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Queens of the ant *Monomorium* (Hymenoptera: Formicidae) are unusual prey of *Acridotheres tristis* (Passeriformes: Sturnidae) (Common Myna)

Yash Paul Sharma**ABSTRACT**

Acridotheres tristis (Linnaeus, 1766) hunting for Queens of the ant *Monomorium* was recorded for the first time. It is depiction of very unusual behavior because only queens were taken as prey, out of the thousands of ant workers. Common Myna generally omnivorous, subsisted mainly on insect but occasional feeders of ants. These observations would definitely help to study the behavior, evolutionary aspect, association of birds and insects.

Keywords: *Monomorium*, Myna, *Acridotheres tristis*, Queens, Ant, Prey.**1. Introduction**

Like most starlings, the Common Myna is omnivorous. It feeds on insects, arachnids, crustaceans, reptiles, small mammals, seeds, grains, fruits and discarded waste from human habitation. It forages on grass for insects, especially for grasshoppers; due to it get the generic name *Acridotheres*, "grasshopper hunter". It however feeds on a wide range of insects, mostly picked from the ground [1, 8]. It is a cross-pollinator of flowers such as *Salmalia* and *Erythrina*. It walks on the ground with occasional hops and is an opportunistic feeder on insects, disturbed by grazing cattle as well as ablaze grass fields. It mainly subsisted on insects (84.1% of the total mass taken) [9] and among insects only 2.4% on hymenopterans including ants [1-3, 5, 6, 9-12].

2. Method

Common Myna was feeding on the queens of ant *Monomorium*, a few meters away, during observation on ant nesting behavior. Thousands of ant workers along with virgin queens were foraging around the nest openings. Common Myna rushes towards the nest and starts hunting the queens. I planned to watch this activity of the Myna, rather than to disturb it or to collect the queens. About 200 queens were roaming around the polydomous nest surrounded by thousands of workers in the winters of January, 2012. I repeatedly photographed from different angles and distances, and made short videos of this behavior at Punjabi University Patiala campus, India (30.3600° N, 76.4500° E). All the shots were made using Sony camera (DSC-W150). Few specimens of the queens and workers were collected for identification and the bird was identified with photographs. The nest of *Monomorium* was more than five years old with thousands of workers.

3. Results and Discussion

Common Myna performed regular attacks on queens of *Monomorium*. The behavioral tactics of the Myna was unchanged and similar to that recorded to other insects hunting for slowly moving prey. It included approaching, selecting of a solitary prey and attack. Common Myna repeatedly picked a queen among thousands of workers and flew away to avoid the wrath of the worker ants (Fig. 1). Every time the Myna came, picked up a queen and flew away, this was very unusual. The Myna mostly attacked the solitary queen and not those from the swarm. At times, the Myna had to wait for the solitary queen. The Myna walked along the openings of the nest to find the solitary queen. During this process, when attacked by the worker ants, it would fly away and come back later for its pray. After a few minutes, one more Myna joined the arena and attacked the queens in a similar manner. It lasted for about 20 minutes. The queens which were escorted by workers were not attacked.

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Fig 1: Common Myna targeting the queens of *Monomorium* species

According to the present data, most of the birds including the common Myna solely feed on insects including ants, but no observational record was found for such unusual feeding behavior, particularly targeting the queens. This unusual behavior of queens emerging in winters and Myna feeding on them is something that has not been recorded so far. Usually, the queens of the *Monomorium* emerge during summers i.e. from March to June and in winters only a few workers roam around the nest. Although, ants activity during this period is very rare because of low temperatures and it's also unusual time for swarming of *Monomorium* queens. But the temperature was few degrees (24 °C) above the normal winter temperature (2-10 °C) with good Sunshine which resulted in unfertilized queens emerging from their nests, but no males were observed. The worker ants trying hard to pull the queens inside the nest. Some of the queens which are quite away from the nests were escorted by the workers (Fig. 2).

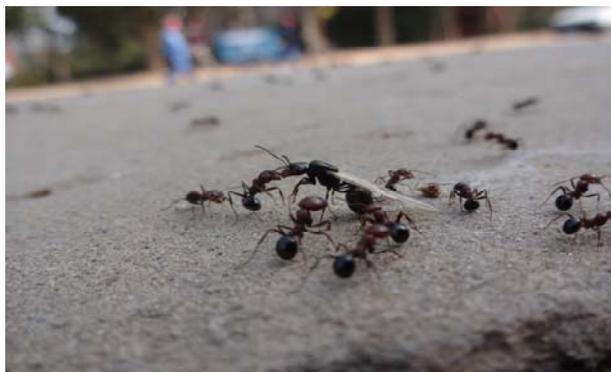


Fig 2: Workers of *Monomorium* escorting a queen

At that day because of the normal sunshine the temperature rises few degrees from normal winter temperature and newly emerged unfertilized queens came out of the nests, but no male for observed. Thousands of the workers were also comes out to escort them.

In winters, most of the insects hibernate and there are few chances for birds to encounter any insect. So, when the Myna saw the swarm, it flew down to eat them but chose only the queens. The exact reason for this unusual behavior is unknown but it might be due to following reasons:

1. The winged queens resembled to other winged insects like grasshoppers.
2. The mandibles of the queens are not rigid enough to defend the attack as compared to worker ants. Queens are more proteineous than workers.

These observations resulted in distinguishing several aspects of unusual behaviour. The first question concerns with the emergence of queens in winters and second; the feeding of Myna solely only on queens. Whatever may be the actual reason; this type of observations would definitely help to study the behavior, evolutionary aspect, association of birds and insects, and effect of temperature variations on the life cycle of ant species which are one of the most important keystone species in an ecosystem [4,7].

4. Acknowledgment

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5. Declaration

The experiments comply with the current laws of the country and also declare that there is no conflict of interest regarding publication of this article.

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