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Acanthosentis assamensis n. sp. from the intestine of a fresh water fish Puntius chola (Ham-Buch) and Puntius sophore (Ham-Buch) from Chatla Haor, Silchar, Assam

Huidrom Puinyabati^a, Maibam Shomorendra^a & Devashish Kar^b

^aFish disease Research Lab, Department of Zoology, Thambal Marik College, Oinam-795134, Manipur

^bDivision of Wetlands, Fishery Science and Aquaculture, Department of Life Science and Bioinformatics, Assam (Central) University, Silchar-11, India

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Abstract : *Acanthosentis assamensis* n. sp. from the intestine of the fresh water fish *Puntius chola* (Ham-Buch) and *P. sophore* (Ham-Buch) has been described and compared with the other known species of the genus *Acanthosentis* Verma et Datta, 1929. The authors have reason to consider the acanthocephala to be new.

Key Words: *Acanthosentis assamensis* n. sp., *Puntius chola*, *P. sophore*, Chatla Haor, Assam.

INTRODUCTION

The genus *Acanthosentis* was established by Verma and Datta (1929)¹ with type species *A. antespinus*. The other species described under this genus are *A. holospinus* Sen (1937)²; *A. dattai* Poddar (1938)³; *A. sircari* Poddar (1941)⁴; *A. tilapiae* Baylis (1948)⁵; *A. giuris* Soota and Sen (1954)⁶; *A. acanthuri* Cable and Quick (1954)⁷; *A. nigeriensis* Dollfus and Golven (1956)⁷; *A. indicus* Tripathi (1959)⁸; *A. betwai* Tripathi (1959)⁹; *A. cameroni* Gupta and Kakaji (1969)¹⁰; *A. bacailai*, *A. vittatus* Verma (1973)¹¹; *A. golvani* Gupta and Jain (1980)¹²; *A. shuklai* Agarwal et Singh (1982)¹³; *A. vancleavei* Gupta and Fatma (1985)¹⁴; *A. bilaspurensis* Chowhan et al. (1987)¹⁵ and *A. putitorae* and *A. seenghalae* Chowhan et al. (1988)¹⁶.

During the present investigation many specimen of the present form has been collected from the intestine of *Puntius chola* (Ham-Buch) and *P. sophore* (Ham-Buch).

MATERIALS AND METHODS

The fish hosts were collected from the study area and brought to the laboratory for parasitic examination. The external body organs as well as the internal body organs were thoroughly examined for the parasites. The collected worms were washed and relaxed in normal saline. Then the specimens were fixed and preserved in AFA (alcohol-formalin-acetic acid) solution. To facilitate identification of the worms the acanthocephalans were cleared in lactophenol and mounted in glycerine jelly. The collected parasites were identified following Yamaguti (1963)¹⁷ and Bhattacharya (2007)¹⁸. Diagrams were made with the help of camera lucida and measurements were taken with ocular micrometer. All the measurements are in millimetres.

DESCRIPTION

Acanthosentis assamensis n. sp. (Fig. 1.)

Body elongated, cylindrical, slightly flattened, posterior end bluntly rounded. Sexual dimorphism is well marked. Males generally smaller than females. Proboscis short with three transverse rows of recurved hooks, 6 in

*Correspondent author :

Phone : 08014874669

E-mail : hpuinya@rediffmail.com

each row, similar in shape but different in size. Hooks of anterior row larger than middle and the basal. A short neck is followed by trunk. Regular circlets of hooks are present all over the body. The spines on the posterior portions are sometimes not clearly seen. Proboscis sheath is a single layered muscular sac. Lemnisci are two, cylindrical, unequal and longer than proboscis sheath. Hypodermal nuclei are 2 or 3.

Male: Body 1.82-2.95 mm long, 0.32-0.35 mm wide. Proboscis 0.07-0.19 mm long, 0.04-0.045 mm wide. Proboscis hooks of first row measures 0.025 mm long, of middle and the basal row measures 0.01 mm long. Neck 0.03-0.04 mm long, 0.05-0.06 mm wide. Proboscis sheath 0.20-0.25 mm long, 0.03-0.05 mm wide. Lemnisci unequal. Shorter lemniscus 0.23-0.37 mm long and longer lemniscus 0.31-0.44 mm long. Trunk spines all over the body with 13-20 rows.

Testes ovoid, subequal, pre-equatorial. The two testes are in close approximation and are placed one behind the other. Anterior testis 0.38-0.69 mm long, 0.22-0.24 mm wide, Posterior testis 0.35-0.53 mm long and 0.24-0.25 mm wide. Cement gland 0.20-0.26 mm long, 0.12-0.13 mm wide having 5 nuclei. Cement reservoir 0.10-0.11 mm long, 0.03-0.05 mm wide. Saefttigen's pouch present. Seminal vesicle 0.24-0.41 mm long, 0.08-0.09 mm wide.

Female: Body 4.18-6.90 mm long, 0.47-0.69 mm wide. Proboscis 0.07-0.10 mm long, 0.05-0.055 mm wide. Proboscis hooks of anterior row 0.015-0.02 mm long. Neck 0.03-0.06 mm long, 0.06 mm wide. Proboscis sheath 0.28-0.33 mm long, 0.05-0.07 mm wide. Shorter

lemniscus 0.31 mm long, longer lemniscus 0.47 mm long. Uterine bell 0.12-0.16 mm long, 0.06-0.07 mm wide. Uterine bell is followed by few guard cells which connect the uterine bell to uterus. Uterus is an elongated tube like structure which opens into a muscular vagina. Uterus 0.25-0.42 mm long, 0.02-0.04 mm wide. Vagina 0.04-0.07 mm long, 0.03-0.06 mm wide. Egg elongated 0.025-0.03 mm long, 0.01-0.015 mm wide.

Host: *Puntius chola*, *P. sophore*

Location: Intestine

Locality: Chatla Haor, Silchar (Assam).

DISCUSSION

In *A. antespinus* hypodermal nuclei are 3 dorsal and 2-3 ventral, in *A. dattai* hypodermal nuclei are 4-6 dorsal & 2 ventral; in *A. betwai* hypodermal nuclei have not been reported in *A. glovani* 5-6 dorsal nuclei & 2 mid ventral nuclei have been reported but in the present specimens total number of hypodermal nuclei are 2 or 3. In *A. antespinus*, lemnsce are equal, slightly unequal in *A. dattai*, nature of deminsci is *A. betwai* is not reported; in *A. glovani* lemnsce are unequal (as in the present specimens). The nuclei in the cement gland of *A. betwai*, 6-8 nuclei is *A. dattai*, number not mentioned in *A. glovani*, but the nuclei are 5 in the cement gland of present acanthocephalas. The presence of saefftingens pouch in the present acanthocephala and differences in the number of hypodermal nucelei isolates the present acanthocephala from the species reffered to above and have a nw *Acanthosentis assamensis* n.sp. is proposed for its reception.

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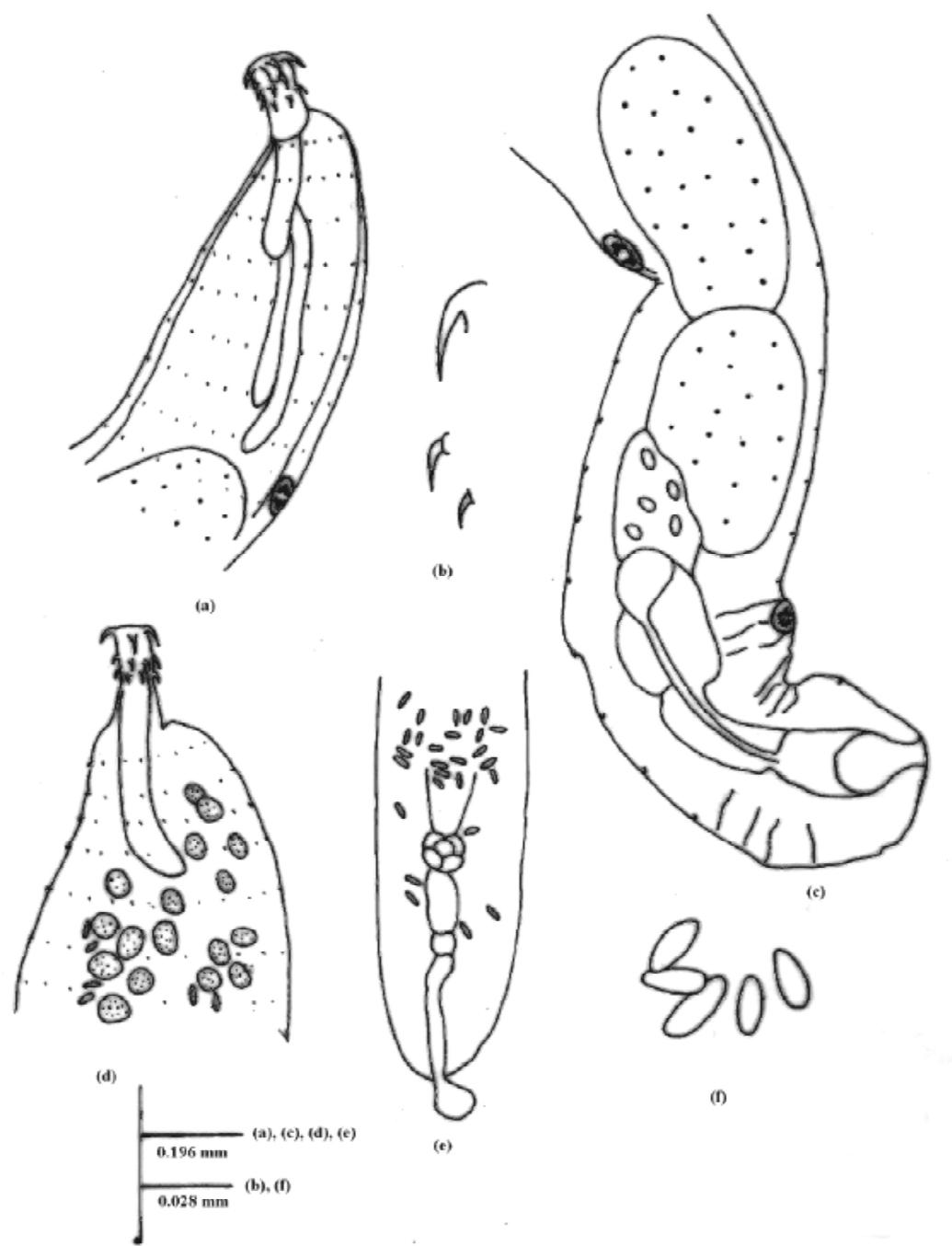


Fig. 1. *Acanthosentis assamensis* n. sp. (a) Anterior end of male, (b) Hooks, (c) Posterior end of male, (d) Anterior end of female, (e) Posterior end of female, (f) Egg.

Table 1: A comparative chart of some species of genus *Acanthosentis* Verma and Datta, 1929. (All measurements in mm.).

Structures	Present form	<i>A.antespinus</i> Verma and Datta, 1929	<i>A.dattai</i> Poddar, 1938	<i>A.betwai</i> Tripathi, 1959
Size of body				
Male	1.82-2.95 x 0.32-0.35	0.08-2.4 x 0.08-0.67	1.34-3.34 x 0.24-0.42	8.75 x 1.25
Female	4.18-6.90 x 0.47-0.69	0.85-4.5 x 0.25-1.2	1.67-9.46 x 0.44-0.90	9.93 x 2.08
Size of proboscis	0.07-0.19 x 0.04-0.045	0.04-0.17 x 0.04-0.05	0.12 x 0.55	0.127-0.133 x 0.127
Length of proboscis hooks				
1 st row	0.025	0.072	0.05-0.057	0.057-0.068
2 nd row	0.01	0.054	0.03-0.038	0.038-0.053
3 rd row	0.01	0.048	0.026-0.048	0.024-0.041
Size of neck	0.03-0.04 x 0.05-0.06	-	-	-
Length of femisci				
I	0.23-0.037	0.04-0.34	0.68	-
II	0.31-0.44	0.04-0.34	-	-
Size of proboscis sheath	0.20-0.25 x 0.03-0.05	-	-	-
Size of anterior testis	0.38-0.69 x 0.22-0.24	0.08-0.47 x 0.06-0.13	0.48 x 0.031	0.942 x 0.652
Size of posterior testis	0.35-0.53 x 0.24-0.25	0.06-0.034 x 0.05-0.032	0.29 x 0.27	0.797 x 0.435
Size of cement gland	0.20-0.26 x 0.12-0.13	-	-	-
Size of Saefttigen's pouch	0.10 x 0.08-0.085	-	-	-
Size of seminal vesicle	0.24-0.41 x 0.08-0.09	-	-	-
Size of uterine bell	0.12-0.16 x 0.06-0.07	-	-	-
Size of uterus	0.25-0.42 x 0.02-0.04	-	-	-
Size of vagina	0.04-0.07 x 0.03-0.06	-	-	-
Egg	0.025-0.03 x 0.01	0.026 x 0.008	0.026	0.015

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Table 2. Morphometric measurements (in mm) of *A. assamensis n. sp.* with range, mean, S.D. and S.E.

Parameters	Range	Mean	S.D.	S.E.
Body length : ♂	1.82-2.95	2.323333	0.469491	0.271069
	♀ 4.18-6.90	5.483333	1.113323	0.642796
Maximum breadth : ♂	0.32-0.35	0.333333	0.012472	0.007201
	♀ 0.47-0.69	0.55	0.099331	0.057351
Proboscis length	0.07-0.19	0.11	0.056569	0.032661
Proboscis breadth	0.04-0.045	0.0418667	0.002357	0.001361
Neck length	0.03-0.04	0.033333	0.004714	0.002722
Neck breadth	0.05-0.06	0.056667	0.004714	0.002722
Length of lemniscus I	0.23-0.37	0.296667	0.057349	0.033111
Length of lemniscus II	0.31-0.44	0.366667	0.054365	0.031389
Length of proboscis hook 1 st row	0.025-0.025	0.025	0	0
	2 nd row	0.01-0.01	0.01	0
	3 rd row	0.01-0.01	0.01	0
Proboscis sheath length	0.20-0.25	0.166667	0.084984	0.049067
Proboscis sheath breadth	0.03-0.05	0.143333	0.146363	0.084505
Anterior testis length	0.38-0.69	0.516667	0.129185	0.074587
Anterior testis breadth	0.22-0.24	0.226667	0.009428	0.005443
Posterior testis length	0.35-0.53	0.43	0.074833	0.043206
Posterior testis breadth	0.23-0.25	0.24	0.008165	0.004714
Cement gland length	0.20-0.26	0.226667	0.024944	0.014402
Cement gland breadth	0.12-0.13	0.123333	0.004714	0.002722
Saefftigen's pouch length	0.09-0.10	0.096667	0.004714	0.002722
Saefftigen's pouch breadth	0.08-0.085	0.081667	0.002357	0.001361
Seminal vesicle length	0.24-0.41	0.313333	0.071336	0.041187
Seminal vesicle breadth	0.08-0.09	0.085	0.004082	0.002357
Uterine bell length	0.12-0.16	0.146667	0.018856	0.010887
Uterine bell breadth	0.06-0.07	0.066667	0.004714	0.002722
Uterus length	0.25-0.42	0.323333	0.071336	0.041187
Uterus breadth	0.02-0.04	0.033333	0.009428	0.005443
Vagina length	0.04-0.07	0.06	0.014142	0.008165
Vagina breadth	0.03-0.06	0.05	0.014142	0.008165
Egg length	0.025-0.03	0.026667	0.002357	0.001361
Egg breadth	0.01-0.01	0.01	0	0

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