

On *Narsingiella narsingi*, a New Genus and Species of Aspidoderid Nematode from *Bufo viridis* Found in Berhampur, India

RATNAMALA RAO

Department of Zoology, University College of Science, Hyderabad, India

Narsingiella narsingi n. g., n. sp.

On one occasion the writer collected specimens of an aspidoderid nematode which, on detailed study, proved to belong to a new species and a new genus. The material studied consists of 15 males and 20 females recovered from the intestine of the green toad, *Bufo viridis* Laurenti, procured from Berhampur. The body of the worm is cylindrical with rounded anterior ends and conical tails in both sexes. The mouth is surrounded by three lips which bear two pairs of submedian papillae and a pair of laterally situated amphids arranged as in the typical oxyuroid worms with three cephalic lips. The head bears cervical cordons characteristic of worms belonging to the Aspidoderidae Freitas, 1956. The cordons, which are continuous, run parallel to the anterior borders of the lips following a sinuous course, while they form loops between the adjacent lips; they are also armed with spines. Circular rows of spines also occur on the cuticle between the striae present on the body, but are discernible only under high magnification. Projecting from the inner surface of the lips are found three distinct onchia as illustrated in Fig. 3. The mouth opens into a small somewhat swollen pharynx. The esophagus which follows consists of a long cylindrical portion with a terminal valvate bulb preceded by a small pyriform second bulb continuous with the esophageal corpus. The following measurements are all in millimeters and the mean value is in parenthesis.

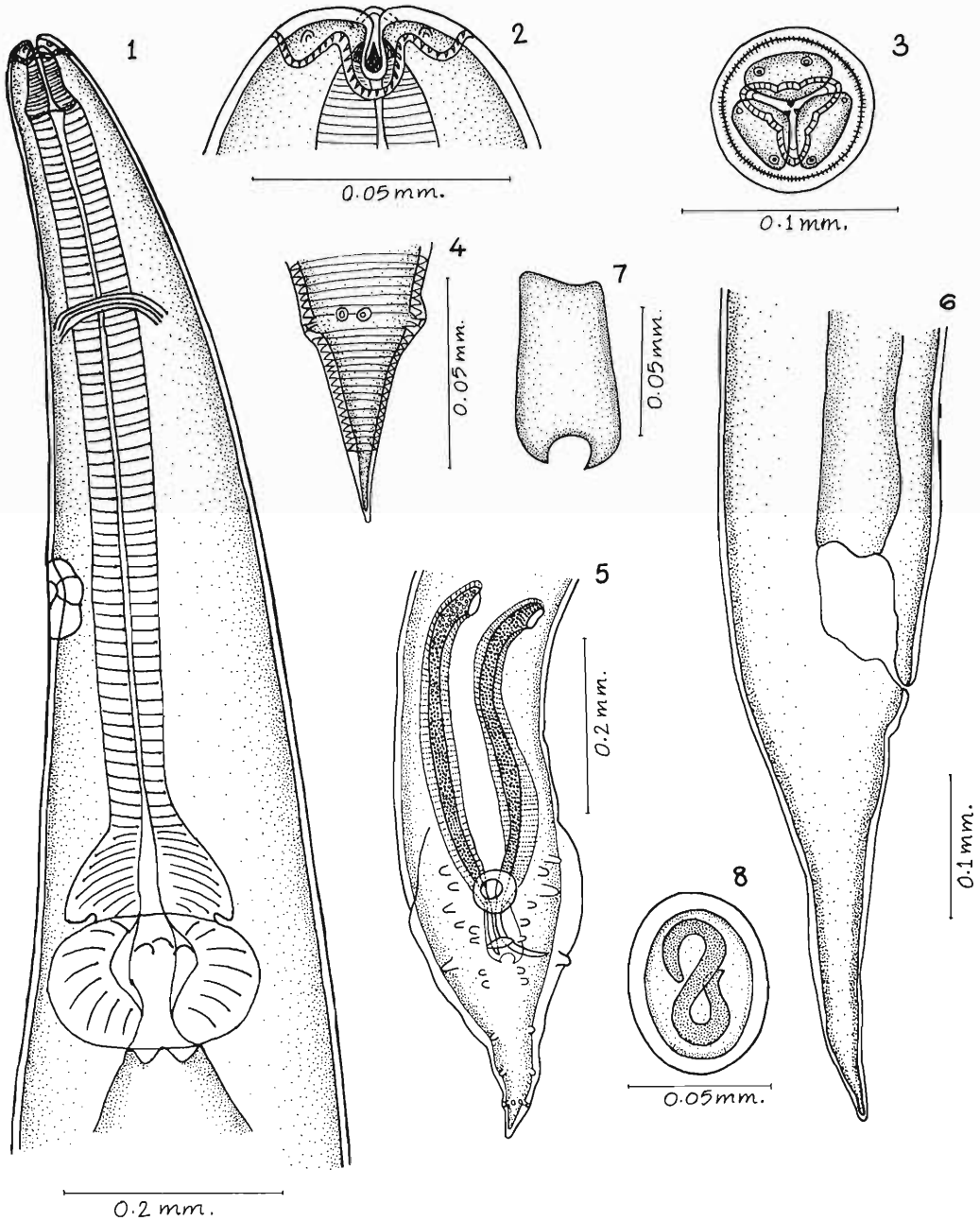
MALE: The males are smaller than the females and measure 3.15–5.38 (4.45) in length and 0.22–0.28 (0.24) in maximum thickness. The esophagus, including the two bulbs, is 0.65–0.85 (0.75) long, its total length occupying $\frac{1}{6}$ to $\frac{2}{5}$ of the body length. The excretory pore is 0.34–0.47 (0.41) from the head end. The tail is short and conical, measuring 0.16–0.25 (0.23) in length; it forms roughly $\frac{1}{20}$ of the body length. A precloacal ventral sucker is

present close to the cloacal opening. Well-developed caudal alae are present which originate slightly anteriorly to the sucker and extend down the tail, enclosing its tip. There are 12 pairs of caudal papillae, of which six are preanal and six postanal. The first three pairs of pre-anals, which are pedunculate, are situated laterally to the sucker; the next three pairs are sessile, lying between the sucker and the cloacal opening. The first pair of postanal papillae are pedunculate and stand out prominently, projecting into the alae. The next two pairs lie close behind the cloaca, while the last three pairs are arranged down the attenuated region of the tail as illustrated in Fig. 5. An additional minute pair of papillae is found between the last pair of postanal papillae as shown in the figure. The spicules are equal and similar, measuring 0.30–0.52 (0.44) in length. A gubernaculum is present which is 0.05–0.08 (0.065) long and 0.035–0.05 (0.043) wide; its hind border is marked by a cleft.

FEMALE: The females, which are slightly larger in size than the males, measure 4.14–6.56 (5.03) in length and 0.25–0.40 (0.30) in maximum width. The esophagus, including its two bulbs, has a length of 0.83–1.00 (0.91); it constitutes about $\frac{1}{6}$ of the body length. The excretory pore is 0.45–0.60 (0.49) from the head end. The tail tapers evenly to a pointed tip; it is 0.30–0.36 (0.33) long, occupying roughly $\frac{1}{6}$ of the body length. The vulva, situated anterior to the middle of the body, is 2.40–4.25 (2.90) from the tail end; its position divides the body in the ratio of 1 : 1.4–1 : 1.8. The eggs are 0.055–0.074 (0.058) long and 0.03–0.05 (0.04) wide; those contained in the vagina are embryonated.

Discussion of the systematic position

The heterakoid nematode described above belongs to the family Aspidoderidae Freitas,



Figures 1-8. *Narsingiella narsingi* n. g., n. sp. 1. Anterior end, female, lateral view. 2. Head end, ventral view. 3. Head end—on view showing lips, cephalic papillae, amphids, onchia and first anterior row of circularly disposed spines and cordons. 4. Terminal portion of male tail. 5. Posterior end, male, ventral view. 6. Posterior end, female, lateral view. 7. Gubernaculum. 8. Embryonated egg.

1956, since it possesses cervical cordons and the male has the characteristic preloacal sucker. As revealed by the presence of cordons and absence of cuticular plaques, it shows close affinities to the subfamily Spinaspidoderinae Freitas, 1956, members of which are parasites of birds. Skrjabin and Schikhobalova raised the genus *Spinaspidodera* in 1947 for the species *Pseudaspidodera spinosa* Maplestone, 1932. The worm under discussion being parasitic in an amphibian host is excluded from this subfamily because of the presence of two esophageal bulbs in both sexes and the presence, in the male, of two equal spicules. These are features which it shares with the worms belonging to the genus *Cheloniheterakis* Yamaguti, 1961. The writer feels it necessary to create not only a new genus and a new species, but also a new subfamily for the accommodation of the newly discovered worm. It is therefore proposed to name the new genus *Narsingiella* n. g., with the new species *Narsingiella narsingi* n. sp. as its type. The new genus, parasitic in the intestine of *Bufo viridis*, is proposed to be the type of the new subfamily Narsingiellinae. The genus *Cheloniheterakis* Yamaguti, 1961 is transferred to this subfamily owing to its possession of cordons—figured though not mentioned—and also because there are two bulbs in its esophagus.

Diagnostic features of the new subfamily Narsingiellinae

Aspidoderidae possessing cervical cordons without plaques; esophagus with 2 esophageal

bulbs; males having 2 equal spicules. Parasites of amphibians and reptiles.

Diagnostic Key to the Genera of Narsingiellinae

1. With gubernaculum and parasites of amphibians *Narsingiella* n. g.
2. Without gubernaculum and parasites of reptiles *Cheloniheterakis*

The type-species of the new genus *Narsingiella* parasitic in a toad.

HOST: *Bufo viridis*.

HABITAT: Intestine.

LOCALITY: Berhampur, India.

Type specimens are deposited in the Museum of the Department of Zoology, Osmania University, Hyderabad, India.

Acknowledgment

The author wishes to thank Prof. S. N. Singh for his valuable guidance.

Literature Cited

- Skrjabin, K. I., N. P. Schikhobalova, and E. A. Lagodovakaja. 1961. Oxyurata of animals and man. Part 2. In K. I. Skrjabin (ed.), Principles of Nematology. Vol. X. Izdatelstvo Akad. Nauk SSSR, p. 1-499.
- Yamaguti, S. 1961. Systema Helminthum. Vol. III. The nematodes of vertebrates. Parts 1 & 2. p. 1-1261.
- Yorke, W., and P. A. Maplestone. 1926. The Nematode Parasites of Vertebrates. J. A. Churchill, London. 536 p.