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Diet of the Barn Owl (*Tyto alba*) in Shaumari Wildlife Reserve, Eastern Jordan

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Abstract: Pellets belonging to the Barn Owl (*Tyto alba*) were collected under a roost in Shaumari Wildlife Reserve in the Eastern Desert of Jordan between January and August 2002 to determine its diet composition. A total of nine species of small mammals belonging to two orders (Insectivora and Rodentia) were identified. Insectivores constituted 1.7 % of all prey items and 0.4 % of total prey biomass, while rodents comprised 97.4 % of the total prey and 99.6 % of the total biomass. *Mus* sp. was the dominant prey item throughout the study period where as birds had the lowest frequency. Noteworthy records of shrews were reported.

■ **Barn Owl, *Tyto alba*, diet, Shaumari reserve, Jordan**

INTRODUCTION

The Barn Owl, *Tyto alba* (Scopoli, 1769), is a widespread opportunistic predator in the Middle East. It hunts over open fields and its diet consists mainly of small- to medium-sized mammals, birds and reptiles.

Barn Owl mainly inhabits the Jordan Valley and northern Jordan, and is also known from Shaumari Wildlife Reserve in the Eastern Desert (Andrews 1995). Rifai et al. (1998) studied the diet of the Barn Owl from the northern agricultural planes near Irbid, northern Jordan, and found that it consisted mainly of Tristram's jird, *Meriones tristrami*. Dor (1947), Rekasi & Hovel (1997) and Pokines & Peterhans (1998) studied the diet of this owl in various parts of Palestine. Nader (1968) found that the Barn Owl to feed on bats and rodents in Iraq.

This study aims at the description of the dietof Barn Owls in an arid environment in the Shaumari Wildlife Reserve, Eastern Desert of Jordan.

MATERIALS AND METHODS

At least two individuals of the Barn Owl were identified to breed in the Shaumari Wildlife Reserve the area during the sampling periods. Pellets were collected from a communal diurnal roost over planted trees around the reserve during January to August 2002.

The Shaumari Wildlife Reserve is located about 12 km southwest of Azraq Shishan (100 km southeast of Amman). The reserve is part of the Sahara-Arabian biogeographic region. The protection and wildlife conservation of this area has resulted in the growth of

rich desert vegetation with four recognized types: (1) hammada type dominated by *Seidlitzia rosmarinus*, *Anabasis articulata* and *Astragalus spinosus*; (2) the mud flat vegetation with *Capparis leucophylla* and *Ephedra transitoria*; (3) the saline vegetation dominated by *Nitraria retosa*, *Limonium pruinosum* and *Suaeda vermiculata*; and (4) the run-off vegetation dominated by shrubs of *Atriplex halimus*, *Phalaris minor*, *Lolium* sp. and *Artemisia herba-alba* (Al-Eisawi 1996).

A total of 124 regurgitated pellets were collected on daily basis. Each pellet was placed in a Petri dish, soaked in water for 15 min., then all bones and other remains were picked and preserved separately. Prey remains were identified to the lowest taxon possible using skulls, lower jaws and cheek teeth of mammals using reference specimens deposited at the Jordan University of Science and Technology Museum.

Diet composition was expressed as frequency, percentage (number of prey in each taxonomic category divided by the total number of prey collected) and relative biomass (biomass estimated as the number of individuals in each taxonomic group multiplied by average body weight for the taxon).

RESULTS

A total of 416 prey items were identified from Barn Owl pellets during the study period. The diet consisted only of vertebrate prey (mammals and birds) with a range of 1 to 6 prey items per pellet. The diet included nine species of mammals belonging to four families (Tab. 1)

The diet was most variable in spring (8 prey species), and the least variable in summer (5 prey species) (Tab. 1). *Mus* sp. was the most common prey consumed in all seasons (45.5, 66.9 and 83.6 % in spring, winter and summer respectively), followed by *Gerbillus dasyurus*.

The Mouse, *Mus* sp., was the most common prey item consumed during all seasons with a total biomass of 52.2 % with lowest proportion in spring (tab. 1). Larger species of desert rodents (*J. jaculus*, *M. crassus* and *M. libycus*) accounted only for 8.9 % of the total prey items and 26.9 % of total biomass (Tab. 1).

DISCUSSION

In the present study, diet of *Tyto alba* in an arid environment in the Eastern Desert of Jordan was studied for the first time. *Tyto alba* is known as an opportunistic feeder in the Middle East, foraging on a variety of species, incl. mammals, reptiles, birds and insects (Dor 1947, Nader 1968, Hoppe 1986, Kasparek 1988, Brinkmann et al. 1990, Kahila & Tchernov 1991, Rekasi & Hovel 1997, Pokines & Peterhans 1998, Rifai et al. 1998).

The mouse *Mus* sp. was the most abundant prey species throughout the study period. It is a commensal and invasive species that can establish colonies in remote agricultural areas in the desert. All previous studies reported the Mouse *Mus* sp. as the most frequent food item of the Barn Owl in the Middle East (Nader 1968, Hoppe 1986, Kasparek 1988, Brinkmann et al. 1990). Its high occurrence throughout the present study is attributed to its high reproductive potential all year around.

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Table 1. Seasonal variations in frequency, percent frequency and relative biomass (RBM) for prey species taken by the Barn Owl in Shaumari Nature Reser

Species	Winter			Spring			Summer			Total		
Insectivora	n	% n	% RBM	n	% n	% RBM	n	% n	% RBM	n	% n	% RBM
Suncus etruscus				4	4.6	0.5				4	1.0	0.1
Crocidua sauveolans	1	0.7	0.3	2	2.3	0.9				3	0.7	0.3
Rodentia												
Jaculus jaculus	18	12.9	30.1	4	4.6	10.6				22	5.3	13.8
Mus sp.	93	66.9	44.4	40	45.4	30.2	158	83.6	73.2	291	70.0	52.2
Gerbillus dasyurus	8	5.8	6.4	10	11.4	12.7	16	8.5	12.5	34	8.2	10.2
Gerbillus nanus	9	6.5	7.3	7	8.0	9.1	11	5.8	8.7	27	6.5	8.3
Gerbillus henleyi	6	4.3	2.0	8	9.1	4.2	2	1.1	0.6	16	3.8	2
Meriones crassus	1	0.7	1.8	4	4.5	11.3				5	1.2	3.4
Meriones libycus	3	2.2	7.7	5	5.7	20.5	2	1.1	5.0	10	2.4	9.7
Aves				4	4.6					4	1.0	
Total	139	100	100	88	100	100	189	100	100	416	100	100

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