

PARASITES OF SOUTH AFRICAN WILDLIFE. IX. HELMINTHS OF KUDU, *TRAGELAPHUS STREPSICEROS*, IN THE EASTERN CAPE PROVINCE

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ABSTRACT

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The helminths of 25 kudu, *Tragelaphus strepsiceros*, from 3 localities in the eastern Cape Province were collected, counted and identified. The majority of kudu harboured no worms, and the burdens of those infected were small. A race of *Cooperia rotundispiculum*, a *Dictyocaulus* sp., a *Haemonchus* sp., *Nematodirus helvetianus* and *Ostertagia ostertagi* were recovered. Two parasites, *Nematodirus helvetianus* and *Ostertagia ostertagi* can be added to the list of helminth parasites of kudu in South Africa.

INTRODUCTION

The habits, food preference and some aspects of the ecology of kudu, *Tragelaphus strepsiceros*, have been summarised and commented on by Boomker, Horak & De Vos (1989).

The helminth parasites of these antelope from the African continent have been listed by Round (1968). The list of helminth parasites of kudu in Namibia and South Africa has been amended by Boomker, Anthonissen & Horak (1988) and Boomker, Horak & De Vos (1989), respectively.

This paper records the helminths recovered from 25 kudu from 3 localities in the eastern Cape Province.

MATERIALS AND METHODS

During April 1985, 2 adult male kudu were shot in the Addo Elephant National Park (33° 31' S; 25° 45' E), which is approximately 6 852 ha in extent. The vegetation type is known as the Addo Bush type of Valley Bushveld, a subdivision of Karoo and Karoid types, and consists of short, dense, dry forest, dominated by *Schotia afra*, *Sideroxylon inerme*, *Olea europaea*, *Cussonia spicata* and an abundance of shrubs and climbers, such as *Azima tetracantha*, *Portulacaria afra*, *Sarcostemma viminalis*, *Carissa bispinosa* and *Capparis citrifolia* (Acocks, 1988). The summers are hot and frosts seldom occur. Rainfall is approximately 300 mm *per annum*.

A second investigation was conducted in the Andries Vosloo Kudu Reserve (Kudu Reserve) (33° 07' S; 26° 40' E), which comprises 6 497 ha and lies approximately 30 km north-east of Grahamstown. It is situated in a low rainfall area, which, although lying on the coastal plateau, receives only approximately 300 mm *per annum*. Vegetation is typically Fish River Scrub of Valley Bushveld, which, according to Acocks (1988), is a subdivision of Karoo and Karoid types. This vegetation is characterised by the dominance of *Portulacaria afra* (spekboom or elephant bush) and the presence of *Grewia robusta*, *Crassula argentea*, *Azima tetracantha* and many other plants of this association.

One male kudu was shot in this reserve each month for 11 consecutive months from March 1985 to January 1986. Thereafter a further kudu was shot every 3 months from March 1986 to December 1986.

Kudu were also shot on the farm 'Bucklands' (33° 05' S; 26° 41' E), which is about 5 480 ha in extent and shares a 11 km boundary with the Kudu Reserve (Horak & Knight, 1986). It has the same vegetation type as the reserve and the rainfall is similar. There are approximately 185 cattle, 300 Dorper sheep, 4 000 Angora goats and 300 kudu on the farm (Horak & Knight, 1986).

An attempt was made to collect an adult male kudu on the farm at 3-monthly intervals from March 1985 to December 1986. However, two kudu were shot during June 1985 and although 1 was shot during March 1986 it was not used. A total of 8 animals was examined.

The parasites of all these antelope were collected as described by Boomker *et al.* (1989).

RESULTS AND DISCUSSION

The Addo Elephant National Park

Only 1 of the 2 kudu shot here was infected and harboured 4 nematode species, of which *Nematodirus helvetianus* was the most abundant (Table 1).

The presence of 2 helminth species indicates that it probably moved into Addo from a neighbouring farm. Both *N. helvetianus* and *Dictyocaulus* sp. are primarily a parasite of cattle, which are probably the source of infection of this kudu. Kudu seem to be good hosts of *N. helvetianus*, which were present in larger numbers than *C. rotundispiculum*, a definitive parasite of these antelope.

The Andries Vosloo Kudu Reserve

Four species of nematodes were recovered from 9 of the 15 kudu, the remaining animals harbouring no worms at all. Of those nematodes present, the *C. rotundispiculum* race was the most prevalent and numerous (Table 1).

As the Kudu Reserve shares a common boundary with the farm 'Bucklands', it is conceivable that kudu move to and fro between the two localities. The *Dictyocaulus* sp. was possibly acquired from cattle, sheep or goats on the farm, or from kudu in the Reserve, while the *Haemonchus* female could have been acquired from any of the ruminants present on the farm or in the Reserve.

Ostertagia ostertagi is primarily a parasite of cattle but we have no explanation for its presence in kudu from the Reserve, as it was not recovered from kudu from 'Bucklands'. In addition, kudu do not appear to be good hosts for *O. ostertagi*, as negligible numbers were recovered. The same applies to the *Dictyocaulus* sp. of which only 1 specimen was recovered from a kudu from the reserve.

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TABLE 1 Helminths recovered from kudu from three localities in the eastern Cape Province

Locality and helminth species	Number of worms recovered			Number of animals infected
	Larvae	Adults	Total	
Addo Reserve (2 animals)				
<i>Cooperia rotundispiculum</i>	0	150	150	1
<i>Dictyocaulus</i> sp.	0	1	1	1
<i>Nematodirus helvetianus</i>	0	275	275	1
Mean nematode burden	0	213	213	
Andries Vosloo Reserve (15 animals)				
<i>Cooperia rotundispiculum</i>	0	5 620	5 620	8
<i>Dictyocaulus</i> sp.	0	1	1	1
<i>Haemonchus</i> sp. female	—	1	1	1
<i>Ostertagia ostertagi</i>	0	125	125	2
Mean nematode burden	0	383	383	
The farm 'Bucklands' (8 animals)				
<i>Cooperia rotundispiculum</i>	0	1 056	1 056	2
Mean nematode burden	0	132	132	

— = Not applicable

Individual worm burdens fluctuated considerably in the kudu shot each month from March 1985 to January 1986, but few worms were recovered from kudu shot during the corresponding months in 1986.

'Bucklands'

The only helminth recovered was the *Cooperia rotundispiculum* race, of which a total of 1 056 was present in 2 of the 8 kudu (Table 1). The mean helminth burden was 132.

In trying to explain the small worm burdens of common duikers and Angora goats from the farm 'Brakhill', Boomker, Horak & MacIvor (1989), stated that the climate is too harsh for the survival of the free-living infective stages. This probably also holds true for 'Bucklands' and the 2 reserves which all have the same vegetation type. It should also be kept in mind that kudu and common duikers, like Angora goats, are browsers and hence are less exposed to the infective larvae of parasitic nematodes than are grazers (Boomker, Horak & MacIvor, 1989).

General

Boomker, Horak & De Vos (1989) recorded considerably higher nematode burdens and more helminth species from kudu in the Kruger National Park (KNP) than in this investigation. The differences are thought to be the result of a more favourable climate in the KNP and larger variety of antelope species, which probably resulted in more regular exposure to cross-infection.

The burdens of the antelope in the present study were approximately the same as those of kudu in the Etosha Game Reserve, Namibia, an area with a similar harsh and dry climate (Boomker *et al.*, 1988). However, more helminth species were recorded from the kudu from Etosha than from those in the eastern Cape. This is also ascribed to the large number of antelope species present in Etosha, from which cross-infection could have taken place.

Only 2 cattle nematode species, *O. ostertagi* and *N. helvetianus*, can be added to the existing list of helminth parasites of kudu in South Africa (Boomker, Horak & De Vos, 1989). While these nematodes appear to be accidental parasites in kudu, the numbers recovered indicate that kudu could act as reservoir hosts.

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