Think India Journal
ISSN: 0971-1260 Vol-22, Special Issue-31
National Conference ETDAB-2019
Held on 23th & 24th December 2019
Organized by: Deptt. of Botany, Deogiri College, Aurangabad, M.S

On A New Species of Genus *Tylocephalum* (Linton, 1890) (Cestoda: Lecanicephalidea) From *Dasyatis Walga* from Dist. Raigad (M.S) India

Vasant Dongare

S.M. Art's Commerce & Science College, Poladpur Ta. Poladpur Dist. Raigad (M.S) India

Email: drvkdongare@gmail.com

In the present study a new species is describe of Genus *Tylocephalum* (Linton, 1890) from *Dasyatis walga* at Borli, Dist Raigad (M.S) India, in the period of March 2017 to May 2018. The present worm scolex is oval, bearing four suckers, each sucker having oval shape; mature proglottids are three to four time longer than broad, testes are 60-70 in number, oval shaped, posterior testes are slightly larger in size than anterior testes, ovary is 'V' shaped, the lobes of ovary are elongated, broad anteriorly and narrow posteriorly The uterus is narrow anteriorly and broad posteriorly, starts from ootype straight reaches near to the anterior region of the segment.

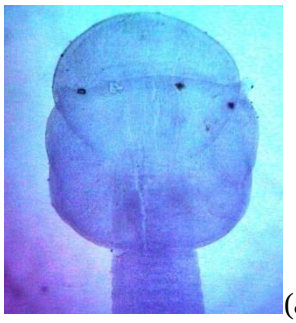
Key Words: *Tylocephalum, Dasyatis Walga,* Raigad

Introduction: Linton erected the genus *Tylocephalum* in the year 1890 to accommodate the type species, *T. pingue*, collected from *Rhinoptera quadriloba* from Woods Hole Water. *T. aetobatidis* (Shipley & Hornell, 1905) Shiplet *et* Hornell, (1906) in *Aetobatis narinari* and *Dasybatus walga* from Celyon, and *T. dierama* is another species added by Shipley & Hornell, (1906) from the hosts *Aetomylaeus maculates*, *Dasybatus kuhil* and *Rhynchobatus djeddensis* collected from Ceylon and its larval from was also collected from Ceylon by Jameson, (1912). Linton, (1910) collected a single specimen from *Rhinoptera bonasus* At Woods Hole and named it as *T. marsupium*. Shipley and Hornell, (1906) described *T. trygoni* from *Dasybatus wagla* in Ceylon water and from *Dasybatus sp*. from Chilka Lake, Orissa, India.

Yamaguti, (1934) describe *T. squatinae* from *squatinae japonica* At Toyama Bay, Japan. Southwell, (1925) describe *yorkei* from *Stoasodon narinari* from Puri coast, Orissa, India. Subhapradha, (1955) described *T. elongatum* and *T. minimum* from *Rhynchobatus djeddenesis* collected from Madras coast, India. Later on Shinde, (1976c) redescribed *T. pingue* from *Trygon sp*. At Ratnagiri, India. Chincholikar and Shinde, (1980) added one new species to this genus *T. madhukari* from *Trygon sp.* At. Ratnagiri. Jadhav & Shinde, (1981) described *T. singhii* from *Trygon zugei* at Bombay. In 1983, Jadhav described a new species of this genus *T. bombayensis* collecting from *Trygon sephen* at Bombay Campbell and Williams, (1984) described a new species *T. bonasum* collected from *Rhinoptera bonasus*. Again, Jadhav and Shinde, (1988) described *T. aurangabadensis* from *Aetobatis narinari* collected from Arabian Sea. Shinde *et al*; (1989) described *T. hanumanthraoi* from *Trygon sephen* in India.Bhagwan and Shinde, (2002) described *T. mehdi* from *Trygon zugei* at Ratnagiri, M.S. India. Bhagwan and Mohekar, (2003) added new species of this genus *T. alibagensis* from marine fish *Trygon zugei* At. Alibag M.S. India. Later on Wankhede and Jadhav, (2003) described one more new species *T. gajananae* from *Trygon sephen* at Bombay, M.S. India. Finally, Pawar and Jadhav, (2005) added two new species of this genus *T. babulalae* and *T. shindei* from *Trygon zugei* and *Trygon sephen* at Ratnagiri M.S. India. Later on, no species is added to this genus.

Think India Journal
ISSN: 0971-1260 Vol-22, Special Issue-31
National Conference ETDAB-2019
Held on 23th & 24th December 2019
Organized by: Deptt. of Botany, Deogiri College, Aurangabad, M.S

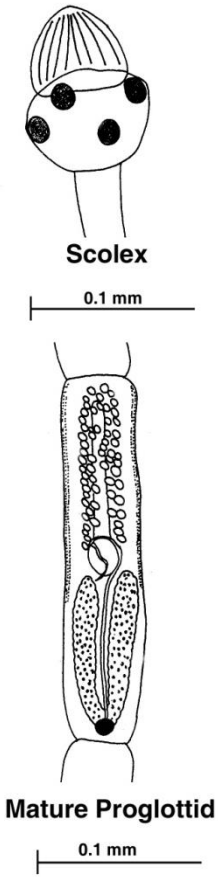
DESCRIPTION



(a) Scolex



(b) Mature Proglottids



Eighty-seven specimen of the cestode were collected from the spiral valve of *Dasyatis walga* (Blyth, 1860). At. Borli, Dist Raigad (M.S) India. In the period of March 2017 to May 2018.

These cestodes were flattened, preserved in 4 % formalin, stained with Harris haematoxylin, passed through various alcoholic grades, cleared in xylol, mounted in D. P. X. and whole mount slides were prepared, for further anatomical studies. Sketches are drawn with the help of Camera Lucida and all measurements are in millimeters.

The largest worm measures 35 - 40 in length and consists of 70 to 80 proglottids. The scolex is clearly divided into two regions, the anterior and posterior. The anterior region is cup like somewhat globular in shape, measures 0.052 in length and 0.062 in breadth. The posterior region is oval, bearing four suckers, which measures 0.0701 in length and 0.078 in breadth, each sucker having oval shape, which measures 0.017 in diameter.

The mature proglottids are three to four longer than broad, measures 0.232 in length and 0.048 in width. Testes are 60-70 in number, oval shaped. The size of testes is different, posterior testes are slightly larger than anterior testes, measures 0.049 in length and 0.037 in breadth. All testes are placed in the anterior half of the segment above the cirrus pouch. The cirrus pouch is oval to round in shape placed at posterior one third of the segment and measures 0.017 x 0.017 in diameter. The genital pores are regularly alternate oval in shape, sub- marginal, measures 0.0871 in length and 0.04166 in breadth. The cirrus is narrow, slightly curved measures 0.0175 in length. The seminal vesicle turns anterior towards, and measures 0.2083 in length and 0.0113 in breadth. The vagina is tubular, starts from anterior region of the genital pore above the cirrus pouch; there it is slightly takes a turn up to the seminal receptacle, vagina measures about 0.1315 in length and 0.01515 in breadth. The seminal receptacle is slightly breadth measures 0.4204 in length and 0.02272 in breadth. The ootype is medium, rounded, and posterior in the ovary, measure about 0.013 in length and 0.09469 in breadth. The vitellaria are granular, placed in corticular region. The ovary is ‘V’ shaped, the lobes of ovary are elongated, broad anteriorly and narrow posteriorly. It measures about 0.096 in length and 0.0175 in breadth. The uterus is narrow anteriorly and broad posteriorly, measures 0.087 in length and 0.008 in breadth. Starts from ootype straight reaches near to the anterior region of the segment.

DISCUSSION

Thus the valid species of the genus *Tyolocephalum* Linton, 1890 are

as follows.

1. *Tylocephalum pingue* Linton, 1890.
2. *T. dierma* Shipley et Hornell, 1906.
3. *T. marsupium* Linton, 1906.
4. *T.* yorkei Southwell, 1925.
5. *T. elongatum*, Subhapradha, 1955.
6. *T. minimum*, Subhapradha, 1955.
7. *T. madhukari* Chincholikar, 1980.
8. *T. singhii* Jadhav and Shinde, 1981.
9. *T. bombaynensis* Jadhav, 1983.
10. *T. aurangabadensis* Jadhav, *et al;* 1988.
11. *T. hanmantraoi* Shinde *et al;* 1989.
12. *T. mehdii* Bhagwan *et al ;* 2002.
13. *T. alibagensis*, Bhagwan and Mohekar, 2003.
14. *T. gajananae* Wankhede and Jadhav, 2003.
15. *T. babulalae* Pawar and Jadhav, 2005.
16. *T. shindei* Pawar and Shinde, 2005.

The scolex is clearly divided into two regions anterior and posterior. The anterior cup like portion, posterior region is collar like structure. Four suckers, placed at each corner. The posterior region, a short neck. Mature proglottids are almost squarish in shape broader than long, slightly broader. 60 to 70 testes, testes are medium and oval. The cirrus pouch is large in size oval in shape.

1 The present cestode differs from *Tylocephalum pingue*, which is having the scolex globose, 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 from, differs from *T. marsupium*, which is having the scolex relatively large in size, neck absent, testes 31-32 in numbers, ovary lobed and vitellaria granular.

4 The present tapeworm differs from *T. yorkei*, which is having the scolex cushion shaped, neck absent, testes 30-36 in number, ovary small, bilobed and vitellaria follicular, in one row on each side.

5 The present worm differs from *T. elongatum*, which is having the scolex with anterior region as long as posterior, neck absent, testes 40 in numbers, ovary bilobed, with small accini and vitellaria follicular.

6 The present cestode differs from *T. minimum*, in which is having the scolex with anterior region smaller than posterior, neck absent, testes 33 in number, ovary not mentioned and vitellaria follicular, in one row.

7 The present parasite 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.

8 the present cestode differs from *T. singhii* which is having the scolex with anterior region compressed, smaller and posterior one short, indistinct, neck short, testes 70-80 in number, ovary bilobed, 'U' shaped in appearance and vitelline follicles numerous, in lateral fields.

9 The present cestode 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.

10 The present cestode parasite differs from *T. aurangabadensis*, which is having the scolex squarish in shape, neck absent, testes 16 in number, ovary not described and vitellaria follicular.

11 The present form differs from *T. hanmantraoi* which is having scolex quadrangular, anterior region almost subglobular and posterior region squarish, testes 30-35 in number, medium, oval, preovarian, in 3-4 rows, ovary bilobed, 'H' shaped, vitellaria granular, corticular, thin strips, on both the lateral sides.

12 The present parasite differs from *T. mehdii*, Bhagwan *et al;* (2002) in which testes 43- 47 in numbers.

13 The present from differs from *T. gajananae* Wankhede and Jadhav (2003) with quadrangualar scolex, neck absent, testes 55-60 in numbers, ovary bilobed.

14 The present cestode differs from *T. babulalae* Pawar and Jadhav, (2005) in which testes 11-12 in numbers, vitellaria follicular, oval.

15 The present cestode differs from *T. shindei*, Pawar and Jadhav (2005) with testes 26- 27 in numbers, vitellaria follicular and oval.

16 The present cestode differs from *T. alibagensis*; Bhagwan & Mohekar (2003) is having scolex squarish, testes 64 in numbers.

The above noted character are enough to accommodate these worms, in to a new species and hence the name *Tylocephalum walgai* n. sp.

Acknowledgement: I thanks to Principal of S.M. Art's Commerce & Science College, Poladpur Ta. Poladpur Dist. Raigad (M.S) India, for giving all the necessary facilities during this research work.

References

Bhagwan, H. K. Shinde, G. B. (2002*):* *Tylocephalum mehdii* sp.nov. (Cestoda: Lecanicephalidae) Braun-from a marine fish at Ratnagiri, India. Indian J. of Helminth.Vol.20.PP.69-72

Bhagwan, H. K. and Mohekar, A. D. (2003): On a new species of *Tylocephalum* (Cestoda: Lecanicephalidae, Braun, 1990) from *Trygon zugei* at Alibag, India. Of Parasites and Diseases, 189-193.

Chincholikar, L. N. and Shinde, G. B (1980): A new cestode *Tylocephalum madhukari*

n.sp. (Lecanicephalidae) from a marine fish *Trygon sephen*.Riv. Parasit, (1980): 41 (1):23-26.

Ivanov, and Campbell; (2000): Emendation of the genric diagnosis of *Tylocephalum* (Cestoda: Lecanicephalidea, Tetragonocephalidae) and description of *Tylocephalum brooksi* nsp. J.Parasitol. 86 (5): 1085-1092.

Jadhav, B. V. and Shinde, G. B. (1982): A new species of the genus *Tylocephalum singhi* n.sp from *Trygon zugei* from Bombay. Indian J. of Parasitology 5 (1): 109-111.

Jadhav, B. V. (1983): *Tylocephalum bombaynens*is (cestoda: Lecanicephalidae) from the Indian fish *Trygon Sephen*. Rivista di Parasitologia (1983). 44 (2): 193-195.

Jadhav, B. V. and Shinde, G. B. (1981): A new species of the genus *Tylocephalum* Linton, 1890 (cestode: Lecanicephalidae) from an India marine fish. Indian Journal of Parsitology 5 (1): 109-111.

Jadhav, B. V. and Shinde, G. B. (1989): *Tylocephalum aurangabadensis* sp. Nov. (cestoda:

Lecanicephalide) from a marine fish. *Aetobatis narinari* from Arabian Sea Indian J. of Helminth Vol. XXXIX No.2 PP. 88-91. Aurangabad -431004, India.

Pawar, L. B. and Jadhav, B. V. (2005): Two new species of the genus *Tylocephalum* (Linton, 1890): Cestoda: Lecanicephalidae from marine fishes at Ratnagiri, West Coast of India. Ravista Di Parasitologia, Vol.XXII (LXVI) N-3, 259-266.

Ronald, A. Campbell, and Allen, D. Williams; (1984): *Tylocephalum* Linton, 1890 (Cestoda: Lecanicephalidea) from the Cownose Ray, *Rhinoptera bonasus* (Mitchill, 1815) with a discussion of its validity and systematic relationships.Proc. Helminthol. Soc. Wash Vol. 51, N-2 PP121-134.

Shinde, G. B. & Jadhav, B. V. (1981): *Tylocephalum aurangabadensis* n.sp. (Cestoda: Lecanicephalidae) from marine fish *Aetobatis narinari.* Indian J. Helm Vol. XXXIX No. 2, 88-91.*Tylocephalum bombayensis* n.sp. (Cestoda: Lecanicephalidae) from the Indian Fish *Trygon sephen.*Ibid, Vol. XLIV No. 2: 193-195.

Shinde, G. B. & Jadhav, B.V. (1989): A new species of the genus *Tylocephalum* (Cestoda: Lecanicephalidae) from a marine fish *Rhynchobatus djeddensis* at Bombay M.S.India. Indian J. of parasite, 1989 13 (2): 207- 208.

Shinde, G. B. (1976): Studies on Indian cestodes. Redescription of *Tylocephalum Pingue* Linton, 1890 in marine fishes from India.Marathawada Uni. J.Sci. 15 (8): 289-291.

Shinde, G. B. and Gadhav, B.V. (1981): A new species of the genus *Tylocephalum* Linton, (1980) (cestoda: Lecanicephalidea) from an Indian marine Fish. Indian Journal of Parasitology 5 (1): 109-111.