ECTOPARASITES OF THE BUSH SQUIRREL, *PARAXERUS CEPAPI CEPAPI*, IN THE TRANSVAAL (RODENTIA: SCIURIDAE)

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During 1973/74 ectoparasites from bush squirrels, *Paraxerus cepapi cepapi* (A Smith, 1836), from a study area near Naboomspruit in the Transvaal (24°35'S/28°47'E) were collected and preserved in 70 per cent alcohol. In addition, 39 whole skins from various localities in the Transvaal (Viljoen 1975), also in 70 per cent alcohol, were sent to the Entomology Section of the South African Institute for Medical Research in Johannesburg where parasites were extracted and identified or sent away for identification (Table 1).

Mites

Hirstionyssus transvaalensis is the more common

TABLE 1

Ectoparasites collected from bush squirrels, *Paraxerus c. cepapi*, during 1973–1974 in the Transvaal

	Ectoparasite	*Locality*	*Month (1973 except where otherwise mentioned)*
Mites	(Acarina)		
	Sarcoptiform hypopi	Naboomspruit	April to July, September
		Messina	August
	Trombiculidae cf. *Schöngastia*	Naboomspruit	April to July
	Hirstionyssus transvaalensis	Messina	August
Fleas	(Siphonaptera)		
	Xenopsylla brasiliensis	Messina	August
	Ctenocephalides felis	Naboomspruit	September
Sucking lice	(Anoplura)		
	Neohaematopinus heliosciuri	Naboomspruit	January to September
		Messina	August
Ticks	(Ixodoidea)		
	Rhipicephalus theileri	Naboomspruit	May to August 1973, May and September 1974
	Rhipicephalus simus	Messina	August
	Haemaphysalis sp. cf. *H. zumpti.*	Potgietersrus	October

mite on *Paraxerus cepapi* and has been described from this species by Paola (1969) in the Transvaal. In addition to the Naboomspruit record of the Trombiculidae (Table I), these parasites were also identified from the Messina sample (August) of the present study.

Fleas

The flea *Xenopsylla brasiliensis* is extremely common on the house rat *Rattus rattus* and has been recorded from various small mammals, usually rats with some climbing ability, living in hollow trees (Zumpt 1966). Zumpt records the original approximate distribution as probably the southern half of Africa with the exception of the south-western corner and states that it is of great importance as a carrier of plague in Africa and in some places it is probably the main vector. An additional record of the flea, *Xenopsylla* sp., was also recorded from Naboomspruit (July). The cat flea, *Ctenocephalides felis*, is widespread over Africa on Canidae, Felidae, Viverridae, Hyaenidae and Leporidae as well as on domestic animals and man (Zumpt 1966). However, it is apparently not an efficient vector of plague.

Sucking lice

The sucking louse, *Neohaematopinus heliosciuri* has been found on the African tree squirrels *Heliosciurus rufobrachium, Funisciurus anerythrus* and *Paraxerus boehmi emini* by Rahm (1972), and Ledger (1976) additionally records these lice from *Paraxerus ochraceous, P. cepapi* and *P. alexandri.*

Ticks

The tick identifications were done on nymphae. Theiler (1962) recorded the distribution of *Rhipicephalus theileri* in Africa south of the Sahara at Ngamiland in Botswana; various localities in South West Africa; and in the Republic of South Africa from the Orange Free State, North-west Cape, and Bloemhof in the Transvaal. They have been found on *Chelonia* sp., various carnivores, *Xerus inauris* and *Aethomys namaquensis. Rhipicephalus simus* has been identified from many different mammalian hosts (Theiler 1962) as well as from birds, but not before from *P. c. cepapi* although these ticks are common in the Transvaal bushveld and widespread over Africa south of the Sahara. *Haemaphysalis* ticks have been described from *Paraxerus cepapi*

TABLE 2

Monthly distribution of ectoparasites on 39 bush squirrels, *Paraxerus c. cepapi*, collected during 1973 in the Transvaal.

Month	*Host sample size*	*Ticks*	*Fleas*	*Mites*	*Lice*
January	1				1
February	1	1			1
April	5	1			3
May	5	5		3	5
June	2	2		1	2
July	3	3	1	1	3
*August	14	X	X	X	X
*September	8	X	X	X	X

* During August and September skins were not preserved separately and no record was kept of the number of hosts per ectoparasite species—X indicates presence of ectoparasite.

chobiensis from Botswana by Hoogstraal & El Kammah (1974).

Table 2 shows the monthly distribution of hosts and parasites. No record was kept of the relative abundance of the parasites and their distribution on the bodies of hosts, but most were found under the arm, around the anus, posterior to and in the ears, on the neck and eye-lids. Ectoparasites were more abundant on adults than on juveniles, probably as a result of the extensive allogrooming of youngsters.

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STOMACH CONTENT ANALYSES OF *POMADASYS COMMERSONNI* FROM THE SWARTKOPS ESTUARY (PISCES: POMADASYIDAE)

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INTRODUCTION

Pomadasys commersonni (Lacépède 1802), the spotted grunter, occurs in the warmer water of the east Coast of South Africa with a special preference for the calm water of estuaries (Smith 1950; Smith 1961; Wallace 1975). It is a very popular sporting fish and contributes to a large extent to recreation in the Swartkops Estuary. Records of the Swartkops Angling Club were analysed by Marais (1976) who found that in terms of biomass, 82 per cent of the catches of anglers consisted of *Pomadasys commersonni* and in terms of numbers this species contributed 87 per cent. Average *P. commersonni* catches by angling club members from April 1972 to March 1975 in the Swartkops Estuary were 127 per month. An equal number of fish is probably caught by non-members of angling clubs. Next in abundance was *Lithognathus lithognathus* with only 4 per month.

A further indication of the relative abundance of *P. commersonni* in the Swartkops Estuary was obtained from a study of the catches made by