

On a collection of Formicidae (Hymenoptera: Vespoidea) from Buxa Tiger Reserve, West Bengal, India, with new records of one rare genus and a rare species

SOUMYENDRA NATH GHOSH¹ & SAROJ SHEELA²

¹West Bengal Biodiversity Board, Paribesh Bhavan, Salt Lake, Kolkata-700 098, India.

²Zoological Survey of India, M-Block, New Alipore, Kolkata-700 053, India.

* Corresponding author's email: soumyendraghosh@yahoo.co.in

Abstract. One day's collection of Formicidae from the Buxa Tiger Reserve of West Bengal, India yielded a total of 19 species from 15 genera and five subfamilies, of which six species are reported for the first time in the state of West Bengal (*Philidris* sp., *Odontoponera transversa* (Smith), *Tapinoma indicum* Forel, *Crematogaster ransonneti* Mayr, *Lophomyrmex kali* Rigato and *Monomorium scabriceps* (Mayr)). The genus *Philidris* is recorded here for the first time from mainland India. *Lophomyrmex kali* is recorded for the first time since its description in 1994.

Keywords: Formicidae, *Philidris*, Buxa Tiger Reserve, West Bengal, India

INTRODUCTION

The formicid fauna of the Indian state of West Bengal has been studied mainly by Bingham (1903), Tiwari *et al.* (1998) and Ghosh *et al.* (2005, 2007). A total of 136 species from 44 genera have been reported from all these studies. None of those collections contained specimens from Buxa Tiger Reserve. The Reserve is situated in Jalpaiguri district of West Bengal, at 23° 30' to 23° 50' N and 89° 25' to 89° 55' E, and covers an area of 761 km² with a core area of 376 km², in which exists Buxa Wildlife Sanctuary (369 km²) containing the National Park (117 km²). Besides tigers, it is the habitat of a large number of resident elephants as well as migratory elephants from the neighbouring country of Bhutan. Buxa is famous for its rich biodiversity including a number of rare and endangered animals. The vegetation is mainly tropical moist deciduous forest, semi-evergreen forest, sal forest, scrub and grassland. The

temperature ranges from 12°C to 32°C and has an average rainfall of 4100 mm per year.

Although studies on the vertebrate fauna of Buxa Tiger Reserve have been conducted for a long time, only limited effort has been made so far for the study of other groups (Saha *et al.* 1994; Biswas *et al.* 1996), especially insects and ants in particular. This was a first attempt to study the Formicidae in this protected forest area.

MATERIALS AND METHODS

The sampling was done in a single day (nearly six hours) on 3 December 2007, in the core area of Buxa Tiger Reserve (Fig. 1). Specimens were hand collected using a brush and preserved in 70% alcohol. Specimens were dried and mounted on triangular cards. Observations were done with the help of SZX9 Wild Stereo Zoom Microscope and identifications were done with the help of Bingham (1903), Bolton (1994) and Rigato (1994).

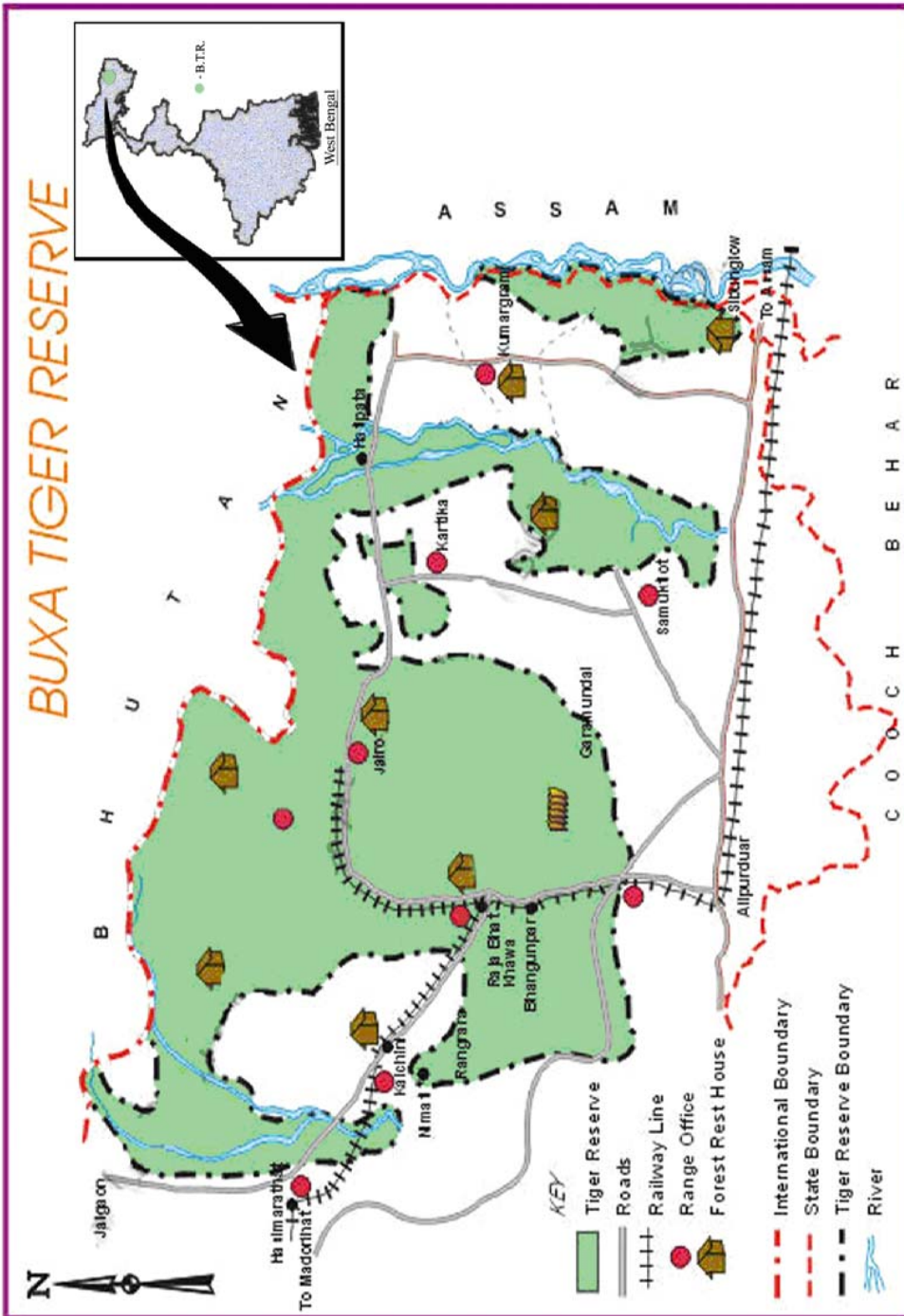


Fig. 1. A map of the Buxa Tiger Reserve. Sampling took place near Jairo.

RESULTS AND DISCUSSION

Table 1. List of 19 species of ants collected from Buxa Tiger Reserve area. (FRI- First record from mainland India, FRWB- first record from West Bengal).

Subfamily	Name of species	Stratum	Collection record (status/distribution in India)
Dolichoderinae	<i>Philidris</i> sp.	tree trunk	FRI
Dolichoderinae	<i>Tapinoma indicum</i> Forel	trees	FRWB (common)
Dolichoderinae	<i>Technomyrmex albipes</i> Smith	ground	(common)
Formicinae	<i>Camponotus compressus</i> (Fabr.)	trees and ground	(common)
Formicinae	<i>Camponotus sericeus</i> (Fabr.)	trees	(common)
Formicinae	<i>Paratrechina longicornis</i> (Latr.)	trees	(common)
Formicinae	<i>Polyrhachis dives</i> (Smith)	trees	(common)
Myrmicinae	<i>Crematogaster ransonneti</i> Mayr	trees	FRWB (uncommon)
Myrmicinae	<i>Lophomyrmex bedoti</i> Emery	ground	(rare)
Myrmicinae	<i>Lophomyrmex kali</i> Rigato	ground	FRWB (rare)
Myrmicinae	<i>Monomorium floricola</i> (Jerdon)	ground	(common)
Myrmicinae	<i>Monomorium scabriceps</i> (Mayr)	ground	FRWB (common)
Myrmicinae	<i>Pheidole roberti</i> Forel	ground	(common)
Myrmicinae	<i>Solenopsis geminata</i> (Fabr.)	ground	(common)
Ponerinae	<i>Diacamma rugosum</i> (Le Guillou)	ground	(common)
Ponerinae	<i>Diacamma scalpratum</i> (Smith)	ground	(restricted distribution)
Ponerinae	<i>Odontoponera transversa</i> (Smith)	ground	(widespread)
Ponerinae	<i>Pachycondyla rufipes</i> (Jerdon)	ground	(common)
Pseudomyrmecinae	<i>Tetraponera rufonigra</i> (Jerdon)	trees	(common)

A total of 19 species of Formicidae were found (Table 1), of which six species – *Philidris* sp., *Odontoponera transversa* (Smith), *Tapinoma indicum* Forel, *Crematogaster ransonneti* Mayr, *Lophomyrmex kali* Rigato and *Monomorium scabriceps* (Mayr) – are recorded for the first time from West Bengal.

This is the first report of the genus *Philidris* from mainland India. Before, one subspecies, *Philidris myrmecodiae andamanensis* (Forel, 1903), was reported from the Andaman Islands by Forel (1903) and another, *P. laevigata* (Emery 1895), from Burma by Shattuck (1992).

Lophomyrmex kali Rigato is known only from a single holotype specimen described by Rigato (1994) from Northeast India. Another species of the same genus, *L. bedoti*, is also recorded here. *L. bedoti* was recorded from India earlier by Bingham (1903) from Sikkim, by Dutta & Roy Chowdhury (1983) from Sikkim and West Bengal, and by Mathew & Tiwari (2000) from Meghalaya.

The otherwise common species *Tapinoma indicum* Forel was not reported in the above mentioned studies from West Bengal. *Monomorium scabriceps* (Mayr) is a common species in the south and eastern parts of India (Sheela 2008) but previously this species had not been reported from West Bengal; in Buxa it was abundant. *Crematogaster ransonneti* Mayr is reported from other parts of the country, but not from West Bengal (Priyadarshanan *et al.* 2006). Though not seen frequently, *Odontoponera transversa* (Smith) has a wide distribution in India (Sheela, 2008) and it is also reported here for the first time from West Bengal. *Camponotus compressus* (Fabr.), *Camponotus sericeus* (Fabr.), *Paratrechina longicornis* (Latr.), *Monomorium floricola* (Jerdon), *Solenopsis geminata* (Fabr.), *Tetraponera rufonigra* (Jerdon) and *Diacamma rugosum* (Le Guillou) are very common ants found in every collection from West Bengal (based on National Zoological Collections of Zoological Survey of India). *Polyrhachis dives* (Smith) and

Pheidole roberti Forel, though common in India, can be found in areas of natural vegetation. *Diacamma scalpratum*, is found in various parts of India, and mostly restricted to forest habitats. In Buxa this species was abundant. Another species, *Pachycondyla rufipes* (Jerdon), also commonly encountered under thick vegetation cover, was found here.

Since the charismatic animals in the forest have acted as an umbrella species conferring protection on the area, Buxa Tiger Reserve contains a very rich invertebrate fauna, which is yet to be thoroughly explored. Just one day's collection, though not intensive, has yielded valuable information on the formicid fauna of West Bengal, as well as India. These findings stress the need to explore the area thoroughly to understand the rich biological wealth of the country as well as the need to conserve the forest more religiously.

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