

# HAEMONCHUS CONTORTUS FROM THE VAAL RIBBOK, PELEA CAPREOLUS, AND THE BONTEBOK, DAMALISCUS DORCAS DORCAS, IN THE BONTEBOK NATIONAL PARK

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## ABSTRACT

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During a survey of the parasites of antelope in the Bontebok National Park, Swellendam, Cape Province, specimens of *Haemonchus contortus* with exceptionally long spicules were recovered from 5 out of 8 bontebok, *Damaliscus dorcas dorcas*, and 3 out of 5 vaal ribbok, *Pelea capreolus*, but not from 4 springbok, *Antidorcas marsupialis*. Typically, *H. contortus* has spicules 0,466 ± 0,085 mm long, but those recovered from vaal ribbok had spicules 0,581 ± 0,02 mm long and were recovered in large numbers from this antelope only. This indicates that the nematode is probably a definitive parasite of vaal ribbok, and its occurrence in bontebok must be regarded as accidental.

## INTRODUCTION

A survey of the parasites of some antelope species in the Bontebok National Park, Swellendam, Cape Province, was conducted during December 1979. The geography of this Park has previously been described by Boomker, Horak & De Vos (1981). Four springbok, *Antidorcas marsupialis*, 8 bontebok, *Damaliscus dorcas dorcas*, and 5 vaal ribbok, *Pelea capreolus*, were necropsied and 4th-stage larvae and adults of a *Haemonchus* sp. were recovered from the abomasa of ribbok and bontebok only. The worms were identified as *Haemonchus contortus*.

The purpose of this report is to describe the differences between *H. contortus* as described by Gibbons (1979) and those recovered from the vaal ribbok, a new host for this species.

## RESULTS AND DISCUSSION

None of the springbok examined harboured any *Haemonchus* sp., but 5 out of 8 bontebok had between 10 and 50 4th stage *Haemonchus* larvae. Twenty-five adult *H. contortus*, including males with exceptionally long spicules, were recovered from 1 bontebok only. From 25-75 4th stage *Haemonchus* larvae were present in 3 out of the 5 vaal ribbok, while 25-1175 adults, including males with exceptionally long spicules, were present in 4 of the animals. Three out of the 4 older ribbok harboured both 4th-stage larvae and adult nematodes. Typical *H. contortus* was not found in any of the antelopes examined.

Fifteen males and 15 females of the *H. contortus* (No. 2157) from one vaal ribbok, and 5 males and 5 females (No. 2158) from another have been deposited with the Onderstepoort Helminthological Collection. Additional material consisting of 8 males of the long spicule type and 10 females of *H. contortus* from 1 bontebok, as well as typical *H. contortus* from blesbok, grey duiker *Sylvicapra grimmia*, sheep and cattle from various localities were also examined during the course of this study. The measurements for *H. contortus* of the long spicule type are given in Table 1.

Typical *H. contortus* and the long spicule type resemble each other in the principal measurements, the shape of the bursa, the dorsal ray, the spicules, the genital cone and the gubernaculum (Fig. 1-5). The spicules of both types each bear one barb only, but the spicules differ markedly in length. The spicules of *H. contortus* from

TABLE 1 The principal measurements of *Haemonchus contortus* (ribbok)

	Male	Female
Length	13,39-17,6	17,7-27,4
Width	0,275-0,326	0,346-0,624
Head width	0,025-0,037	0,03-0,047
Distance of nerve ring from anterior end	0,202-0,317	0,200-0,305
Oesophagus, length	1,254-1,652	1,468-1,700
Distance of excretory pore from anterior end	0,245-0,347	0,235-0,330
Distance of cervical papillae from anterior end	0,315-0,437	0,266-0,388
Dorsal ray, length	0,187-0,285	—
Spicules, length	0,562-0,602	—
Barbs, from tip of spicule, left	0,053-0,063	—
right	0,033-0,038	—
Gubernaculum, length	0,244-0,306	—
Ovjectors, combined length including sphincters	—	0,612-0,796
Distance from vulva-anus	—	2,213-3,937
Distance from anus-tip of the tail	—	0,408-0,683
Distance from vulva-tip of the tail	—	2,662-4,478
Eggs, length	—	0,07-0,10
width	—	0,042-0,055

vaal ribbok and bontebok are longer than those of typical *H. contortus*, i.e. 0,581 ± 0,02 mm in the former and 0,466 ± 0,085 mm in the latter. The range of spicule lengths of typical *H. contortus* as given by Gibbons (1979) and the number of male specimens examined by Gibbons (1979) were compared statistically with those of *H. contortus* from the vaal ribbok and bontebok, and when the Student t-test (Steel & Torrie, 1960) was used, the difference in spicule length was found to be significant (P<0,005).

No differences were seen between the 4th stage larvae of the 2 types of *H. contortus* adults.

*H. contortus* is one of the nematodes of both domestic and wild artiodactylids most commonly encountered all over the world and variation in the different measurements can therefore be expected. This was pointed out by Gibbons (1979), who regarded *Haemonchus bispinosus*, *Haemonchus placei*, *Haemonchus cervinus*, *Haemonchus tartaricus* and the various subspecies of *H. contortus* as being synonymous on the grounds that they are morphologically indistinguishable. Thus, the range of spicule lengths of *H. contortus* was increased from 0,410-0,434 mm, as given by Roberts, Turner & McKeveatt (1954), to 0,381-0,550 mm, as recorded by Gibbons (1979). It is apparent from Table 1 that the spicules of *H. contortus* from vaal ribbok and bontebok are the longest yet recorded.

Although all the ruminant species utilize the same grazing, *H. contortus* was recovered in significant numbers from the vaal ribbok only, and it may be a definitive parasite of this host as defined by Horak (1981). The

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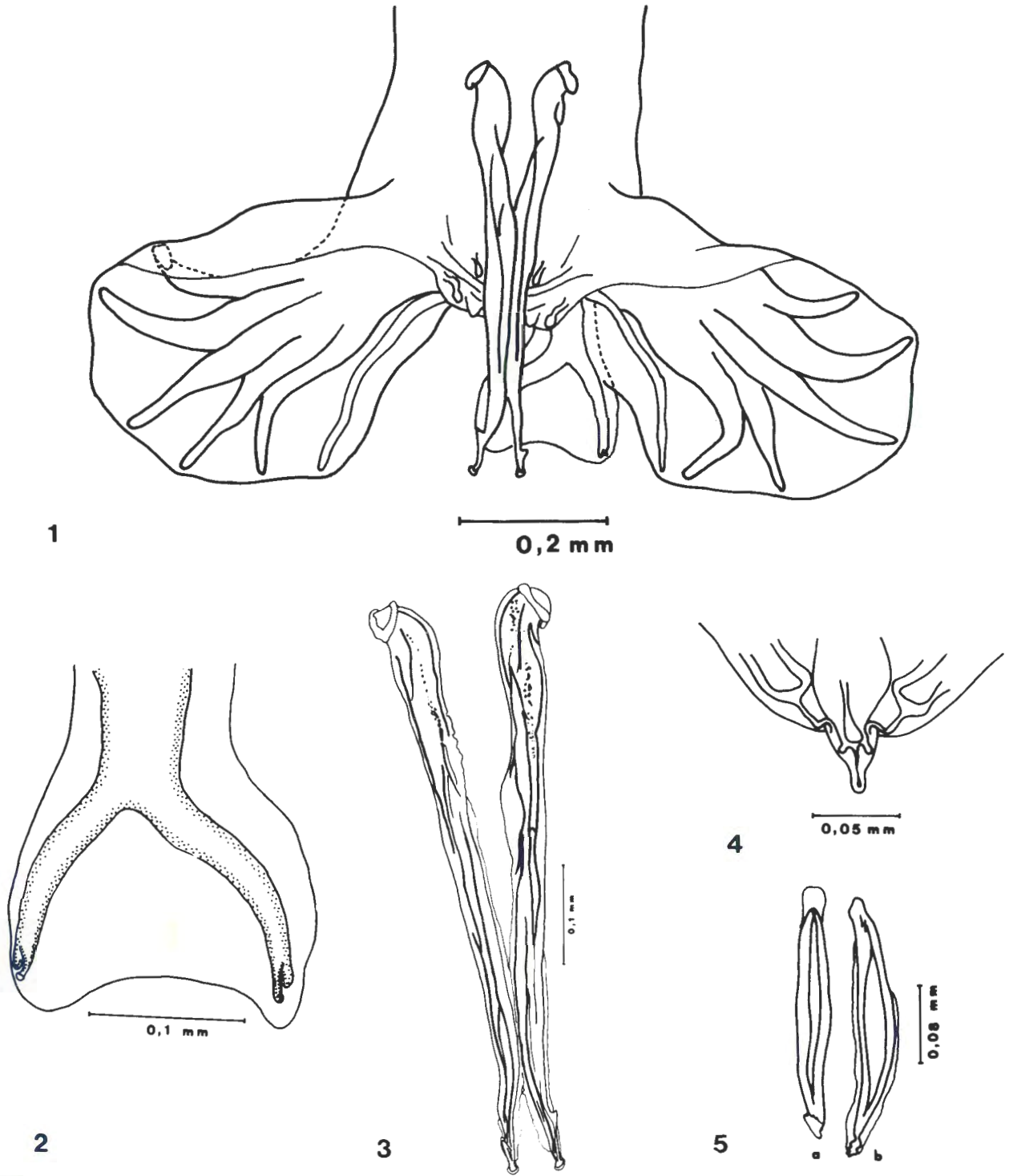


FIG. 1 Male bursa, ventral view  
FIG. 2 Dorsal ray, dorsal view  
FIG. 3 Spicules, dorsal view  
FIG. 4 Gubernaculum: (a) ventral view, (b) lateral view  
FIG. 5 Genital cone, ventral view

numbers of worms recovered suggest that the vaal ribbok is more susceptible to *H. contortus* than the bontebok from which this parasite has previously been recorded.

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