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A REDESCRIPTION OF *NILOCOTYLE (NILOCOTYLE) PRAESPHINCTRIS* NÄSMARK, 1937 (TREMATODA: PARAMPHISTOMIDAE) FROM *HIPPOPOTAMUS AMPHIBIUS*

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INTRODUCTION

Several adult *Nilocotyle* (*N.*) *praesphinctris* Näsmark, 1937, were recovered from hippopotami shot in the Kruger National Park. For the description of these the division of *Nilocotyle* by Yamaguti 1958, into two subgenera: *Nilocotyle* (Näsmark, 1937) and *Sellsitrema* (Yamaguti, 1958), is retained.

DESCRIPTION

Name: Nilocotyle (*N.*) *praesphinctris.*

Host: Hippopotamus amphibius: stomach.

Locality: Kruger National Park—South Africa.

Length 3·8 to 4·1 (4·0) mm; dorso-ventral width 1·5 to 1·7 (1·6) mm; conical in shape; dorsal and ventral lines curved (Fig. 1).

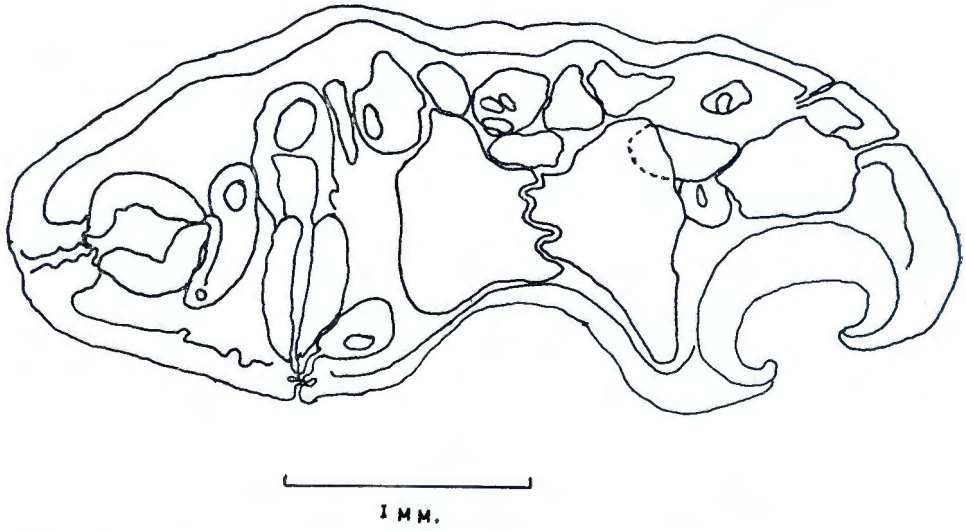

FIG. 1.—A median sagittal section of *Nilocotyle* (*N.*) *praesphinctris*

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The acetabulum (Fig. 2) is elliptical in shape and of the *Nilocotyle* type; its maximum diameter measured dorso-ventrally is 0·894 mm (0·856 to 0·942 mm); ratio to length of body 1 : 4·5 (1 : 4·3 to 1 : 4·7). The number of units in the various circular muscle series is as follows: dorsal external circular 13 to 18, dorsal internal circular 24 to 26, ventral internal circular 23 to 25 and ventral external circular 13 to 18.

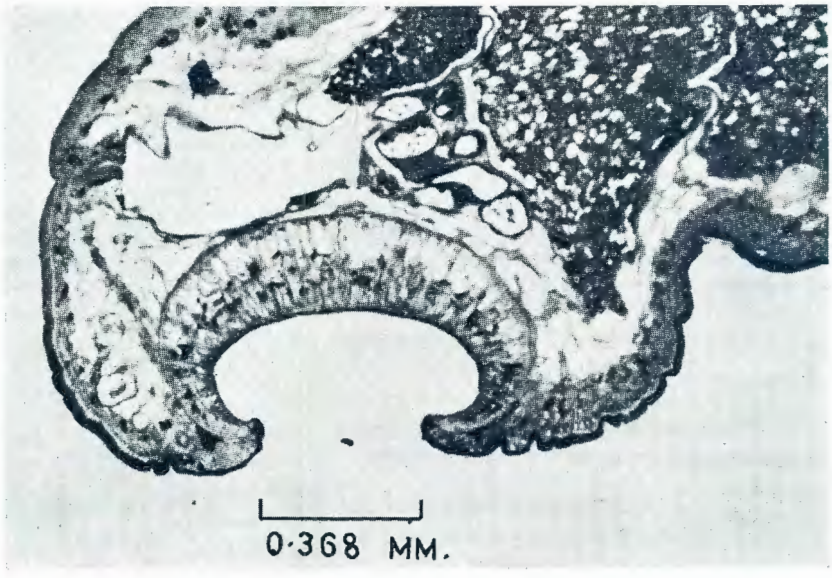

FIG. 2.—A median sagittal section of *Nilocotyle* (*N.*) *praesphinctris* showing the acetabulum, excretory bladder and canal

The pharynx conforms to Näsmark's *Dicranocoelium* type. Two very prominent, horseshoe-shaped lip-sphincters are present, one on either side of the anterior aspect of the pharynx. If a series of sagittal sections of these worms is traced inwards from either side it is usual to find the sphincters as a solid mass (Fig. 4). More medially they divide into a dorsal and ventral mass to be discontinued in the median sagittal plane. The position is much the same as found in the case of *Nilocotyle* (*N.*) *hepaticae* Swart, 1961, and Fig. 3, 4 and 5 in that article illustrate the position of the sphincters. The oral apperture of *N.* (*N.*) *hepaticae* is similar to that of *N.* (*N.*) *praesphinctris*. The two worms differ in the shape of the pharynx, especially the lumen which is oval in *N.* (*N.*) *praesphinctris*, with the longer axis directed antero-posteriorly.

Pharynx length 0·519 mm (0·513 to 0·525 mm), ratio to length of body 1 : 7·6, width measured dorso-ventrally 0·454 mm (0·413 to 0·488 mm).

The thinner portion of the oesophagus, length 0·275 mm (0·250 to 0·313 mm), turns ventrally to join the strongly developed muscular bulb. The bulb, length 0·450 mm (0·425 to 0·500 mm), turns dorsally to join the two lateral intestinal caeca. The two caeca end laterally, dorsal to the acetabulum.

The genital atrium is of the *minutum* type, sphincter papillae being present and genital sphincter absent.

FIG. 3.—The pharynx and pars prostatica of *Nilocotyle* (*N.*) *praesphinctris*

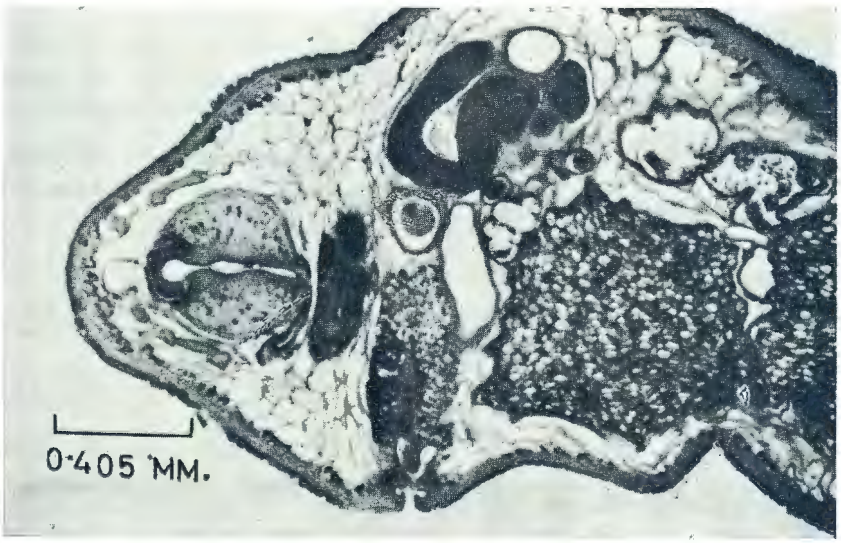

FIG. 4.—A lateral sagittal section of *Nilocotyle* (*N.*) *praesphinctris*

The pars prostatica, length 0·538 mm (0·488 to 0·588 mm), width 0·344 mm (0·300 to 0·413 mm), is elongated. The pars prostatica of *Nilocotyle hepaticae*, length 0·218 mm, width 0·277 mm, is round in shape.

The shape of the testes is irregular and differs in sectioned specimens. They are unlobed, length dorso-ventrally 0·906 mm (0·556 to 1·027 mm), width 0·722 mm (0·556 to 0·899 mm).

The round to oval ovary lies dorsal to Mehli's gland between the excretory bladder and the posterior testis. Where it is round, the diameter is 0·288 to 0·313 mm and when oval, the length antero-posteriorly 0·413 to 0·425 mm and width dorso-ventrally 0·200 to 0·313 mm. Mehli's gland is round (diameter 0·238 to 0·350 mm) or oval (length dorso-ventrally 0·388 to 0·450 mm).

The opening of Laurer's canal is situated 0·417 mm (0·325 to 0·575 mm) anterior to the excretory pore. These openings are in line antero-posteriorly and the canals do not cross. If the excretory bladder and canal of this worm and those of *Nilocotyle (N.) hepaticae* are compared, a striking difference is apparent. In *N. (N.) praesphinctris* the lumen of the excretory bladder (Fig. 2) is large and the sides thin-walled with the excretory canal short (in comparison with the length of the bladder) and thick-walled, whereas in *N. (N.) hepaticae* the lumen is small and the sides are thick-walled with the excretory canal long and thin-walled.

The vitellaria are arranged in 2 to 3 longitudinal rows on either side of the worm.

The egg measurements are 0·143 mm (0·138 to 0·151 mm) × 0·077 mm (0·063 to 0·095 mm).

Discussion

Näsmark (1937) described the species *Nilocotyle praesphinctris*. He stated that this diagnosis was of a preliminary nature, because there was only a single immature specimen at his disposal. The author is in full agreement with Näsmark in proposing *N. (N.) praesphinctris* as a new species. *N. (N.) praesphinctris* and *N. (N.) hepaticae* are identical as to the type of acetabulum, pharynx and genital pore but can be differentiated on the following morphological points:—

1. Size;
2. the shape of the pharynx;
3. the shape of the pars prostatica, and
4. the excretory bladder and canal.

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