

**Taxonomy and diversity of Ant (Hymenoptera: Formicidae)
from campus of Moreshwar Arts, Science and Commerce
College, Bhokardan District, Jalna**

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Abstract

The present study deals with the diversity of ants in the, Moreshwar Arts, Science and Commerce College, Bhokardan District, Jalna, as there is no adequate information pertaining on ant diversity of this region. The present study was carried out during October 2022 to December 2022. We have sampled ants by hand picking method. The sampled specimens representing 3 species belonged to 2 genera and 1 subfamily. During present study genera *Monomorium* and *Crematogaster* were recorded. The species diversity of genus *Monomorium* is higher than genus *Crematogaster*.

Keyword words : Ants, Taxonomy Myrmicinae, Bhokardan.

Ants are important components of ecosystems not only because they constitute a great part of the animal biomass but also because they act as ecosystem engineers. All the known species of ants are asocial⁵. Ant species can be used in monitoring environmental impacts, ecosystem funding, and tools in ecological studies.² Ant species are used as excellent indicators of land management practices and restoration efforts^{1,4,9}.

Ants are ubiquitous in distribution and occupy almost all terrestrial ecosystems. There are about 15000 species of ants³; only 11,769 species have been described¹. The family Formicidae contains 21 subfamilies, 283

genera and about 15000 living ant species of which 633 ant species belonging to 82 genera, 13 subfamilies are reported from India. About 226 species of ants belonging to 63 genera and 11 subfamilies are estimated from Karnataka state¹⁰.

Ants are one of the least studied groups with respect to their taxonomy and ecology in India. Species identification of ants is difficult because of lack of reference collection and the fact that most of the available keys are either out of print and unavailable are restricted to the ant fauna of specific region ants account for an estimated 30% of terrestrial biomass⁶ and play many important ecological

role having direct interaction with the soil plants and animals at all tropic levels. Ant communities are influenced by both biotic and a biotic factors. Distribution of ant species varies along latitudinal gradients which correspond to gradual changes in a certain environmental factor such as a climate and vegetation factors. Globally there are about 12571 extant ants species as per the recent classification all ants are grouped in 21 sub families all the ants species fall into signal family formicidae this family is included in the super family vespidae of the order hymenoptera which is placed in the class insect.

were hand collected using a brush and forceps and preserved in 70 % alcohol and brought to the laboratory for further analysis. Identification of ant species made with the help of stereozoom trinocular microscope, on the basis of taxonomic keys given by Holldobler, and Wilson⁶, Mathew and Tiwari,⁷ (Sheela⁸) etc. Ant diversity in the campus of Moreshwar Arts, Science and Commerce College, Bhokardan District, Jalna between Lat 20.243964° to long 75.757595° has been analyzed in this study. During this study a total of 50 sampled specimens were collected in the study area.

The ant samples were collected from various localities in and around college Jalna District of Maharashtra India. We employed all out search method for the collection of ants form October 2022 to December 2022. Ants

During the present study three species belonging to two genera and subfamily Myrmicinae were found as shown in the table. The genus crematogaster were represented by on species and genus Monomorium was recorded with two species.

Table-1. Showing Subfamily, genus and species wise list of ants collected in and around College

Subfamily	Genus	Species
Myrmicinae	<i>Crematogaster</i>	<i>Crematogaster subnuda</i> (Mayr, 1879)
	<i>Monomorium</i>	<i>Monomorium indicum</i> (Forel, 1902)
	<i>Monomorium</i>	<i>Monomorium latinode</i> (Mayr, 1872)

Taxonomy :

suture absent hind tibae with only simple spur—————Myrmicinae

Keys to the subfamily :

Keys to the Myrmicinae genus :

Members of the subfamily myrmicinae are characterized by two segmented pedicel, transversely rounded and unnamed pygidium, presence of eyes and frontal lobes and well separated antennal sockets. Most of the genera are polymorphic in nature.

1. Postpetiole attached to the dorsal side of gaster; gaster in dorsal view heart Shaped.....**Crematogaster**

- 1. Posterior margin of clypes projection in between antennal sockets promesonotal

Crematogaster subnuda (Mayr, 1879)

Family: Formicidae

Subfamily: Myrmicinae

Genus: *Monomorium*

Species: *subnuda*

Diagnostic Characters : Head, thorax pedicel, antennae and legs brownish red pilosity sparsely spread on thorax and apex of gaster, pubescence white appressed widely and regularly arranged all over head smooth with a small strait surrounding antennal hollows mandibles strait clypeus broad. Anterior portion almost transverse eyes lateral situated on the middle, more to posterior part scape clearly reaching top of head. Flagellum formed of apical three joints. Pronotum flat above rugolose anterolateral suture weakly and mesonotal suture clearly indicated. Propodeal spines straight and acute; apex of propodeum smooth petiole semicircular in front sides angular post petiole shallowly longitudinally grooved gaster broadly cordate. Size 4.5 to 5 mm

Distribution: Throughout India.

Elsewhere: Myanmar and Sri Lanka Sheela, (2008).

2. Propodium unnamed, evenly rounded mandible not as above ————*Monomorium indicum* (Forel, 1902)

Family: Formicidae

Subfamily: Myrmicinae

Genus: *Monomorium*

Species: *indicum*

Diagnostic Characters : Head, thorax and pedicel ferruginous red, the legs and in many specimens the head also verging to brown; abdomen dark brown or black; head, thorax and abdomen rugolose, opaque, the head and thorax anteriorly in certain lights appearing densely and extremely finely longitudinally striate; abdomen minutely reticulate; in some specimens the 2nd and following segments are

smooth, polished and shining; pilosity entirely wanting. Head broad, almost as broad as long, broader anteriorly than posteriorly, the hinder margin slightly concave; mandibles narrow, obscurely longitudinally striate, when closed partially concealed under the projecting margin of the clypeus, the latter obtusely bicarinate; antennae moderately long, the scape not quite attaining the posterior margin of the head; eyes comparatively large and flat, placed about the middle of the side of the head. Thorax anteriorly rounded, moderately broad, the meso- and metanotum narrow and strongly compressed, the meso-metanotal suture, distinct; the thorax in profile emarginated at the suture, the basal portion of the metanotum broadening posteriorly. Pedicel: the nodes, seen from above, nearly equal, the rounded 1st node higher than the 2nd and petiolate anteriorly; abdomen oval.

Habitat: They make small nests on ground by excavating soil.

Distribution: India from Punjab to Kerala Bingham⁴.

***Monomorium Latinode* (Mayr, 1872)**

Family: Formicidae

Subfamily: Myrmicinae

Genus: *Monomorium*

Species: *latinode*

Head, thorax and pedicel yellowish brown mandibles antennae and legs honey yellow color; abdomen dark brown whole body smoothly polished and shining metanotum and side of mesonotum transversely striate pilosity moderate brown suberect, pubescence absent. Head longer than broad; scape of antennae reaching top of head club of flagellum thick formed of apical three segments, eyes laterally situated in the front of middle promesonotum

together forming a convexity behind which, metanotum narrow and almost straight meso-metanotal suture distinct propodeal spiracles distinctly indicated; propodeum with upper margined apex smooth; petiole conical postpetiole distinctly broader than petiole, gaster broadly oval from above size 3-4 mm

One subfamily and two genera with tree species are described from study area genera *Monomorium* was also reported from IISC Bangalore and also from Madras in 1851 J. Lit. Sci., 2003. The nearctic *Monomorium* belongs to the taxonomically vexing minimum group revised by Dubois in (1986).

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