A NEW SPECIES OF THE NEMATODE GENUS *STREPTOPHARAGUS.*

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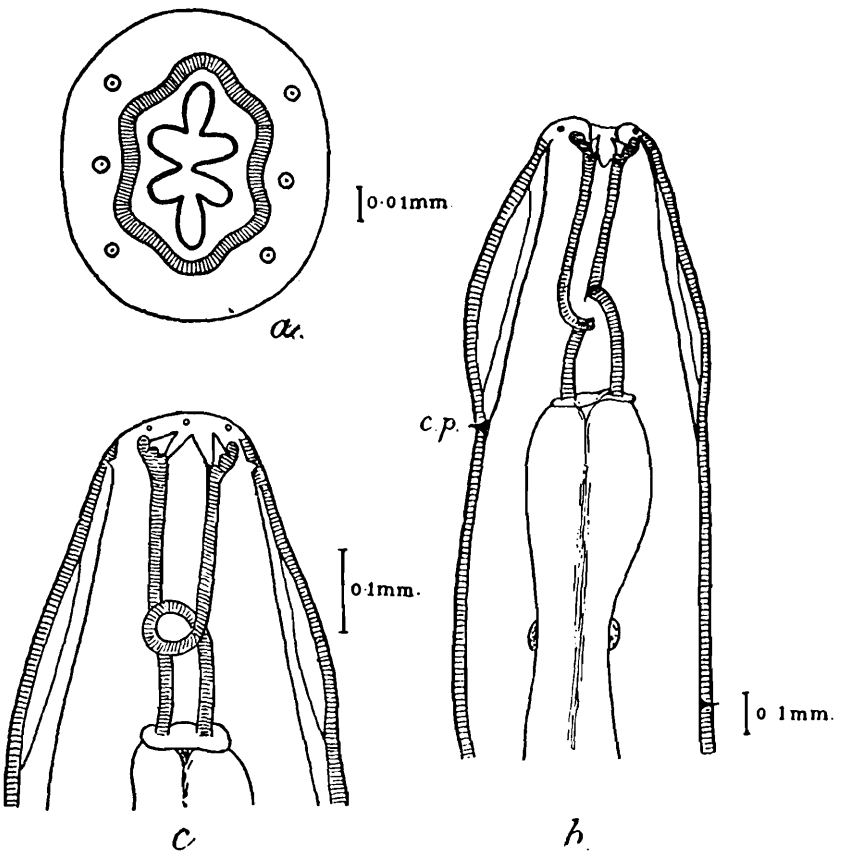
The worms about to be described were obtained in large numbers from the stomach and intestines of a small gibbon monkey (*Hylobates hoolock*), that died in the Calcutta Zoo.

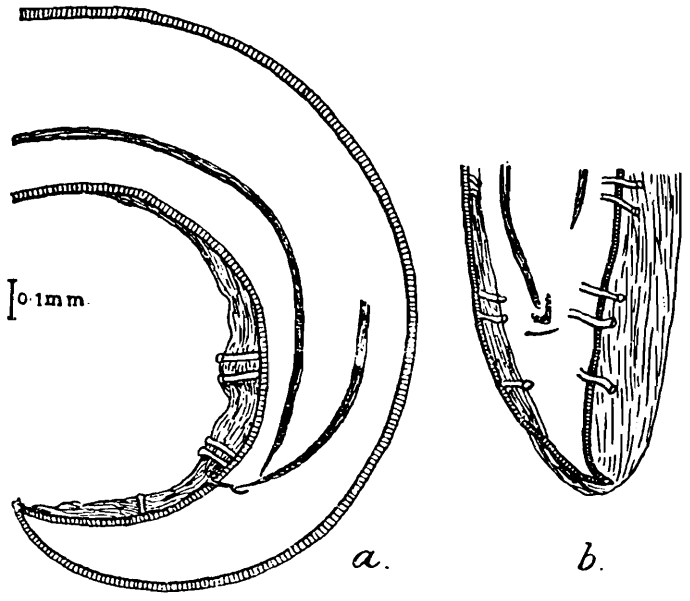
The worms are pearly white and semitransparent and the oesophagus, which is deep brown in colour, can be easily seen with the naked eye. They are slightly more attenuated anteriorly than posteriorly. There are distinct transverse striations on the cuticle, and lateral flanges are absent. The cephalic cuticle presents an asymmetrical expansion, and the cervical papillae are correspondingly asymmetrically placed, the more anterior one being about opposite the junction of the pharynx with the oesophagus, and the more posterior one behind the nerve ring.



TEXT-FIG. 1.—*Streptopharagus magnus*, n. sp. *a*. Anterior end, end-on view. *b*. Anterior end, dorso-ventral view. *c*. Anterior end, lateral view.

The mouth is roughly hexagonal in shape (fig. 1*a*), with its greatest diameter dorso-ventral, and it is bordered by two lateral lips; each lip bears three papillae, sub-dorsal, lateral and sub-ventral. On each side of the mouth there are three teeth with single cusps directed inwards;

they arise from just within the anterior end of the chitinous pharynx, and they are separated dorsally and ventrally by a notch in the chitinous mouth opening. The worms differ in this respect from *S. armatus*, which has small teeth in these situations. The pharynx is thick-walled, and it has fine transverse striations throughout its length ; a little behind the middle of its length it has the characteristic half spiral turn (figs. 1*b* and 1*c*). The anterior opening of the pharynx is somewhat wider than the lumen of the pharynx itself ; this increase in diameter is brought about by two " terraces," which encircle its opening, and which in optical section have the appearance of two right-angled steps (figs. 1*b* and 1*c*). The oesophagus is composed of two distinct portions ; an anterior short muscular portion, which is dumb-bell-shaped owing to anterior and posterior expansions with a constriction about its middle ; and a longer posterior glandular portion, which gradually enlarges from before backwards. It joins the intestine by a rounded end, which has no trace of bulbar enlargement.

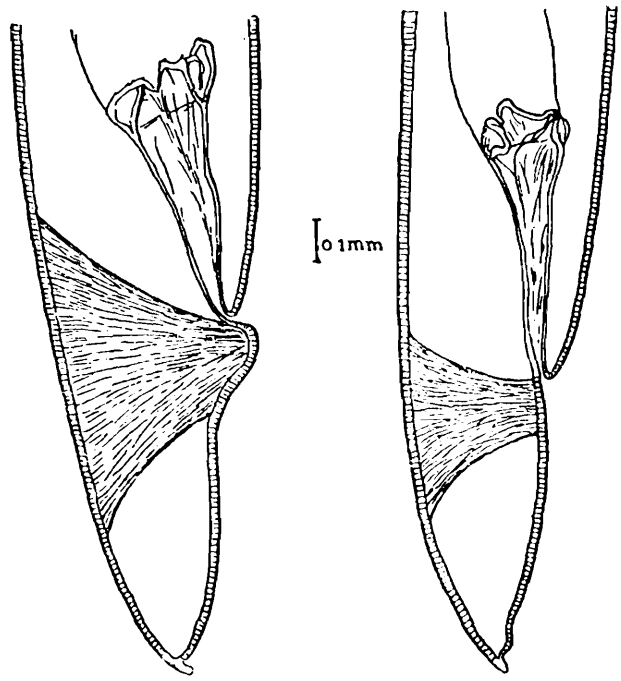


TEXT-FIG. 2.—*Streptopharagus magnus*, n. sp. *a*. Tail of male, lateral view. *b*. Tail of male, semi-lateral view. The caudal ala on the right side is rolled inwards and looks narrower than the ala on the left.

Male.—The males are from 45 mm. to 55 mm. in length, and 0·093 mm. in greatest diameter, and they terminate in two or three spiral twists. The tail ends in a cuticular point, and there are broad symmetrical caudal alae, marked on their ventral surfaces with interrupted longitudinal striations (figs. 2*a* and 2*b*). The alae are supported by five pairs of typically drumstick-shaped pedunculated papillae. One pair of papillae is situated about half-way between the tip of the tail and the cloaca, two pairs are just in front of the cloaca, and two more pairs are further forward. No small papillae could be made out near the tip of the tail. There are two thin spicules of unequal length, which end in a sharp point, and the gubernaculum is asymmetrical, having the longer arm on the side corresponding with the longer spicule (fig. 2*b*).

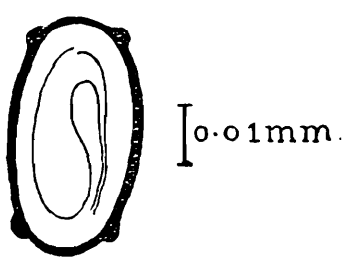
Female.—The females are from 70 mm. to 95 mm. in length with a maximum thickness of 1·35 mm. The tail is straight and it ends in a short cuticular point (fig. 3). The cuticle extends inwards from the

anus forming a funnel-shaped rectum about 0·3 mm. in length; it is fluted at its junction with the gut, and in optical section it presents a striking appearance, as at first sight the thick diverging walls look like two spicules (fig. 3). Just behind the anus there is a strong fan-shaped transverse muscle whose state of contraction probably accounts for the different appearances of this area seen in different specimens.



TEXT FIG. 3.—Tails of two females of *Streptopharagus magnus* showing different appearance of the post anal portions of the worms.

The vulva is small and inconspicuous, and it opens about 20 mm. from the anterior end of the worm; in some specimens two small papillae could be made out, situated one behind the other a short distance in front of the opening. The vagina is not markedly muscular, and it is 3 mm. to 4 mm. in length; it pursues a posterior course and terminates by dividing into two uterine tubes, which at first both run posteriorly, but one branch eventually turns forwards and ends in an ovary a little behind the middle of the oesophagus, and the other branch continues its posterior course to end in its ovary behind the anus. The two uterine branches are wide simple tubes closely packed with eggs. The eggs have thick, smooth shells, they are oval in shape and have a slight thickening encircling each pole, which gives them a slightly quadrangular appearance in optical section. They are 36-40μ in length and 20-22μ in breadth, and they contain embryos (fig. 4).



TEXT FIG. 4.—Egg of *Streptopharagus magnus*, n. sp.

According to Baylis (1923) there are four species in the Genus *Streptopharagus*, viz., *S. armatus* Blanc, 1912, *S. pigmentatus* (Linstow, 1897). *S. numidicus* Seurat, 1917, and *S. sudanensis* Baylis, 1923.[1]

From the table of dimensions of these different species given by Baylis (1923), it is obvious that the worm under discussion is quite distinct

[1] Ortlepp (1925) in a review of the genus has created two additional species, *S. intermedius* and *S. baylisi*; these are however quite distinct from *S. magnus*.

from all but *S. pigmentatus*, and if due allowance is made for the larger size of the females in the writer's material the difference between these two worms is so slight as to be practically negligible. There are other points of difference than that of size, however, which it is considered justify the erection of a new species under the name *Streptopharagus magnus*.

In Linstow (1897) the figure of the anterior end of the worm shows it to be thickly stippled with pigment, whereas the present species is quite free from such dots, being of exceptional whiteness and transparency. The same drawing of Linstow shows the cephalic expansion to be symmetrical, whereas the same structure in *S. magnus* is distinctly asymmetrical. Linstow states that the male "bursa" of *S. pigmentatus* is asymmetrical whereas in *S. magnus* the alae are of the same size. In the female, Linstow says the vagina is very muscular, and he shows no cuticular point at the end of the tail in *S. pigmentatus*, while in *S. magnus* the vagina is a rather delicate tube, and there is a short point composed only of cuticle at the end of the tail, in both sexes. Other less striking differences are the considerable coarser transverse striations in *S. magnus*, and the relatively greater length of the oesophagus in this species.

The measurements of *S. magnus* are given below, and so as to make them readily comparable with the other species of the genus, the same headings as those given by Baylis (1923) are made use of.

	Male.	Female.
Length (maximum)	55	95
Thickness (maximum)	0·93	1·35
Tail, length	0·49	0·90
Distance from ant. end to end of oesophagus	8·10	11·12
,, ,, ,, ,, ,, ant. div. of oesophagus	0·90	1·35
,, ,, ,, ,, ,, nerve ring	0·65	0·90
,, ,, ,, ,, ,, excretory pore	..	1·0
,, ,, ,, ,, ,, end of pharynx	0·33	0·49
Cuticular striations, distance apart	0·018	0·20
Spicules, length	L. 5·0 R. 0·76	..
Accessory piece, length	0·064	..
Vulva, distance from anterior end	..	20·0
Vulva divides total length in proportion of (roughly)		4 : 15
Ova, measurements		36—40μ × 20—22μ

(All measurements except those of the ova are in millimetres.)

Type-specimens of *Streptopharagus magnus*, n. sp. have been placed in the Indian Museum, Calcutta.

REFERENCES.

Baylis, H. A. (1923).—The Nematode Genus *Streptopharagus* with some remarks on the Genus *Spirocerca*. *Trans. Roy. Soc. Trop. Med.*, Vol. XVI, p. 486.

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