

Fragmenta Theriologica

A note on the Diet of the African Musk Shrew

UWAGI O POKARMIE *CROCIDURA POENSIS*

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Churchfield S., 1982: A note on the diet of the African musk shrew. *Acta theriol.*, 27, 24: 347—360 [With 1 Table]

The feeding habits of *Crocidura poensis* (Fraser, 1843) in south-east Nigeria were studied by faecal analysis of live-trapped shrews and food tests on captive individuals. Major dietary items included gryllids, diplopods, coleopterans and hemipterans. In addition, captive shrews readily ate acridids and mantids. 48% of prey items were 5—10 mm in body length but invertebrates up to 50 mm in length were taken by captive shrews.

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1. INTRODUCTION

Most studies of African crocidurid shrews have been confined to laboratory investigations of subjects such as their energy requirements (Hunkeler & Hunkeler, 1970; Vogel, 1976), activity patterns (Baxter *et al.*, 1979; Vogel *et al.*, 1981), behaviour in captivity and post-natal development (Ansell, 1964; Dippenaar, 1979). Little is known of their habits in the wild, particularly the diets of these often large and common shrews whose voracious predatory habits could have a considerable impact on prey populations.

This paper presents a brief investigation into the feeding habits of the large African musk shrew, *Crocidura poensis* (Fraser, 1843) in south-east Nigeria.

2. METHODS

The shrews were captured in an area of rough grass and cassava at Oron in the Calabar District of Cross River State, south-east Nigeria. Ten Longworth live-traps were placed singly at approximately 15 m intervals and examined morning and evening for captures over a period of six days. The traps were provided with paper tissue bedding but no bait was included.

The diet of the shrews was studied by analysing faecal pellets collected from the traps in which shrews had been captured. Eight samples were collected, each

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comprising a minimum of three faecal pellets. There was no correlation between the number of faecal pellets per sample and the number of prey items identified.

Faecal samples were preserved in 70% alcohol and later examined for identifiable food remains. Identification was facilitated by the use of a reference collection of potential prey items taken from the study area. Quantitative estimates and detailed identification of prey items were made impracticable by the fragmentary nature of the material. The sizes of prey items were recorded by comparing the dimensions of prey remains in faecal pellets, such as limbs, antennae and mouth-parts, with a reference collection of prey of different sizes.

In addition, two shrews were maintained in captivity and feeding tests were performed using live invertebrates caught in the study area. A selection of the larger and most frequently occurring invertebrates was presented to the shrews and all those which were readily eaten were recorded. No attempt was made to establish the shrews' preferences for different invertebrate prey types.

3. RESULTS

The results of dietary analysis are presented in Table 1 where the major prey types taken by shrews are shown. Results of faecal analysis are given in terms of percentage frequency of occurrence (the proportion of the number of samples examined which contained a named item) and percentage composition (the number of occurrences of a named item divided by the total number of occurrences of all items). The most commonly occurring items in the diet as revealed by faecal analysis were diplopods, gryllids, coleopterans and hemipterans. There was no apparent difference between samples collected from shrews caught at night or during the day but the small sample size makes results inconclusive.

The sizes of prey items identified from faecal pellets ranged from less than 5 mm in body length (formicids) to 35 mm (the larger gryllids). Only 10.3% of items were less than 5 mm. Most of the prey fell in the size ranges 5—10 mm (48.0%) and 11—20 mm (34.5%) but diplopods were excluded from the analysis owing to the difficulty of assessing

Table 1

The diet of *C. poensis* revealed by faecal analysis and food tests. Prey items readily eaten (+), prey items not presented (—).

	Faecal pellet samples		Food tests on captive shrews
	% Frequency of occurrence	% Composition	
<i>Coleoptera</i>	62.5	14.7	+
<i>Hemiptera</i>	62.5	14.7	—
<i>Gryllidae</i>	87.5	20.6	—
<i>Formicidae</i>	50.0	11.8	—
<i>Acrididae</i>	0	0	+
<i>Mantidae</i>	0	0	+
<i>Lepidoptera</i> (larvae)	37.5	8.8	+
<i>Araneidae</i>	37.5	8.8	—
<i>Diplopoda</i>	87.5	20.6	+

their sizes from remains in faecal pellets (in the field they had a body length of 11—25 mm). Only 6.9% of prey items were larger than 20 mm in body length. However, captive shrews would readily take larger prey, a maximum of 50 mm body length being recorded.

The diet of the shrews reflected the frequency of occurrence of the invertebrates in the study area as revealed by searching, with the exception of acridids and mantids which, despite their abundance, were not found in the faecal samples. Tests with captive shrews to ascertain whether acridids and mantids are eaten revealed that they were taken avidly (see Table 1). Tests also confirmed that coleopterans, lepidopteran larvae and diplopods are readily eaten by these shrews.

4. DISCUSSION

The list of prey items recorded here are by no means exhaustive of the diet of *C. poensis* but despite the small number of samples these shrews are seen to take a wide range of commonly occurring invertebrate prey, as do other shrews whose diets are better documented. A major proportion of the diet (21%) comprised diplopods which were very numerous in the study area. Shrews whose diets have been studied in more detail, such as *Sorex araneus* and *S. minutus* (Mezhzherin, 1958; Rudge, 1968), *Neomys fodiens* (Wołk 1976) and *Blarina brevicauda* (Hamilton, 1930) have rarely been found to eat diplopods: it is possible that these invertebrates produce distasteful secretions. Similarly, formicids are not common prey items of shrews whose diets are well-documented but in *C. poensis* they occurred in 50% of the faecal samples. Formicids were frequently found inside the traps and it is possible that they were eaten either because the captured shrews were very hungry or because the formicids were a source of annoyance.

No vertebrate remains were found in the faecal samples although the large size of *C. poensis* (with a body length of 88—95 mm) would enable it to tackle prey of considerable size such as lizards which were common in the study area. This may be due to the small number of samples examined since *Blarina brevicauda*, a shrew of similar size, has occasionally been found to feed on salamanders, small birds and mice (Hamilton, 1930) and the much smaller *C. russula* will eat lizards and small rodents (Fons, 1972).

The results of this study provide a brief insight into the diet of *C. poensis* but further work is required to discover the full extent of the feeding habits of the large, tropical crocidurids and their impact as predators.

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Plant Composition of Coney Rat's (*Reithrodon auritus*) Diet

SKŁAD DIETY ROŚLINNEJ U REITHRODON AURITUS

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Study of the seasonal variation in the stomach contents of coney rats, *Reithrodon auritus* (Fischer, 1914), collected in a native grassland of the southeast of Buenos Aires Province, shows that diet of this small rodent is exclusively constituted of plant materials, mostly grasses. *Lolium multiflorum* and *Poa* spp. were two dominant species which composed a 74% of the stomach contents dry weight. The number of items found in the diets were dramatically lower than the number of species in the pasture.

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1. INTRODUCTION

The coney rat, "rata orejuda", *Reithrodon auritus* (Fisher) 1914 is widely distributed in the southern part of South America (Herskovitz, 1955). According to Williamson (1940), coney rat causes serious losses in annual and perennial crops near General Pico, in the Central Province of La Pampa.

The ecology of this rodent is poorly known, specially in their food habits. We present in this paper, the first results obtained by micro-histological analysis of stomach contents of this small herbivore.