



Full Length Research Article

**DIVERSITY AND ECONOMIC IMPORTANCE OF ANTS (HYMENOPTERA: FORMICIDAE) FROM
KOLHAPUR CITY, MAHARASHTRA STATE, INDIA**

¹Shilpa Kurane, ^{*2}Bhoje, P. M. and ¹Sathe, T. V.

¹Department of Zoology, Shivaji University, Kolhapur
²Department of Zoology, Y. C. Warana College, Warananagar

ARTICLE INFO

Article History:

Received 04th December, 2014
Received in revised form
11th January, 2015
Accepted 14th February, 2015
Published online 17th March, 2015

Key words:

Diversity, Ants,
Occurrence,
Economic importance,
Kolhapur city.

Copyright © 2015 Shilpa Kurane et al. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Ants are important components of ecosystem and acts as biological indicators. The present study was undertaken to assess ant diversity of Kolhapur city. We collected 20 species of ants belonging to genera *Camponotus*, *Monomorium*, *Crematogaster*, *Dolichoderus*, *Formica*, *Doryllus* from Kolhapur city. Their occurrence and economic importance have been reported.

INTRODUCTION

Ants are important components of ecosystem and represent a great part of animal biomass. They act as biological indicators. All the known species of ants are eusocial (Gadagkar *et al.*, 1993). Their morphology varied as per habitat. Ants feed on honey dew, plant seed, nectar, etc.

Most species are carnivorous, omnivorous, predators and some species are pests on economical important crop plants. So ant diversity from Kolhapur city has been studied. The ant diversity was studied by Bolton & Collingwood (1975), Agosti (1991), Bingham (1903), Chapman *et al.* (1951), Tak (1995), Tiwari (1999), Wu (1990) etc.

MATERIALS AND METHODS

The ant samples were collected from Kolhapur city. Samples were collected randomly. The ants were collected by using sharp forceps and camel brush. The collected ants were preserved in 70% alcohol.

***Corresponding author: Sathe, T. V.**

Department of Zoology, Shivaji University, Kolhapur- 416004, India

The collected samples were identified in laboratory by using literature cited under references. Occurrence and economic importance was studied by visiting different study spots in Kolhapur city at 15 days interval.

RESULTS AND DISCUSSION

In all, 20 species of ants have been reported. The most specious sub-family was Myrmicinae followed by Formicinae, Dolichoderinae, Dorylinae were recorded from Kolhapur city. From which *Monomorium*, *Dolichoderus*, *Crematogaster*, *Doryllus* found in human habitat. *Formica* species found on crops, vegetables and fruits.

There are two types of ants, winged and non-winged. The winged ants have sting poison gland opening into the sting while non winged have poisonous sharp mandibles. In both cases formic acid is poison responsible for irritation and itching and swelling on the human body.

Non poisonous ants are associated with sweet materials in human houses. They contaminate food and transmit certain diseases to humans. Results are recorded in Table 1 and Figs. 1 – 8.

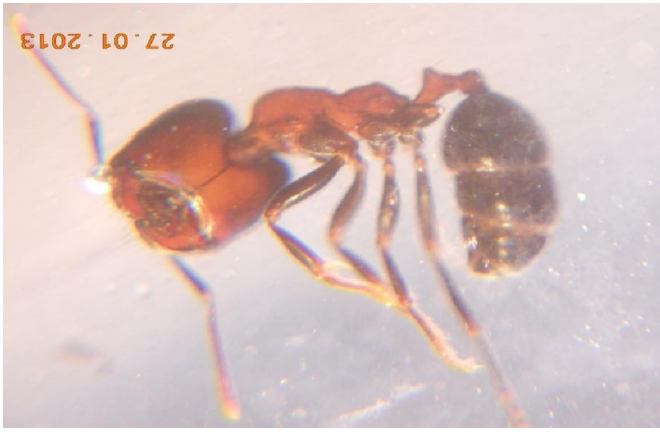


Fig.1. Dorylus sp.



Fig.5. Camponotus sp.



Fig. 2. Dolichoderus sp.



Fig. 6. Formica sp.



Fig. 3. Crematogaster sp.



Fig.7. Monomorium sp.



Fig.4. Aenictus sp.



Fig. 8. Formica winged sp.

Table 1. Diversity of Ants (Hymenoptera: Formicidae) from Kolhapur city

Sr. No.	Scientific Name	Sub-family	Occurrence	Economic importance
1.	<i>Camponotus cinerascens</i> Fabricus, 1787	Formicinae	Monsoon	Feed on plant sap, sting absent, no bite
2.	<i>C. compressus</i> Fabricius, 1787	Formicinae	Throughout the year	Feed on plant sap, sting absent, no bite
3.	<i>C. maculatus basalis</i> Smith, 1878	Formicinae	Throughout the year	Feed on plant sap, sting absent, no bite
4.	<i>C. radiatus</i> Forel, 1892	Formicinae	Throughout the year	Feed on plant sap, sting absent, no bite
5.	<i>C. selene</i> Emery, 1889	Formicinae	Throughout the year	Feed on plant sap, sting absent, no bite
6.	<i>Crematogaster abdominalis</i> Motschoulsky, 1863	Myrmicinae	Monsoon	Feeds on sweets, meat, sting strongly developed, bite
7.	<i>C. anthracina</i> Smith, 1857	Myrmicinae	Monsoon	Feeds on sweets, meat, sting strongly developed, bite
8.	<i>C. diffusa</i> Jordon, 1851	Myrmicinae	Monsoon	Feeds on sweets, meat, sting strongly developed, bite
9.	<i>Dolichoderus affinis</i> Emery, 1889	Dolichode-rinae	Monsoon	Feeds on plant sap, no sting, no bite.
10.	<i>D. sundari</i> , Mathew and Tiwari, 2000	Dolichode-rinae	Monsoon	Feeds on plant sap, no sting, no bite.
11.	<i>Dorylus labiatus</i> Shuckard, 1840	Dorylinae	Throughout the year	Feeds on small insects, mandibles large pointed, sting strongly developed, bite.
12.	<i>D. orientalis</i>	Dorylinae	Monsoon	Feeds on small insects, mandibles large pointed, sting strongly developed, bite.
13.	<i>Formica rufa</i>	Formicinae	Throughout the year	Feeds on honeydew, seeds, sting absent, spray formic acid from abdomen
14.	<i>Monomorium destructor</i> Jordon, 1851.	Myrmicinae	Throughout the year	Feeds on grease, sweets, fruits, vegetables, no sting, no bite
15.	<i>M. glabrum</i> Atdr, 1883	Myrmicinae	Throughout the year	Feeds on grease, sweets, fruits, vegetables, no sting, no bite
16.	<i>M. indicum</i> Forel, 1902	Myrmicinae	Throughout the year	Feeds on grease, sweets, fruits, vegetables, no sting, no bite
17.	<i>M. gracillimum</i>	Myrmicinae	Throughout the year	Feeds on grease, sweets, fruits, vegetables, no sting, no bite
18.	<i>M. indica</i> Weber, 1950	Myrmicinae	Throughout the year	Feeds on grease, sweets, fruits, vegetables, no sting, no bite
19.	<i>M. rugifrons</i> Smith, 1858	Myrmicinae	Monsoon	Feeds on grease, sweets, fruits, vegetables, no sting, no bite
20.	<i>M. rugosa</i> Mayr, 1865	Myrmicinae	Monsoon	Feeds on grease, sweets, fruits, vegetables, no sting, no bite

Acknowledgements

Authors are thankful to Shivaji University, Kolhapur for providing facilities.

REFERENCES

- Agasti, D. 1991. Revision of the oriental genus *Cladomyrmex* with a outline of the higher classification of the formicinae *Systematic entomology*, 16, 293-310.
- Bingham, C.T. 1903. The fauna of British India including Ceylon and Burma, Hymenoptera. Vol.-2. Ants and Cuckoo wasps. London. 506 pp.
- Bottom, B. and Collingwood, C.A., 1975. Hymenoptera : Formicidae, Hand Book for identification of British Insects, Vol.-4 (3c), London, 34pp.

- Chapman, J.W. and Capco, S.R., 1951. Check list of the ants of Asia. *Monographs of the Institute of science and technology, M. anila*, 1 : 327 pp.
- Gadagkar, R.P., Nair, K. Chandrashekhar and Bhat, D.M., (1993). Ant species richness in some selected localities in Western Ghats, India. *Hexapoda*, 5 : 70-94.
- Tak, N., 1995. Studies on Ants (Formicidae) of Rajasthan. I. Jodhpur. *Hexapoda*. 7 : 17-28.
- Tiwari, R.N. (1999). Taxonomic studies on Ants of Southern India (Insecta : Hymenoptera : Formicidae). *Memoirs*. 18 : 1-96.
- Wu, J. 1990. Taxonomic studies on the genus *Formica* of China. *Forest Research*, 3, 1-8.
