



## Studies On Cestode Genus *Tylocephalum* (Linton, 1890) In *Trygon sephen* With Description Of New Species

Thakkar Aamod N.\*

\*Veer Wajekar A. S.C. College Phunde, Mahalan Vibhag, Tal. Uran, Navi Mumbai (M. S.)

### Abstract:

The present investigation deals with systematic observation of the cestode parasites *Tylocephalum moraae* new sps .of marine fish *Trygon sephen* from Sheva creek, Uran, West Coast of Maharashtra. The present worm comes closer to all the known species of the genus *Tylocephalum* in general topography of organ but differs due to scolex distinctly marked off from the strobilla, large in size, almost squarish in shape, clearly divided into two anterior and posterior, neck is short, wide, slightly broad at the base, narrow at the apex .Mature segments are longer than broad, cylindrical in shape with slightly convex or straight margins. Proglottids without projections at the anterior or posterior corners, testes are small, oval in shape, 68 in number, pre-ovarian, all placed anterior to the cirrus pouch, in two lateral fields. The cirrus pouch is medium in size, oval in shape, opens marginally. The cirrus is thin, slightly coiled, within the cirrus pouch .The vas deferens is thin and runs transversely for a short distance, turns posteriorly. The genital pores are small in size, oval in shape and open marginally. The ovary is medium in size, 'U' shaped and vitellaria are granular, thin strips, in cortical region.

**Keywords:** Parasites, Marine, Cestode, *Trygon sephen*, *Tylocephalum*,

### Introduction:

The oceans are truly the last frontier for exploration and exploitation on this planet for human being. From the total fish caught, fish for human consumption represents perhaps 1% of all human food, but significant 10% of total proteins intake, hence it is very important.

All animals of the class fishes takes lead not only for the variety of forms and the number of individuals harbored but also for the frequency of individual cases of parasitism.[1] .

The study of "fish Parasite and their importance" [2] states that since fish are not only definitive hosts for a large number of species of round and flat worms but are intermediate host for many more. Hence the study of fish parasites is of considerable importance not only to the pisciculture but also to health authority.

The genus *Tylocephalum* was erected by Linton, 1890 with its species *T. pingue* from *Rhinoptera quadriloba* at Woods Hole and also recorded from *R.banasus*. In present communication *Tylocephalum morae* Sp. Nov. is reported from *Trygon sephen*.

### Materials and Method:

#### Study Area:

Geographically, Uran is located along the eastern shore of Mumbai harbor opposite to Colaba. A creek called 'Uran creek / Sheva creek' (Lat.18°50' 20" N and Long. 72° 57' 5" E) encircles Uran city towards the north side and is continuous with Panvel creek and Thane creek. Creek namely Dharamtar creek (Lat.18°50' 5" N and Long. 72° 57' 10" E) encircles Uran city towards the south side and is continuous with Karanja creek and Pen Khopoli creek. On the west side, Uran is encircled by Arabian Sea.

The fishes were collected during 2010- 2012 at Mora from Sheva creek of Uran and were autopsied in the laboratory for helminth infections. The cestodes were flattened, preserved in 4% formalin, passed through different alcoholic grades, stained with Harris haematoxyline and borax caramine and mounted in D.P.X. Camera lucida drawings were prepared and measurements were recorded in millimeters.

### Description:

During present assessment 23 specimens of the cestode parasite were collected from the spiral valve of *Trygon sephen* at Mora, Raigad District, M. S. India.

The scolex is distinctly marked off from the strobilla, large in size, almost squarish in shape, clearly divided into two anterior and posterior and measures 0.566 to 0.694 in length and 0.556 to 0.734 in width. The anterior region is medium in size, with thin musculature and measures 0.446 in length and 0.272 to 0.538 in breadth. The posterior region is much large in size, almost squarish in shape, with four accessory suckers and measures 0.612 in length and 0.558 to 0.742 in width. The accessory suckers are oval in shape, small in size, situated almost in the corners, arranged in two pairs one pair in each half of the scolex, and measure 0.078 in length and 0.496 to 0.082 in width. The neck is short, wide, slightly broad at the base, narrow at the apex and measures 0.393 in length and 0.118 to 0.416 in width.

The mature segments are longer than broad, cylindrical in shape with slightly convex or straight margins, proglottids without projections at the anterior or posterior corners and measures 0.338 to 0.865 in length and 0.204 to 0.262 in width.

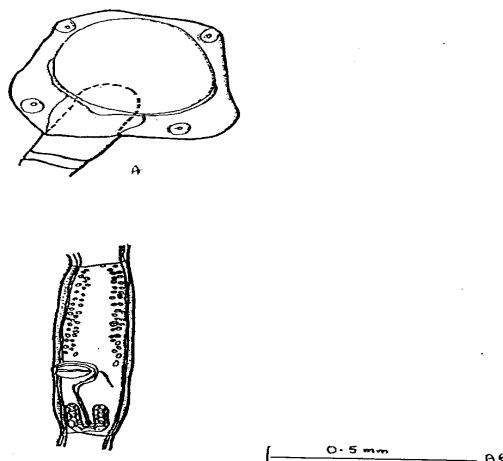
The testes are small, oval in shape 68 in number, pre-ovarian, all placed anterior to the cirrus pouch, in two lateral fields in each half of the segments, in two rows on each lateral sides, almost evenly distributed, in the anterior half of the segments, uneven in size and measures 0.012 to 0.027 in length and 0.013 to 0.032 in width. The cirrus pouch is medium in size, oval in shape, opens marginally and measures 0.157 in length and 0.031 to 0.053 in breadth. The cirrus is thin, slightly coiled, within the cirrus pouch and measures 0.112 in length and 0.007 to 0.012 in breadth. The vas deferens is thin and runs transversely for a short distance, turns posteriorly and measures 0.099 in length and 0.008 to 0.012 in width.

The ovary is medium in size, 'U' shaped in appearance, indistinctly bilobed, lobes extend interiorly, situated near the posterior margin of the segments and measures 0.384 in length and 0.048 to 0.126 in width. The vagina is thin starts from the genital pore, runs obliquely and medially, situated anterior to the cirrus pouch, takes turn, extends in poral half of the segments then turns posteriorly extends reaches and opens into the ootype and measures 0.460 in length and 0.006 to 0.016 in width. The ootype is small in size, oval in shape, pre-ovarian situated in between the ovarian lobes, and anterioposteriorly elongated and measures 0.022 in length and 0.012 to 0.018 in width.

The genital pores are small in size, oval in shape open marginally, in the corticular region, irregularly alternate and measures 0.037 in length and 0.011 to 0.017 in breadth.

The vitellaria are granular, thin strips, in corticular region, placed on each lateral side of the segments and from the anterior to the posterior of the same.

The longitudinal excretory canals are narrow and measures 0.012 in width.



**A :Scolex B : Mature segment**

The genus *Tylocephalum* was erected by with its species *T. pingue* from *Rhinoptera quadriloba* at Woods Hole and also recorded from *R. banasus*. [3] Later on the following speciec were added to this genus:

- *T. dierma* from *Mylobatis maculata*, Ceylon.[4].
- *T. marsupium* from *Aetiobatus narinari*, [5].
- *T. squatinae* from *Squatina japonica*, at Japan. [6].
- *T. yorki* from *Aetiobatis narinari* at Puri, Orissa, India. [7].
- *T. madhukari* from *Trygon* species at Ratnagiri, M.S. India. [8].
- *T. bombayensis* from *Trygon sephen* at Bombay [9].
- *T. aurangabadensis* [10].
- *T. alibagensis* [11].
- *T. gajanane* [12].
- *T. babulalae* and *T. shindei* [13].
- *T. trygoni* [14].

**Discussion:**

Ten species are reported under the genus *Tylocephalum* (Linton, 1890) with its type species *T. pingue* from *Rhinoptera quadriloba* at Wood Hole and also recorded from *R. bonasids*

- 1) In the cestode under discussion, the scolex is large in size, almost squarish in shape, neck short and wide, testes 68 in number, ovary medium in size, U shaped, indistinctly bilobed, vitellaria granular, thin strips differs from *T. pingue* which is having the scolex globular, neck absent testes 20-27 in number, ovary transverse and vitellaria follicular, in two rows on each side.
- 2) The present cestode differs from *T. dierama* which is having the scolex variable in shape, neck present, testes 50 in number, ovary bilobed, with very small elongated acini and vitellaria follicular.
- 3) The present worm differs from *T. marsupium* which is having the scolex relatively large in size, neck absent testes 31-32 in number, ovary bilobed and vitellaria granular.
- 4) The present form differs from *T. yorkei* which having the cushion shaped scolex, neck absent, testes 30-36 in number, ovary small, bilobed and vitellaria follicular, in one row, on each side.
- 5) The present cestode differs from *T. madhukari* which is having the scolex with anterior region subglobular, neck absent, testes 16 in number, ovary compact, granular, bean shaped in appearance and vitellaria granular.
- 6) The present worm, differs from *T. bombayensis* which is having the scolex round in shape, neck short, testes 31-38 in number, ovary roughly bilobed, or a transverse band, cylindrical and vitellaria granular, in two lateral fields.
- 7) The present cestode, differs from *T. aurangabadensis* which is having the scolex squarish in shape, neck absent, testes 16 in number, ovary not described and vitellaria follicular.
- 8) The present form differs from *T. alibagensis*, having scolex squarish, absence of neck, testes small 64 in numbers in two lateral fields and genital pores marginal.
- 9) It also differs from *T. gajanane*, with the scolex quadrangular, absence of neck, testes 64 in numbers, cirrus pouch spindle shaped and obliquely placed anteriorly directed, ovary dumbbell shaped and vagina posterior to cirrus pouch.
- 10) The present worm differs from *T. babulalae*, in the globular scolex, testes 11 to 12 in numbers, cirrus pouch obliquely placed, genital pores marginal, vagina posterior to cirrus pouch, ovary small with 10 to 12 acini and vitellaria follicular, oval in shape.
- 11) It also differs from *T. shindei*, in having scolex globular, testes 26 to 27 in numbers, vas deferens runs posteriorly in the mature proglottids, vagina posterior to cirrus pouch and coiled, ovary small with many acini and vitellaria follicular, rounded placed in one line.
- 12) It differ from *T. trygoni*, in having scolex globular, testes 35 to 40 in numbers, arranged in central medulla, cirrus pouch large, sub marginal, vagina anteroventral to cirrus pouch, ovary Bilobed and genital pore sub marginal.

**Conclusion:**

The above noted characters are enough to erect a new species, to accommodate these worms and hence the name *Tylocephalum morae* is named with respect to the site of collection.

Type : *Tylocephalum morae*

Host : *Trygon sephen*

Habitat : Spiral valve

Locality : Mora, Raigad District, M. S., India.

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Study area Map -1

