

# THE DIET OF THE BARN OWL, *TYTO ALBA DETORTA* HARTERT, AT SÃO DOMINGOS VALLEY IN SANTIAGO, CAPE VERDE ISLANDS

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With 1 figure and 1 table

**ABSTRACT.** Information on the diet of the Cape Verde Barn Owl (*Tyto alba detorta* HARTERT, 1913) at São Domingos valley, Santiago island, is presented. Pellet analysis showed that *Mus musculus* is the most common prey item (56.1% of the total number recovered), although Orthoptera made up an important portion of the diet (39% of the total number of items).

**RESUMO.** Neste trabalho apresentamos informação acerca da dieta da Coruja-das-torres (*Tyto alba detorta* HARTERT, 1913) na ilha de Santiago (Cabo Verde), com base na análise do conteúdo de 10 regurgitações recolhidas em Junho de 1989 no vale de São Domingos (c. de 10 Km a norte da cidade da Praia). Os resultados mostram que *Mus musculus* (espécie introduzida) é a presa mais comum (56,1% do total de presas detectadas), constituindo todavia os invertebrados da Ord. Orthoptera um elemento importante da dieta (39% do total de presas).

## INTRODUCTION

Over most of the western Palearctic the food habits of the Barn Owl (*Tyto alba*) have been well reported (CRAMP, 1985), and show that small mammals (mice, small voles and shrews) predominate in the diet. Small birds and amphibians are also taken and invertebrates are described as a prey group which seems to be avoided (BUNN *et al.*, 1982). However, there is evidence that insects are more important to Barn Owls inhabiting the Cape Verde islands (e.g. BOURNE, 1955; HEIM DE BALZAC, 1965; NAUROIS, 1969, 1982) where *Mus musculus* and *Rattus rattus* are introduced species. HAZEVOET (1995)

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points out that the original diet of *T. a. detorta* must have consisted of insects, lizards and small birds and suggests that the species may have profited to some extent from human colonization.

The purpose of this study was to obtain quantitative information on the diet composition of the Barn Owl from São Domingos valley, in the southern part of Santiago island.

### Study area

The São Domingos valley (15° 01' N, 23° 33' W) occupies an area of about 350 ha and lies approximately 10 Km north of Praia in the island of Santiago, at an altitude of c. 250 m a.s.l. The slopes of the valley are very steep (50-75%) with high rocky walls on the southern side. Apart from a few sugar cane and maize plantations in irrigated fields, the valley is mainly covered with *Prosopis juliflora* and *Acacia nilotica* woodlands.

### Materials and methods

A single collection of 10 pellets was made in June 1989 from below an observed roosting place. The site was a crevice in the rocky wall about three meters above the ground. Barn Owl feathers were found at the site and the presence of fresh whitewash on rocks was considered an indication of recent site occupancy. Apart from pellets no other prey remains were found in the site area. Pellets were individually stored for subsequent analysis. Measurements were taken from only three pellets since all others showed some fragmentation and were respectively 41.2 x 29.2 mm, 45.0 x 29.2 mm and 38.2 x 19.9 mm.

Pellets were soaked in water and the contents removed for identification. Identification of mammals was based on skulls and mandibles, while for insects mouthparts (mainly mandibles) and other remains were used. Paired elements of each taxon were counted, and the largest number was considered the minimum number of individuals (MNI) detected in pellets.

### Results and discussion

Results are presented in Table 1. The introduced *Mus musculus* and *Rattus rattus* were the only vertebrates recorded. They comprised 61% of the diet, and *Mus musculus* was the most common prey (56.1 %). As far as invertebrates were concerned, only Orthoptera were found. However, they comprised an important part of the Barn Owl's diet (39%). Similarly, the stomach contents of a Barn Owl found dead in May 1989 in São Jorge, a small town near São Domingos valley, contained a mouse, locusts and many cockroaches (C. J. HAZEVOET, pers. comm.).



**TABLE 1** - Barn Owl prey numbers in pellets (n=10) from São Domingos valley, Santiago, Cape Verde Islands. MNI - Minimum number of individuals.

Prey Type	MNI	Percentage of prey items
<b>Mammals:</b>		
<i>Mus musculus</i>	46	56.1
<i>Rattus rattus</i>	4	4.9
<b>Insects:</b>		
Undetermined		
Orthoptera	32	39.0
(Total)	(82)	(100)

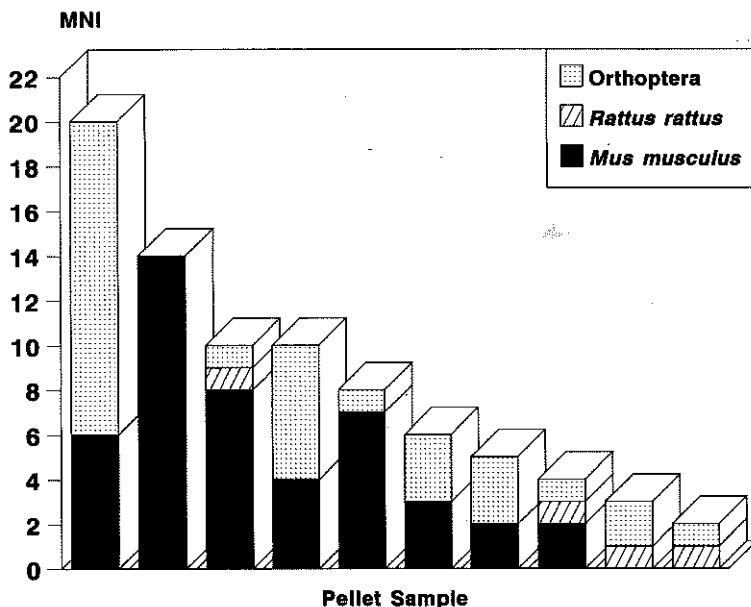


Fig. 1 - Minimum Number of Individuals (MNI) of different prey taxa identified in Barn Owl pellets from São Domingos valley, Santiago, Cape Verde Islands.

Fig. 1 also shows that *Mus musculus* and Orthoptera were the most frequent prey elements occurring in the sample. The number of vertebrate prey per pellet varied from one (pellets with the largest prey, *Rattus rattus*) to 14 (only *Mus musculus*). The latter is an exceptionally high number of individuals in Barn Owl pellets (THIOLLAY, 1963).



The assessment of Barn Owl diet on the basis of prey numbers only is not entirely satisfactory, due to differences in size of vertebrate and invertebrate prey. In fact, analysing the sample using biomass estimates of each identified prey would be a better approach, but was not conducted in this study due to lack of information. Nevertheless, the results and other information available (see NAUROIS, 1982, for a review; HAZEVOET, 1995), suggest that the contribution of invertebrate prey to the diet of Barn Owls inhabiting the Cape Verde islands is not negligible.

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## REFERENCES

BOURNE, W.R.P.:

1955. The birds of the Cape Verde Islands. *Ibis*, **97**: 508-556.

BUNN, D.S.; WARBURTON, A.B. & WILSON, R.D.S.:

1982. *The Barn Owl*. Poyser Ltd. 282 pp.

CRAMP, S. (Ed.):

1985. The Birds of Western Palearctic, Vol. 4. Oxford University Press. 960 pp.

HAZEVOET, C.J.:

1995. *The Birds of the Cape Verde Islands*. British Ornithologists' Union Check-list No. 13. 192 pp.

HEIM de BALSAC, H.:

1965. Quelques enseignements d'ordre faunistique tirés de l'étude du régime alimentaire de *Tyto alba* dans l'Ouest de l'Afrique. *Alauda*, **33**: 309-322.

NAUROIS, R. de:

1969. Notes brèves sur l'avifaune de l'archipel du Cap-Vert: Faunistique, endémisme écologique. *Bull. Inst. Fond. Afrique Noire, Sér. A*, **31**: 143-218.
1982. Le statut de l'Effraie de l'archipel du Cap Vert, *Tyto alba detorta*. *Riv. Ital. Ornit., Milano*, **52**: 154-166.

THIOLLAY, J.-M.:

1963. Les "pelotes" de quelques Rapaces. *Nos Oiseaux*, **27**: 124-131.