

HELMINTH AND ARTHROPOD PARASITES OF VAAL RIBBOK, *PELEA CAPREOLUS*, IN THE WESTERN CAPE PROVINCE

I. G. HORAK⁽¹⁾, V. DE VOS⁽²⁾ and B. D. DE KLERK⁽²⁾

ABSTRACT

HORAK, I. G., DE VOS, V. & DE KLERK, B. D., 1982. Helminth and arthropod parasites of vaal ribbok, *Pelea capreolus*, in the western Cape Province. *Onderstepoort Journal of Veterinary Research*, 49, 147-148 (1982).

Five vaal ribbok, culled in the Bontebok National Park during December 1979, were examined for helminth and arthropod parasites. Ten nematode species, a louse and 2 tick species were recovered and there was also evidence of previous infestation by the larvae of 2 oestrid flies. The parasite burdens of the vaal ribbok are compared with those of sympatric bontebok and springbok culled at the same time.

INTRODUCTION

The vaal ribbok, *Pelea capreolus*, is known definitely only within South Africa, where it is limited to hilly country. Its northern limits in the Cape Province are the Korannaberg and Kuruman hills; in the Transvaal it occurs as far north as the Soutpansberg range but is absent from the eastern lowveld, the low-lying coastal areas of Natal and the eastern Cape Province (Ansell, 1971). Despite its widespread distribution it is seldom found in large numbers in any one locality, and the approximately 200 animals in the Bontebok National Park near Swellendam in the western Cape Province probably represent one of the highest concentrations of vaal ribbok in southern Africa.

Little seems to be known of the parasites of the vaal ribbok. Round (1968) lists only 3 nematodes recovered from this animal, Ledger (1980) lists a louse, and Zumpt (1965) mentions the recovery of larvae of a warble fly. None of these records reports the actual numbers of parasites recovered.

The present paper describes the total numbers of helminth and arthropod parasites recovered from 5 vaal ribbok shot in the Bontebok National Park during December 1979. Four springbok, *Antidorcas marsupialis*, and 8 bontebok, *Damaliscus dorcas dorcas*, were shot in the park at the same time and comparisons are made between their parasite burdens and those of the vaal ribbok.

MATERIALS AND METHODS

The physiography of the Bontebok National Park has been described by Boomker, Horak & De Vos (1981). The endo- and ectoparasites of 4 adult and 1 juvenile vaal ribbok shot in this park were recovered and counted, as described by Horak, Meltzer & De Vos (1982).

RESULTS

The parasite burdens of the vaal ribbok, ranked by age, are summarized in Table 1.

A total of 10 nematode species, 1 species of louse and 2 tick species was recovered. In addition, the hides of 2 animals exhibited lesions of a previous infestation with the larvae of a *Strobiloestrus* sp., and an eye of 1 animal and both eyes of 2 others, including the juvenile, had been affected by the larvae of a *Gedoelstia* sp. No larvae of either of the above-mentioned flies, however, were recovered from any of the vaal ribbok.

DISCUSSION

The spicule lengths of the males of the *Haemonchus contortus* recovered ranged from 0,562 mm to 0,602 mm, measurements which considerably exceed the

spicule lengths of 0,381 mm-0,550 mm given by Gibbons (1979) for this worm in her review of the genus *Haemonchus*. This nematode preferred the vaal ribbok as host, as none of the 4 springbok culled at the same time harboured any (Horak *et al.*, 1982), and only 1 of the 8 bontebok culled simultaneously was infested with adult worms of this species (Horak, unpublished data, 1980).

The vaal ribbok harboured *Longistrongylus curvispiculum*, *L. namaquensis* and *Nematodirus spathiger* in common with the bontebok (Horak, unpublished data, 1980), and these nematodes plus *Ostertagia hamata* and *Trichostrongylus falculatus* in common with the springbok (Horak *et al.*, 1982). Neither the bontebok nor the springbok harboured *Paracooperioides peleae*, a nematode only recently described from the vaal ribbok (Boomker *et al.*, 1981). Although all the springbok and bontebok were infested with *Dictyocaulus magnus*, none were recovered from the vaal ribbok.

The recovery of *L. namaquensis* from vaal ribbok, springbok and bontebok in the Bontebok National Park is confirmation that this nematode, like other species of the genus, is a parasite of wild ruminants (Gibbons, 1977). It also substantiates the contention of Horak *et al.* (1982) that it is probably an accidental parasite of sheep, even though it was originally recovered and described from this host (Ortlepp, 1963).

The absence of *H. contortus*, *L. curvispiculum*, *L. namaquensis*, *Ostertagia* sp. and *P. peleae* and the virtual absence of *O. hamata* in the juvenile vaal ribbok, which was estimated to be 4-5 months old, indicated that infective larvae of these species must have disappeared from the pasture by the time this animal was making extensive use of the grazing. The large proportion of 4th stage larvae of the *Longistrongylus/Ostertagia*-type recovered indicated that these parasites probably survived in an arrested state in the host animals during the hot, dry summer period when external conditions were unfavourable for their free-living stages. Whether the same applied to *N. spathiger* or whether age resistance was responsible for the large proportion of 4th stage larvae present could not be determined in this survey.

The louse *Damalinea peleae* is a specific parasite of vaal ribbok (Ledger, 1980), and all the animals were infested with it.

No specific identification was attempted of the immature *Ixodes* sp. and *Rhipicephalus* sp. recovered. *Ixodes pilosus* is associated with the sourveld areas of South Africa and is found in sourveld areas all along the coast from Port Shepstone to Cape Town (Howell, Walker & Nevill, 1978), while *Rhipicephalus nitens* has a distribution limited to the south-western Cape Province (Morel, 1969). It is interesting to note that, whereas *Ixodes* sp. accounted for the major portion and *Rhipicephalus* sp. the minor portion of the tick burdens of the vaal ribbok, the converse was true for the bontebok (Horak, unpublished data, 1980). This difference was probably a reflection of the fact that within the park the vaal ribbok preferred the gravel slopes and the bontebok the plain as habitat.

⁽¹⁾ Department of Parasitology, Faculty of Veterinary Science, University of Pretoria. Present address to which requests for reprints should be sent: Tick Research Unit, Rhodes University, Grahamstown 6140

⁽²⁾ National Parks Board, Private Bag X402, Skukuza 1350

Received 7 April 1982—Editor

HELMINTH AND ARTHROPOD PARASITES OF VAAL RIBBOK IN THE WESTERN CAPE PROVINCE

TABLE 1 The helminth and arthropod parasites recovered from 5 vaal ribbok culled near Swellendam in the south-western Cape Province

Parasites Species	Stage of development	Age and sex of animals culled and numbers of parasites recovered				
		Juvenile ♂	Young adult ♀	Mature ♂	Mature ♂	Mature ♀
Helminths						
<i>Haemonchus</i> sp.	4th	0	50	0	25	75
<i>H. contortus</i>	Adult	0	25	126	150	1 175
<i>Longistrongylus/Ostertagia</i> -type	4th	0	778	793	3 424	3 406
<i>L. curvispiculum</i>	Adult	0	50	122	9	58
<i>L. namaquensis</i>	Adult	0	0	15	0	100
<i>O. hamata</i>	Adult	25	108	632	615	936
<i>Ostertagia</i> sp.	Adult	0	0	50	56	50
<i>Trichostrongylus</i> spp.	4th	0	0	25	0	0
<i>T. falculatus</i>	Adult	260	0	601	800	0
<i>T. pietersi</i>	Adult	60	0	0	0	0
<i>T. rugatus</i>	Adult	60	0	0	0	0
<i>Nematodirus</i> sp.	4th	1 170	3 035	2 390	625	12 790
<i>N. spathiger</i>	Adult	430	0	0	0	3 270
<i>Paracooperioides peleae</i>	Adult	0	195	675	960	2 000
Arthropods						
<i>Damalinea peleae</i>	{ Nymphae	83	0	12	0	6
	{ Adult	83	4	38	8	14
<i>Ixodes</i> sp.	{ Larvae	0	56	76	8	6
	{ Nymphae	0	8	18	4	10
	{ Adult	3	38	114	24	29
<i>Rhipicephalus</i> sp.	Nymphae	0	0	4	8	2
<i>R. nitens</i>	Adult	19	6	3	2	22

4th = 4th stage larvae

Although no *Strobiloestrus* sp. larvae were recovered from the vaal ribbok examined in the present survey, larvae of this genus have been recovered from vaal ribbok in the Bontebok National Park (Horak, unpublished data, 1979). The cutaneous lesions found in 2 of the animals examined indicated that larvae of this fly had been present at an earlier date and had probably left the antelope to pupate.

All the bontebok shot at the same time as the vaal ribbok harboured larvae of a large *Gedoelestia* sp. in the nasal sinuses (Horak, unpublished data, 1980). First stage larvae of flies of this genus can cause severe ocular lesions when deposited in the eyes of abnormal hosts (Basson, 1962). It is assumed that these larvae were the cause of the eye lesions seen in the vaal ribbok, even though no fly larvae were recovered from the eyes or other organs of these animals.

ACKNOWLEDGEMENTS

We wish to thank the National Parks Board for placing the vaal ribbok at our disposal and Mr P. C. Pieterse and his staff for their assistance with the necropsies.

This research was funded by the University of Pretoria and the Council for Scientific and Industrial Research.

REFERENCES

ANSELL, W. F. H., 1971. Order Artiodactyla. 84 pp. In: MEESTER, J. & SETZER, H. W. The mammals of Africa: an identification manual. Washington D.C.: Smithsonian Institution.
 BASSON, P. A., 1962. Studies on specific oculo-vascular myiasis (uitpeuloog). III. Symptomatology, pathology, aetiology and epizootiology. *Onderstepoort Journal of Veterinary Research*, 29, 211-240.

BOOMKER, J., HORAK, I. G. & DE VOS, V., 1981. *Paracooperioides peleae* gen. et sp. n. (Nematoda: Trichostrongylidae) from the vaal ribbok, *Pelea capreolus* (Forster, 1790). *Onderstepoort Journal of Veterinary Research*, 48, 169-174.
 GIBBONS, LYNDIA M., 1977. Revision of the genera *Longistrongylus* Le Roux 1931, *Kobusinema* Ortlepp, 1963 and *Bigalakenema* Ortlepp, 1963 (Nematoda: Trichostrongylidae). *Journal of Helminthology*, 51, 41-62.
 GIBBONS, LYNDIA M., 1979. Revision of the genus *Haemonchus* Cobb, 1898 (Nematoda: Trichostrongylidae). *Systematic Parasitology*, 1, 3-24.
 HORAK, I. G., MELTZER, D. G. A. & DE VOS, V., 1982. Helminth and arthropod parasites of springbok, *Antidorcas marsupialis*, in the Transvaal and western Cape Province. *Onderstepoort Journal of Veterinary Research*, 49, 7-10.
 HOWELL, C. J., WALKER, JANE B. & NEVILL, E. M., 1978. Ticks, mites and insects infesting domestic animals in South Africa. Part I. Descriptions and biology. Science Bulletin, Department of Agricultural Technical Services, Republic of South Africa. No. 393.
 LEDGER, J. A., 1980. The arthropod parasites of vertebrates in Africa south of the Sahara. Vol. IV. Phthiraptera (Insecta). Publication No. 56 of the South African Institute for Medical Research, Johannesburg.
 MOREL, P. C., 1969. Contribution à la connaissance de la distribution des tiques (Acariens, Ixodidae et Amblyommatidae) en Afrique éthiopienne continentale. Annexe cartographique, cartes 1-62. Institut d'Élevage et de Médecine Vétérinaire des Pays Tropicaux, Maisons-Alfort.
 ORTLEPP, R. J., 1963. *Bigalakenema namaquensis*, gen. and sp. nov., a trichostrongylid worm from sheep. *Onderstepoort Journal of Veterinary Research*, 30, 119-123.
 ROUND, M. C., 1968. Checklist of the helminth parasites of African mammals of the orders Carnivora, Tubulidentata, Proboscidea, Hyracoidea, Artiodactyla and Perissodactyla. *Technical Communication of the Commonwealth Bureau of Helminthology*, 38, 252, vi pp.
 ZUMPT, F., 1965. Myiasis in man and animals in the Old World. London: Butterworths.