



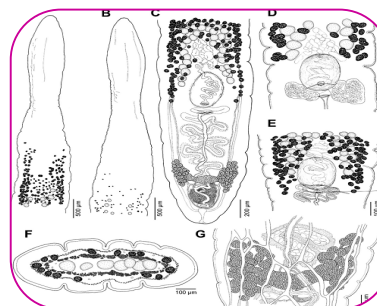
A NEW SPECIES OF THE GENUS *LYTOCESTUS* (CARYOPHYLLIDEA, LYTOCESTIDAE) FROM *CLARIAS BATRACHUS*

D. P. Patil

Department of Zoology, Bhagwan Mahavidyalaya, Ashti (M.S.) India.

ABSTRACT

The head is long, elongated, bluntly rounded, neck short, squarish, testes 1470-1480(1475), medium to large, oval, scattered in middle region, base of neck to the ovary, vas deferens medium, thin, cirrus pouch medium, elongated, cylindrical, obliquely placed, ovary big, dumb-bell shaped, distinctly bilobed, irregular margin obliquely placed, ovarian follicles 28-32, connected by isthmus, vagina is a wide tube, starts from genital pore opens into the ootype, ootype is large, oval, irregular shape, postovarian, situated concavity of the ovarian lobes, uterus opens separately by an uterine pore, vitellaria granular strips of medium width on each lateral side from the base of the neck region to the posterior end of the worm.



KEY WORDS: Cestode, New species, *Lytocestus bharratae* n.sp.

MATERIAL AND METHOD :

Six species of the cestode parasites were collected from a fresh water fish, *Clarias batrachus* at Gulbarga, K.S., India in the month of June. All the worms were flattened, fixed in 4% formalin, stained with Harris haematoxylin, passed through various alcoholic grades and mounted in D.P.X. Drawings are made with camera lucida. All measurements are in millimeters.

DESCRIPTION :

All the cestodes were long, thick i.e. highly muscular, whitish in colour, with head and single segmented body. The head is long, elongated narrow anteriorly, broad posteriorly and measures 0.304 to 2.319 in length and 0.606 to 0.766 in breadth. The neck is short, squarish in shape with slightly convex lateral margins and measures 0.136 to 0.167 in length and 0.636 to 0.652 in breadth. The gonads are situated in the posterior most region of the worm. The testes are numerous, medium to large, oval, 1470 to 1480 (1475) in number, preovarian, scattered in the middle region of the worm from the base of the neck to the ovary and from one lateral to the other lateral margin of the worm, almost unevenly distributed and measures 0.038 to 0.076 in length and 0.038 to 0.076 in breadth. The cirrus pouch is medium in size, elongated, cylindrical in shape, curved anteriorly, preovarian, transversely and slightly obliquely placed, opens in the middle of the body and measures 0.076 to 0.083 in length and 0.023 to 0.060 in breadth. The cirrus is thin, straight, contained within the cirrus pouch and measures 0.136 to 0.152 in length and 0.008 in breadth. The vas deferens is medium in length, a thin tube and measures 0.114 in length and 0.008 to 0.015 in breadth. Ovary is big in size, dumb-bell shaped in appearance, distinctly bilobed, with loose mass of ova, with irregular

margin, situated near the posterior end of the worms, obliquely placed and measures 0.606 to 0.910 in length and 0.454 to 0.515 in breadth. The ovarian lobes are large, oval, broad in the middle, narrow at both the ends, with the same size and shape, antero posteriorly elongated and measures 0.492 to 0.545 in length and 0.227 to 0.341 in breadth. The ovarian follicles are 28 to 32 in number, medium in size, round and measure 0.076 in diameter. The isthmus is a wide tube, highly muscular, obliquely placed and measures 0.152 to 0.197 in length and 0.076 in breadth. The vagina is a wide tube, starts from the genital pore, runs medially and posteriorly, for a long distance, crosses the isthmus, reaches and opens in to the ootype and measures 1.175 in length and 0.038 to 0.083 in breadth. The ootype is large, oval irregular in shape, post ovarian, situated in the concavity of the ovarian lobes and measures 0.060 in length and 0.045 in width.

The utru is a coiled tube, starts from the ootype, takes a turn posteriorly, runs anteriorly, crosses and extends anterior to the isthmus, preovarin, forms wide, transverse coils, loop shaped in appearance, opens separately by an uterine pore ventrally, near the posterior region of the genital pore and measures 4.320 in length and 0.152 to 0.758 in breadth. The uterine pore is medium, oval, double walled, transversely elongated and measures 0.060 in length and 0.008 to 0.023 in breadth.

The vitellaria are granular, strips of medium width, on each lateral side of the worm, from the base of the neck region to the posterior end of the worm.

DISCUSSION:

The genus *Lytocestus* was established by Cohn, in 1908 as *L. adhaerens* from *Clarias fuscus* at Hongkong. Later on the following eleven species are added to this genus

Sr. No.	Name of the Species
1	<i>L. filiformis</i> Woodland, 1923 in <i>Marmyrus cashive</i> , Egyptian Sudan
2	<i>L. indicus</i> Moghe, 1925 in <i>Clarias batrachus</i> , India
3	<i>L. alestes</i> Lynsdale, 1956 in <i>Alestes nurse</i> , Sudan
4	<i>L. birmanicus</i> Lynsdale, 1956 in <i>Clarias batrachus</i> , Burma
5	<i>L. javanicus</i> (Bovien, 1926), Mackiewicz, 1962 U.S.A.
6	<i>L. parvulus</i> (Furtado, 1963) Mackiewicz, 1962 U.S.A.
7	<i>L. longicollis</i> Ramadevi, 1973 in <i>Clarias batrachus</i> India
8	<i>L. fossilis</i> Singh, 1982 in <i>Heteropneustes fossilis</i> Nepal
9	<i>L. marathwadaensis</i> Shinde and Phad, 1990 in <i>Clarias batrachus</i> India
10	<i>L. alii</i> Jadhav and Gavhane, 1991 in <i>Clarias batrachus</i> India
11	<i>L. clariasae</i> 1991 in <i>Clarias batrachus</i> India

After going through the literature, the worm under discussion, in having testes numerous, comes closer to *L. indicus*, *L. birmanicus*, *L. filiformis*, *L. longicollis*, *L. marathwadaensis*, *L. alii*, *L. clariasae*

1. The present cestode, differs from *L. indicus* which is having testes 230-270 in number, round in shape, extends up to the cirrus sac region; vas-deferens followed by ductus ejaculatorius; ovary with numerous follicles, lobes connected by big pipe shaped isthmus, wall of the uterus thick, coiled and vitellaria corticalar, in 2 to 3 rows on each lateral side.

2. The present tapeworm differs from *L. birmanicus* which is having neck long, testes numerous, medulary, extending upto the genital pore, cirrus pouch medullary in position, ovary wing like with numerous follicles and vitellaria follicular, extending upto antero-vaginal pore.

3. The present worm differs from *L. filiformis* which is having the testes numerous, large, round, cirrus pouch small between ovarian lobes, vas deferens short, thin, ovary bilobed with 6-11 separate large follicles and vitellaria follicular, large all around the testicular zone.

4. The present form, differs from *L. longicollis* which is having the testes 105-140 in two layers, spherical, broad and oval in shape, cirrus pouch oval in shape, vas-deferens much convoluted, ovary corticalar, 'H'

shaped, lobes vertical with closely packed follicles; vitellaria follicular, small, oval to round in a single row on each lateral side.

5. The present cestode, differs from *L. marathwadaensis* which is having testes 100-105, oval, placed in the central medulla in 2-3 rows; ovary 'H' shaped, lobes vertical, with closely packed follicles; vitellaria follicular, small, oval to round in a single row, on each lateral side.

6. The present worm, differs from *L. alii* which is having the testes 460-480 in number, oval, scattered in the central medulla; ovary butterfly shaped, vitelline follicles small, round, corticular in 4-5 rows on each side

7. The worm under discussion, differs from *L. clariasae* which is having the testes 700-750, rounded, scattered in the medullary region; ovary bilobed, ovarian follicles, 36-42 in number; vitelline follicles preovarian, rounded, corticular, lateral to testes in 5-6 rows on each side.

The distinct characters, as noted above, justify the recognition, of the present worm as a new species and hence the name *Lytocestus bhadatae* n.sp. is proposed in honour of the mother of the author.

Type species : *Lytocestus bhadatae* n.sp.
Host : *Clarias batrachus*
Habitat : Intestine

Type specimens : Holotype and paratype are deposited in Helminthology Laboratory, Department of Zoology, Dr. B. A. M. University Aurangabad.

ACKNOWLEDGEMENT :

The authors are thankful to Ex-Prof. Dr. G. B. Shinde and Head, Department of Zoology, Dr. Babasaheb Ambedkar Marathwada University Aurangabad, and to the Principal, Bhagwan Mahavidyalaya, Ashti for providing laboratory facilities.

REFERENCES :

- Shinde, G. B. and Phad A. N. (1990).** On a new cestode *Lytocestus marathwadaensis* n.sp. from fresh water fish Rivista Di Parasitologia Vol. 59 No. 113(47) : 295-298.
- Singh, S. S. (1982).** On *Lytocestus fossilis* n.sp. (cestoda: Lytocestidae) from Heteropneustes fossilis from Nepal Zool. Soci. India. (1975) 79-82.
- Sinha, S.S. and Unnisa, R. (1981).** An anomaly in caryophyllid cestoda *Lytocestus indicus* n.sp. Moghe,1931. Ind. J. Parasitology (1981) 5(2):197-198
- Wardle, R.A., McLeod, J.A. & Radinovsky, S. (1974).** Advances of the Zoology of Tape worms 1950-1970. University of Minnesota Press, Mineapolis, PP. 1-274.
- Yamaguti, S. (1959).** Systema Helminthum. Vol. II. 1-860.

