

ON SOME ACANTHOCEPHALANS FROM INDIAN MARINE FISHES

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ABSTRACT

The paper deals with five species of acanthocephalans from Indian marine fishes. One species is new and the rest form new locality records and also show interesting variations. A brief review of the genus *Serrasentis* Van Cleave, 1923, has also been included.

During 1972-76 a few faunistic surveys of some coastal areas of Peninsular India were undertaken by the senior author in the course of which some acanthocephalans were collected from marine fishes. The present paper deals with these specimens as well as some others from the area, now present in the unnamed collection of the Zoological Survey of India. The entire material comprises five species of five genera and three families, of which one species is new and the rest form new locality records and also show interesting variations. This paper also includes a brief review of the genus *Serrasentis* Van Cleave, 1923.

All measurements are in millimeters.

Order PALAEACANTHOCEPHALA
Meyer, 1931

Superfamily ECHINORHYNCHOIDEA
(Cobbold, 1876) Golvan and
Houin, 1963

Family RHADINORHYNCHIDAE Travassos,
1923

Subfamily RHADINORHYNCHINAE
Lühe, 1912

Genus *Rhadinorhynchys* Lühe, 1911

Rhadinorhynchus hiansi sp. nov.

(Fig. 1)

Material : Holotype ♂ (ringed) and paratype ♂ mounted on the same slide ; Z. S. I. Reg. No. WN 360/1 ; host—*Ablennes hians* ; location—intestine ; locality—Trivandrum ; 24. i. 1976 ; coll. T. D. Soota.

Description : Male. Body 8.5-10.0 long, 0.44-0.55 wide ; proboscis 2.2-2.25 long ; proboscis hooks in 20-22 longitudinal rows of 40-44 hooks each ; hooks apparently of two dissimilar types, ventrals slightly thicker, 0.033-0.055 long, dorsals thinner, 0.033-0.066 long, both gradually decreasing in size posteriorly, and then last few rows progressively increasing in size until the subsequent hooks at the basal crown become very conspicuous with a length of 0.066-0.077 ; proboscis receptacle 3.0-4.3 long ; neck spineless, 0.22 long ; lemnisci 2.5-2.6 long ; body spines on the anterior in two zones ; anterior testis 0.47-0.49 × 0.27-0.29, posterior 0.44-0.46 × 0.27-0.33 ; cement glands 4, tubular ; genital pore terminal.

Remarks : The present specimens approach *Rhadinorhynchus dujardini* Golvan, 1969, in body size, but differ from it in number of longitudinal rows of proboscis hooks. They

latter in each row, but differ from both in body size. In this character of proboscis hooks they also approach *R. ornatus* Van Cleave, 1918, but as this species is based

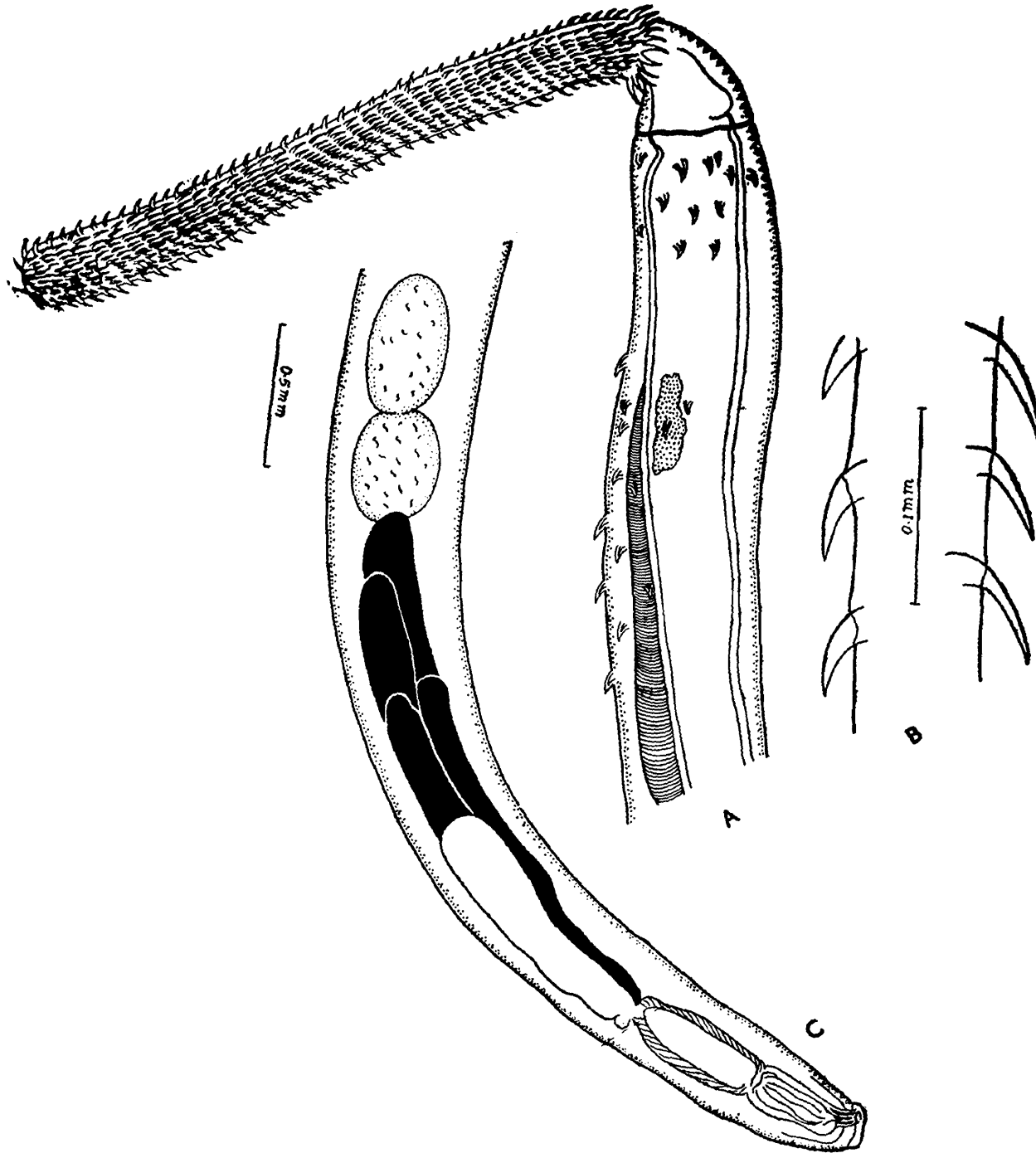


Fig. 1. Holotype male. *Rhadinorhynchus hiansi* Soota and Bhattacharya.
A. anterior end ; B. proboscis hooks ; C. posterior end showing male genitalia.

also come closer to *R. katsuwonis* Harada, 1928, and *R. vancleavei* (Van Cleave, 1940) Golvan, 1969, in number of longitudinal rows of proboscis hooks and the number of the

entirely on female specimens, nothing definite can be said and especially as the present new species is based entirely on male specimens only.

Genus *Raorhynchus* Tripathi, 1959

Raorhynchus polynemi Tripathi, 1959

(Fig. 2)

Material : 3 ♂♂ & 1 ♀ ; Z. S. I. Reg. No. WN 361/1 ; host—*Polynemus* sp. ; location—

intestine ; locality—Mangalore ; 2. i. 1976 ; coll. T. D. Soota. 1 ♂ & 1 ♀ ; Z. S. I. Reg. No. WN 362/1 ; locality—Madras ; 26. viii. 1972. 1 ♂ & 1 ♀ ; Z. S. I. Reg. No. WN 363/1 ; locality—Madras ; 16. viii. 1972 ; host, location & collector—same as above.

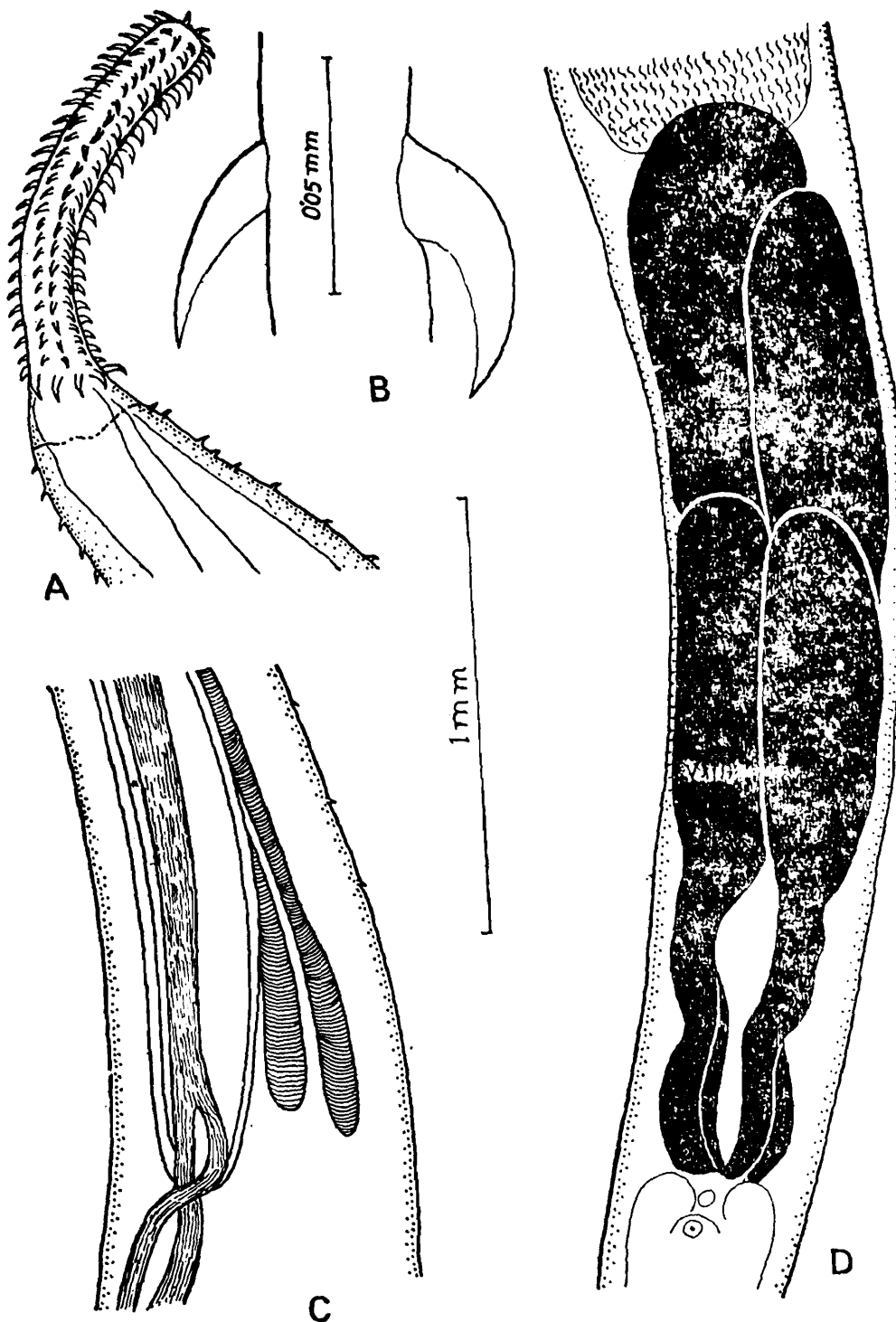


Fig. 2. *Raorhynchus polynemi* Tripathi, 1959.
 A. male anterior end ; B. proboscis hooks ; C. anterior end showing lemnisci ;
 D. male genitalia showing cement glands.

1 ♂ & 2 ♀ ♀ ; Z. S. I. Reg. No. WN 364/1 ; host—*Polynemus plebius* ; location—intestine ; locality—Karaikal ; 27. xi. 1975 ; coll. M. Hafeezullah. 3 ♂ ♂ & 1 ♀ ; Z. S. I. Reg. No. WN 365/1 ; host—*Alectis indica* ; locality—Pondicherry ; 6. xii. 1975. 1 ♂ ; Z. S. I. Reg. No. WN 366/1 ; host—*Harpadon* sp. ; locality—Pondicherry ; 6. xii. 1975 ; location & collector—same as above. 1 ♀ ; Z. S. I. Reg. No. WN 367/1 ; host—*Alectis indica* ; location—intestine ; locality—Tuticorin ; 24.ii. 1975 ; coll. T. D. Soota. 1 ♀ ; Z. S. I. Reg. No. WN 368/1 locality—Trivandrum ; 28. i. 1976 ; host, location & collector—same as above.

Description : *Male* : Body 6.5-8.7 long, 0.6-0.65 wide ; proboscis 0.93-1.2 long ; proboscis hooks in 10-12 longitudinal rows of 22-24 hooks each ; hooks of two types, ventrals thicker 0.022-0.055, dorsals thinner 0.022-0.066 long, and gradually decreasing in size posteriorly excepting those at the basal crown which are abruptly long, measuring 0.044 ; proboscis sheath 2-2.25 long ; neck spineless, 0.11-0.14 long ; lemnisci 1.98-2.25 long ; body spines on the anterior, in 8 rows dorsally and 12 rows ventrally ; anterior testis 0.72-0.86 × 0.44-0.7, posterior 0.55-0.96 × 0.38-0.6 ; cement glands 4, tubular ; genital pore subterminal.

Female : Body 11.5-19.6 long, 0.7-1.1 wide ; proboscis 0.99-1.2 long ; proboscis hooks same as in male ; proboscis sheath 2.8-3.7 long ; neck spineless, 0.11 long ; lemnisci 2.7-3.0 long ; body spines on the anterior, in 10-12 rows dorsally and 18-22 rows ventrally ; genital pore subterminal.

Remarks : Tripathi (1959) created the genus *Raorhynchus* with *R. terebra* (Rudolphi, 1819) as its type species, and characterised it as having two cement glands. Gupta and Lata (1967) described a new species *Rhadinor-*

hynchus polynemi in which they reported four cement glands. However, Golvan (1969) after examining prepared sections of the genital apparatus of a dissected specimen reported the presence of four cement glands in the genus *Raorhynchus*. He, therefore, not only emended the characters of *Raorhynchus*, but also considered *Rhadinorhynchus polynemi* as probable synonym of *Raorhynchus polynemi* with which the present authors agree. Subsequently, Gupta and Gupta (1971) while redescribing *Raorhynchus polynemi* also discerned only two cement glands as already reported by Tripathi (*op. cit.*), but this was probably due to their not being aware of Golvan's observations. In fact, the present authors have also found four cement glands in their specimens and so they accept Golvan's findings.

However, the species is recorded from new hosts and localities.

Subfamily SERRASENTINAE Petrotschenko, 1956

Genus *Serrasentis* Van Cleave, 1923

Serrasentis sagittifer (Linton, 1889)

Linton, 1932

1889. *Echinorhynchus sagittifer*, Linton, *Rep. U. S. Fish. Comm.* 1886, pt. 14 : 493.
1924. *Serrasentis socialis*, Van Cleave, *Proc. Acad. Nat. Sc.*, **76** : 326.
1932. *Serrasentis socialis*, Meyer, *Dr. H. G. Bronns "Klassen und Ordnungen d. Tierreichs"* 4ter., Bd., 2te. Buch : 41.
1932. *Serrasentis sagittifer*, Linton, *Science*, **76** : 193.
1954. *Serrasentis chauhanii*, Datta, *Rec. Indian Mus.*, **51** : 52.
1959. *Serrasentis longa*, Tripathi, *Rec. Indian Mus.*, **54** : 75.
1961. *Serrasentis socialis*, Yamaguti, *Systema Helminthum*, **5** : 111.

1969. *Serrasentis sagittifar*, Golvan, *Mem. Mus. natn. Hist. nat. Paris (A)*, 57 : 120.
1971. *Serrasentis longiformis*, Bilqees, *Pakistan J. Zool.*, 3 (1) : 64.
1972. *Serrasentis mujibi*, Bilqees, *Pakistan J. Sci.*, 24 (3-6) : 121.
1972. *Serrasentis sciaenus*, Bilqees, *Pakistan J. Sci.*, 24 (3-6) : 124.
1972. *Serrasentis giganticus*, Bilqees, *Agricultural Res. Council, Govt. of Pakistan*, 1972 : 60.
1976. *Serrasentis engraulisi*, Gupta & Gupta, *Proc. 63rd Indian Sci. Congr. Ass.*, III, Abstract, p. 205.
1977. *Serrasentis socialis*, Gupta & Jain, *All India Symposium Helminthology*, Srinagar, p. 3.
1980. *Serrasentis fotedari*, Gupta and Fatma, *Indian J. Helminth.* (1979), 31 (1), p. 45.
1980. *Serrasentis socialis*, Farooqi, *Indian J. Parasit.*, 3, Supplement, p. 17.

Material : Adults. 3 ♂♂ & 2 ♀♀ ; Z. S. I. Reg. No. WN 369/1 ; host—*Elecate nigra* ; location—intestine ; locality—Calicut ; 15—16. i. 1976 ; coll. T. D. Soota. 5 ♀♀ , only one entire ; Z. S. I. Reg. No. WN 370/1 ; host—*Istiophorus gladius* ; 19. i. 1976 ; location, locality & collector—same as above.

Juveniles. 2 ♂♂ ; host—*Elecate nigra* ; location—intestine ; locality—Calicut ; 16. i. 1976 ; coll. T. D. Soota. 2 ♂♂ & 1 without gonads ; host—*Pseudorhombus* sp. ; locality—Madras ; 13. xii. 1975. 1 ♂ host—*Psettodes erumei* ; locality—Portonovo ; 11. v. 1975. 2 ♂♂ ; locality—Calicut ; 21. i. 1976. 1 ♀ ; locality—Cochin ; 16. i. 1976. 1 ♂ & 1 ♀ ; host—*Johnius dussumieri* ; locality—Calicut ; 15. i. 1976. 1 ♂ & 1 ♀ ; host—*Lutjanus* sp. ; locality—Pondicherry ; 1. xii. 1975. 1 ♂ & 1 ♀ ; host—*Nemipterus* sp. ; locality—Madras ; 15. iii. 1975 ; location & collector—same as above. 2 ♂♂ & 1 ♀ ; host—*Synaptura cornuta* ; location—intestine ; locality—Kaki-

nada ; 30. i. 1975 ; coll. M. Hafeezullah. 2 ♂♂ ; host—*Trachinocephalus myops* ; locality—Pondicherry ; 1. xii. 1975 ; location & collector—same as above.

Description : Male : Body 40.5-65.5 (3.2-8.7) long ; proboscis 1.1-1.3 (0.55-1.15) long ; proboscis hooks 22-24 longitudinal rows of 14-18 hooks each ; neck 0.42-0.44 (0.22-0.44) long ; body spines in 6-8 rows ; body combs in 19-25 rows ; anterior testis 0.93-1.5 (0.066-0.14), posterior 1.0-1.3 (0.077-0.15) long.

Female : Body 24.7-52.0 (4.4-6.5) long ; proboscis 1.1 (0.9-1.0) long ; proboscis hooks as in male ; body spines 6-8 rows ; body combs in 20-26 rows.

Remarks : Meyer (1932) included two species under the genus *Serrasentis* viz., *S. lamelliger* (Dies., 1854) and *S. socialis* (Leidy, 1851). Subsequently, two more species from Indian marine fishes were added viz., *S. chauhani* by Datta (1954) from *Psettodes erumei* and *Lutjanus johnii* from Bombay, and *S. longa* by Tripathi (1959) from *Rhynchobatus djeddensis* from Puri, Orissa. Although, this was accepted by Yamaguti (1963), Golvan (1969) while dealing with the genus, not only opined that both the Indian species under it were probably based on juveniles of *S. sagittifer*, but also treated *S. socialis* as synonym of this species. The present authors also accept this opinion. Subsequently, six more species were added to the genus namely, *S. longiformis* (1971), and *S. giganticus*, *S. mujibi* and *S. sciaenus* (1972) by Bilqees from Karachi, Pakistan, *S. engraulisi* (1976) by Gupta and Gupta from Quilon (Kerala), and *S. fotedari* by Gupta and Fatma (1980) from Mandapam (Tamil Nadu). The present specimens as well as the existing descriptions of the

species referred herein lead the authors to opine that these six species are also based on the juveniles of *S. sagittifer*. However, Gupta and Jain (1977) while treating only *S. charuhani*, *S. longus*, and *S. longiformis* as juveniles, and *S. giganticus* as synonym of *S. socialis*, probably unaware of Golvan's work (*op. cit.*) wrongly treated it as valid.

It may be of interest to record here that examination of the three juvenile specimens from *Pseudorhombus* sp. has revealed that there is the trace neither of gonads nor of body combs in the smallest specimen, a slight trace only of gonads in the second, and of both structures in the third.

Family FESSIDENTIDAE Van Cleave, 1931

Genus *Filisoma* Van Cleave, 1928

Filisoma indicum Van Cleave, 1928

Material : 1 ♀ ; Z. S. I. Reg. No. WN 371/1 ; host—*Scatophagus argus* ; location—intestine ; locality—Portonovo ; 13. iii. 1975 ; coll. *T. D. Soota*.

Description : *Female* : Body 90 long ; proboscis 0.9 long ; proboscis hooks in 12-14 longitudinal rows with 24-26 hooks in each.

Remarks : The species is recorded for the first time from Portonovo.

Family POMPHORHYNCHIDAE Yamaguti, 1939

Genus *Longicollum* Yamaguti, 1935

Longicollum indicum Gupta and Gupta, 1971

Material : 2 ♂ ♂ and 2 ♀ ♀ ; Z. S. I. Reg. No. WN 372/1 ; host—*Protonibea diacanthus* ; location—intestine ; locality—Calicut ; 16. i. 1976 ; coll. *T. D. Soota*. 1 ♂ and 4 ♀ ♀ ; Z. S. I. Reg. No. WN 373/1 ; host—*Scatophagus argus* ; 18. i. 1976 ; location, locality & collector—same as above. 2 ♂ ♂ and 3 ♀ ♀ ; Z. S. I. Reg. No. WN 374/1 ; host—*Lethrinus*

reticulatus ; location—intestine ; locality—Ernakulum ; 22. i. 1976 ; coll. *T. D. Soota*. 6 ♀ ♀ ; Z. S. I. Reg. No. WN 375/1 ; host—*Strongylura strongylurus* ; 22. i. 1976. 2 ♂ ♂ and 2 ♀ ♀ ; Z. S. I. Reg. No. WN 376/1 ; host—*Pennahia macrophthalmus*. 2 ♂ ♂ ; Z. S. I. Reg. No. WN 377/1 ; host—*Lobotes surinamensis*. One ♂ and 6 ♀ ♀ ; Z. S. I. Reg. No. WN 378/1 ; host—*Epinephelus chlorostigma* ; 23. i. 1976 ; location, locality & collector—same as above.

Description : *Male* : Body 9.5-10.5 long ; proboscis 0.77-1.0 long ; anterior testis 0.3-0.72 and posterior 0.37-0.67 long.

Female : Body 8.0-10.5 long ; proboscis 0.95-1.1 long.

Remarks : This species was described by Gupta and Gupta (1971) from *Strongylura strongylurus* from Ernakulum. The present specimens agree in most of the details with their description of the species excepting in some body measurements etc., but these are considered here as intraspecific variations. The species is recorded here for the first time from Calicut and from new hosts.

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