

**A NEW PROTOCEPHALID TAPEWORM *GANGESIA JAYAKWADENSIS* FROM
CLARIAS BATRACHUS AT AURANGABAD (M.S.)**

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ABSTRACT

Parasites are the major public health problem. It invades man and several other domestic animals. Cestode parasites are the intestinal parasites found in various animals like fish, sheep, goat, poultry etc. Four specimens, of the cestode parasites were collected from the intestine of a freshwater fish *Clarias batrachus* from Jayakwadi project at Paithan, Dist. Aurangabad. A new species of cestode parasite, *Gangesia jayakwadensis* n.sp. has been described in this paper. It is differentiated from all known species of the genus in scolex large, quadrangular, rostellum armed with a double circle of hooks, one circle with 25 hooks, second circle with 29 hooks, mature proglottids squarish in shape, broader than long, testes 300 to 310 (305), ovary is large in size, distinctly bilobed. The vitellaria are follicular; uterus is tubular in mature segment. The gravid segments are large, slightly longer than broad. The eggs are medium, oval and operculated.

KEY WORDS: Key words: Cestode, *Clarias batrachus*, proglottids, uterus,

INTRODUCTION

The genus *Gangesia* was erected by Woodland in 1924. The description of *Gangesia*, studied by Dhar and Mahajan (1984) Jadhav et al., (2001), described *Gangesia clariusae* (cestoda) from *Clarias batrachus*. Southwell (1930) however, recognized only three valid species of the same genus others being regarded as synonyms. Later on 23 species are added to this genus. In india, Gupta and Parmars (1984) find out a new cestode *Gangesia* (*Gangesia indica* sp.nov. from fresh water fish *Wallago attu* (Bloch) from Lucknow, U.P. Jadhav and Tat (1997) observed a new tapeworm from *Wallago attu* from a river *Gangesia dhararensis*.

In 1981, Malhortra et al. observed a new cestode, *Gangesia mehambadensis* from *Mystus tengra* from Mehamadbad. The present communication deals with the description of a new species of cestode parasite *Gangesia jayakwadensis* n.sp. from *Clarias batrachus*.

MATERIALS AND METHODS

Four specimens of the cestode parasite were collected from the intestine of a fresh water fish, *Clarias batrachus*, from Jayakwadi project, at Paithan, Taluka Paithan, Dist. Aurangabad, M.S. India. The worms were thin, medium in size, white in color, consisting of scolex, numerous immature, mature and gravid proglottids. They were flattened, preserved in 4% formalin, stained with Harris Haematoxylin, passed through various alcoholic grades, cleared in xylol, mounted in D.P.X. and whole mount slides were prepared, for further anatomical studies. Drawings are made with the help of camera lucida. All measurements are in millimeters (mm).

DESCRIPTION

The scolex is large in size, almost quadrangular in shape, indistinctly marked off from the strobila, with the projection at the anterior tip, 2-3 constrictions on the anterior and lateral margin.

The rostellum is present, which is armed, large in size, oval in shape, situated in the projected region of the scolex, armed with a double circle of hooks.

The rostellar hooks are small to medium in size, arranged in two circles, in one circle the hooks are longer, 25 in number, with large disc at the base and a single pointed prong. Second circle is having small hooks, which are short in length and breadth, with smaller basal disc and a single pointed prong, 29 in number.

The suckers are large in size, oval in shape, arranged in two pairs, one pair in each half of the scolex, touching or not to each other in each pair, situated in the posterior three fourth region of the scolex.

The neck is short, very much broader than long, seven to eight times broader than long, with convex and irregular lateral margin.

The mature proglottids are medium in size, squarish in shape, broader than long, almost two times broader than long, curved anteriorly and posteriorly, with convex lateral margins, with or without short, blunt, round projections at the posterior corners of the segments, acrespedote, uneven in length.

The testes are small to medium in size, oval in shape, 300 to 310 (305) in number, arranged in a single field, unevenly distributed, preovarian, few lateral to ovary, from the anterior margin upto the ovary and from one lateral to the other lateral margin of the segments, bounded laterally by the longitudinally excretory canals, few on excretory canals.

The cirrus pouch is large in size, cylindrical in shape, curved posteriorly, opens marginally, and extends far beyond the longitudinal excretory canals, almost upto one fourth width of the mature segments, situated either in the centre or just anterior to the middle of the segments, slightly obliquely placed.

The cirrus is of medium width, curved, contained within the cirrus pouch.

The vas deferens is wide, long slightly coiled, extends anteriorly, up to the middle of the segments.

The ovary is large, in size, distinctly bilobed, situated near the posterior margin of the segment extending laterally upto the longitudinal excretory canals. The ovarian lobes are large in size, almost triangular in shape, unequal in shape in size, each lobe with 5-8 short, blunt, round, wide acini, poral lobe long and narrow, where as aporal lobe short and wide.

The isthmus is short, wide, connecting the two ovarian lobes.

The vagina is thin, situated posterior to the cirrus pouch, arises from the genital pore, runs obliquely and medially, parallel to the posterior margin of the cirrus pouch, extends anteriorly, runs obliquely, up to middle region of the segments, turns posteriorly, extends obliquely, slightly coiled, reaches and opens into the ootype.

The ootype is large in size, round in shape, posteroventral to the ovary and isthmus, near the posterior margin of the segments, almost in the centre of the same.

The genital pores are medium in size, oval in shape, open marginally, either at the centre, or just anterior to the middle, of the lateral margin, of the segments, irregular alternate.

The vitellaria are follicular, follicle are medium in size, round in shape in 3-4 rows, on each lateral side, from the anterior to the posterior margin of the segments.

The longitudinal excretory canals are of medium width.

The uterus in the mature segments is tubular, arises from the ootype, and extends anteriorly, upto the anterior margin of the segments.

The gravid segments are large in size slightly longer than broad, with convex or concave lateral margins, with or without short, blunt, round projections at the posterior corners of the segments, unequal in length. The gravid segments are having the uterus, with a central stem and 16-18 lateral diverticulae, which are long, separate, elongated and contain numerous eggs.

The eggs are medium in size, oval in shape, operculated.

RESULTS AND DISCUSSION

After going through the literature, the worm under discussion, in having 300 – 310 (305) testes comes closer to *G. pseudotropii*, *G. sanhensis*, *G. lucknowia*, and *G. fotedari* (Dhar and Mahajan, 1984), *Gangesia rohita* (Pawar et al., 2004), *Gangesia clariusae* (Jadhav et al., 2001), but differs from them in many characters, which are as follows –

- The present form, differs from *G. pseudotropii* which is having scolex broader at the middle, rostellar hooks 17 – 20 in complete ring, testes 100-160, in two lateral fields; ovary bilobed, compact, uterus with 30-40 latera diverticulae.
- It differs from *G. sanhensis* which is having the scolex indistinct from the body, hooks 22-25, in a circle, testes 122-184 in number, bounded by excretory canals; ovary follicular, uterus branched with 10-24 lateral, finger shaped diverticulae.

- It differs from *G. lucknowia* which is having the neck short, testes 130-150 in number, ovary bilobed, lobes squarish. Uterus branched with 16-18 lateral diverticulae.
 - From *G. paithanensis* in having scolex oval, elongated, hook 11-12 in two rows, testes 280-300 preovarian, ovary bilobed with acini, uterus 16-18 diverticulae.
- The above species was compared with the data on *Gangesia*.

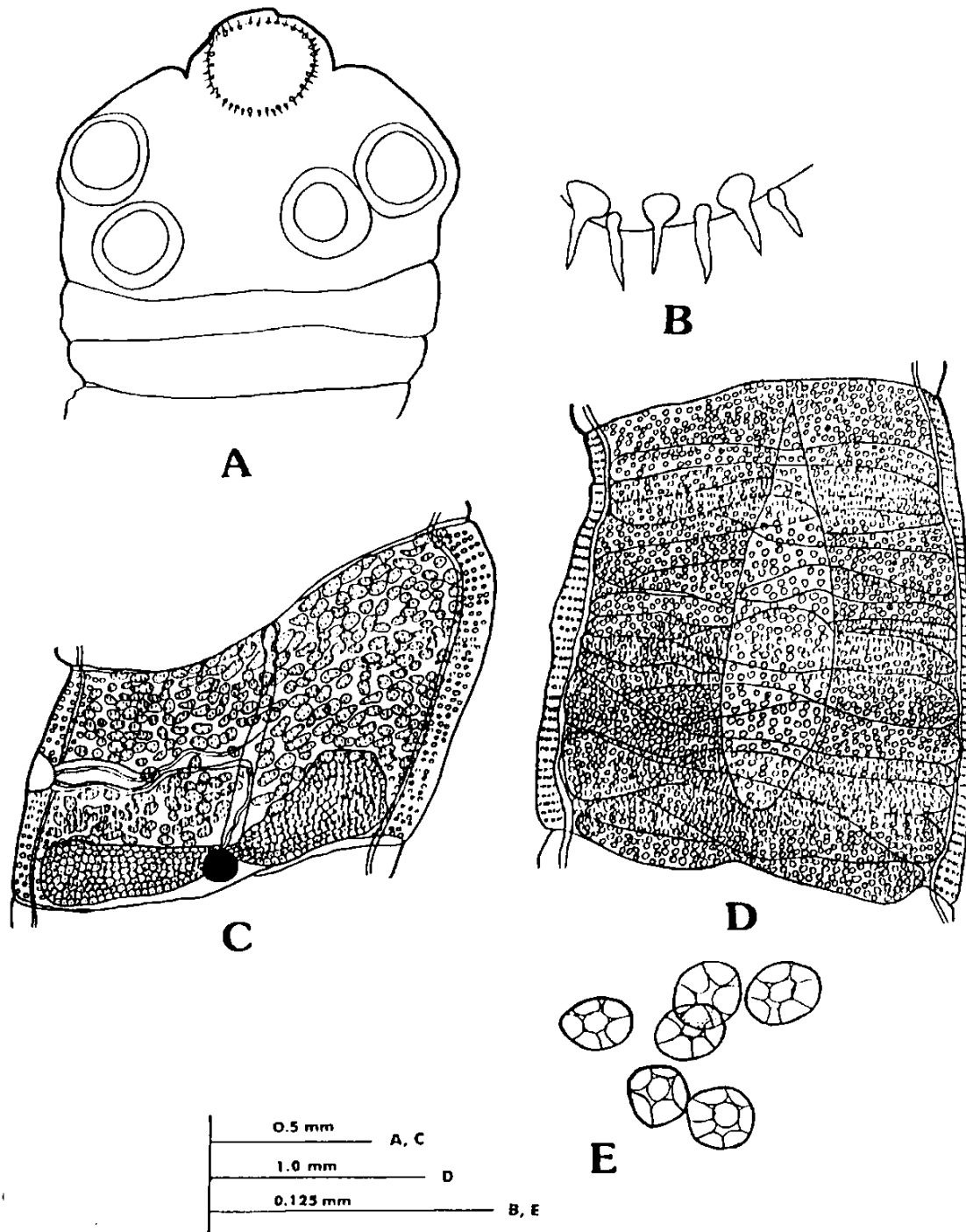


Figure 1. *Gangesia jayakwadensis*

Table No. 1. Measurements of *G. jayakwadensis*

Sr. No.	Body Parts	Length (mm)	Breadth (mm)
1.	Scolex	0.530 - 0.917	0.265 - 1.228
2.	Rostellum	0.288	0.333
3.	Rostellar hooks (1 st circle)	0.040	0.002 - 0.022
	2 nd circle	0.025	0.022 - 0.007
4.	Suckers	0.295 - 0.311	0.265 - 0.273
5.	Neck	0.114 - 0.189	1.129 - 1.182
6.	Mature proglottids	0.106 - 1.091	1.228 - 1.463
7.	Testes	0.030 - 0.053	0.023 - 0.060
8.	Cirrus pouch	0.326	0.023 - 0.083
9.	Cirrus	0.326	0.008
10.	Vas deferens	0.432	0.0058
11.	Ovary	0.205 - 0.303	1.137
12.	Ovarian lobe	0.530 - 0.568	0.091 - 0.295
13.	Isthmus	0.068	0.038 - 0.053
14.	Vagina	0.955	0.008 - 0.023
15.	Ootype	0.098 in diameter	-
16.	Genital pore	0.083	0.045 - 0.125
17.	Uterus	0.735	0.038 - 0.053
18.	Gravid	1.99 - 2.40	2.03 - 1.69
19.	Eggs	0.028 - 0.030	0.029 - 0.030

CONCLUSION

As the characters are distinct, it is regarded as a new species and hence the name *Gangesia jayakwadensis* n.sp. is proposed, after the name of the dam, a water body source of the host.

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