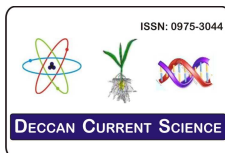


Research Article



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***Lytocestus godavariensis* Newss Spp. From *Clarius batrachus* (Linnus, 1758) At
Pravarasangam Dist. Ahmednagar, India**

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Abstract:

The present paper deals with the taxonomic study of cestode parasites. The tapeworm is important endoparasite which directly affect on nutrition of host and causes reduces nutritional value of food animals. In this paper we discuss about new species record of cestode parasite from fresh water fish *Clarius batrachus*. The present worm has long head, testes 400-500 in numbers, pre-ovarian, oval in shape; cirrus pouch oval, transversally placed, vagina long tube, vas deferens short tube, ootype small, ovary bilobed contain 24-26 ovarian follicles, uterus wide convoluted tube filled with eggs, eggs operculated, vitellaria granular.

Keywords: *Clarius batrachus*, Cestode n. ssp., testes and ootype.

Introduction:

The genus *Lytocestus* was erected by Cohn 1908 with type species *L. adhaerensis* in *Clarius fuscus* in Hong-kong. The genus is firstly confirmed by woodland 1926, he added four species like *L. filiformes* (1923), *L. chalmersius* (1924), *L. indicus* (1925), *L. cunningtoni* (1925). The same species is recorded by Mehra (1930) from *Clarias magur*, Hunter (1927) placed this genus in sub family namely Lytocestinae. Wardle, Mcleod and Radinovsky in 1974 suggested new system of classification, who used term cotyloda as a class and order caryophyllidea, kept in class Mackiewicz (1972) included the species *L. javanicus* (Bovien, 1926), Furtado (1926), Lynsdale (1950) considered *L. alestesias* syn. of *L. barmanicus*, Lynsdale

(1956). But Mackiewicz (1962) after examination of original material *L. alestesias* Lynsdale (1956) concluded that it should be considered as synonym of filiformis woodland (1973) described *L. longicollis* from *Clarias batrachus*. Lateran Shinde and Pawar 2002 added *L. batrachusae*; Kolpuke and Shinde (1999) erected *L. tereanaensis*, D.N. Patil and B.V. Jadhav (2002) erected *L. caryophyllide*. Shinde G.B. and Deshmukh R.A. (1975) added new species of *Lytocestoides baylis* from *C. batrachus*. *shindei* was erected by Khadap, Jadhav (2004). Shinde and Phad (1988) erected *L. marathwadensis* from *C. batrachus* Tandon (2005) erected four new species *L. clariae*, *L. allenuateus*, *L. assamensis* in *clarius batrachus* and *L. heteropneustii* in

Heteropneustes fossilis. Sawarkar (2012) erected *L. alii* n. ssp. from *Clarias batrachus* later on no species are added in this genus

Materials and Methods:

The present study deals with the taxonomic and systematic study of cestode parasites from fresh water fish *Clarias batrachus* in Godavari River at Pravarasangam Dist. Ahmednagar. During January 2010 to December 2010 i.e. the worms were collected, flattened and preserved in 4% formalin for study. For taxonomic study worm were stained with Harris hematoxyline stain, mounted in D.P.X. All drawing were drawn to scale with the aid of camera Lucida and all measurements are in millimeters

Description:

Three hundred specimens of cestode parasites were collected from intestine of *Clarias batrachus* (Linneus, 1758) from Gadavari River at Pravarasangam Dist. Ahmednagar during January 2010 to December 2010, Out of these ten specimens were stained for taxonomical studies. The mature specimens are long 12.4-24.23 mm in length and 2.1 -4.2 mm in width. The head is long, well marked, measures 3.116(2.385-3.847) in length and 1.999(0.727-2.271) in width. The testes are numerous (400-500) in numbers, pre-ovarian, placed centrally, oval in shape, measures 0.151(0.121-0.182) in length and 0.103(0.091-0.114) in width.

The cirrus pouch is small, pre-ovarian, transversely placed measures 0.121(0.114-0.129) in length and 0.019(0.015-0.023) in width. The cirrus is straight, thin and measures 0.057(0.053- 0.060) in length and 0.012(0.005-0.015) in width. Vagina is long, coiled tube, start from genital runs posteriorly measures 0.084(0.076-0.098) in length and 0.012(0.010-0.015) in width. Vas deferens is short, thin measures 0.055(0.053-0.058) in length and 0.075(0.005-0.01) in width. Genital pore oval, measures 0.022(0.019-0.024) in length and 0.0075(0.005-0.01) in width. Ootype is

small, oval situated between the ovarian lobes ,measures 0.141(0.114-0.167) in length and 0.121(0.098-0.144) in width. Ovary bilobed, posteriorly located, measures 0.352(0.228-0.477) in length and 0.364(0.262-0.465) in width, each lobe contains 24-26 ovarian follicles, lobes are connected with each other with isthmus, measures 0.065(0.048-0.082) in length and 0.378(0.364-0.388) in width. Uterus is wide, convoluted tube filled with eggs, opens outside by uterine pore, measures 0.167(0.159-0.174) in length and 0.034(0.023-0.45) in width. Uterine pore rounded measures 0.038 in diameter. The eggs are operculated, oval in shape, measures 0.181(0.172-0.191) in length and 0.220(0.210-0.230) in width, vitellaria granular.

Discussion:

The present worm has long head, testes 400-500 in numbers, preovarian ,oval in shape, cirrus pouch oval, transversally placed ,vagina long tube, vas deferens short tube, ootype small, ovary bilobed contain 24-26 ovarian follicles ,uterus wide convoluted tube filled with eggs ,eggs operculated ,vitellaria granular. It differs from *L. marathwadensis*, Shinde and Phad, 1988 testes arranged in two-three rows, cirrus pouch large ,ovary 'H' shaped, vitellaria oval ,located in single row, uterus secular; from *L. naldurgensis*, Kadam, Jadhav et, al. 1991, Scolex conical ,neck short ,testes 500-600 in number ,scattered medially ,cirrus pouch small, oval, vertical and obliquely placed ,ovary bilobed, butterfly shaped ,vagina wide tube ,vitellaria follicular, in 2-3 rows; from *L. teranaensis* ,Kolpuke and Shinde ,1999 in testes numerous ,round about 1200-1500, pre-ovarian, each lobe triangular; from *L. govindae*, Patil and Jadhav, 2002 testes 1425-1475 in number ,pre ovarian ,evenly distributed ,cirrus sac small, oval, pre ovarian, vagina long coiled tube, uterus wide tube filled with eggs; from *L. shindei*, Khadap, Jadhav ,2004, in testes 350-360, ovary bilobed ,butterfly

shaped located near posterior region, uterus wide tube, vitellaria granular; from *L. nagapurensis*, Shinde et.al.2004, in having spatulate scolex, neck short, broader than long, testes 1100-1150, oval, vas deferens medium, thin coiled, cirrus pouch medium, ovary bilobed with numerous follicles, vaginal long and thin; differs from *L. heteropneustii*, Tendon et.al 2005 in testes ovoid, large about 235-340 in numbers, ovary bilobed, vitelline follicles spherical, cortical in position; from *L. alii*, Sawarkar, 2012 in having testes 580-590, oval in shape, ovarian follicles 32-39 in number situated near posterior region, vagina coiled tube.

The above noted characters are valid enough to accommodate these worms as a new species *Lytocestus gadavariensis* n.sp. named after the known river Godavari, from where the author has collected the worms.

Type species: *Lytocestus gadavariensis* n.sp.

Host: *Clarias batrachus*

Habitat: Intestine

Locality: Pravarasangam Dist. Ahmednagar

Period of collection: January 2010 to Dec. 2010

Deposition: Zoological Research Lab. Arts, Com & Sci. College, Sonai Dist. Ahmednagar

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References:

Lynsdale J.A., (1958): On the new species of *Lytocestus* from Burma and the Sudan J.Helm.50 (2-3):87-96.

Ramadevi P., (1973): *Lytocestus longicollis* n.sp.(Cestoda:caryophyllaeida) from cat fish, *Clarias batrachus* in India J.hel.47: 415-420

Shinde G.B. And Pawar (2002): A new species *Lytocestus batrachusae* n.s

(Cotyloda:Lytocestidae) from *Clarias batrachus* at Aurangabad, J.Riv.Parasit, vol. XIX (LXIII) N-2153-126

Shinde G.B. and Deshmukh R.A. (1975): On new species of *Lytocestoides*, Baylis, 1928 from fresh water fish j. Ibid, 19 (7):233- 236.

Kolpuke, et.al (1999): On new species of the genus *Lytocestus* Cohn, 1908 (Cestoda:caryophyllidea) from wallago attu from Terna river at A.bad, U.P.J.Zool.19 (1):93-95

Khadap R.M. and Jadhav B.V. (2004): A new species of the genus *Lytocestus* (Cohn, 1908), from *Clarias batrachus* at Aurangabad Nat.J. of life sci.1 (2), 2004, 413-416.

Pawar R.T. and Raut N.M., (2011): Influence of some phonological factors on Caryophyllaeid cestode *Lytocestus* parasitizing fresh water fish *Clarias batrachus* J.Ex.Sci.2011,2(5)27;30

Pawar R.T. and Raut N.M., (2011): Influence of some Phenological factors on the caryophyllaeid cestode *Lytocestus* parasitizing fresh water fish *Clarias batrachus* (Linnaeus) The Bioscan 6(2):271-273, 2011

Shinde, G.B. and Mohekar B.V., (1987): Two new species of genus *Lytocestus* (Lytocestidae) from a fresh water fish India J.hel.47: 1987, 415-420

Shinde G.B. and Phad A.N., (1988): On a new species of cestode *Lytocestus marathwadensis* from fresh water fish Riv.Di.para.47 (2)295-298

Sawarkar B.W., (2012): Record of new tapeworm, *Lytocestus alii* n.sp. from fresh water fish *Clarias batrachus* (Bleaker, 1862) at Amravati J.Bio.&life sci..3 (.1)2012, 11-12

Tandon V. and Chakravarty, (2005): Four new species of the genus *Lytocestus* (Caryophyllidea:Lytocestidae) from edible cat fishes j. Assam, J.pasitic disease vol.29(2), 2005, 131-142

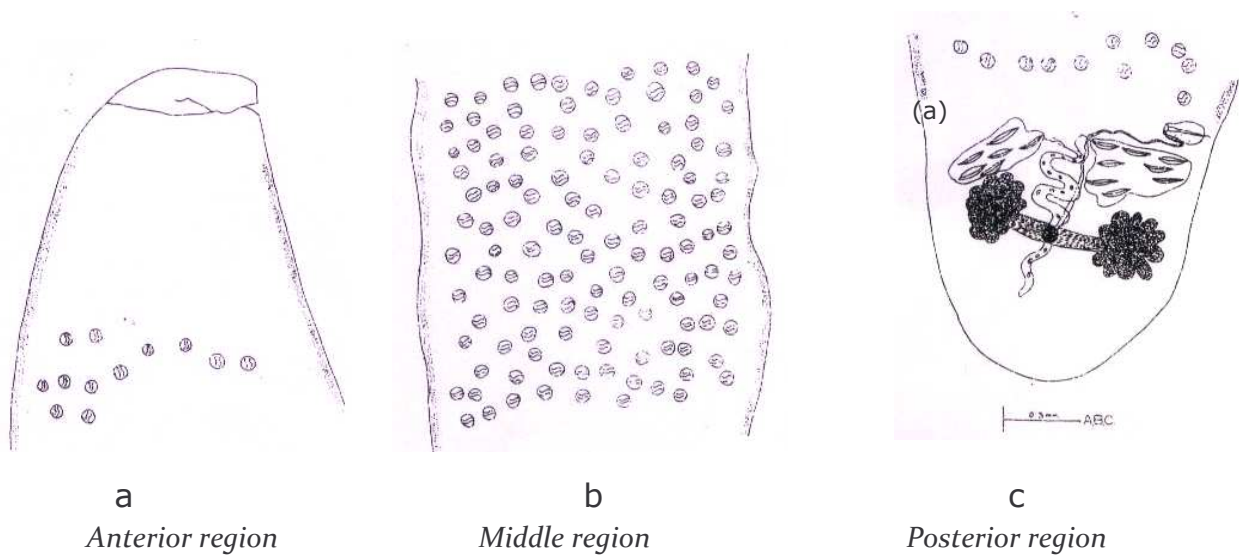


Fig 1: *Lytocestus godavariensis*(a, b and c)

Comparative chart showing an account of old and new species of genus *Lytocestus*, Cohn, 1908

Name of Species	Characters						
	Host	Testes	Cirrus pouch	Ovary	R. seminis	Uterus	Vitelaria
<i>L. adhaerens</i> Cohn,1908	<i>C. fuscus</i>	450-600	With muscular wall	Bilobed	Present behind cirrus	Looped	Granular
<i>L. marathwadensis</i> Shinde et.al,1988	<i>C. batrachus</i>	2-3 rows	Oval	H shaped	Absent	Sacular	Granular
<i>L. naldurgensis</i> Kadam et.al,1999	<i>C. batrachus</i>	500-600	oval	Bilobed	Present	Coiled	Follicular
<i>L. teraensis</i> Kolpuke et.al,1999	<i>Wallago attu</i>	1200-1500	oval	Triangular	Absent	Wide tube	Follicular
<i>L. govindae</i> Patil& adhav,2002	<i>C. batrachus</i>	1425-1475	Small	Butterfly shaped	Present	Convula-ted tube	Granular
<i>L. shindei</i> Khadap et.al,2004	<i>C. batrachus</i>	350-360	oval	Bilobed	Present	Wide tube	Granular
<i>L. nagapurensis</i> Shinde et.al,2004	<i>C. batrachus</i>	1100-1150	Medium	Bilobed with follicles	Not mentioned	Wide long	Granular
<i>L. heteropneustii</i> Tandon et.al.2005	<i>Heterpneus tiifossilis</i>	235-340	Promi- nent	H shaped	Distinct	Glandular	Follicular
<i>L. alii</i> Sawarkar,2012	<i>C. batrachus</i>	580-590	Oval	Bilobed	Present	Wide tube	Granular
<i>L. gadavariensis, n.sp.</i>	<i>C. batrachus</i>	500-600	Small, oval	Bilobed	Long, coiled	Wide convuluted	Granular