

ON THE REVALIDATION OF LYTOCESTOIDES LEPIDOCEPHALI²¹- A CRITICAL ANALYSIS

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ABSTRACT

The authors have critically examined and found that the transference of *L. leptocephali* to the genus *Paracaryophyllaeus* was highly wrong and thus have revalidated the original status of *Lytocestoides leptocephali*²¹.

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KEY WORDS : *Lytocestoides leptocephali*, *Paracaryophyllaeus*, Revalidation.

Introduction

Lytocestoides leptocephali was described²¹. This species is a Caryophyllaeid Cestode of the family *Lytocestidae* recovered from *Lepidocephalus guntea* of the family Cobitidae at Garapota 24 Parganas West Bengal. Unfortunately a worker⁸ transferred it to the genus *Paracaryophyllaeus* of the family *Caryophyllaeidae*²² on untenable grounds.

Caryophyllidean cestodes show high degree of endemism. Out of four families of *Caryophyllidea* viz: *Caryophyllaeidae*²², *Lytocestidae*¹³, *Capingentidae*¹⁴ and *Balanotaeniidae*²⁴, only three families are represented in India.

In all the above families a number of genera exist except for *Balanotaeniidae*, where only one genus *Balanotaenia* has been reported²⁴. In the family *Lytocestidae* a number of genera have been erected.

These are: 1. *Lytocestus*⁴; 2. *Caryophyllaeids*²⁸; 3. *Balanotaenia*¹⁷; 4. *Monobothriodes*⁵; 5. *Djombangia*³; 6. *Lytocestoides*²; 7. *Bovienia*⁶; 8. *Stocksia*³⁷; 9. *Khawia*¹²; 10. *Notolytocestus*¹⁸; 11. *Atractolycerstus*¹; 12. *Lucknowia*⁷; 13. *Crecentovitus*²⁷; 14. *Markevitschia*¹⁹; 15. *Caryoaustralis*²⁵; 16. *Thallophyllaeus*²⁵; 17. *Moravekia*³⁰; 18. *Neolytocestus*³⁰; 19. *Introvertus*³²; 20. *Lobulovarium*²¹.

Of the list above, species have been reported under genera 1, 5, 6, 7, 12, 13, 17, 18, 19, 20 respectively.

Scientists^{15,16} gave a key to the species of the genus *Lytocestoides* reported from Indian region in which

granules/follicular vitellaria, number of testes, placement of cirrus pouch and shape of the head are the criteria for species identification.

Materials and Methods

Different research papers have been consulted and few slides observed.

Observation and Conclusion

*Lytocestoides leptocephali*²¹ was transferred⁸ to the genus *Paracaryophyllaeus* to which *Pliovitellaria osteobramensis* was also transferred.

It is strange to note that *Paracaryophyllaeus* genus belongs to the family *Caryophyllaeidae*²² where vitellaria are entirely medullary being always internal to and surrounded by inner longitudinal muscle layer typically annularly arranged occasionally lateral, gonopore/s and ovary are situated in the last 4th of body except *Wenyonia*³⁸, where gonopores are in anterior half of body. Besides in *Paracaryophyllaeus* uterine coil extend anterior to CS, male and female genital pore opens into a genital atrium.

Nevertheless in *Lytocestoides leptocephali* vitellaria²¹ are cortical and it is a member of family *Lytocestidae*, also the uterine coil does not extend anterior to CS. The author therefore restores the original status of *Lytocestoides leptocephali*²¹ i.e. in *Lytocestoides*. Some workers did not agree to transfer *Lytocestoides leptocephali* to the genus *Paracaryophyllaeus* instead kept it under 'Insertae sedis'

TABLE-1 : Under *Lytocestoides* genus following species are reported from India.

Parasite	Host	Location	Locality
<i>L. tanganyika</i> ²	<i>Aletes</i> sp. (Cypriniformes) Characidae	Intestine	Tanganyika Aurangabad, Pune
<i>L. aurangabensis</i> ³³	<i>Barbus collus</i> (Cypriniformes) Syprinidae	Intestine	Sangli, Satara, Pune, Thane
<i>L. aurangabensis</i> ³³	<i>Barbus collus</i> (Cypriniformes) Cyprinidae	Intestine	Satara, Thane, Kolhapur, Solapur
<i>L. aurangabensis minuta</i> ³³	<i>Labeo calbasu</i> (Cypriniformes) Cyprinidae	Intestine	Aurangabad, Latur, Nanded, Pune
<i>L. paithanensis</i> ³⁴	<i>Pseudotropius takree</i> (sykes) (Cypriniformes) Cyprinidae	Intestine	Ahmadnagar, Pune, Satara, Aurangabad
<i>L. lepidocephali</i> ²¹	<i>Lepidocephalichthys</i> Guntea	Intestine	West Bengal
<i>L. naldurgensis</i> ³⁵	<i>Cirrhinus mrigala</i> (Ham) Cypriniformes cyprinidae	Intestine	Osmanabad, Solapur, Latur, Beed
<i>L. mackiewiczi</i> ³⁵	<i>Cirrhinus mrigala</i> (Ham) Cypriniformes cyprinidae	Intestine	Aurangabad, Jatna, Satara, Sangli
<i>L. clariasae</i> ⁹	<i>Clarias batrachus</i> (Linnaus) Siluriformes clariidae	Intestine	Aurangabad, Parbhanbi, Nasik
<i>L. ajanthi</i> ¹⁰	<i>Clarias batrachus</i> (Linnaus) Siluriformes clariidae	Intestine	Osmanabad, Aurangabad, Solapur
<i>L. mrigali</i> ¹¹	<i>Cirrhinus mrigala</i> (Ham) Cypriniformes cyprinidae	Intestine	Aurangabad, Osmanabad, Pune, Satara

ⁱ% Out of the above species reported from India *L. aurangabensis*³⁴ from *Barbus collus* and *L. paithanensis*³⁴, from *Pseudotropius takree*²⁶, were badly decomposed and were held **INVALID**.

*A worker⁸ transferred *L. naldurgensis*³⁵ and *L. aurangabensis*³⁴ to the genus *Breviscolex*. This transference was vehemently protested by some workers³¹ saying there in that transference was **MISLEADING**.

It was also pointed out³¹ that “granular vitellaria” was a stage of immaturity and the possibility of their becoming follicular could not be ruled out and protested making keys on the basis of number of testicular follicles. Rejecting the idea of placement of cirrus sac (oval, small, transversely placed in *L. tanganyika*, at the junction of 2nd and 3rd quarter in *L. aurangabensis*, at 2/3rd of body from the anterior end in *L. aurangabensis* minor, at the junction of middle and last third of body in *L. aurangabensis* minuta, situated in the middle reason of body in *L. paithanensis*, small oval transversely placed in *L. naldurgensis*, round medium, post equatorial in *L. mackiewiczi*, round oval obliquely placed in *L. clariasae*, small oval medullary, transversely placed in *L. ajanthi*, round to oval medially placed in *L. mrigali* as per respective authors) and giving congniasance in species identification was also rejected. Tentatively revalidated all the species of *Lytocestoides*.

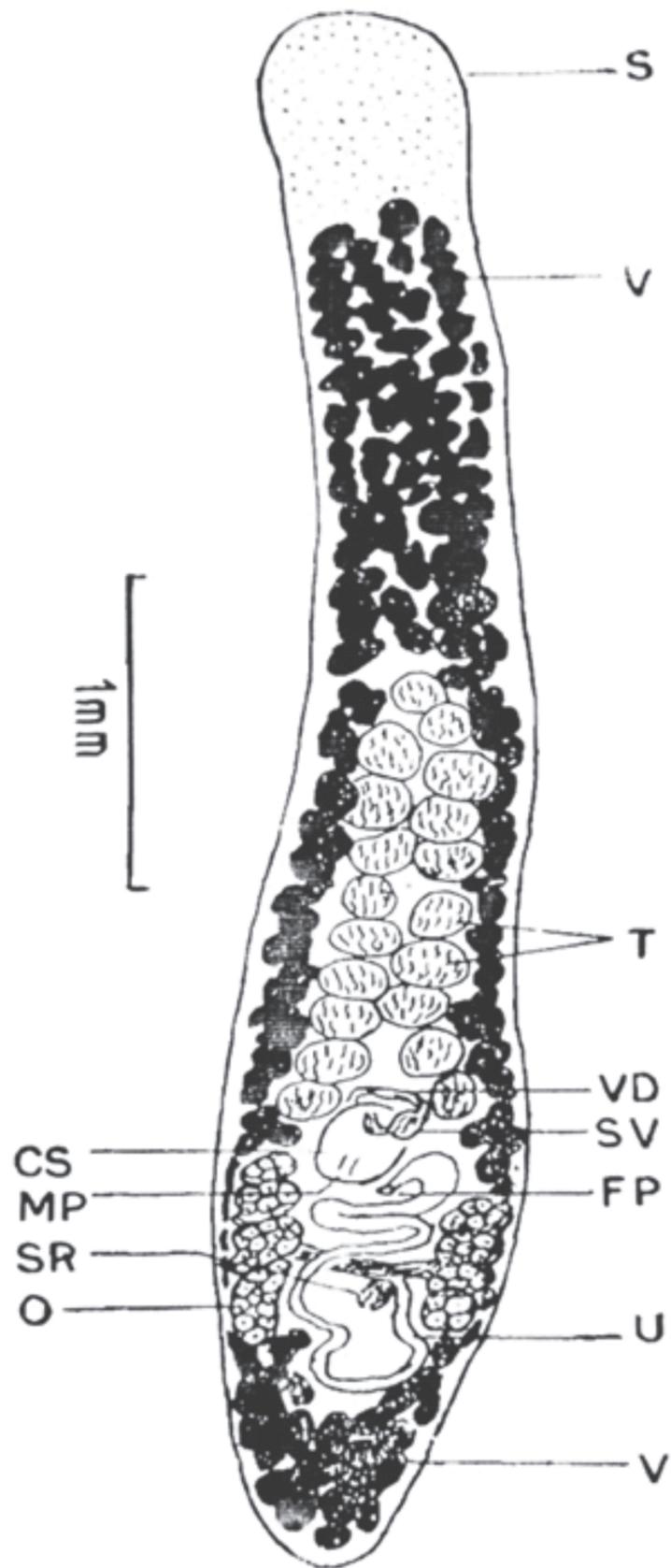
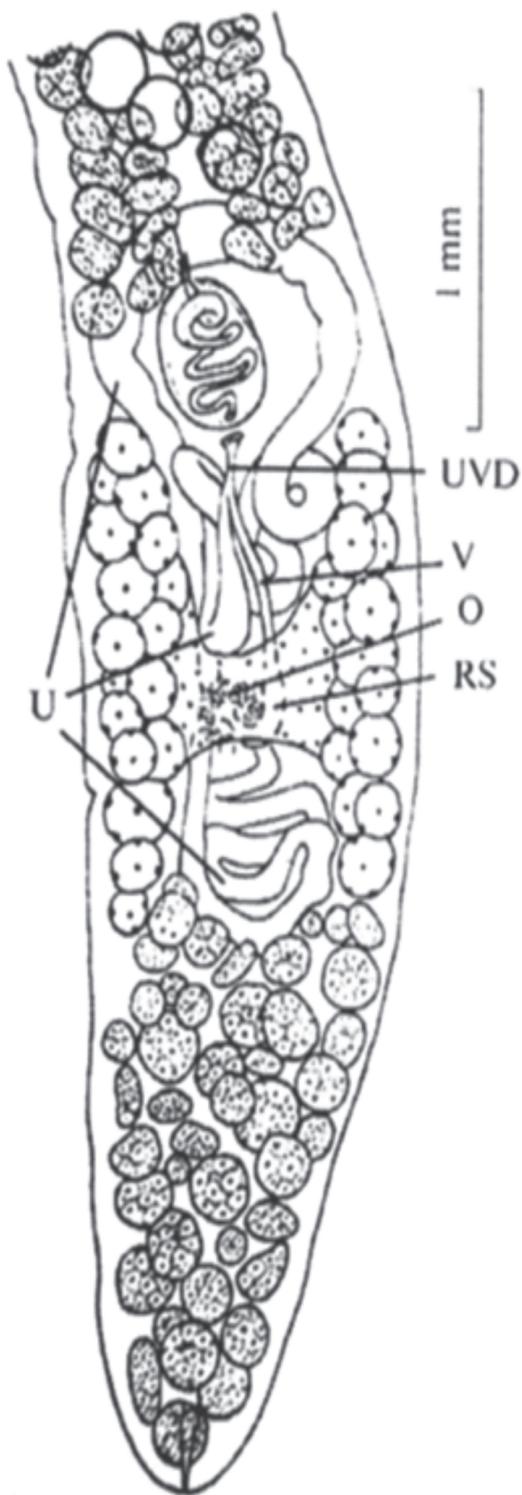


Fig. 1 : *Lytocestoides leptocephali*¹ (from the reprint)



(a) Posterior end



(b) Genital appertures

Fig. 2 : Line diagram of *Paracaryophyllaeus misgurni* (from the reprint)

TABLE- 2 : Comparison Chart

Parameters	<i>Lytocestoides leptocephal</i> ²¹ <i>Lytocestidae</i> ³⁶	<i>Paracaryophyllaeus</i> ²⁰ <i>Caryophyllaeidae</i> ²³
Scolex	Globular, smooth and free from wrinkles long, folds or depression	Broad, poorly defined, unspecialized, not marked off from rest of body
Neck	Present	Absent
Testes	16-20 larger than vit. follicles in two adjacent long, rows in peripheral medulla one on each side of median line, pre ovarian	Few arranged in two parallel longitudinal rows medullary, restricted much post. to anterior level of vit.
Uterine coil	Long, coiled, descent into post ovarian region then ascend but does not extend ant. to C.S	Extending ant. to cirrus sac
Vit.	Cortical	External & ant. to medullary testes
POV	Present	Present
Cirrus	Large, globular/oval, median	Small
Ovary	H-shaped with two follicular lobes in peripheral medullary region connected by isthmus	H- shaped, medullary
Genital pore	Separate	Separate
Sem. Rec	Not formed	Present/ Absent

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