

A NEW NEMATODE, NEMATODIRUS ANTILOCAPRAE,  
FROM THE PRONG-HORN ANTELOPE, WITH A KEY  
TO THE SPECIES OF NEMATODIRUS

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The nematode described in this paper was collected by the writer from the small intestine of a prong-horn antelope *Antilocapra americana* which died in the National Zoological Park, Washington, D. C. This animal, a recent accession, was obtained from the western part of the United States. In view of the fact that wild ruminants often serve as hosts for certain parasites of domestic animals, it is not unlikely that this nematode may also occur in cattle, sheep, or goats in certain parts of this country.

This nematode belongs to the genus *Nematodirus* Ransom, 1907, but it possesses characters which differ from those of any existing species of the genus. It is therefore considered as new and the name *Nematodirus antilocaprae* is hereby proposed.

NEMATODIRUS ANTILOCAPRAE, new species

*Diagnosis.*—*Nematodirus*.—Characters of the genus.

Body long and slender, pink in color when fresh, and gradually tapering toward the anterior extremity. The cuticle of the head is inflated asymmetrically, but no striations appear to be present. Circumoral papillae present. Cervical papillae not apparent. The excretory pore is situated at the junction of the esophagus and intestine. The esophagus measures about 450 to 495 $\mu$  in length.

Male 13 to 16 mm. long and with a maximum thickness of about 140 $\mu$ . The bursa (figs. 1 and 2) is composed of two large lateral lobes and a smaller dorsal lobe. The dorsal lobe is set off from the lateral lobes by moderately deep indentations. A deep median in-



dentation is present which divides it into two smaller lobes which are supported by the two dorsal rays. These rays are bifurcated near the tip, the lateral branch being slightly longer than the median. The externo-dorsal rays are quite widely separated from the other rays, slender and curved slightly dorsad. The postero-lateral and medio-lateral rays are long, slender, and parallel except near their tips where they diverge slightly and terminate near the edge of the bursa. The externo-lateral ray arises from the same common stem with the medio-lateral and postero-lateral rays; it runs parallel to the medio-lateral ray for about one-half of its length and then bends ventrad at almost a right angle. The ventral rays diverge slightly near their tips and terminate near the edge of the bursa. Bursal maculae or bosses appear to be absent. The spicules are long and measure 4.1 to 4.4 mm. They are united for the greater part of their length. The tip is straight and semilanceolate. (Fig. 3.)

Female 24 to 29 mm. long and with a maximum thickness at the vulva of about  $250\mu$  to  $350\mu$ . The body thickness is noticeably reduced immediately behind the vulva. The tip of the tail is truncate and bears an acutely pointed bristlelike process  $14\mu$  in length. (Fig. 4.) The anus is located  $100\mu$  to  $115\mu$  from the truncate tip of the tail. The vulva is a transverse slit situated about 1 mm. anterior to the middle of the body. The ovejectors are long, the combined length being about 4 mm. The posterior ovejector measures about 2.5 mm. and the anterior about 1.5 mm. in length. The anterior uterus is atrophied and appears to be sterile. The eggs are oval, with shells of uniform thickness, and measure  $240\mu$  long and  $130\mu$  wide.

*Host*.—*Antilocapra americana*.

*Location*.—Small intestine.

*Locality collected*.—National Zoological Park, Washington, D. C.

*Type specimens*.—United States National Museum Helminthological Collections No. 27438.

This species belongs in the *N. mauritanicus* group as described by May (1920). It is quite similar to *N. mauritanicus*, which was described by Maupas and Seurat (1912) from the dromedary, but differs from this species in location of vulva and position of uteri. In *N. mauritanicus* the vulva is located about 4 mm. posterior to the middle of the body and both uteri are directed backward, while in *N. antilocaprae* the vulva is about 1 mm. anterior to the middle of the body and one uterus lies in the anterior and the other in the posterior part of the body. Maupas and Seurat do not state whether both uteri in their species are functional or not. Their figure, however, suggests that possibly one may be sterile. The atrophied condition of the anterior uterus in *N. antilocaprae* relates it to *N.*



*dromedarii*. In the latter species the vulva is located at the junction of the anterior and middle thirds of the body and the spicules of the male are considerably longer.

The genus *Nematodirus* at the present time contains 14 species, and for convenience in making determinations the following key is appended.

KEY TO THE SPECIES OF NEMATODIRUS

- 1. Female less than 8 mm. long; vulva 1.57 mm. from posterior end; male not known; in monkey (*Anthropopithecus troglodytes*)-----*N. weinbergi*.  
Female more than 8 mm. long----- 2
- 2. Spicules less than 2 mm. long----- 3  
Spicules more than 2 mm. long----- 10
- 3. Spicules 0.430 mm. in length, the proximal portion of uniform diameter and terminal portion pointed; this terminal attenuated portion resembles an interrogation mark; in hippotamus-----*N. hopkeni*.  
Spicules not so shaped----- 4
- 4. Dorsal lobe not set off from lateral lobes----- 5  
Dorsal lobe set off from lateral lobes by a more or less distinct notch-- 6
- 5. Medio-lateral and postero-lateral rays of bursa scarcely separated; eggs with smooth shells-----*N. filicollis*.  
Medio-lateral and postero-lateral rays of bursa well separated; eggs with alveolate shells-----*N. roscidus*.
- 6. Tip of spicule pointed----- 7  
Tip of spicule not pointed----- 9
- 7. One spicule slightly shorter than the other, and the two twisted at the end-----*N. abnormalis*.  
Spicules equal in length, tips not twisted----- 8
- 8. Spicules 0.532 mm. long; tail of female conical; anus 140 $\mu$  from end of tail; in *Tayassus albirostris* and *T. tajacu*-----*N. molini*.  
Spicules 0.90 mm. to 1.25 mm. long; tail of female truncate; anus 70 to 80  $\mu$  from end of tail-----*N. helvetianus*.
- 9. Tip of spicule spoon-shaped; vulva at junction of posterior and middle thirds of body-----*N. spathiger*.  
Tip of spicule ending in a membranous bulb; vulva about one-fourth of body length from posterior end of body; in rabbits-----*N. leporis*.
- 10. Vulva anterior to middle of body----- 11  
Vulva posterior to middle of body----- 12
- 11. Vulva one-third of body length from anterior end; anus 145 to 150 $\mu$  from end of tail; spicules 5 to 5.36 mm. long-----*N. dromedarii*.  
Vulva about 1 mm. anterior to middle of body; anus 100 to 115 $\mu$  from end of tail; spicules 4.1 to 4.4 mm. long-----*N. antilocaprae*.
- 12. Vulva 4 mm. or more posterior to middle of body; both uteri posterior to vulva opening; spicules 4.5 to 5.5 mm. long-----*N. mauritanicus*.  
Vulva at or near the union of posterior and middle thirds of body; one uterus anterior and one posterior to vulva----- 13
- 13. Anus 80 $\mu$  from tip of tail; egg 75 to 100 $\mu$  long by 50 to 75 $\mu$  wide; spicules 2.75 mm. long-----*N. tarandi*.  
Anus 120 $\mu$  from tip of tail; egg 145 to 190 $\mu$  long by 80 to 90 $\mu$  wide; spicules 3 to 3.4 mm. long-----*N. neotoma*.



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## EXPLANATION OF PLATE

*Nematodirus antilocaprae*, new species

FIG. 1. Bursa, lateral view.

2. Bursa, ventral view: *d.*, Dorsal ray; *exd.*, externo-dorsal ray; *ex l.*, externo-lateral ray; *lv.*, latero-ventral ray; *ml.*, medio-lateral ray; *pl.*, postero-lateral ray; *v v.*, ventro-ventral ray.

3. Tip of spicule.

4. Posterior end of female.





Price, Emmett W. 1927. "A new nematode, *Nematodirus antilocaprae*, from the prong-horn antelope, with a key to the species of *Nematodirus*."

*Proceedings of the United States National Museum* 71(2694), 1–4.

<https://doi.org/10.5479/si.00963801.71-2694.1>.

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