



Biodiversity of Ants (Hymenoptera : Formicidae) of Amba Reserve Forest of Western Ghats, Maharashtra.

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ABSTRACT

Ants are significant part of ecosystem not only because they represent a great part of the animal biomass but also they act as ecosystem engineers. We collected 65 ant species, distributed in 35 genera. The most speciose subfamily was Myrmicinae (26 Speciose) followed by Formicinae (16 Species), Ponerinae (11 species), Pseudomyrmecinae (4 Species), Dolichoderinae (3 Species), Cerpachyinae, Acnictinae (2 Species each) and Dorylinae (1 Species).

KEYWORDS : Biodiversity, Ants, Amba reserve forest.

INTRODUCTION

Ants are significant part of ecosystem not only because they represent a great part of the animal biomass but also they act as ecosystem engineers. These are important in below ground process through the fluctuation of the physical and chemical environment and through their effect on plants, microorganisms, and other soil organisms (Folgarait, 1998). Ants are kept in a single family, the Formicidae, contained by the order Hymenoptera, and are social insects which have been evolving successfully since the Cretaceous. The known living ants involve 16 families, 296 genera and 15000 species, around 10,000 of which are described (Bolton, 1994). However, the number of species still remaining to be discovered and described is extremely high (Holldobler and Wilson, 190). In spite of its manifold importance, ants are poorly studied.

Jorden (1851) worked on Indian ants particularly from southern India and recorded 46 species under 8 genera of these 39 species were new to science. While Forel (1900) and Donisthorpe (1942, 1943) contributed much of the fauna of southern India. Prior to this, Bingham (1903) published his valuable work on the ant Fauna of British India including Burma and Ceylon and gave detailed account of distribution

Successive workers like Forel (1900a, 1900b, 1900c), Mukherjee (1927), Karavajew (1926, 1927, 1928), Menozzi (1935), Donisthorpe (1942a, 1942b, 1942c, 1943), Smith (1948), Brown Jr. (1954, 1957, 1959), Wilson (1964), Taylor (1968), Collingwood (1970), Bolton (1995), Baroni

Urbani (1977), Tewary (1977), Tiwari et al. (1994a, 1994b,) have made valuable contribution to the ants fauna.

MATERIALS AND METHODS

The study was conducted at Amba reserve forest (ARF) (16.69 N^o, 74.24E^o). This Ghats lays in Sahyadri Mountains ranges; it is a tropical semi evergreen forest. The forest covers an area 318 ha. Elevation ranges 800 to 2000 m above the sea level and total annual precipitation ranges from 2000 mm to 2500mm. Temperature ranges 20 °C to 38 °C in summer, 10 °C to 30 °C in winter and in rainy season it is about 15°C to 30 °C. Study was conducted from June 2009 to 2010.

Present work is based on the collection of the ants from ARF. Ants in present study were collected from 2009 to 2011 at each fifteen days of intervals, generally in morning and in evening from different localities of Amba forest reserve. They were collected with help of camel brush and forceps (BB). After study the ants have been released in field from where they were collected.

RESULTS AND DISCUSSION

Results are recorded in table 1 and figs. 1 to 5. We collected 65 ant species, distributed in 35 genera. The most speciose subfamily was Myrmicinae (26 Speciose) followed by Formicinae (16 Species), Ponerinae (11 species), Pseudomyrmecinae (4 Species), Dolichoderinae (3 Species), Cerpachyinae and Acnictinae (2 Species each), Dorylinae (1 Species)

Table : 1 List of ants of Amba reserve forest Tal . Shahuwadi Dist . Kolhapur ,Maharashtra

| Subfamilies | Genera | Number of species |
|--------------------------|----------------------------------|--|
| 1) Cerpachyinae Forel | <i>Cerpachys</i> Forel, 1893 | <i>Cerpachys mordax</i> Donisthorpe, 1942 <i>Cerpachys rufus</i> Jredon, 1851 |
| 2) Ponerinae Lepeletiere | <i>Anochetus</i> Mayr, 1861 | <i>Anochetus graeffei</i> Mayr, 1870 <i>Anochetus obscurior</i> Brown, 1978 <i>Anochetus yerburyi</i> Forel, 1900 <i>Anochetus</i> spp. 1 |
| | <i>Harpegnathous</i> Jerdon 1851 | <i>Harpegnathous saltator</i> Jredon, 1851 |
| | <i>Leptogenys</i> Roger 1861 | <i>Leptogenys chinensis</i> Mayr, 1870 |

| | | | |
|----------------------------|-------------|--|---|
| | | <i>Pachycondyla</i> | <i>Leptogenys processionalis</i> Jerdon 1851 <i>Pachycondyla crassa</i> Emery, 1877 <i>Pachycondyla melanaria</i> Emery, 1893 <i>Diacamma ceylonense</i> Emery, 1897 <i>Pltythyrea parallela</i> Smith 1859 |
| | | <i>Diacamma</i> Mayr, 1862 <i>Pltythyrea</i> Roger 1863 | |
| 3) Dorylinae | Lepeletiere | <i>Dorylus</i> Fabricus 1793 | <i>Dorylus orientalis</i> Westwood 1815 |
| 4) Acnictinae | | <i>Aenictus</i> | <i>Aenictus aratus</i> Forel, 1900 <i>Aenictus ceylonicus</i> Mayr, 1866 |
| 5) Pseudomermicinae | Emery | Tetraponerae Smith, 1852 | <i>Tetraponerae aitkenii</i> (Forel, 1902) <i>Tetraponerae allabornus</i> Walkar, 1859 <i>Tetraponerae nigra</i> Jredon, 1851 <i>Tetraponerae rufonigra</i> (Jredon, 1851) |
| 6) Myrmicinae | Lepeletiere | <i>Aphenogaster</i> Mayr, 1872 <i>Cataulacus</i> Smith, 1853 <i>Crematogaster</i> Lund, 1831 <i>Lopomermex</i> Emery 1887 <i>Meranoplus</i> Smith, 1854 <i>Myrmecina</i> Curtis 1829 <i>Monomorium</i> Mayr, 1855 <i>Myrmicaria</i> Saunders 1841 <i>Pheidole</i> Westwood, 1841 <i>Pheidologeton</i> <i>Recurvidris</i> (<i>Trigonogaster</i>) | <i>Aphenogaster beccarii</i> Emery, 1887 <i>Cataulacus latus</i> Forel, 1891 <i>Crematogaster rothneyi</i> Mayr, 1872 <i>Crematogaster</i> spp. 1 <i>Crematogaster</i> spp. 1 <i>Lopomermex</i> <i>quadrispinosus</i> Jredon, 1851 <i>Meranoplus bicolour</i> (Gueri, 1838) <i>Myrmecina urbanii</i> Tiwari, 1994 <i>Monomorium atomum</i> Smith, 1858 <i>Monomorium carinatus</i> Donisthorpe 1942 <i>Monomorium destructor</i> (Jredon, 1851) <i>Monomorium levis</i> Donisthorpe 1942 <i>Monomorium</i> <i>subopacum</i> <i>Myrmicaria brunnea</i> Sunders, 1841 <i>Pheidole</i> spp. 2 <i>Pheidole spathifera</i> Forel, 1902 <i>Pheidole woodmasoni</i> Forel, 1885 <i>Pheidologeton affinis</i> Jerdon, 1851 <i>Recurvidris</i> <i>recurvispinosa</i> Forel, 1902 |

| | | |
|--------------------------------------|--|---|
| | <i>Rhoptromermex</i> | <i>Rhoptromermex wrightonii</i> Forel, 1902 |
| | <i>Solenopsis</i> Westwood, 1841 | <i>Solenopsis geminate</i> Fabricius 1804 |
| | <i>Strumigenys</i> Smith,1860 | <i>Strumigenys godeffrayi</i> Mayr, 1866 |
| | <i>Tetramorium</i> Mayr,1855 | <i>Tetramorium mixtum</i> Forel, 1902 <i>Tetramorium smithi</i> Mayr, 1879 <i>Tetramorium walshi</i> Forel, 1902 |
| 7) Dolichoderinae Lepeletiere | <i>Dolichoderus</i> <i>Tapinoma</i> Forester 1850 | <i>Dolichoderus affinis</i> Emery, 1889 <i>Tapinoma melanocephalum</i> Fabricius 1793 |
| 8) Formicini Lepeletiere | <i>Techomermex</i> <i>Acropyga</i> | <i>Techomermex albipes</i> Smith, 1861 <i>Acropyga acutiventis</i> Roger, 1862 |
| | <i>Camponotus</i> Mayr,1861 | <i>Camponotus compressus</i> Fabricius 1787 <i>Camponotus paria</i> Emery, 1889 <i>Camponotus sericeus</i> Fabricius 1798 <i>Camponotus smillis</i> . Donisthorpe 1943 <i>Camponotus variegates</i> . Smith, 1858 |
| | <i>Lepisiota</i> | <i>Lepisiota fraunfeldi</i> Mayr, 1855 |
| | <i>Oecehylla</i> Smith,1861 | <i>Oecehylla samaragdina</i> (Fabricious 1775) |
| | <i>Paratrechina</i> Motschoulskys 1863 | <i>Paratrechina lonicornis</i> . Latreille, 1802 <i>Paratrechina yerburyi</i> (Forel1894) |
| | <i>Plagiolepis</i> Mayr,1861 | <i>Plagiolepis exigua</i> Forel, 1894 <i>Plagiolepis dichro</i> Forel, 1902 <i>Plagiolepis jerdonii</i> (Forel1894) |
| | <i>Polyrachis</i> Smith,1858 | <i>Polyrachis bihamata</i> Mayri Roger 1883 <i>Polyrachis fergusonii</i> (Forel 1894) <i>Polyrachis rustellata</i> Latreille, 1802 |

Number of subfamilies - 8

Number of Genera-35

Number species 66

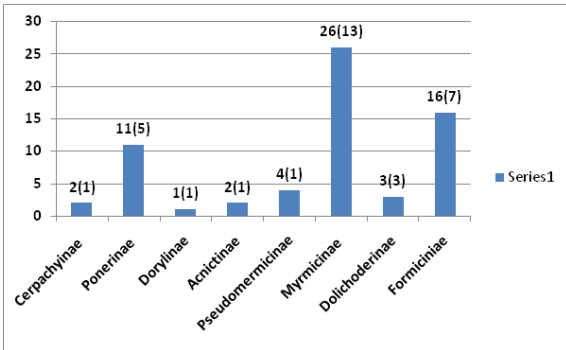


Fig. 1:- Number of species from each subfamily collected in Amba reserve forest. The first number on each bar is the number of genera and number in parentheses is the number of species

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Fig. 1 *Crematogaster* sp.

Fig. 2 *Dorylus* sp.



Fig. 3 *Monomorium* sp.

Fig. 4 *Solenopsis* sp.

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