



ISSN (E): 2277- 7695  
ISSN (P): 2349-8242  
NAAS Rating: 5.03  
TPI 2018; 7(11): 81-82  
© 2018 TPI  
www.thepharmajournal.com  
Received: 15-09-2018  
Accepted: 16-10-2018

#### Moutushi Roy

Junior Research Fellow,  
Zoological Survey of India,  
M Block, New Alipore, Kolkata,  
West Bengal, India

#### Balaram Panja

Assistant Divisional Forest  
Officer, Office of the Divisional  
Forest Officer, Purba Medinipur  
Forest Division, Chak Kamina,  
Tamluk, Purba Medinipur,  
West Bengal, India

#### Apurva Das

Junior Research Fellow,  
Zoological Survey of India,  
M Block, New Alipore, Kolkata,  
West Bengal, India

#### Bulganin Mitra

Emeritus Professor, Dept. of  
Zoology, Ramakrishna Mission  
Vivekananda Centenary College,  
Rahara, Kolkata, West Bengal,  
India

## First report of mangrove inhabiting ants from Bajkul forest range of Purba Medinipur district, West Bengal

Moutushi Roy, Balaram Panja, Apurva Das and Bulganin Mitra

### Abstract

A short-term field study was undertaken for the first time to know the ant diversity in the mangroves of Purba Medinipur district, West Bengal. Present study revealed 12 species belonging to 04 subfamilies of ants are associated with 05 species of mangrove plants. The abundance of ants was high in *Sonneratia apetala* with 05 species, followed by *Avicennia officinalis* (03), *Avicennia marina* (02), *Acanthus ilicifolius* and *Pandanus odoratissimus* (01).

**Keywords:** Ants, mangroves, Purba Medinipur district, first report, West Bengal

### 1. Introduction

Ants are highly developed social creatures and also an important service provider in any ecosystem. Since a long evolutionary time, mangrove ecosystem acts as the rich reservoir of flora and fauna. As in other arboreal ant communities, ant mosaic was also reported in tropical mangroves (Adams, 1994) [1]. But their diversity, association and interaction with each other is still imperfectly known.

The district Purba Medinipur under the state of West Bengal has long coastal line and various types of natural vegetation which includes mangrove forest. Very few taxonomic and ecological works have been documented on the mangrove ants in India. Nothing has been known on the mangrove inhabiting ants from West Bengal and Purba Medinipur district in particular.

The objective of this study was to find out ant diversity and distribution in the mangrove patches of Khejuri, Dakshin Kalagachia, Banbansuria and Nijkasba under Bajkul forest range in the district of Purba Medinipur. Besides this, the present study will certainly be the base line for further study on the group from the study area for future researchers.

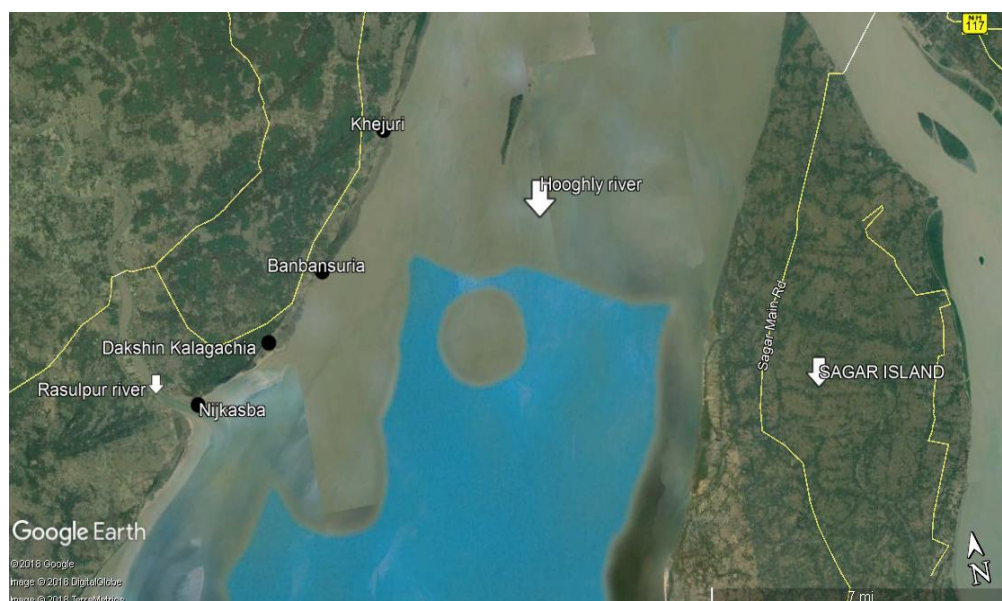


Fig 1: Map showing the collection localities

#### Correspondence

#### Apurva Das

Junior Research Fellow,  
Zoological Survey of India,  
M Block, New Alipore, Kolkata,  
West Bengal, India

## 2. Materials & Methods

**2.1 Study area:** The Purba Medinipur district is geographically located between 21°36'35" N and 22°57'10" N latitude and 86°33' E and 88°12' E longitude and is surrounded by the Bay of Bengal and Balasore District of Orissa State in its South, Paschim Medinipur in its West, Howrah district in the North and South 24 Parganas in the East (Das & Das, 2014) [2].

The study was carried out in the Purba Medinipur district during 2017 (one year study). The collections were made from the mangrove patches of Khejuri (21°52'08" N, 87°58'36" E), Dakshin Kalagachia (21°48'32" N, 87°55'20" E), Banbansuria (21°49'41" N, 87°56'45" E) and Nijkasba (21°47'37" N, 87°53'35" E) (Fig.1).

### 2.2 Collection methodology:

The ants were collected by bare hand and also by using brush soaked in 70% alcohol kept in glass vials. The collections were mostly made in day time from the different mangrove plants. Date, time, locality, and other necessary data were written on a paper slip and inserted in the respective tube of the ants. They were later brought to the laboratory and

properly identified using Leica EZ4 HD and also consulting the available literatures.

## 3. Results

Present survey documents 12 species of ants under the subfamilies Formicinae (07 species), Myrmicinae (03), Pseudomyrmecinae (01) and Dolichoderinae (01) from the mangrove patches of Khejuri, Dakshin Kalagachia, Banbansuria and Nijkasba in Purba Medinipur district. Of them, only *Crematogaster rogenhoferi* was collected from two plant species (*Avicennia marina* and *Avicennia officinalis*). Rest of the species were collected from single plant species (Table.1).

In this present survey, *Camponotus compressus* and *Tetraponera rufonigra* were collected only from the leaves where as *Paratrechina longicornis* only from stem. Rest of the species were collected from both stem and leaves (Table.1).

On the other hand, *Sonneratia apetala* hosts 05 species of ants, followed by *Avicennia officinalis* (03), *Avicennia marina* (02), *Pandanus odoratissimus* and *Acanthus ilicifolius* (01) (Table.1).

**Table 1:** List of ant species collected from the mangrove patches of the Bajkul forest range, Purba Medinipur

Subfamily Formicinae			
Sl. No.	Species	Micro habitats	Locality
1.	<i>Camponotus compressus</i> (Fabricius, 1787)	<i>Acanthus ilicifolius</i> Linnaeus (Leaves)	Khejuri
2.	<i>Polyrhachis rastellata</i> (Latreille, 1802)		
3.	<i>Paratrechina longicornis</i> (Latreille, 1802)	<i>Sonneratia apetala</i> Buch. Ham (Stem)	Dakshin Kalagachia
4.	<i>Lepisiota opaca</i> (Forel, 1892)		
5.	<i>Nyländeria indica</i> (Forel, 1894)		
6.	<i>Oecophylla smaragdina</i> Fabricius, 1775	<i>Sonneratia apetala</i> Buch. Ham (Stem and leaves)	Banbansuria
7.	<i>Camponotus sericeus</i> (Fabricius, 1798)	<i>Avicennia officinalis</i> Linnaeus (Stem and leaves)	Dakshin Kalagachia
Subfamily Myrmicinae			
8.	<i>Crematogaster rogenhoferi</i> Mayr, 1879	<i>Avicennia marina</i> (Forssk.) Vierh. (Stem and leaves)	Dakshin Kalagachia
		<i>Avicennia officinalis</i> Linnaeus (Stem)	Nijkasba
9.	<i>Crematogaster subnuda</i> Mayr, 1879	<i>Avicennia marina</i> (Forssk.) Vierh. (Stem and leaves)	Dakshin Kalagachia
10.	<i>Solenopsis geminata</i> (Fabricius, 1804)	<i>Sonneratia apetala</i> Buch. Ham (Stem and leaves)	Banbansuria
Subfamily Pseudomyrmecinae			
11.	<i>Tetraponera rufonigra</i> (Jerdon, 1851)	<i>Pandanus odoratissimus</i> Linnaeus (Leaves)	Khejuri
Subfamily Dolichoderinae			
12.	<i>Dolichoderus taprobanae</i> (Smith, F., 1858)	<i>Avicennia officinalis</i> Linnaeus (Stem and leaves)	Dakshin Kalagachia

## 4. Discussion

Present study documents only 12 species of ants from 05 species of mangrove plants in 04 mangrove patches (Khejuri, Dakshin Kalagachia, Banbansuria and Nijkasba) under the Bajkul forest range of Purba Medinipur district.

In ant-plant protective mutualisms, ants serve as biological control agents against a variety of different pest species (Way & Khoo, 1992) [3]. Since ants prey on insects, they have the potential to reduce the number of herbivorous insects on the plants where they forage (Beattie, 1985) [4]. In their study on *Oecophylla smaragdina* in Thai mangrove forest, Offenberget al., (2004) [5] showed that approximately four times more herbivory on trees without ants compared to trees with ants.

Therefore, it is an urgent need to document the ant faunal diversity and their interaction with plants in a mangrove like fragile ecosystem in India.

## 5. Acknowledgement

Authors are grateful to Director of Zoological Survey of India, for providing necessary facilities and encouragement in preparation of the manuscript. Authors also extend their thanks to the staff of Bajkul Forest Range for their help in

field.

## 6. References

- Adams ES. Territory defence by the ant *Azteca trigona*: maintenance of an Arboreal ant mosaic. *Oecologia*. 1994; 97:203-208.
- Das D, Das M. Vegetation Ecology of Coastal belt of Khejuri area of Purba Medinipur District with special reference to Hijli coast, West Bengal, India. *Journal of Pharmacy*. 2014; 4(2):56-77.
- Way MJ, Khoo KC. Role of ants in pest-management. *Annu. Rev. Entomol*. 1992; 37:479-503.
- Beattie AJ. The evolutionary ecology of ant-plant mutualisms. Cambridge University Press, Cambridge, England, 1985.
- Offenberget J, Havanon S, Aksornkoe S, MacIntosh DJ, Nielsen MG. Observations on the Ecology of Weaver Ants (*Oecophylla smaragdina* Fabricius) in a Thai Mangrove Ecosystem and their effect on herbivory of *Rhizophora mucronata* Lam.1. *Biotropica* 2004; 36(3):344-351.