

**A NEW SPECIES *TETRAGONOCEPHALUM GOVINDI* N.SP. (EUCESTODA: LECANICEPHALIDEA)  
FROM *TRYGON ZUGEI* AT PANJI, GOA, INDIA\**

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**ABSTRACT**

The present paper deals with description of new species of genus *Tetragonocephalum govindi* n.sp. differs from all known species in length and breadth of worm, size of scolex, number of testes, size and shape of ovary, presence and absence of neck and external seminal vesicle.

**KEY WORDS:** Panji, Goa (West coast of India), spiral valve, *Tetragonocephalum govindi* n.sp., *Trygon zugei*

**INTRODUCTION**

The genus *Tetragonocephalum* is established by Shipley and Hornell (1905), with its type species *T. trygonis* from *Trygon walga* at Ceylon. Later on seven species are added to this genus by various workers in the world. The present communication deals with description of *Tetragonocephalum govindi* n.sp.

**MATERIALS AND METHODS**

Thirteen cestode parasites were collected from *Trygon zugei*. All were flattened, preserved in 4% formalin, stained with Harris haematoxyline, and were passed through various alcoholic grades, whole mount slides were prepared for anatomical studies. Drawings were made with the help of camera Lucida. All measurements are in millimeters.

**RESULTS**

**Description**

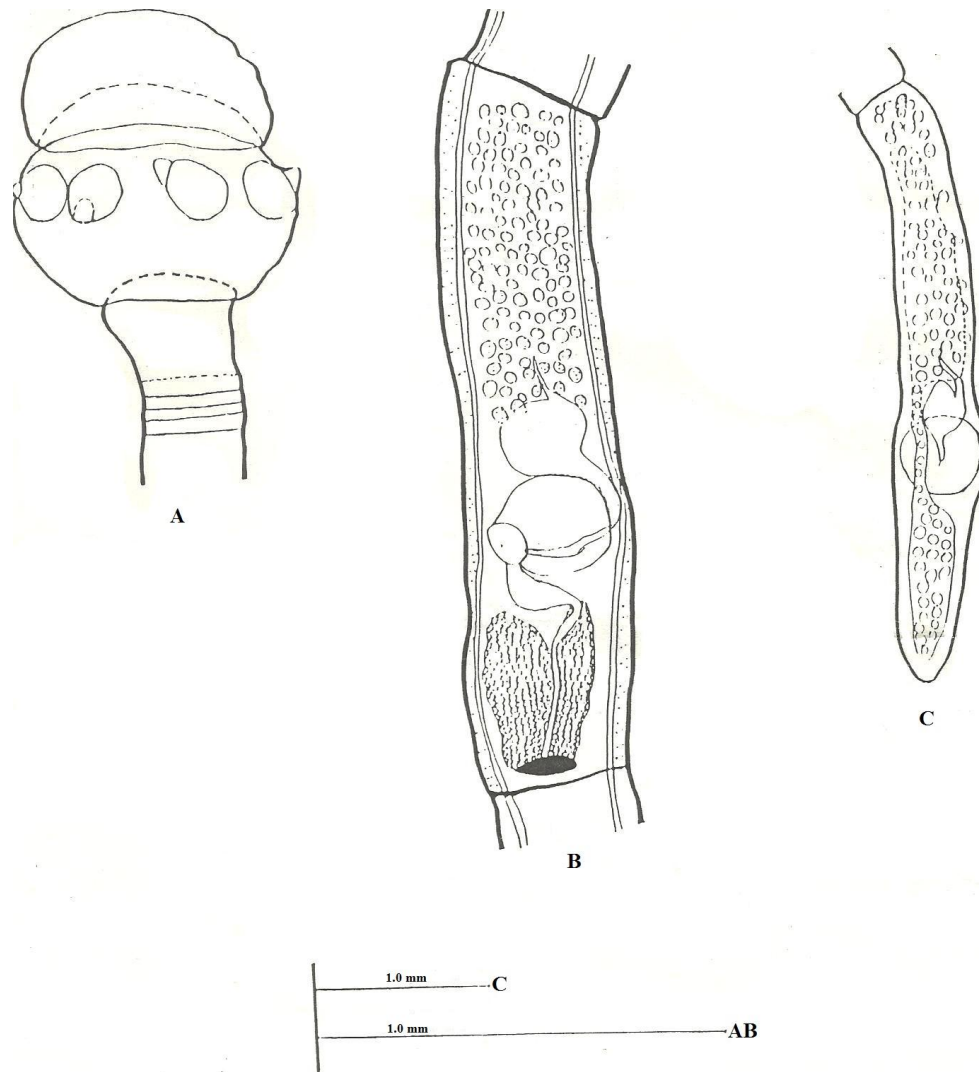
(Figure A, B and C) The scolex is distinctly marked off from the strobila, large in size globular in shape, highly muscular clearly divided into two regions, anterior and posterior and measures 0.606–0.735 in length and 0.530–0.697 in breadth. The anterior region is medium in size, almost oval in shape and measures 0.278–0.311 in length and 0.492–0.621 in breadth. The posterior region is large in size, oval in shape, with four accessory suckers and measures 0.417–0.440 in length and 0.454–0.690 in breadth. The accessory suckers are medium in size, oval in shape, each with muscular papillae, suckers arranged in two pairs, transversely and obliquely placed and measures 0.136–0.159 in length and 0.114–0.129 in breadth. The scolex is followed by a short neck, which is broad anteriorly, narrow posteriorly and measures 0.235 – 0.265 in length and 0.242–0.318 in breadth.

The mature proglottids are 4-5 times longer than their breadth, with almost straight, slightly concave and convex lateral margins without projections at the anterior and posterior corners of the segments and measure 1.705 – 1.932 in length and 0.379 – 0.417 in breadth. The testes are small and medium in size, oval in shape, arranged in a single field preovarian, situated from the anterior margin to the cirrus pouch, 100 – 105 (102) in number in the central medulla, evenly distributed and measure 0.030 – 0.045 in length and 0.023 – 0.038 in breadth. The cirrus pouch is large in size, oval in shape, situated almost at 2/3<sup>rd</sup> of the segments from the anterior margin, transversely placed, central in position, opens sub-marginally and measures 0.265 – 0.341 in length and 0.189 – 0.258 in breadth. The cirrus is thin, unarmed, slightly coiled, curved, contained within the cirrus pouch and measures 0.227 in length and 0.015 – 0.030 in breadth. The vas deferens is thin, extends anteriorly forms large external seminal vesicle and measures 0.303 in length and 0.015 to 0.045 in breadth. The seminal vesicle is large in size, oval in shape, anterolateral to the cirrus pouch and measures 0.197 in length and 0.106 – 0.212 in breadth.

The ovary is large in size, indistinctly bilobed, compact, almost 'Y' shaped in appearance, situated near the posterior margin of the segments, extends anteriorly upto the receptulum seminis, poral lobe is larger than the aporal lobe and measures 0.417 in length and 0.189 – 0.273 in breadth. The margin is irregular with many short, blunt, round acini. The vagina is a thin tube, posterior to the cirrus pouch, starts from the genital pores, runs for a short distance posteriorly, enlarges and forms a small receptaculum seminis, curved, takes a turn to the posterior side, reaches and opens in to the ootype and measures 0.515 in length and 0.015 – 0.038 in breadth. The receptaculum seminis is small in size, sac like, obliquely placed and measures 0.114 in length and 0.038 – 0.076 in breadth. The ootype is medium in size, oval in shape, posteroventral to the ovary, near the posterior margin of the segments, transversely placed and measures 0.038–0.053 in length and 0.136–0.152 in breadth. The genital pores are medium in size, oval in shape, placed at 2/3<sup>rd</sup> from the anterior margin of the segments, submarginal in position, irregularly alternate and measure 0.121 in length and 0.053 – 0.083 in breadth.

The longitudinal excretory canals are thin, subcortical in position and measure 0.015 in width. The vitellaria are granular, thin strips, in the corticular regions, on each lateral side from anterior to the posterior margin of the segments. The gravid segments are longer than broad, more than 5 – 6 times longer than broad, with almost straight, convex and concave lateral margins and measures 3.480 – 3.748 in length and 0.357 – 0.552 in breadth. The uterus is saccular, centrally placed, large, divided in to anterior and posterior sacs and occupy the major portion of the gravid segments.

The anterior sac is 3 – 4 times longer than broad, broader posteriorly, tapering anteriorly and measures 1.428 – 2.052 in length and 0.178 – 0.338 in breadth. The posterior sac of the uterus is oval in shape, broad anteriorly, narrow posteriorly 3 – 4 times longer than its width and measures 0.928 – 1.071 in length 0.125 – 0.249 in width. The whole of the uterus is fitted up by numerous, rounded eggs, which measures 0.035 – 0.071 in diameter.



**Figure 1. *Tetragonocephalum govindi* A) Scolex B) Mature Segment C) Gravid Segment**

Type species	- <i>Tetragonocephalum govindi</i> n.sp,
Host	- <i>Trygon zugei</i> , Muler and Henle, 1841.
Habitat	- Spiral valve.
Locality	- Panji, Goa State (West coast of India), India.
Date of Collection	- 25 <sup>th</sup> January, 1991.

#### DISCUSSION

The present cestode differs from *T. trygoni* (Shiple and Hornell, 1905) length of worm 27.0, breadth 0.8, length of scolex 0.26, breadth of scolex 0.33, testes 7 – 12, external seminal vesicle present, ovary massive, vitellaria follicular, it also differs from *T. urnak* (Shiple and Hornell, 1906) in having length of worm 8.3, breadth of worm 0.14 – 0.40, length of scolex 0.22 – 0.28, breadth of scolex 0.21 – 0.41, testes number 16 – 27, ovary massive, bilobed, it further

differs from *T. minutum* (Southwell, 1925) in having length of worm 20.00 breadth of worm 0.68, length of scolex 0.53, breadth of the scolex 0.44, testes 38 – 63, ovary quadrangular, follicular; also differs from *T. ravi* (Deshmukh and Shinde, 1979) in having length of the worms 16 – 20, breadth of the worm 0.38, length of scolex 0.63 – 0.89, breadth of scolex 0.45 – 0.54, testes 50 – 55, ovary ‘W’ shaped follicular; it further differs from *T. alii* (Deshmukh and Shinde, 1979) in having length of worm 0.30 – 0.32, breadth of worm 0.73, length of the scolex 0.74, breadth of scolex 0.84, hooks absent, testes 40 – 45, external seminal vesicle present, ovary slightly ‘U’ shaped, follicular, then it differs from *T. sephenis* having length of worm 10.00, breadth of the worm 0.73, length of scolex 0.53 – 0.62, breadth of scolex 0.53 – 0.55, testes 36 – 38, ovary quadrangular, follicular; further it differs from *T. shiptyi* (Shinde et al., 1985) in having length of worm 40.00, breadth of worm 1.83, length of scolex 0.50 – 0.56, breadth of scolex 0.38 – 0.48, testes 12, ovary bilobed, compact, ovary ‘H’ shaped, it then differs from *T. bhagwati* (Shinde et al., 1985) in having length of worm 20 – 25, breadth of worm 0.45 – 0.50, length of scolex 0.40 – 0.46, breadth of scolex 0.48 – 0.54, neck absent, testes 37 – 38, ovary bilobed and ‘H’ shaped. It differs from *T. panjiensis* n.sp. (described earlier) which is having the length of the worm 15.00, the breadth of the worm 0.24 – 0.37, length of the scolex 0.43 – 0.60, testes 37 – 42 (40) in number, external seminal vesicle absent and the ovary large in size, oval in shape, a single mass with few, blunt acini.

The above noted characters, are valid enough, to erect a new species for these worms and hence the name *Tetragonocephalum govindi* n. sp. Is proposed, in honor of Dr. G.B. Shinde, Professor of Zoology and research guide of the author, for his keen interest and encouragement for the completion of this work.

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