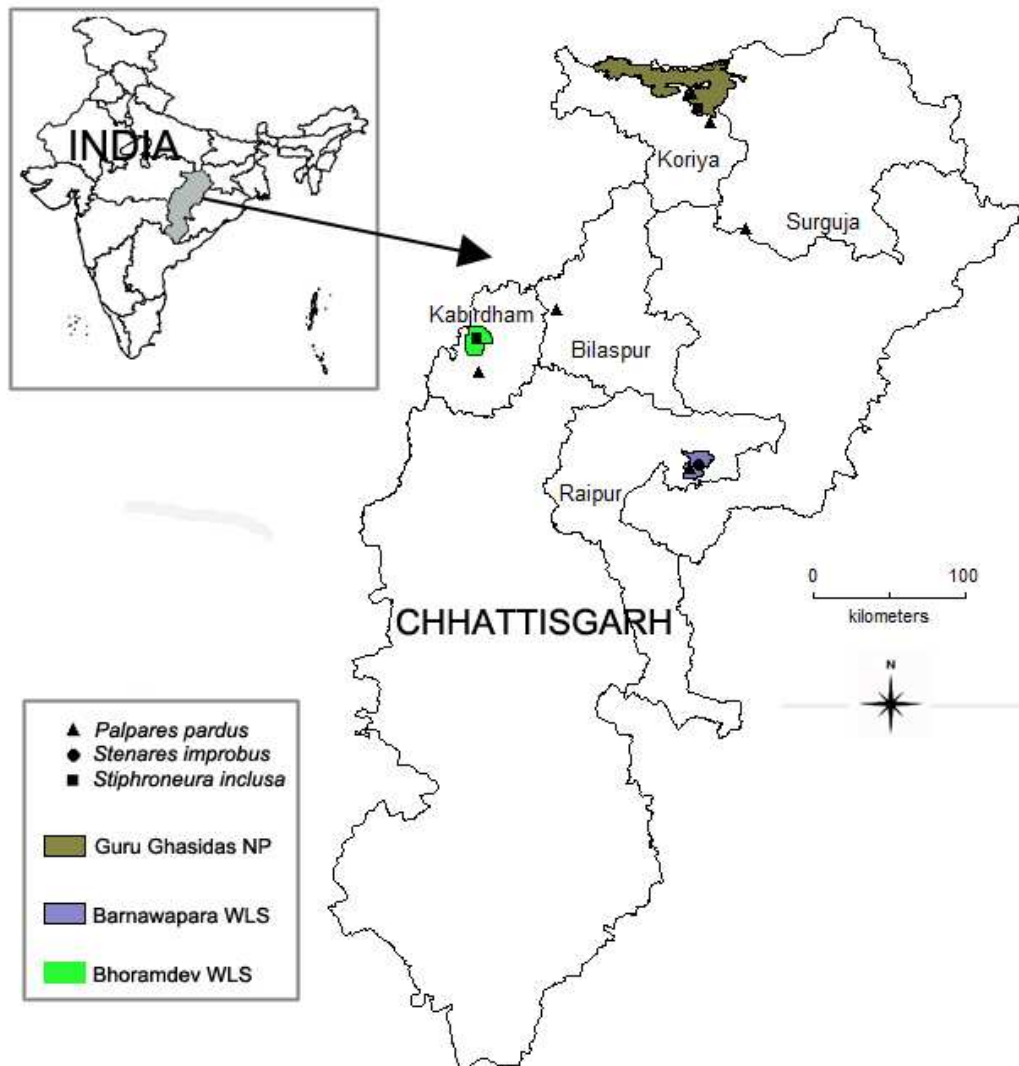


Figure 1: Map

Figure 2

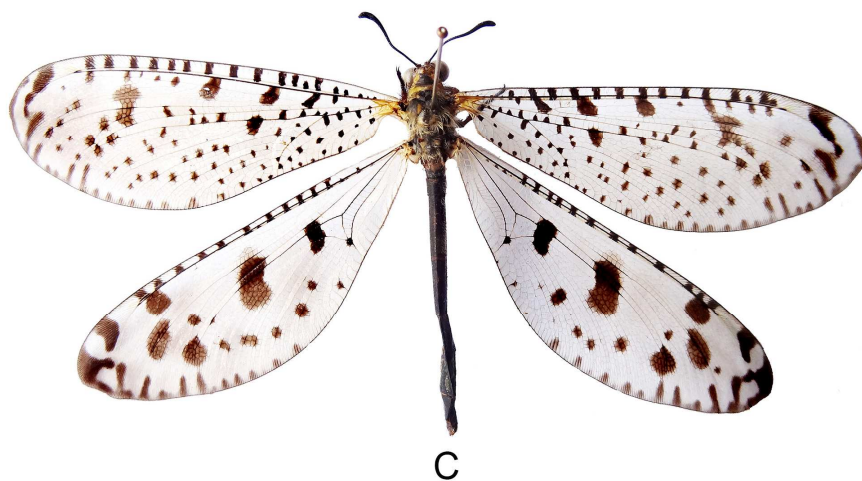
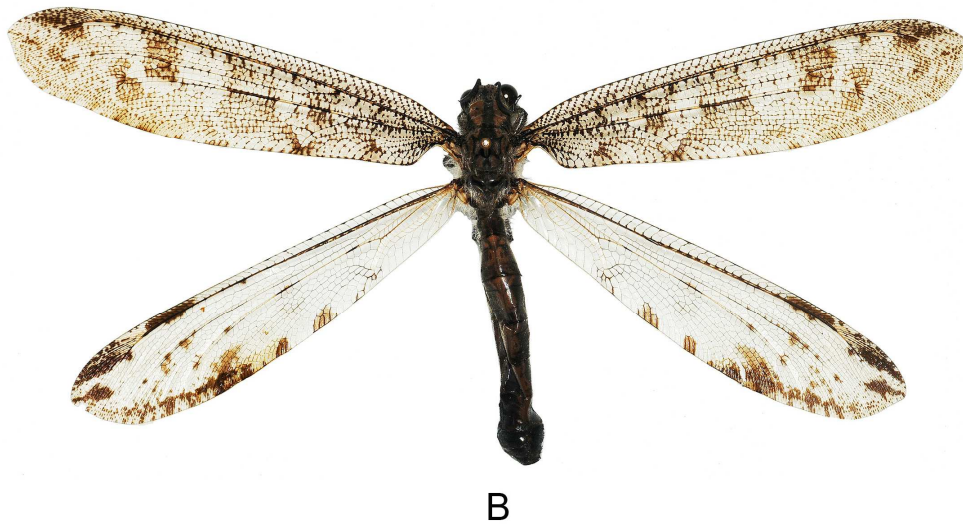
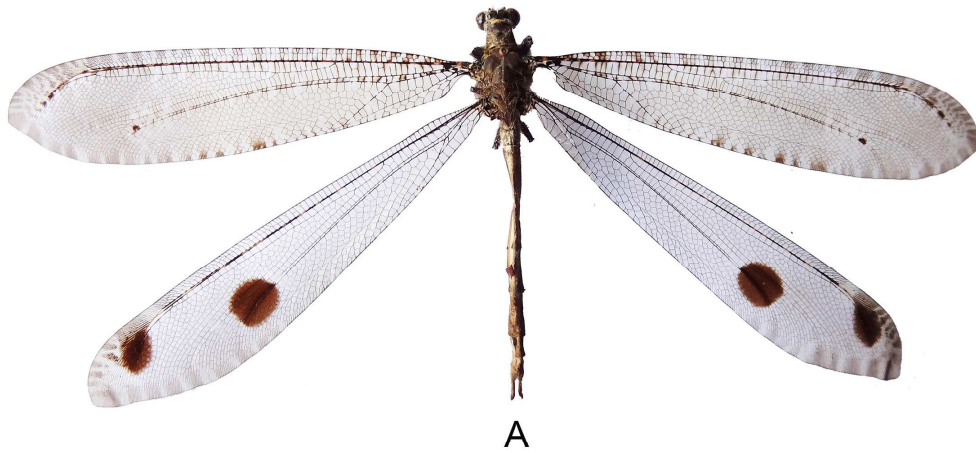


Figure 2: Photographs of the Identified species: A- *Stiphoneura inclusa* (Walker); B- *Stenares improbus* (Walker); C- *Palpares pardus* (Rambur)

DISCUSSION

Neuroptera being a predator devouring other insects which may include serious pests of crops and forest vegetations, it is of immense importance economically as well as ecologically. Like other insects, this group is also being ignored. Till date, proper documentation of this group is done only in the Eastern part of India. In Central India, except Chandra *et al.* [3] there is no other consolidated account of Neuroptera. The present study provides a consolidated checklist of the family Myrmeleontidae recorded from Chhattisgarh including three new distributional records. The present communication is prepared with an aim of serving future exploration studies on Neuroptera not only in Chhattisgarh but also in other parts of Deccan Peninsular Biogeographic zone.

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Checklist of the MYRMELEONTIDAE (Neuroptera) from Chhattisgarh

S. No.	Scientific Name	Distribution in Chhattisgarh
	Subfamily: PALPARINAE Tribe: PALPARINI	
1.	* <i>Palpares pardus</i> (Rambur)	Koriya, Surguja, Bilaspur, Raipur, Kabirdham
2.	* <i>Stenares improbus</i> (Walker)	Raipur
	Subfamily: MYRMELEONTINAE Tribe: ACANTHACLISINI	
3.	* <i>Stiphronera inclusa</i> (Walker)	Koriya, Kabirdham
	Tribe: MYRMELEONTINI	
4.	<i>Hagenomyia sagax</i> (Walker)	Bilaspur
5.	<i>Hagenomyia marginicollis</i> (Gerstaecker)	Bilaspur
6.	<i>Myrmeleon tenuipennis</i> Rambur	Bastar
	Tribe DISTOLEONTINI	
7.	<i>Creoleon griseus</i> (Klug)	Bastar

*New record from Chhattisgarh

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