



A New Species of Caryophyllaeidae Tapeworm *Pseudolytocestus* Hunter, 1929 (Cestode) from Freshwater Catfish *Clarias batrachus* (Linn.) in Eastern Uttar Pradesh

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ABSTRACT

During the course of study on morphotaxonomical studies of helminth parasites of economically important vertebrates of eastern Uttar Pradesh, the author collected many new and known forms of different genus of helminth parasites. This paper deals with a new species of the cestode genus *Pseudolytocestus* Hunter, 1929. from the intestine of a piscian host *Clarias batrachus* (Linn.).

Keywords: Helminth, Digenea, Cestoda, *Pseudolytocestus*, *Clarias batrachus*.

INTRODUCTION :

During the course of study on morphotaxonomical studies of helminth parasites of economically important vertebrates of eastern Uttar Pradesh, the author examined 60 specimens of fresh water fish *Clarias batrachus* (Linn.), of which only two were found infected with the 13 specimens of the genus *Pseudolytocestus* Hunter, 1929. The worms were collected from the intestine of the host. On subsequent study, these worms appeared new to science and are described herein as a new species.

MATERIAL AND METHODS :

Live specimens of *Clarias batrachus* (Linn.) were procured from the local fish markets of district Ayodhya. The fisherman caught the specimens from the saryu river district Ayodhya. Thorough examination of their alimentary canal and other body parts was made for the screening of parasites. The cestodes were taken out and washed with water, stretched in luke warm water and fixed in 5% formalin for 24 hours. Subsequently they were washed in running tap water. The cestodes were dehydrated through a series of graded alcohols and stained in aceto-alum carmine, differentiated into acid alcohol, cleared in xylol and mounted in Canada balsum. Camera lucida sketches were made from permanent preparations.

Measurements were taken with the aid of an oculometer.

Generic Diagnosis :

Body elongate, scolex little specialized followed by short neck. Testes very numerous in broad median field anterior to ovary. External seminal vesicle present. Cirrus pouch occupying entire thickness of medulla; cirrus opening separately on ventral surface or into shallow eversible atrium a little in front of utero-vaginal pore. Ovary H shaped, at posterior extremity almost entirely medullary, with its lateral follicles extending into cortex; no post ovarian follicles. Uterine coil never extending forward beyond cirrus pouch, eggs of median size.

Description :

Body elongated, without any trace of external and internal segmentation 12.27-13.95 mm long and 2.47- 3.55 mm wide. Scolex slightly differentiated from body, stumpy, cone shaped, narrower than body and measures 1.99 – 2.35 mm long and 0.20- 0.55 mm wide, followed by a very short neck, measures 0.75 – 0.95 mm long. Main portion of the body posterior to neck rounded at posterior region. Excretory pore terminal. Excretory system with four longitudinal main excretory ducts, two on each side uniting posteriorly to form excretory vesicle opens at the posterior end of the body.

Testes numerous, rounded to ovoid, measures 0.09 – 0.29 mm in diameter, spread throughout the body medially, bounded on lateral sides by vitellarian follicles. Vas deferens much convoluted, medially anterior to the cirrus pouch. Cirrus sac large, ovoid measures 0.87 – 0.97 mm long and 0.54 – 0.64 mm wide situated at the distance of 2.69 – 3.17 mm from the posterior extremity. Vesicula seminalis in median part of the cirrus sac. Cirrus and vaginal opening separate. Ovary 'H' shaped distinctly lobed at the posterior region of the body. Vitellaria large to small, irregular in shape, circular to ovoid and measures 0.010 – 0.055 mm in diameter mostly lateral in position extending from neck region to a little anterior to the cirrus sac. No post ovarian follicles present. Genital aperture situated at 1.75 – 2.15 mm from posterior extremity.

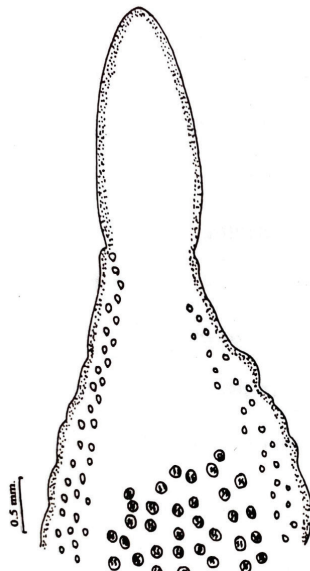


Fig. 1.

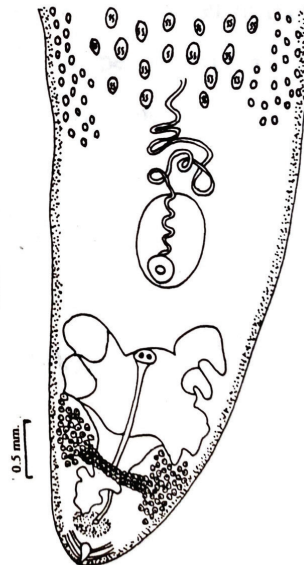


Fig. 2.

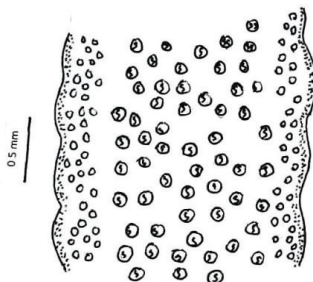


Fig. 3



Fig. 4

Pseudolytocestus singhi n.sp.

Fig. 1 : Anterior Portion

Fig. 2 : Posterior Portion

Fig. 3 : Middle Portion

Fig. 4 : Eggs

Uterus and vagina both opens in a common broad aperture measures 0.23 – 0.27 mm in diameter, posterior to cirrus sac. Vagina a straight tube, broad at anterior portion but narrower in the posterior portion, started from utero-vaginal pore and opens in ootype. Ootype a broad oval chamber, posterior to ovary, receiving opening of oviduct, vitelline duct and ducts of shell glands. The uterus opens into the utero-vaginal atrium. Eggs oval, non-operculated, 0.015 – 0.025 mm long and 0.020 – 0.030 mm wide.

Host : *Clarias batrachus* (Linn.)

Location : Intestine

Locality : Ayodhya U.P.

Prevalence : 13 specimens from two host out of 60 examined.

DISCUSSION :

The present form belongs to genus *Pseudolytocestus* Hunter, 1929 with *P. deffertus* as its type species.

Some more species *P. clarie* Gupta, 1961; *P. thapari* Gupta and Parmar, 1990; *P. fossilisi* Pande et. al., 2000 and *P. jagdishii* Pathak and Srivastava, 2019 are described from India.

The present form differs from the type species in having ovarian wings of greater width and the ovarian isthmus in posterior region to the mid region of the ovarian wings instead of slightly anterior to the mid region of the ovarian wings.

From *P. clarie* in having smaller body, smaller neck, big vitellaria and no post ovarian follicles.

The new form further differs from *P. thapari* in having ovarian isthmus slightly posterior to the mid region of the ovarian wings instead of slightly anterior to the mid region of the ovarian wings.

The new form also differs from the *P. fossilisi* in having ovarian isthmus in posterior region of the ovarian wings instead of mid region of the ovarian wings. It also differs from the same in the extension of vitellaria as it has vitellaria extension from neck to little anterior to the cirrus sac but in *P. fossilisi* vitellaria extend from somewhat posterior from the neck upto the cirrus sac.

Further the new form differs from *P. jagdishii* in having smaller body, larger vitelline follicles and presence of vitelline follicles mainly in cortical region.

So, according to the above discussion, the present form seems to be a new species of the genus *Pseudolytocestus* Hunter, 1929 and named ***P. singhi*** after the name of Kunwar Suresh Singh for his valuable contribution in the field of Helminthology.

Key to the species of *Pseudolytocestus*, Hunter, 1929

1. Neck like a constriction 2
Neck prominent..... 3
2. Post ovarian follicles present *P. clarie*
Post ovarian follicles absent *P. thapari*
3. Ovarian wings of great width 4
Ovarian wings small 5
4. Ovarian isthmus is slightly anterior to the mid region of the ovarian wings *P. deffertus*
Ovarian isthmus is slightly posterior to the mid region of the ovarian wings *P. jagdishii*
5. Extension of vitellaria from little posterior From the neck upto the cirrus sac..... *P. fossilisi*
Extension of vitellaria from neck upto little anterior to the cirrus sac..... ***P. singhi n.sp.***

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Declaration: *We also declare that all ethical guidelines have been followed during this work and there is no conflict of interest among authors.*

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