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ON SOME NEMATODES FROM SOLAN DISTRICT, HIMACHAL PRADESH, INDIA

By

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(With 2 Text-figures)

Introduction

The authors undertook a faunistic survey of some areas of Solan District, Himachal Pradesh, during December, 1976—January, 1977, in the course of which some nematodes were collected. The present paper deals with this material which comprises eleven species of nine genera of eight families. Though the material is numerically insignificant, it is nevertheless interesting in that it not only furnishes unrecorded morphological variations for some and new locality records for all the known species reported here, but also yields one new species.

As not much is known about the helminth fauna of Himachal Pradesh, the present paper initiates an attempt to study this fauna of the area.

All measurements are in millimeters.

Order ENOPLIDA

Superfamily Trichuroidea

Family Trichuridae Railliet, 1915

Genus **Trichuris** Roederer, 1761

Trichuris globulosa (v. Linstow, 1901) Ransom, 1911

Material : One ♂ & one ♀ ; Z. S. I. Reg. No. WN 276/1 ; host-goat (*Capra* sp.) ; location—intestine ; locality—Solan ; 25. xii. 1976, coll. *T. D. Soota* ; one ♂ & one ♀ ; Z. S. I. Reg. No. WN 277/1 ; locality—Kunihar ; 14.i.1977 ; other particulars as above.

Remarks : It may be noted that incidence of infection does not appear to be very high.

Order STRONGYLIDA

Superfamily ANCYLOSTOMATOIDEA

Family ANCYLOSTOMATIDAE Nicoll, 1927

Genus **Bunostomum** Railliet, 1902

Bunostomum trigonocephalum (Rud., 1808) Railliet, 1902

Material: Several ♂♂ & ♀♀ ; Z. S. I. Reg. No. WN 278/1 ; host—goat (*Capra* sp.) ; location—intestine ; locality—Solan ; 25. xii. 1976, coll. *T. D. Soota.* 3 ♂♂ ; Z. S. I. Reg. No. WN 279/1 ; locality—Kunihar ; 14. i. 1977 ; other particulars as above.

Remarks: Of the two localities, Solan showed a higher infection of the hosts probably as these were brought for slaughter from a warmer and lower region.

Genus **Gaigeria** Railliet and Henry, 1910

Gaigeria pachyscelis Railliet and Henry, 1910

Material: 6 ♂♂ & 4 ♀♀ ; Z. S. I. Reg. No. WN 280/1 ; host—goat (*Capra* sp.) ; location—intestine ; locality—Solan ; 19. xii. 1976, coll. *T. D. Soota.*

Remarks: The specimens agree in body measurements etc. with those of Baylis (1936) and in spicules with those of Cameron (1924). The species has been rather rarely reported.

Superfamily STRONGYLOIDEA

Family STRONGYLIDAE Baird, 1853

Subfamily OESOPHAGOSTOMINAE Railliet, 1915

Genus **Oesophagostomum** Molin, 1861

Oesophagostomum columbianum (Curtice, 1890) Stossich, 1899

Material: Several ♂♂ & ♀♀ ; Z. S. I. Reg. No. WN 281/1 ; host—goat (*Capra* sp.) ; location—intestine ; locality—Solan ; 19. xii. 1976, coll. *T. D. Soota.* One ♂ & 2 ♀♀ ; Z. S. I. Reg. No. WN 282/1 ; locality—Kunihar ; 13. i. 1977 ; other particulars as above.

Remarks: Here also, hosts at Solan were more infected for reasons already stated.

Order ASCARIDIDA

Superfamily COSMOCERCOIDEA

Family COSMOCERCIDAE (Railliet, 1916 subfam.) Travassos, 1925

Subfamily COSMOCERCINAE Railliet, 1916

Genus **Oxysomatium** Railliet and Henry, 1916

Oxysomatium macintoshii (Stewart, 1914) Karve, 1927

Material : Two ♀♀ ; Z. S. I. Reg. No. WN 283/1 ; host—*Bufo viridis* ; location—intestine ; locality—Arki ; 6. i. 1977, coll. *T. D. Soota.*

Remarks : The species is quite widely distributed.

Order SPIRURIDA

Superfamily THELAZIOIDEA

Family THELAZIIDAE Skrjabin, 1915

Subfamily **Oxyspirurinae** (Skrjabin, 1916 fam.) Yamaguti, 1961

Genus **Oxyspirura** Drasche, in Stoss., 1897

Oxyspirura sp.

Material : One ♀ ; host—White-breasted King fisher (*Halcyon smyrnensis smyrnensis*) ; locality—Kunihar ; 13. i. 1977, coll. *T. D. Soota.*

Remarks : In the absence of males, specific identification is not possible. It may be noted that the incidence of infection by this genus appears totally insignificant.

Family **Rhabdochonidae** (Travassos, Artigas & Pereira, 1928 subfam.) Skrjabin, 1946

Genus **Rhabdochona** Railliet, 1916

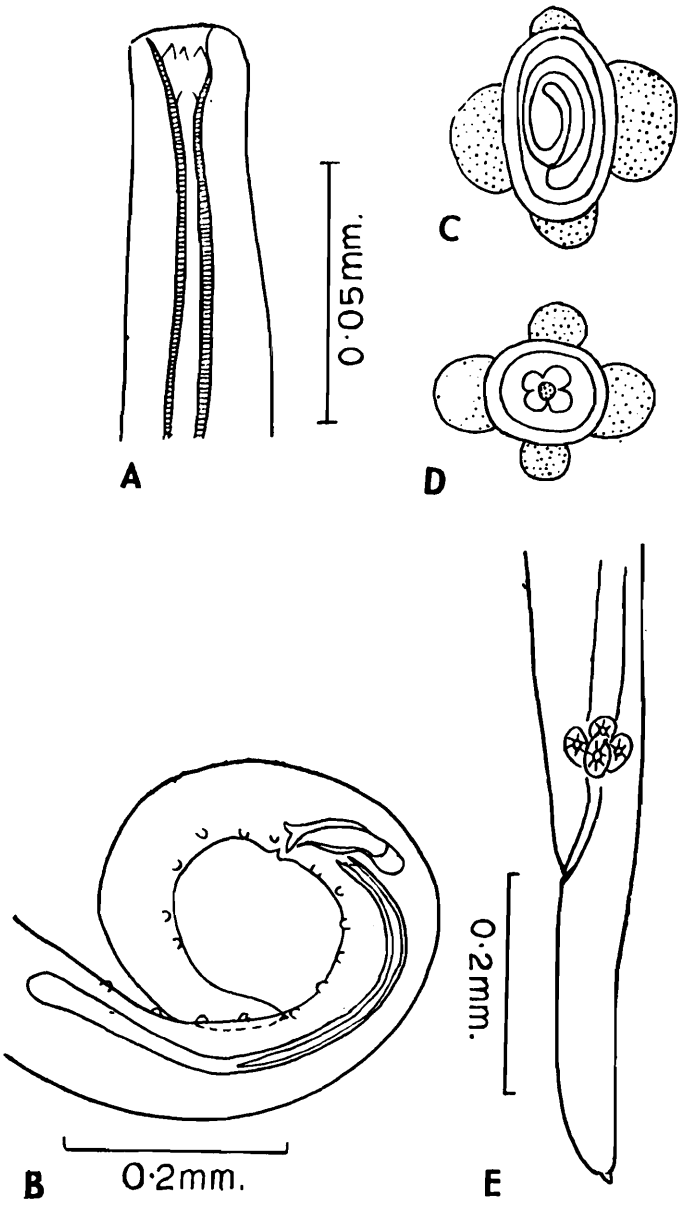
Rhabdochona (Glabochona) bariliusi n. sp.

(Text-fig. 1, A-E)

Material : Holotype ♂ ; Z. S. I. Reg. No. WN 284/1 ; host—a fish (*Barilius bendelisis*) occurring alongwith another fish, *Schizothorax plagiostomum* ; location—intestine ; locality—Khad (a nallah) Arki ; 6. i. 1977, coll. *T. D. Soota.* Paratypes—10 ♀♀ ; Z. S. I. Reg. No. WN 285/1 ; other particulars as for holotype.

Male : Body 7.5 long, 0.11 wide ; tail 0.31 long ; spicules two, dissimilar and unequal, smaller 0.11, larger 0.44 long, both with bifurcated tips ; caudal papillae 16 pairs, 10 preanal and 6 postanal.

Female : Body 11.9–13.5 long, 0.2 wide ; tail conical and with a short spine, vulva 7.6–8.8 from anterior end ; eggs 0.022–0.033×0.022, with four cuticular floats, lateral ones very large.



Text-fig. 1. *Rhabdochona bariliusi* n. sp., A—Anterior end ; B—♂ posterior end ; C & D—Eggs showing floats. E—♀ posterior end.

Remarks : Moravec (1975) subdivided the genus *Rhabdochona* into 4 subgenera, of which one is *Globochona*. Under this subgenus he included the species (group B) showing eggs with floats, a character hitherto known in three species, viz. *R. barusi* Majumdar and De, 1971, from *Barilius* sp. from Ranchi, Bihar ; *R. singhi* Ali, 1956, from *Glossogobius giuris* from Hyderabad ; and *R. gambiana* Gendre, 1922 from three African hosts, viz. *Barbus eutaenia*, *Barilius moori*, and an undetermined fish (probably *Barilius*). A fourth species *R. minima* Moravec and Daniel, 1976 from *Noemacheilus rupicola* var. *inglisi* Hora from Nepal included by the authors under this subgenus and based

only on males, is being retained tentatively (under group A). A comparative chart showing the key characters of the above four species alongwith the present specimens (given below) clearly indicates that these specimens differ from those of the other four and therefore justify for their reception the creation of a new species, *Rhabdochona bariliusi*.

Fotedar and Dhar's (1977) four species, viz. *R.* (*G.*) *jammunensis*, *R.* (*R.*) *oreini*, *R.* (*R.*) tori, and *R.* (*R.*) himalayai, have been omitted due to their published in abstract.

	R. barusi	*R. minima*	*R. singhi*	R. *gambiana* (Data are of *Cystidicola minuta* conspecific with *R. gambiana*)*	*Present specimens*
Body length :					
	♂ 3.01-3.42	2.37-2.56	4.36-4.52	3.81	7.5
	♀ 4.41-5.70	—	5.45-6.0	5.24	11.9-13.5
Spicules length :	0.36 & 0.06-0.07, unforked	0.255 & 0.066-0.072, unforked	0.48 & 0.062. unforked	0.345 & 0.075, unforked	0.44 & 0.11, with bifurcated tips.
Caudal papillae	22 (9 pairs postanal, 1 pair adanal, & 2 unpaired preanal)	13 pairs (7 preanal, 6 postanal)	12 pairs (7 preanal, 5 postanal)	16 pairs (10 preanal, 6 postanal)	16 pairs (10 preanal, 6 postanal)
Eggs	0.045 × 0.37	—	36u × 17u	0.021-0.027 × 0.12-0.015	0.022-0.033 × 0.022

Rhabdochona (Rhabdocnona) hellichi (Sramek, 1901) Chitwood, 1933

Material : 3 ♂♂ & 6 ♀♀ : Z, S. I Reg. No. WN 286/1 ; host—a fish (*Schizothorax plagiostomum*) ; location—intestine ; locality—Khad (a nallah) Arki ; 6. i. 1977, coll. *T. D. Soota.*

Male : Body 7.3-8.4 long, 0.13 wide ; oesophagus, anterior muscular 0.44, posterior glandular 2.25-2.53 long ; tail 0.24-0.31 long ; spicules two, dissimilar and unequal, smaller 0.11-0.12, larger 0.35 long, both with bifurcated tips ; caudal papillae 17-18 pairs, 11-12 preanal and 6 postanal.

Female : Body 9.3-15.0 long, 0.16 wide ; oesophagus, anterior muscular 0.33-0.5, posterior glandular 2.2-3.0 long ; tail 0.27-0.33 long ; vulva from anterior end 4.8-7.8 ; eggs 0.022 × 0.011, with filaments.

Remarks : Thapar (1950) described the new species *R. kashmirensis* from *Schizothorax niger* from Kashmir, which Fotedar and Dhar (1970)

*Rasheed's (1965) Key for the genus *Rhabdochona* including data of *R. gambiana* gives measurements for male body as 9.3 and female 9.15-20.47 ; caudal papillae 17 pairs, 11 preanal, 6 postanal.

redescribed as *Filochona kashmirensis* and added from Kashmir four more new hosts, viz., *Schizothorax esocinus*, *S. curvifrons*, *S. plagiostomum* and *Noemacheilus kashmirensis*. But Moravec (1975) treated the species as synonym of *R. hellichi*. The present specimens show some variations from its earlier descriptions in respect of body size, size of spicules, and number and arrangement of caudal papillae, but these are considered as just intraspecific variations.

Rhabdochona (Rhabdochona) hospeti Thapar, 1950

Material : One ♂ & one ♀ ; Z. S. I. Reg. No. WN 287/1 ; host—a fish (*Tor tor*) ; location—intestine ; locality—Solan ; 2. i. 1977, coll. *T. D. Soota*.

Male : Body 8.6 long, 0.11 wide ; oesophagus, anterior muscular 0.38, posterior glandular 2.9 long ; tail 0.27 long ; spicules two, dissimilar and unequal, smaller, 0.088, larger 0.53 long, both with bifurcated tips ; caudal papillae 12 pairs, 7 preanal and 5 postanal.

Female : Body 16.2 long, 0.22 wide ; oesophagus, anterior muscular 0.5, posterior glandular 4.35 long ; tail 0.22 long ; vulva from anterior end 9.0 ; eggs 0.22 × 0.22, without filaments.

Remarks : Thapar (1950) from a single female from *Tor tor* from Hospet, Madras, described the new species *R. hospeti*. One more new species *R. barbi* was described from *Puntius kolus* and *Tor khudree* from Pune, Maharashtra, by Karve (1951). This species was considered by Rasheed (1965) as an apparent synonym of *R. hospeti*. Subsequently, three more new species were added under the genus, viz., *R. ghaggri* from *Tor tor* from near Chandigarh, Punjab, by Sood (1969) ; and *R. alii* and *R. labeonis*, both from *Labeo rohita* from Nanded, Maharashtra, by Kalyankar (1972). However, all these four species were definitely treated as synonyms of *R. hospeti* by Moravec (1975). The present specimens show some differences from its earlier descriptions in respect of body size, size of spicules, and number and arrangement of caudal papillae, but as these differences are not uncommon in the genus, they are considered just as intraspecific variations.

Superfamily GNATHOSTOMATOIDEA

Family GNATHOSTOMATIDAE Lane, 1923

Genus **Tanqua** Blanchard, 1904

Tanqua anomala (v. Linstow, 1904) Baylis, 1916

Material : Several ♂♂ & ♀♀ ; Z. S. I. Reg. No. WN 288/1 host—The Checkered Keelback (Xenochyrophis piscator) ; location—intestine ; locality—Khad (a nallah) Arki ; 10. i. 1977, coll. *T. D. Soota*.

Superfamily DIPLOTRIAENOIDEA

Family DIPLOTRIAENIDAE (Skrjabin, 1916 subfam.) Anderson, 1958

Subfamily DIPLOTRIAENINAE Skrjabin, 1916

Genus **Diplotriaena** Railliet and Henry, 1909

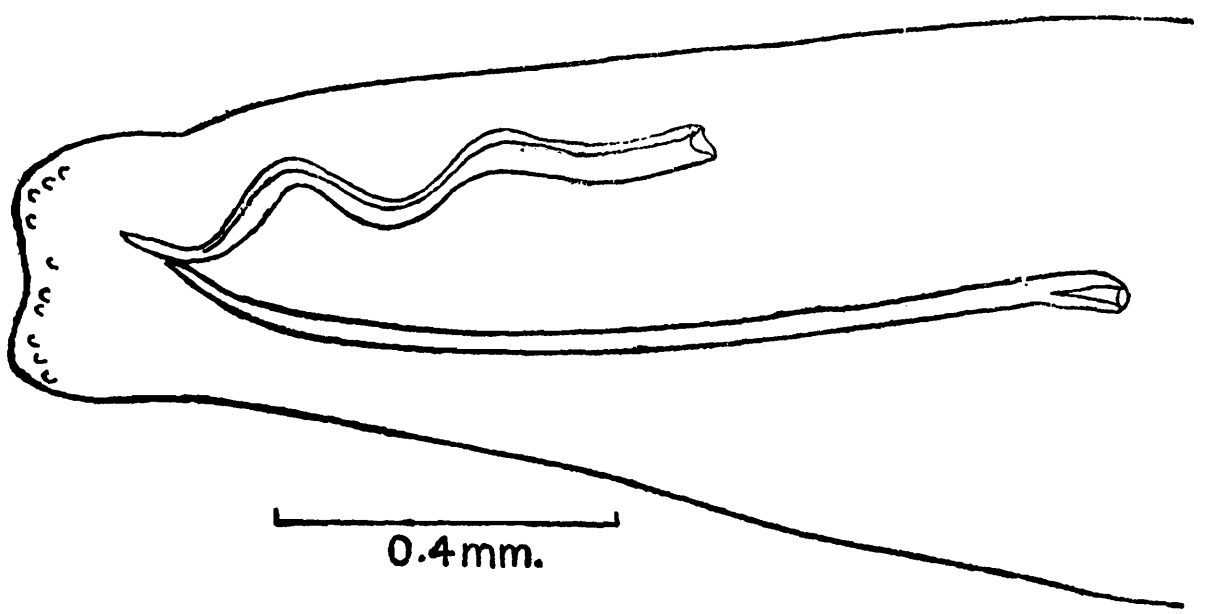
Diplotriaena nepalensis Soota and Chaturvedi, 1967

(Text-fig. 2)

Material : 3 ♂♂ & 7 ♀♀ ; Z. S. I. Reg. No. WN 289/1 ; host—Whistling Thrush (*Myiophoneus caeruleus temmincki*) ; location—body cavity ; locality—Arki ; 6-8. i. 1977, coll. *T. D. Soota.*

Male : Body 19.8-23.3 long, 0.77 wide ; tridents with transverse ridges and pointed tips and 0.176-0.198 long ; tail 0.143-0.165 long ; caudal papillae five pairs, all appear postanal.

Female : Body 34.4-52.8 long, 0.66-1.0 wide ; tridents as in male, 0.16-0.22 long ; tail 0.28-0.38 long.



Text-fig. 2. *Diplotriaena nepalensis* Soota & Chaturvedi, 1967. ♂ posterior end.

Remarks : The present specimens show some differences from the earlier description of the species in body size and in arrangement of caudal papillae, but these are considered as intraspecific variations.

That the incidence of infection in the host is high is shown by the fact that out of five hosts examined, four harboured these parasites.

Diplotriaena tricuspis (Fedchenko, 1874) Seurat, 1915

Material : 2 ♂♂ & one ♀ ; Z. S. I. Reg. No. WN 290/1 ; host—common mynah (*Acridotheres tristis*) ; location—body cavity ; locality—Solan ; —18. xii. 1976, coll. *T. D. Soota.*

Remarks : The species is one of the most widely occurring nematode parasites of the common mynah.

Summary

The paper deals with eleven species of nematodes from Solan District, Himachal Pradesh. One of the species dealt with here is new and the remaining known ones form new locality records and in some cases show interesting variations.

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