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Short Communication

Notes on food and feeding habits of oriental magpie robin (*copsychus saularis)*

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Abstract

Magpie Robin is a very common bird found in a variety of habitats like open woodlands, electric cables on roadside, cultivated lands and paddy fields close to human dwellings. It is a variety feeder. The food composition varies from insects to reptiles. The present study is conducted in eight locations during the period from 2016 to-2018. The study shows that the above bird is acting as a pest since it preys upon the larvae of soldier flies, Hermetia spp, which are highly useful for the decomposition of house hold wastes.

Keywords: Oriental magpie robin, variety feeder, feeding habits, black soldier fly Larvae, *Blatta orientalis*, house hold wastes.

Introduction

The oriental magpie robin, with distinctive black and white markings on the body, is a small passerine bird with a long tail that is held upright conspicuously during their daily activities[1-4]. The bird is mostly seen close to the ground chirping and hopping along the branches. Males of magpie robin are well known for their complex song delivery[5]. They are closely associated with human habitations and breed mainly from March and continued till August[6,7].

The present paper discusses the food and feeding habits of magpie robin in Malappuram district of Kerala, south India.

Materials and methods

Food, feeding and foraging were observed focally and also with the help of field binoculars (7 X 50) from a considerable distance without affecting their feeding habitat. Data was collected weekly from the field and the food items were identified using standard text books. Birds were counted using point count method.

Vegetation was estimated by using quadrate method. Vegetations up to height of 1metre are classified as herbs and those between 1metre and 2metres height are put under shrubs. Vegetations with more than 2metres are considered as trees. Insect fragments in the diet collected from the pellets were identified at the species level by comparing the semi digested food particles and the small chitnous particles with that of a reference slide prepared for the purpose.

Study area: It was carried out in eight natural habitats of Malappuram district as shown in Table-1.

Table-1: Showing the peculiarities of different study sites.

Study sites	Peculiarities
Thiruvali	Coconut Plantation
Poonthottam	Human dwellings
Vaniyambalam	Railway station
Pathiriyal	Road side
Angadipuram	School compound
Manjeri	Human dwellings
Nilambur	Temple Premise
Wandoor	Human dwellings

Results and discussion

Of the eight locations under study (Tabe-2), *Cocos nucifera* are the most abundant species among trees in study site 1 followed by *Ocimum sanctum* and *Hibiscus rosa sinensis* among herbs and shrubs. In study site 2, the most abundant trees are represented by *Bambusa arundinacea* and *Rosa gallica* and *Murraya koenigii* among herbs and shrubs.

Similarly, in study site 3, the most abundant trees are *Tectona grandis* where as the most predominant herbs and shrubs are represented by *Biophytum sensitivum* and *Eupatorium odoratum respectively*. In study site 4, *Mangifera indica* are the most abundant species among trees and *Rosa gallica* and *Caricapa ppaya* among herbs and shrubs respectively. The most abundant trees in study site 5 are represented by *Millettia pinnata* and among shrubs and herbs *Hibiscus rosa sinensis* and *Ocimum sanctum*. Among trees *Cocos nucifera* are the most abundant trees in study site 6 followed by *Rosa gallica and Musa paradisiaca* among herbs and shrubs. The most abundant trees present in study site 7 are *Tectona grandis* and *Biophytum sensitivum* and *Carica papaya* among herbs and shrubs. *Hevea brasiliensis are* the most abundant species among trees in study site 8 followed by *Ocimum sanctum* and *pouteria campechiana* from among the herbs and shrubs.

Table-2: The % composition of vegetations in different study sites with locations.

Study Sites	Locations	% Composition of vegetation
Thiruvali	11.2028ºN, 76.1871º E	Trees:80%, Herbs:15%, Shrubs:5%
Poonthottam	11.1974ºN, 76.1685ºE	Trees:10%, Herbs60%, Shrubs:30%
Vaniyambalam	11.1883ºN, 76.2609ºE	Trees:60%, Herbs:25%, Shrubs:15%
Pathiriyal	11.1822º N, 76.1609ºE	Trees:25%, Herbs:30%, Shrubs:45%
Angadipuram	10.9773º N, 76.2014º E	Trees:25%, Herbs:35%, Shrubs:40%
Manjeri	11.1203 ºN, 76.1199ºE	Trees:15%, Herbs:50%, Shrubs:35%
Nilambur	11.2794º N, 76.2398º E	Trees:50%, Herbs:30%, Shrubs:20%
Wandoor	11.1955 ºN, 76.2360ºE	Trees:20%, Herbs:40%, Shrubs:40%

Figure-1: Rat tailed maggot[8].

The food of adult birds consists mainly of ants, centipedes, rat tailed maggots, (Figure-1) house lizards, geckos, black soldier fly larvae, termites, Blue tiger moths and Butterflies of the family Pieridae (Table -3).

The food is collected from various habitats under study. They catch insects in mid-air and then take a perch to consume it. They prey upon ants by hopping on the ground. Large prey species are consumed after fragmenting them into small pieces with the help of their beak and legs, perching on the trees and pecking suddenly. The same habit is reported in little bee eaters also[9]. The food of nestlings is almost same as the adult. Though the bird is a mixed feeder .It is mainly insectivorous as in warblers[10].

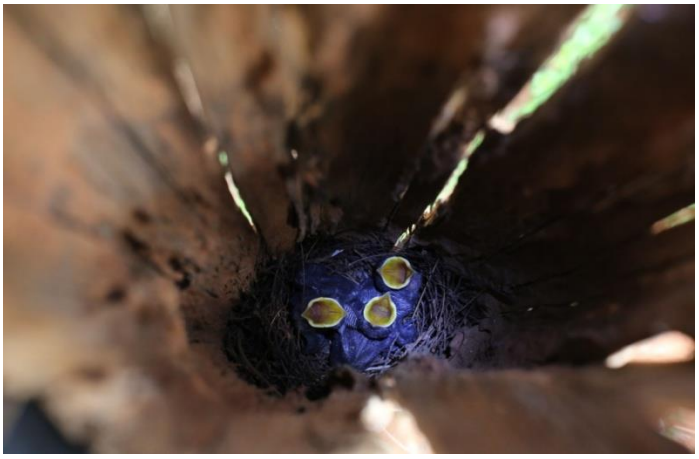

Figure-2: Mouth linings of the nestlings exposed when beg for food.

In breeding season, usually, the foodstuff is transferred in to the beak of the parent bird and is placed in the begging open mouth of the nestling[11,12]. The young ones are very much conscious of the arrival of the parents into the roost by the quivering, call entries and clear activities of the parent bird at its landing in or close tonest[13]. The mouth linings of the nestlings lying at about 15 cm deep from the entrance of the nest built in the cavities of the areca nut and coconut palms are brightly coloured when it begs for food and is seen as a gap for food provision when the cavity of the nest is observed using a torch light (figure-2). The above gap acts as a food reception site of the nestling, which directs the parents to putdown the food perfectly[14].

Figure-3: Black soldier fly larvae decomposing the food waste[15].

When parents reach the roost with food, usually all the chicks react at different levels of strength assuming on the need for food and age differences. In passer form birds, their quantity of nourishing varies every day due to growing energy requirement of the flourishing off springs until they attain flight[16].

Females take much effort on feeding the young ones than the males.

Figure-4: Black soldier fly pupa[17].

Robins, highly vulnerable to introduced predators, lack natural predators and have only a limited ability to avoid predation[18]. In the present study, domestic cats are seen preying upon them in their fledging stage. Their ground feeding habits make them easily accessible to introduced mammals and their flightless period after leaving the nest make fledglings easily vulnerable.

The present study shows that most of their preys are invertebrates inhabiting the top soil like ants, termites, lizards, centipedes, rat tailed maggots and larvae of black soldier fly. It is also observed that the nesting pairs are preying up on dragon flies in flight during twilight. The geckos, *Hemidactylus brooki*, are an easy target of the robins in soil habitat in the surroundings of the human dwellings[19].

The bird is acting as a pest to some extent since it preys upon the larvae of soldier flies in abundance which is highly useful for the decomposition of house hold wastes (Figures-3 and 4).

Conclusion

The present study shows that the Magpie robin is mixed grazer and is insectivorous in habit. The most common food items preferred by the bird is termites and the least preferred ones are cockroach nymph .

This bird behaves as pest as it feeds upon the larvae of soldier flies in groups which are very helpful for decaying domestic wastes.

Table-3: The food species consumed by magpie robin during 2016-18.

Species/common name	Family/class	Species Percentage
Formica spp. (Ants)	Formicidae - Insecta	19.38%
Odontotermes spp. (Termites)	Termitidae- Insecta	31.01%
Scolopendra spp. (Centipede)	Scolopendridae- Chilopoda	3.88%
Hirudinaria granulosa (Leech)	Hirudinidae- Annelida	3.10%
Aeshna spp. (Dragon fly)	Aeshnidae - Insecta	2.33%
Hermetia spp. (Black soldier fly larvae)	Stratiomydae- Insecta	19.38%
Acrida exaltata / Acrida gigantea (Grass hoppers)	Acrididae - Insecta	1.55%
Gryllus spp. (Cricket)	Gryllidae - Insecta	1.55%
Eristalis spp. (Rat tailed maggot)	Syrphidae- Insecta	7.75%
Calotes versicolor (Gecko)	Geckonidae - Reptilia	0.78%
Hemidactylus brookii (House lizard)	Geckonidae - Reptilia	1.55%
Blatta orientalis (Cockroach nymph)	Blattidae - Insecta	0.78%
Bluetiger moth (moth)	Geometridae- Insecta	3.10%
Aranea spp. (Spider)	Araneidae - Arachnida	3.88%
	Total	100.00%

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