

ADDITIONS TO THE NEMATODES PARASITIC IN
VERTEBRATES OF DARJILING DISTRICT, WEST
BENGAL, INDIA

By

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(With 1 Text-figure)

INTRODUCTION

In an earlier paper the authors (1980) reported twelve species of parasitic nematodes from Darjiling District. Since then, some material from the district and comprising ten species belonging to nine genera and nine families has been studied. Of this, one species is new and all the remaining ones either form new locality records or show interesting variations. The systematic positions of the genus *Belanisakis* Maplestone, 1932, and the species *Thelazia aquilina* Baylis, 1934, have also been discussed.

All measurements are in millimeters.

Order SPIRURIDA

Superfamily (1) HABRONEMATOIDEA

Family HABRONEMATIDAE (Chitwood & Wehr, 1932) Ivaschkin, 1961

Subfamily HABRONEMATINAE Chitwood & Wehr, 1932

Genus *Habronema* Dies., 1861

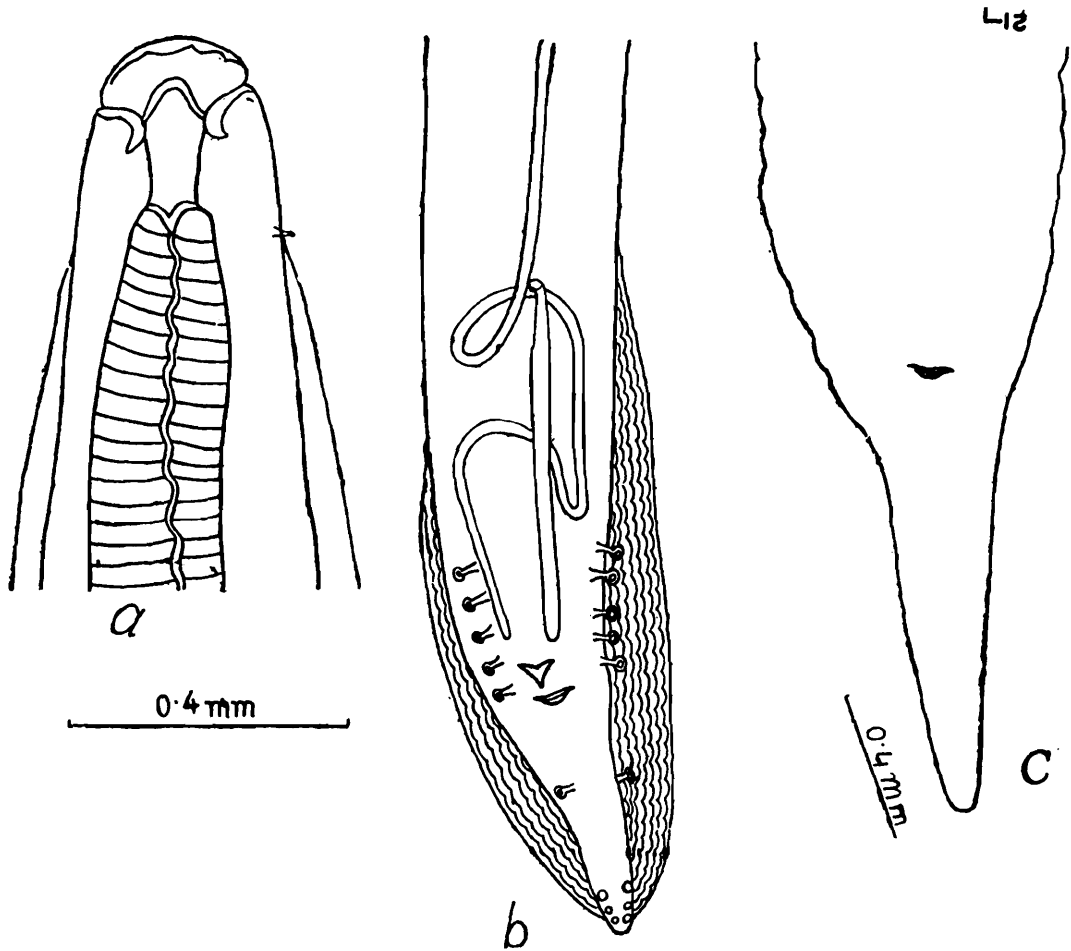
Habronema avicedae n. sp.

(Text-fig. 1, a b & c)

Material : Holotype ♂ ; Z. S. I. Reg. No. WN 265/1 ; host—Indian Black-crested Baza, *Aviceda leuphotes leuphotes* ; location—intestine ; locality—Sukna ; 13. vii. 1974, coll. *T. D. Soota* ; Paratype—♀ ; Z. S. I. Reg. No WN 266/1 ; other particulars as for holotype.

Male : Body 9.8 long, 0.37 wide ; cervical papillae 0.14 from anterior end ; lateral alae starting near cervical papillae and extending upto 4.0 ; oesophagus 2.2 long ; tail 0.27 long ; spicules unequal, smaller 0.5 and longer 2.5 long ; gubernaculum 0.055 long ; caudal papillae, pedunculate 6 pairs, sessile 3 pairs discernible.

Female : Body 33.0 long, 0.66 wide ; cervical papillae 0.3 from anterior end ; lateral alae start near cervical papillae and extend upto 7.0 ; oesophagus 5.5 long ; tail 0.88 long ; vulva post equatorial, 17.4 from anterior end.



Text-fig. 1.—*Habronema avicedae* n. sp.,
 a. ♂ anterior end, b. ♂ posterior end,
 c. ♀ posterior end showing tail

Remarks : The present specimens come close to *Habronema skrjabini* Ischernikowa, 1934, and *H. longispiculum* Walton, 1928 (which latter, however, based on a male only), to both in the presence of cervical papillae and lateral alae on both sides of the body, and to the former only in the position of vulva also, but differ from both in body size, size of spicules and in number of sessile papillae.

Superfamily (2) THELAZIOIDEA

Family THELAZIIDAE Skrjabin, 1915

Subfamily THELAZIINAE (Skrjabin, 1915, fam.) Baylis & Daubney, 1926

Genus *Thelazia* Bosc, 1819

Thelazia campanulata (Molin, 1858) Railliet and Henry, 1910

Material : 7 ♂♂ & 8 ♀♀ ; Z. S. I. Reg. No WN 267/1 ; host—Whistling thrush, *Myiophonus caeruleus temminckii* ; location—from under the nictitating membrane ; locality—Reang ; 28.—29. vi. 1974, & 4. vii. 1974, coll. *T. D. Soota*.

Male : Body 9.5-12.0 long, 0.27-0.47 wide ; oesophagus 0.53-1.3 long ; tail 0.088-0.19 long ; spicules unequal and dissimilar, smaller 0.13-0.2 and longer 1.5-2.0 long ; gubernaculum 0.044-0.055 long ; caudal papillae 12-13 pairs, 8-9 preanal and 4 postanal.

Female : Body 9.5-12.4 long, 0.25-0.46 wide ; oesophagus 0.65-1.3 long ; tail 0.088-0.33 long ; vulva 0.44-0.72 from anterior end.

Remarks : Molin (1858) described *Filaria campanulata* and *F. falconis magnirostris* from the Large-billed Hawk, *Falco magnirostris* [= *Buteo magnirostris*] from Brazil. Railliet and Henry (1910) treated both as a single species, *campanulata* and placed it under the genus *Thelazia*. Travassos (1918) while giving a complete synonymy of this species, redescribed it from the same host and from Brazil. Cram (1927) included it in her monograph on bird nematodes. Baylis (1935) described another species, *Thelazia aquilina* collected from the eye regions of three birds viz., a Wedge-tailed Eagle, *Uroaetus audax* [= *Aquila audax*] from Townsville, a Brown Hawk, *Hieracidea berigora* [= *Falco berigora*], and a White-bellied Sea Eagle, *Haliaeetus leucogaster*, both from Cromarty. While tentatively distinguishing it from *T. campanulata* by the length of the oesophagus, the distance of the vulva from the anterior end, and the number and arrangement of the caudal papillae, he opined that future studies may show both the species to be synonymous. Our study reveals that the characters concerned are variable and fall within the given range of variations and hence both the species are considered here as conspecific.

The species is recorded for the first time from India.

Superfamily (3) FILARIOIDEA

Family ONCHOCERCIDAE (Leiper, 1911)

Subfamily SETARIINAE Yorke & Maplestone, 1926

Genus *Setaria* Viborg, 1795

Setaria digitata (v. Linstow, 1906)

Material : 6 ♀♀ ; Z. S. I. Reg. No. WN 268/1 ; host—domestic buffalo (*Bubalus bubalus*) location—Peritoneal cavity locality—Ghoom ; 21.-22. vi. 1974, coll. *T. D. Soota*.

Order ASCARIDIDA

Superfamily COSMOCERCOIDEA

Family COSMOCERCIDAE Travassos, 1925

Subfamily COSMOCERCINAE Railliet, 1916

Genus **Oxysomatium** Railliet and Henry, 1916**Oxysomatium macintoshii** (Stewart, 1914) Karve, 1927

Material : a ♀ ; Z. S. I. Reg. No. WN 269/1 ; host—a frog ; (unidentified) location—intestine ; locality—Sukna ; 16. vi. 1974, coll. T. D. Soota.

Remarks : The species is recorded from a new locality.

Superfamily ASCARIDOIDEA

Family ASCARIDIDAE Baird, 1853

Subfamily TOXOCARINAE (Hartwich, 1954, fam.) Osche, 1958

Genus **Porrocaecum** Railliet and Henry, 1912**Porrocaecum ibidis** (Maplestone, 1932) Hartwich, 1959

Material : 3 ♂ ♂ & one ♀ ; Z. S. I. Reg. No. WN 270/1 ; host—Tawny Wood Owl, *Strix aluco nivicola* ; location—intestine ; locality—Ghoombhanjan ; 20. vi. 1974, coll. T. D. Soota.

Male : Body 18.7—24.0 long, 0.38—0.5 wide ; interlabia and cervical alae present ; oesophagus excluding ventriculus 1.2—1.8 long ; ventriculus 0.19-0.27 long ; tail 0.22-0.33 long ; spicules 0.38-0.5 long ; gubernaculum 0.066-0.088 long, caudal papillae 10 pairs discernible, 7 preanal and 3 postanal.

Female : Body 34.6 long, 0.73 wide ; interlabia and cervical alae present ; oesophagus excluding ventriculus 2.0 long ; ventriculus 0.33 long ; tail 0.44 long ; vulva 17.7 from anterior end.

Remarks : Maplestone (1932) established the genus *Belanisakis* with *B. ibidis* as its type species from a Black-headed Ibis, *Ibis melanocephalus* [*Threskiornis melanocephalus*] from the Zoological Gardens, Calcutta. This was accepted by Baylis (1936), Mozgovoi (1950) and Inglis (1954), although the last reported from another host, Black Ibis, *Pseudibis papillosa* from India. However, Hartwich (1957) at first considered the genus uncertain and so, subsequently (1959, 1974) merged it with *Porrocaecum*. But it was included by Yamaguti in his monograph (1961), and also accepted by Majumdar (1964). The present authors, however, upholding the view of Hartwich (*op. cit.*) assign the present specimens

to the genus *Porrocacum*, as the differentiating basis between the two genera is mainly the intestinal caecum which is an unstable character, since in some cases it may be hardly discernible or even totally absent.

The species is now recorded from a new host and also from a new locality.

Order ENOPLIDA

Superfamily TRICHUROIDEA

Family TRICHURIDAE Railliet, 1915

Genus *Trichuris* Roederer, 1761

Trichuris trichiura (Linnaeus, 1771) Stiles, 1901

Material : 2 ♂♂ & 2 ♀♀ ; Z. S. I. Reg. No. WN 271/1 ; host—Rhesus Macaque, *Macaca mulatta* ; location—intestine ; locality—Ghoombhanjan ; 23. vi. 1974, coll. *T. D. Soota*.

Remarks : The species has a world—wide distribution.

Order STRONGYLIDA

Superfamily (1) DIAPHANOCEPHALOIDEA

Family DIAPHANOCEPHALIDAE Travassos, 1920

Genus *Kalicephalus* Molin, 1861

Kalicephalus costatus indicus Ortlepp, 1923

Material : 4 ♀♀ ; Z. S. I. Reg. No. WN 272/1 ; host—a snake (unidentified) ; location—intestine ; locality—Sukna ; collector—T. D. Soota ; date of collection—16. vi. 1974.

Remarks : This subspecies, under different names, has been described from several parts of the world from reptilian hosts only, excepting for a single record of its probably an accidental occurrence in a mammal, a wild cat. Now it is recorded from a new locality.

Superfamily (2) STRONGYLOIDEA

Family STRONGLIDAE Baird, 1853

Subfamily OESOPHAGOSTOMINAE Railliet, 1915

Genus *Oesophagostomum* Molin, 1861

Oesophagostomum blanchardi Railliet and Henry, 1912

Material : 2 ♂♂ & 4 ♀♀ ; Z. S. I. Reg. No. WN 273/1 ; host—Rhesus Macaque, *Macaca mulatta* ; location—intestine ; locality—Ghoombhanjan ; 23. vi. 1974, coll. *T. D. Soota*.

Remarks : In India, so far it has been reported from Hoolock gibbon, *Hylobates hoolock*, from the Zoological Gardens, Calcutta. Now, it is recorded for the first time from a new host and from a new locality.

Oesophagostomum columbianum Curtice, 1890

Material : 2 ♂♂ ; Reg. No. WN 274/1 ; host—domestic goat (*Capra*) location—intestine ; locality—Ghoom ; 21. vi. 1974, coll. *T. D. Soota*.

Remarks : The species is cosmopolitan in distribution.

Superfamily (3) TRICHOSTRONGYLOIDEA

Family TRICHOSTRONGYLIDEA Leiper, 1912

Genus **Mecistocirrus** Railliet and Henry, 1912

Mecistocirrus digitatus (v. Linstow, 1906) Railliet and Henry, 1912.

Material : 8 ♂♂ & 8 ♀♀ ; Z, S. I. Reg. No. WN 275/1 ; host—domestic cow (*Bos*) ; location—stomach ; locality—Ghoom ; 21. vi. 1974, coll. *T. D. Soota*.

Remarks : The species is recorded from a new locality.

SUMMARY

The paper deals with ten species of nematodes parasitic in vertebrates from Darjiling district. One species is new and the remaining are either new locality records or show interesting variations. *Belanisakis* Maplestone, 1932, is considered congeneric with *Porrocaecum* Railliet and Henry, 1912, and *Thelazia aquilina* Baylis, 1934, conspecific with *T. campanulata* (Molin, 1858).

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*Not seen in original.