

**A new species *Lytocestus parturii* of the genus *Lytocestus* (Cestoda: *Lytocystiidae*, Hunter, 1927) from the fresh water fish *Clarius batrachus* at. Partur Dist. Jalna.(M.S.), India.**

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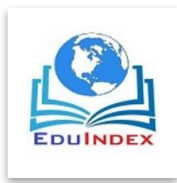
### **ABSTRACT**

The present investigation deals with the study of new species of genus *Lytocestus* (Cestoda: Lytocystidae) from the fresh water fish *Clarius batrachus* at Partur Dist. Jalna. The worm after the keen observation found that body elongated and dorsoventrally flattened. Scolex smooth, unarmed, rounded and stumpy. Posterior end blunt and rounded. Excretory pore terminal. Testes numerous. Vitelline follicles oval. Ovary is bilobed. Uterus very well developed and eggs oval with thick shell.

**Key words:** Scolex, Vitelline, Flattened, Segmentation, *Clarius batrachus*.

### **Introduction**

Considerable attention has been given by some European and Asian authors. Hunter (1927), considered caryophyllaeidae as an independent family of pseudophylledea rather than accepting as one of sub families of caryophyllaeidae Nybelin (1922). He divided the family caryophyllaeidae into four sub families caryophyllaeinae Nybelin (1922), Hunter (1927), capingentinae Hunter (1927), Wardle and Mcleod (1952) raised the family caryophyllaeidae to the rank of an order caryophyllaeidea. Fotedar (1958) and Yamaguti (1959) followed the classification proposed by the Hunter (1927). Gupta (1961) agreed with Yamaguti and considered that there are no other differences in the position of the genital apertures.



Several form of the family Caryophylleidae have been described from India. Moghe (1925),(1931) described *Lytocestus indicus* of the subfamily Lytocestinae from a fresh water fish *Clarias batrachus* from Nagpur. Lynsdale (1956) described another species of *lytocestus birmanicus* from *Clarius batrachus* from Rangoon ((Burma) Fotedar (1951) described a new genus and species *Adenoscolex oreini* from fresh water fish *Orreinu sinuatus* from Kashmir under the subfamily Capingentinae. It has considered the genus *bothriscolex*. Szddat (1937) as a synonym of the genus *Khawia*. Four new species from India have been added by Gupta (1961) *Lucknowia fossilis* n.sp. from *Heteropneustes fossilis*, Lucknow (U.P.) *Pseudolytocestus Clariae* n.sp. *Pseudocaryophyllae indicus* n.sp. and *Capingentoides batrachii* n.sp. from *Clarius batrachus*, Gauhati (Assam).

### **Material and Methods**

Total 25 number of fresh water fishes *Clarius batrachus* has been studied. Cestode parasites were collected from the intestine. For stretching the body parasite was deepened in warm water, flattened the parasite, kept for overnight in 10% formalin, next day washed with water, passed through the different alcohol grades, stained in aceto-carmine, again passed through various alcoholic grades, then cleared in clove oil and finally mounted in Canada balsam. To record the seasonal incidence the fishes were examined at regular interval from Jul 2016 to Jun 2018.

Drawing was made with the help of Camera Lucida at a suitable magnification.

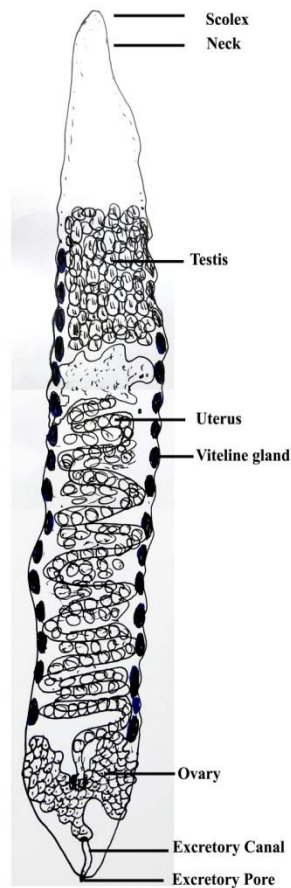
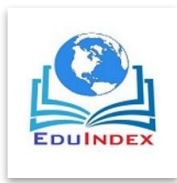


Fig. *Lytocestus parturii* n.sp.

## Result and Discussion

Body elongated, dorsoventrally flattened, no trace of internal segmentation, external segmentations of wrinkles were observed in the marginal area of the body. The fully matured worm when measured it is found broader and thicker in the posterior region. It measures 20-22 mm in length and 3-3.5 mm in width.

Scolex is smooth, unarmed, rounded stumpy markedly differentiated from the remaining part of the body. The scolex is followed by neck which is short and something broad in the width, it measures 2.0-2.5 mm long and .75- 1.0 in width. Posterior part of the body blunt and rounded.

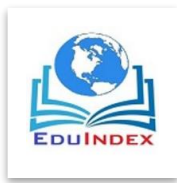


The exterior pore is terminal and leads into an excretory vesicle. Middle and Posterior sixty to seventy (60-70)% part of the body occupied by the reproductive organ like cirrus sac, uterus, ovary etc. the uterus occupied the major part of these region.

Testes are numerous 200 – 220 in numbers, transversely elongated, oval in shape larger or equal. Vitelline follicles extending throughout pre-uterine, medulla, measuring 0.25- 0.30 X 0.45- 0.58 mm and bounded by the lateral side by vitelline follicles. Vitelline follicles are oval in outline, little smaller or equal to the size of testes. It measures 0.20- 0.25 X 0.30- 0.38 mm in size, Vas deferens is convoluted lying in the middle part of the body and anterior to cirrus sac. The cirrus sac is large, ovoid, medially situated and measures 0.80-0.8 X 0.60- 0.72 mm in size. Seminal vesicle is coiled and filled the entire space of cirrus sac. The cirrus sac lying into a deep mid-ventral pit. Ovary is bilobed, transversally elongated extends lateral to the vitelline glands. Ovarian follicles extends beyond the lateral side of the body. Uterus is well developed arises from the posterior end of ootype as a convoluted tube, compactly coiled posterior to isthmus extending up to the exterior bladder, then turns anteriorly beyond the cirrus sac. Eggs are oval and thick shelled. The shell gland is very well developed and located behind the isthmus. Cirrus sac is separated from urino genital canal and situated very close to it. The vagina runs more or less straight and joins to the terminal end of the uterus. The uro- vaginal canal opens by a wide aperture below the cirrus sac. Ootype is straight and ventral side to the ovary.

The present worms belong to the sub family Lytocestinae, Hunter (1927) and closely resemble to the genera Lytocestoides. Baylis (1928) and Khawia Hsu (1935) in the present of post ovarian Vitelline gland, but differs from both genera in the absence of common genital aperture and in the shape of ovary. The new form resembles Lytocestus indicus and lytocestus birmancis in having genital aperture separate. In the structure of scolex of scolex, in the shape of the ovary shows similarity, but differs from position of vitelline gland. It extends up to the end of the body instead of up to the urino- vaginal aperture and in the position of compactly coiled uterine coils behind the ovarian isthmus.

The new form resembles to Adenoscolex oreini Fotedar (1958) in having the post ovarian Vitelline glands but differs from it in the shape of ovary. Present investigation closely resembles



to *Lucknowia fossilis*, Gupta (1961) from the different host *Clarias batrachus* in the presence of post ovarian Vitelline gland, separate opening for the cirrus and utero vaginal canal, in the shape of ovary, uterine coils post testicular, with thick wall. Ovarian lobes cortical. Vitelline glands in the irregular in shape and almost equal to other size of testes.

According to Ravi Solunke et.al (2012), specimens are long, buff colored single segmented, head big, cylindrical, narrow anteriorly while broad posteriorly. The testes are numerous medium to larger in size, oval in shape, 460 – 470 in numbers, pre-ovarian and scattered in single field. Cirrus pouch medium, cylindrical in shape, globular and big in size, medially broader while anterior and posteriorly narrow. Ovary large in size, bilobed with ovarian follicle and irregular margin. The isthmus long tube like lying on the middle of ovary. The vitellaria are granular, thin and cortical in position.

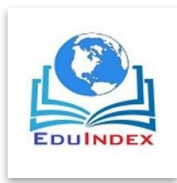
Ravi Pradhan and Rajesh Dhere (2013), investigation reveals that the length of parasite is considerably long and anterior part is much longer, neck long, testes 380-400 in number, unevenly scattered and small, oval in shape, scattered in the middle position. Gonads mostly placed in the posterior part of the body, Cirrus is thin, pre-ovarian, genital pore straight and small.

Kale S. S. (2017), stated that head of parasite is stipulated, blunt at the top, narrow with irregular margin, curved longer than broad, gonads at the posterior region, testes unequal, oval in shape 220-250 in numbers and scattered in the middle region of the body. Cirrus pouch median in size, oval and antero-posteriorly placed, opens in the middle part of the body. According to these characters it is regarded a new species.

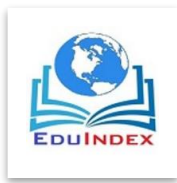
### **Acknowledgement**

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