

COOPERIA ACUTISPICULUM N. SP (NEMATODA: TRICHOSTRONGYLIDAE) FROM THE KUDU, TRAGELAPHUS STREPSICEROS (PALLAS, 1766)

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ABSTRACT

BOOMKER, J., 1982. *Cooperia acutispiculum* n. sp. (Nematoda: Trichostrongylidae) from the kudu, *Tragelaphus strepsiceros* (Pallas, 1766). *Onderstepoort Journal of Veterinary Research*, 49, 95-97 (1982).

A new species of nematode, *Cooperia acutispiculum*, was collected from the small intestine of 3 out of 4 kudu *Tragelaphus strepsiceros* (Pallas, 1766) and 2 out of 3 grey duiker, *Sylvicapra grimmia* (Linnaeus, 1758), culled in the Kruger National Park, Transvaal.

The males of this species are unique amongst members of the genus *Cooperia* in that the spicules are acutely pointed and the lateral branches of the distal part of the dorsal ray are wavy in appearance. The females could not be identified because of simultaneous infection of the type host with *Cooperia neitzi* (Mönnig, 1932).

INTRODUCTION

Four kudu, *Tragelaphus strepsiceros* (Pallas, 1766), and 3 grey duiker, *Sylvicapra grimmia* (Linnaeus, 1758), were culled during an ongoing survey of the parasites of the antelopes of the Kruger National Park. The small intestines of 3 of the kudu harboured nematodes of the genus *Cooperia*, and identical nematodes were found in 2 of the grey duiker.

Only a few parasites were recovered from each animal, most of which being 225 males from a kudu and 5 males from a grey duiker. As these nematodes could not be assigned to any of the known species of *Cooperia*, they are here described as *Cooperia acutispiculum* n. sp. because of the sharply pointed spicules. The type host selected was *T. strepsiceros*, since too few parasites for a detailed description were collected from the grey duiker. Because mixed infestations with other *Cooperia* spp. occurred in all the hosts, the females could not be separated with certainty.

DIAGNOSIS OF THE SPECIES

Trichostrongylidae: Trichostrongylinae: Anterior end with a cuticular dilatation; buccal capsule vestigial, cervical papillae absent; 12-16 longitudinal cuticular ridges on body. Males with symmetrical bursa; dorsal lobe usually distinct, spicules relatively short, thick and complex, gubernaculum absent. Females didelphic, vulva in posterior half of body; tail tapering to a more or less acute point.

Description of *Cooperia acutispiculum* n. sp.

Type host

Tragelaphus strepsiceros (Pallas, 1766), from the Kruger National Park, Transvaal.

Material examined

T. strepsiceros, Kruger National Park, syntype specimens (Onderstepoort Helminthological Collection, No. 2159) 12 males.

T. strepsiceros from the type locality, paratypes (Onderstepoort Helminthological Collection, No. 2160), 8 males.

S. grimmia, from the type locality, 6 males.

Description

The principal measurements are given in Table 1.

Small worms whose anterior end may be spirally coiled. The cuticle bears 12-14 longitudinal ridges which are supported by sclerotized rods. Narrow lateral alae are also present; these end abruptly, about 0,34-0,42 mm in front of the bursa, giving the body in that region a constricted appearance. The mouth is surrounded by 3 small lips, and a cephalic inflation is present (Fig. 1). The oesophagus has the usual cylindrical

TABLE 1 The principal measurements of the males of *Cooperia acutispiculum* n. sp.*

	Types	Paratypes
Length	4,3-5,4	4,4-5,0
Width	0,086-0,112	0,093-0,115
Head width	0,025-0,032	0,028-0,032
Cephalic inflation, length	0,021-0,036	0,021-0,036
Cephalic inflation, width	0,039-0,043	0,039-0,043
Distance of excretory pore from anterior end	0,219-0,338	0,256-0,364
Distance of nerve ring from anterior end	0,212-0,266	0,219-0,245
Oesophagus, length	0,331-0,426	0,317-0,432
Spicule, length	0,150-0,194	0,166-0,198

* All measurements given in mm

shape and is slightly thickened distally. The excretory pore is situated near the distal end of the oesophagus and the nerve ring is indistinct.

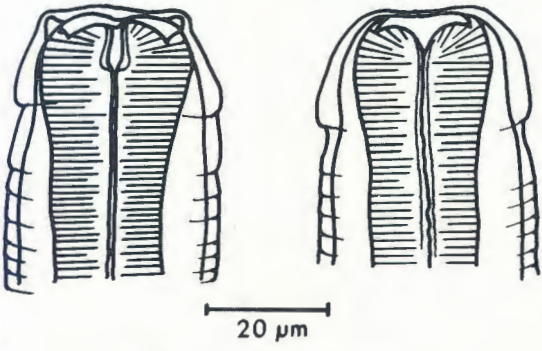
The males are 4,3-5,4 mm long. The bursa has the compact appearance of the genus, with 2 small lateral lobes from which the dorsal lobe is indistinctly demarcated (Fig. 2). The ventral and lateral rays follow the pattern common to the genus. The dorsal ray is fairly long and bifurcates in the posterior third. Ventrally directed branches arise posterior to the bifurcation and appear distinctly undulate. The main branches, which together assume the typical lyre shape of the genus, end in bifid tips that are of equal thickness but may vary in length. The externo-dorsal rays arise near the origin of the dorsal ray. They are slender and have the characteristic shape of the genus (Fig. 3).

The spicules are equal and well sclerotized (Fig. 4). They are comparatively straight, and the bulge in the midregion of some species such as *Cooperia pectinata* (Ransom, 1911), is absent. The distal third of each spicule is divided into 2 spurs, the lateral one of which is shorter and more slender than the median one. Both spurs end in the fine points. The median spur forms the main part of the spicule. There is no gubernaculum; the genital cone (Fig. 5) is complex.

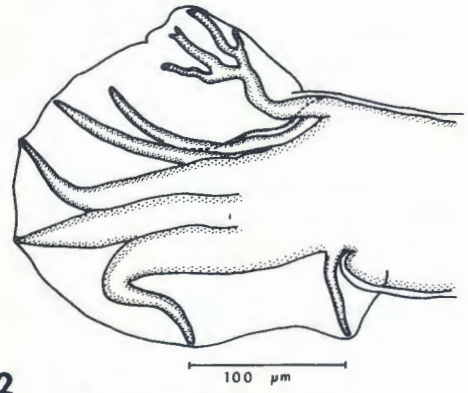
The females of this species could not be separated from those of *C. neitzi* that were also present in the type host.

DISCUSSION

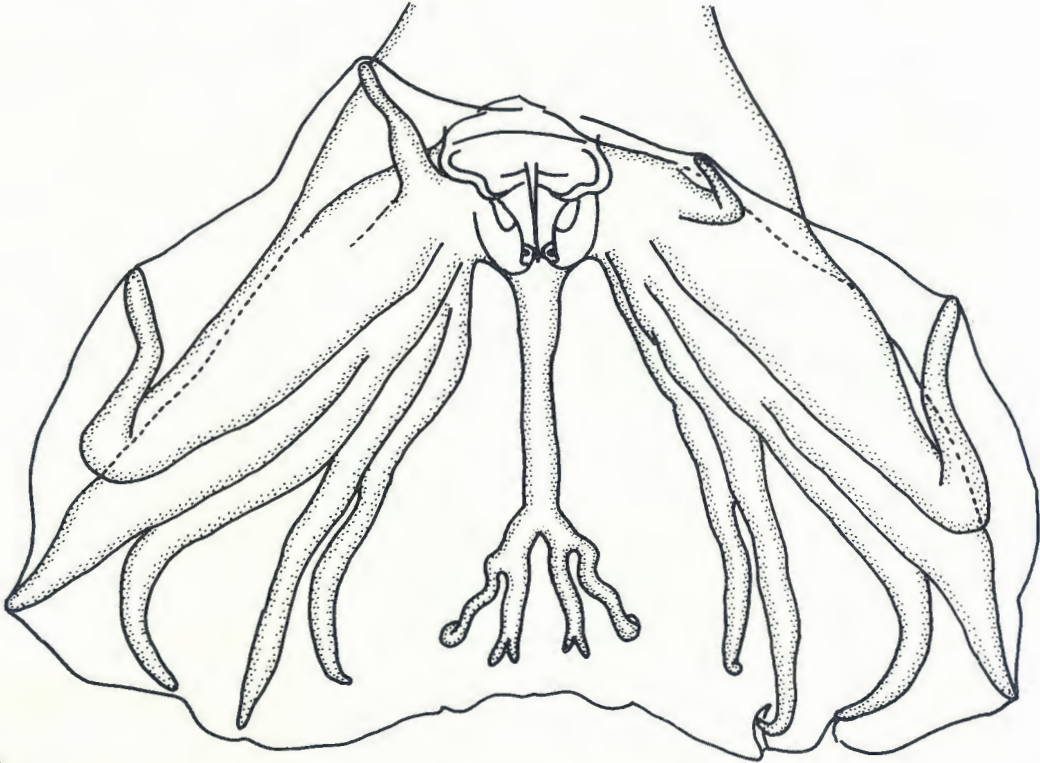
The shape of the dorsal ray of *C. acutispiculum* places it in the group of *Cooperia* spp. in which the lateral branches of the distal part of this ray arise posteriorly to the bifurcation. The species in this group are *C. borgesii* Gutteres, 1947, *C. connochaeti* Boomker, Horak & Alves, 1979, *C. fuelleborni* Hung, 1926, *C. hippotragsi* Gutteres, 1947, *C. hungi* Mönnig, 1931, *C. mcmasteri* Gordon, 1932, *C. oncophora* (Railliet, 1898) Ransom, 1907, *C. pectinata* Ransom, 1907, *C. reduncaii* Gutteres, 1947, *C. rotundispiculum* Gibbons & Khalil, 1980, *C. verrucosa* Mönnig, 1933 and *C. yoshidai* Mönnig, 1939. *C. acutispiculum* can be separated from



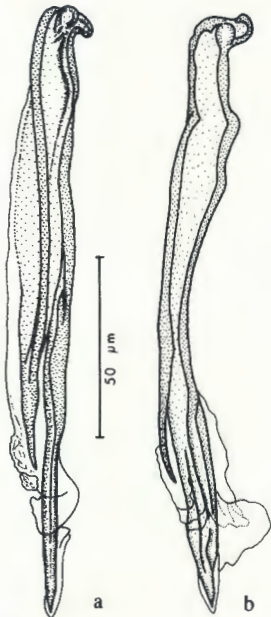
1 FIG. 1 Head, lateral and dorsal view



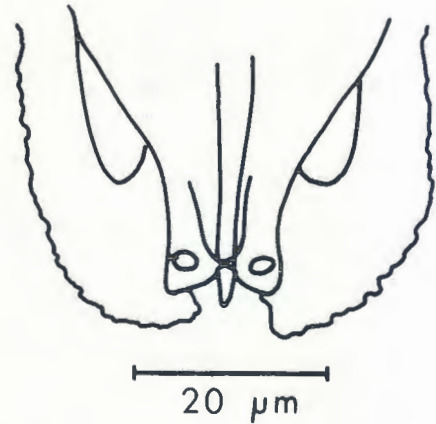
2 FIG. 2 Male bursa, lateral view



3 FIG. 3 Male bursa, ventral view



4 FIG. 4 Spicules, (a) ventral view. (b) lateral view



5 FIG. 5 Genital cone, ventral view

all the other species in this group, since it lacks the bulge in the middle of the spicule common to this group. In addition, the spicules end in fine points and the lateral branches of the distal part of the dorsal ray are wavy in appearance, features that are unique amongst the species of the genus.

The females of this species could not be identified because of a simultaneous infestation of the type host with *C. neitzi* and it was impossible to separate these from those of the latter species on morphological characteristics.

ACKNOWLEDGEMENTS

The author is indebted to the Board of Curators, National Parks Board, for placing the animals at his disposal, to Prof. I. G. Horak, Dr V. de Vos and Mr B. de Klerk for assisting with the necropsies and to Mr N. H. Jonker for technical assistance.

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