Diversity of Ants (Hymenoptera: Formicidae) in an Orchard of North 24 Pgs., West Bengal

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Short Communication

Diversity of Ants (Hymenoptera: Formicidae) in an Orchard of North 24 Pgs., West Bengal

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The ants belong to a single, very large family – the Formicidae. They are one of the most diverse and ubiquitous group of eusocial insects. Ants constitute an important fraction of the animal biomass in terrestrial ecosystems and respond to stress on a much finer scale compared to vertebrates [1]. In West Bengal it is represented by 382 species belonging to 65 genera [2]. The aim of this study is to know the diversity of ants in an orchard of West Bengal which will provide some valuable information about the distribution and richness of ant fauna.

The study carried out during February, 2018 to April, 2019 in an orchard, under Barasat Municipality of District North 24-Parganas. Dominant plant species in this area is *Mangifera indica*. Other notable plant species are *Litchi chinensis*, *Psidium guajava*, *Musa* sp, *Citrus maxima*, *Citrus limonia*, *Cocos nucifera*, *Borassus flabellifer*, *Phoenix dactylifera*, *Areca catechu*, *Colocasia esculenta*, *Cynodon dactylon*, *Solanum nigrum*, *Centella asiatica*, *Coccinia grandis*, *Marsilea minuta*. A small pond is present in the study area. Soil of this site is alluvium in nature, brown in colour and clay silt loam in texture.

The survey was done once in a week in the morning as well as in the afternoon during the entire study period. Samples were collected by hand picking with the help of forceps and brush, by bush beating, by digging few centimeters of soil at random and by pitfall trap. After collection the ants are preserved in 70% alcohol. Mounting and tagging was done following standard procedure. Study conducted under stereoscopic binocular microscope (Model Magnus MS 24). Identification up to genus level was done as per Hölldobler and Wilson [3], Bolton [4] and Sheela [5] and up to species level as per Bingham [6], Bolton [7] and Ward [8].

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In this study twenty-seven species of ants belonging to twenty genera and six sub-families were encountered (Table 1). Representation of subfamily Formicinae is highest followed by subfamily Myrmicinae. Sub-family Pseudomyrmecinae is represented by a single species (Table 1). Diversity of vegetation might have an influence on ants' diversity. Organic manure like excreta of cattle and decomposed fruits found here and there may also have the potentiality to attract and create colonies of ant by providing various food sources. *Solenopsis geminata* (Fabricius) and *Camponotus compressus* (Fabricius) is recorded throughout the year. Abundance and species richness were higher during warmer months whereas it was lower during winter, scarce particularly during the month of January and February. Based on the frequency of observation ant species are classified as very rare (observed < 20%), rare (observed 20% - 40%), regular (> 40% but <60%) and abundant (>60%). Entire study reveals *Solenopsis geminata* (Fabricius) is abundant species in that area.

SUMMARY

This study provides a preliminary knowledge on the diversity of ants in an orchard of alluvial soil. From the present study, it can be concluded that diverse vegetation supports greater ant diversity. But rapid and constant urbanization in this area leads to habitat destruction which has an adverse impact on ant diversity. This study is intended to serve as base line data for what was present during this period in a rapidly changing landscape. Detailed study may generate much more diverse ants' fauna, which may consider as worthy to the taxonomic study on ants in West Bengal.

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Table 1 List of ants observed in an orchard under Barasat Municipality, West Bengal during entire study period

S. No.	Ant species	Sub-family	Remark
1.	*Tapinoma melanocephalum* (Fabricius)	Dolichoderinae	Regular
2.	*Dolichoderus taprobanae* (Smith)	Dolichoderinae	Rare
3.	*Anoplolepis gracilipes* Smith	Formicinae	Rare
4.	*Camponotus compressus* (Fabricius)	Formicinae	Abundant
5.	*Camponotus sericeus* (Fabricius)	Formicinae	Abundant
6.	*Camponotus misturus* (Smith)	Formicinae	Regular
7.	*Lepisiota opaca* (Forel)	Formicinae	Rare
8.	*Oecophylla smaragdina* Fabricius	Formicinae	Very rare
9.	*Paratrechina longicornis* (Latreille)	Formicinae	Abundant
10.	*Polyrhachis illaudata* Walker	Formicinae	Regular
11.	*Polyrhachis lacteipennis* Smith	Formicinae	Regular
12.	*Polyrhachis rastellata* (Latreille)	Formicinae	Regular
13.	*Crematogaster rogenhoferi* Mayr	Myrmicinae	Rare
14.	*Crematogaster subnuda* Mayr	Myrmicinae	Very rare
15.	*Crematogaster hodgsoni* Forel	Myrmicinae	Regular
16.	*Meranoplus bicolor* (Guérin-Méneville)	Myrmicinae	Regular
17.	*Monomorium pharaonis* (Linnaeus)	Myrmicinae	Regular
18.	*Myrmicaria brunnea* Saunders	Myrmicinae	Rare
19.	*Pheidole nietneri* Emery	Myrmicinae	Regular
20.	*Solenopsis geminata* (Fabricius)	Myrmicinae	Abundant
21.	*Diacamma rugosum* (Le Guillou)	Ponerinae	Regular
22.	*Leptogenys processionalis* (Jerdon)	Ponerinae	Rare
23.	*Bothroponera rufipes* (Jerdon)	Ponerinae	Regular
24.	*Tetraponera rufonigra* (Jerdon)	Pseudomyrmecinae	Rare
25.	*Dorylus orientalis* Westwood	Dorylinae	Rare
26.	*Aenictus* sp	Dorylinae	Rare
27.	*Aenictus ceylonicus* (Mayr)	Dorylinae	Rare

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