



ZOOLOGY

## A NEW SPECIES *PEDIBOTHRIMUM STEGOSTOMAE* N.SP. (EUCESTODA: ONCHOBOTHRIIDAE) FROM *STEGOSTOMA TIGRINUM* AT RATNAGIRI, M.S. INDIA

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### Abstract

The present form deals with description of new species of the genus *Pedibothrium stegostomae* n.sp. differs from *P. longispine* Linton, 1909; *P. brevispine* Linton, 1909; *P. hutsoni* Southwell, 1924; *P. lintoni* Shinde et.al, 1980; *P. vervalensis* Shinde et.al. 1980, in the size of worm, shape of scolex, presence or absence of hooks, shape of hooks, number of segments, number of testes, shape of ovary, shape and position of vitellaria. As in *P. lintoni* and *P. vervalensis* 4 accessory suckers present but absent in remaining known species.

**Keywords:** *Pedibothrium* n.sp, *Stegostoma*, Spiral valve, Ratnagiri

### Introduction

The genus *Pedibothrium* was erected by Linton 1909, with its type species *P. globicephalum*. Later on five species are added to this genus by various workers in the world. The present communications deals with description of a new species of genus *Pedibothrium* Linton, 1909.

### Materials and Methods

Specimens of cestode parasites were collected from spiral valve of *Stegostoma tigrinum*. All were flattened, preserved in 4% formalin, stained with Harris haematoxyline, whole mount slides were prepared for further further anatomical studies. Drawings were made with the help of camera Lucida. All measurements are in millimeters.

#### 1) *Pedibothrium stegostomae* n Description

Scolex marked from strobila, large, oval with bothridia, 0.393-0.485 x 0.451 - 0.509; bothridia 4, medium, oval, armed, 0.194 - 0.267 x 0.204-0.228; accessory suckers absent, hooks paired, bipronged, one pair at anterior tip of each bothridium, 0.199 - 0.261 x 0.057-0.078; outer prong shorter, 0.121-0.147 x 0.017 - 0.024; inner prong slightly longer than outer, 0.130 - 0.151 x 0.014 - 0.038; handle with size 0.052 - 0.018 x 0.042 -0.062; vasicle small, oval, 0.024 - 0.042 x 0.016 - 0.036; neck long, thin, narrow anteriorly, slightly broader, curved, 1.369 x 0.067 - 0.097; mature segments longer than broad, small, barrel shaped, 0.981 - 1.102 x 0.340 — 0.509; testes 145-150 (149), small, medium, oval, pre-ovarian, in central medulla,

from ovary to anterior margin of segments, in a single group, except in cirrus pouch region, more in number, anterior to cirrus pouch, less in number, medium, oval, obliquely placed, upto middle of segments,, opens submarginally, posterior to middle of segments, 0.218 x 0.063 - 0.087; cirrus wide, stout, curved, within cirrus pouch, 0.194 x 0.010 - 0.015; vas deferens thin, short, curved, in anterior direction, 0.107 x 0.005 - 0.010; ovary indistinctly bilobed, large, short, near posterior margin of segments, narrow in middle, slightly broader at lateral sides, extends transversely upto longitudinal excretory canals, 0.311 - 0.340 x 0.058 - 0.097; vagina a thin tube, anterior to cirrus pouch, starts from genital pore, runs posteriorly, in middle of segments, reaches and opens into ootype, 0.557 x 0.010 - 0.015; ootype medium, oval, situated antro-ventral to ovary, anteroposteriorly elongated, 0.063 x 0.024 - 0.019; genital pores medium, irregularly alternate, submarginal, round, posterior to middle of segments, 0.043 in diameter; vitellaria granular, corticular, strips, medium width, situated from lateral margin to excretory canals, from anterior to poserior margin of segment; longitudinal excretory canals thin, 0.005-0.010 in size (Fig. A,B and C).

Type species - *Pedibothrium stegostomae* n.sp..

Host - *Stegostoma tigrinum* (Young).

Habitat - Spiral valve.

Locality - Ratnagiri,, M.S.(West coast of India), India.

Date of collection - 17th April, 1991.

The worm under discussion differs from *P. globicephalum* in not having length of worm 1.6-5.0 cm x 0.600; scolex globular, inner prong, 0.036-0.040; bothridia globular, with prominent margin, testes 170-

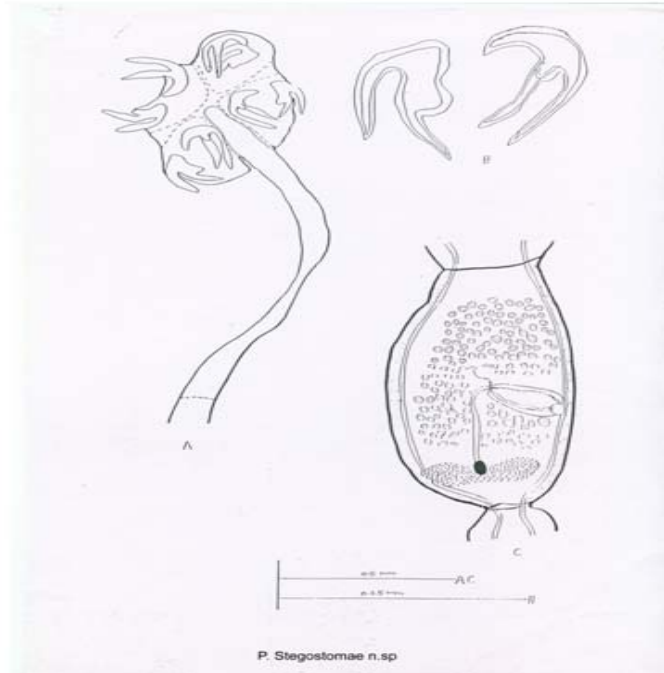
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180, ovary 'U' shaped, vitellaria follicular, in 2-3 rows on each side; further it differs from *P. longispine* in not having length of worm 1.5 cm x 0.540, scolex square shaped, inner prong 0.030, outer prong 0.060, bothridia leaf like, with crenulate broader, neck spinose, testes 70 and ovary 'U' shaped; also it differs from *P. brevispine* in not having accessary suckers, hooks two pronged, inner prong of each hook straight, neck present; further it differs from *P. hutsoni* in not having

size of worm 7cm x 0.650 cm; hooks rose thorn shaped, number of testes over 100, testes 80-130, ovary 'U' shaped and vitellaria follicular and in 7-8 on each side of the segment.

By observing above distinguishing distinct characters, it necessitates to erect new species of genus, hence the name *Pedibothrium stegostomae* n.sp. is proposed after the generic name of the host.

Fig. A, B, and C *Pedibothrium stegostomae* n



## 2) *Pedibothrium alii* n.sp.

The present form deals with description of new species of the genus *Pedibothrium alii* n.sp. differs from *P. longispine* Linton, 1909; *P. brevispine* Linton, 1909; *P. hutsoni* Southwell, 1924; *P. lintoni* Shinde et.al, 1980; *P. vervalensis* Shinde et.al. 1980 & *P. stegostomae* n.sp. (described earlier) in many characters as in the size of the worm, shape and size of scolex, presence or absence of accessory suckers, in number of testes, shape and position of ovary, position of genital pores and in arrangement of vitellaria.

### Description

Scolex distinct from strobila, medium, oval, with bothridia, without accessory suckers, 0.466 - 0.485 x 0.393 - 0.413; bothridia 4, medium, oval, sessile, each with hooks, 0.243-0.267 x 0.228; hooks on each bothridium, paired, bifurcated, strong, stout, 0.156 - 0.260 x 0.043 - 0.064; outer prong short, curved, 0.43-0.130 x 0.016-0.026; inner prong long, stout, 0.121-

0.135 x 0.012 - 0.023; handle wide, short, 0.049-0.121 x 0.033-0.054; vesicle small, oval, 0.031-0.035 x 0.017-0.021; neck thin, long, curved, at anterior end, straight posteriorly, 0.791-0.849 x 0.121-0.146; mature segments longer than broad, 0.621-0.635 x 0.413-0.461; testes 90-100 (195), small, oval, anterior to ovary, in the central medulla, in two groups, one group posterior to cirrus pouch, one anterior and lateral to cirrus pouch, 0.015-0.019 x 0.010-0.024; cirrus pouch medium, oval, obliquely placed, upto 1/3<sup>rd</sup> of segments, opens marginally, just posterior to middle of segments, 0.170-0.233 x 0.072-0.092; cirrus medium, slightly curved, within cirrus pouch, 0.194 x 0.010-0.015; vas deferens long, extends anteriorly, curved, 0.136 x 0.005-0.010; ovary indistinctly bilobed, near posterior margin of the segments, narrow in middle, slightly broader at lateral sides, upto subcortical region of segments, 0.354 x 0.058-0.083; vagina thin tube, anterior to cirrus pouch, starts from genital pore, runs obliquely upto middle of segments, runs posteriorly, in middle of the segments, reaches and opens into

ootype, 0.471 x 0.15-0.019; ootype medium, almost oval, situated on isthmus, 0.039 x 0.024-0.029; genital pores large, irregularly alternate, marginal, oval, just posterior to middle of segments, 0.102 x 0.024-0.043; vitellaria granular, corticullar strips of medium width, from lateral margin of segments and longitudinal excretory canals of medium and 0.010 in width (Fig.A,B,C).

Type species - *Pedibothrium alii* n.sp..

Host - *Stegostoma tigrinum* (Young).

Habitat - Spiral valve.

Locality - Ratnagiri (West coast of India), India.

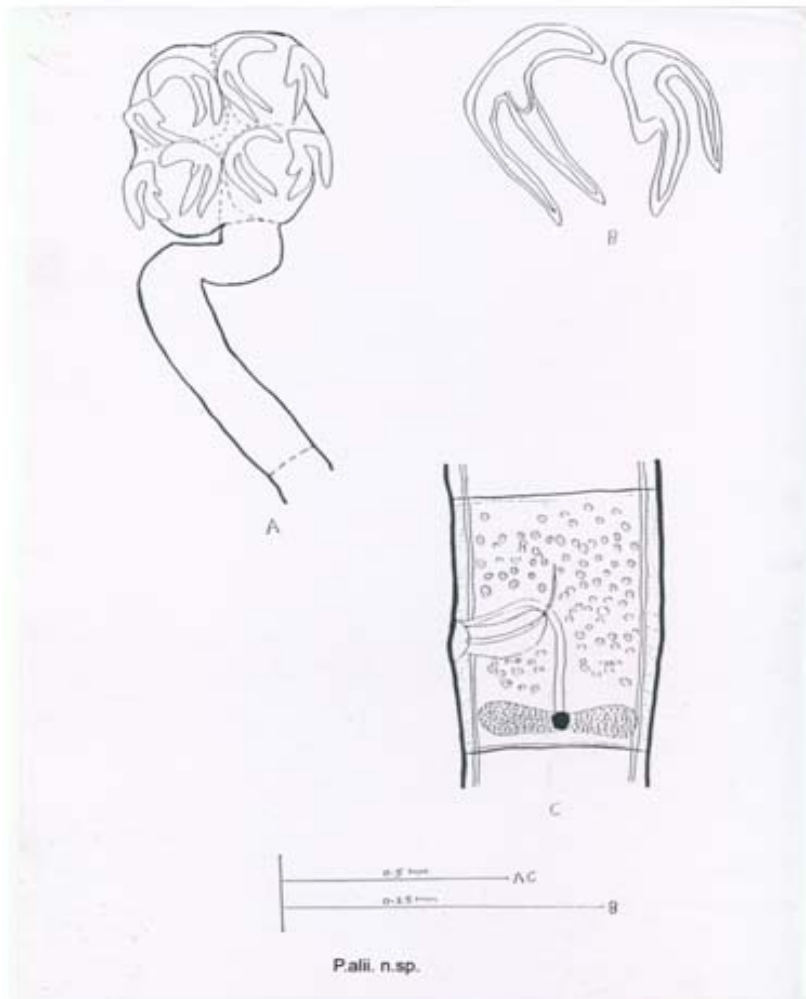
Date of collection - 18th Jan. 1991.

The worm under discussion differs from *P. globicephalum* in not having size worm 1.6-5.0 x 0.600, scolex globular, bothridia globular, testes 170-180, ovary 'U' shaped; vitellaria in 2 rows, follicular; further it differs from *P. longispine* in not having size of worm

1.5 x 0.540 cm; scolex square shaped, bothridia leaf like, with crenulate broader; neck spinose; testes 70 & ovary 'U' shaped; also differs from *P. brevispine* in not having two pronged hooks, inner prong of each is straight; it also differs from *P. hutsoni* in not having size of the worm 7cm x 0.650; hooks rose thorn shaped, number of segments over 100; ovary 'U' shaped; vitellaria follicular, in 7-8 rows on each side of the segment & differs from *P. stegostomac* n.sp. (described earlier) in not having size of worm 3.5 cm x 0.34-0.50; scolex large, bothridia oval; testes 145-155; (149); ovary extends transversely, near posterior margin of the segment, vitellaria corticullar strips and of medium width.

The above differentiating characters, are sufficient to erect a new species, to accommodate these worms and hence the name *Pedibothrium alii* n.sp. is proposed after Dr. Syed mehdi Alii, Ex-Professor & Head, Department of Zoology, Marathwada University, Aurangabad, who has contributed so much, in our knowledge of helminthology.

Fig. A, B and C *Pedibothrium alii* n.sp.



### 3) *Pedibothrium Tigrinumi* n.sp.

The present form deals with description of new species of the genus *Pedibothrium tigrinumi* n.sp; it comes closer as in presence of accessory suckers in *P. Lintoni* and *P. veravalensis* but absent in all other known species; however, it differs from them all other known species in size of worm, testes number, shape and position of ovary, position of vitellaria and genital pores.

#### Description

Scolex distinct from strobila, medium in size, oval, with bothridia, without accessory suckers, 0.523-0.696 x 0.454-0.583; bothridia armed, petal like, medium in size, roughly triangular, narrow anteriorly, broad posteriorly, with hooks, 0.265-0.379 x 0.273; hook bifurcated, paired, prongs, stout, bipronged, curved, 0.196-0.276 x 0.068-0.080, each hook bipronged (outer & inner prong), inner prongs slightly larger than outer prongs, 0.130-0.166 x 0.023-0.023-0.028; outer prong 0.130-0.163 x 0.0017 - 0.024; basal plate 0.085 - 0.194 x 0.062 - 0.073; vesicle 0.029 - 0.035 x 0.019 - 0.024; neck thin, long, slightly straight, 0.985 - 1.038 x 0.076 - 0.114; mature proglottids longer than broad, 0.883-0.898 x 0.357-0.611; testes small, medium, oval, in 7-8 rows, in a single field, from lateral to other lateral margin, pre-ovarian, 110-120 (112), evenly distributed, in central medulla; 0.024-0.053 x 0.034-0.049; cirrus pouch large, oval, oblique at 2/3<sup>rd</sup> from the anterior margin of segment, opens sub marginally, extends upto middle of the segments, 0.263-0.291 x 0.078 - 0.107; cirrus thin, curved, within cirrus pouch, 0.272 x 0.005-0.016; vas deferens long, thin, runs anteriorly, 0.175 x 0.005; ovary distinctly bilobed, medium, compact lobes, near posterior margin of segments, extends laterally upto subcortical region of the segments, in central medulla, 0.413-0.437 x 0.047-0.107; vagina thin tube, long; anterior to cirrus pouch, starts from genital pore, upto middle of the segments, reaches and opens into ootype, 0.762 x 0.015-0.024; ootype medium, oval, posterovental to isthmus, anteroposteriorly elongated, 0.072 x 0.039-0.049;

genital pores medium, oval, submarginal, at 2/3<sup>rd</sup> from anterior margin of the segments, irregularly alternate, 0.072 x 0.041 - 0.058; vitellaria follicular, in 2-3 rows on each side of the segment, and from anterior to posterior margin of the segments (Fig.A,B,C)

Type species — *Pedibothrium tigrinumi* n.sp..

Host - *Stegostoma tigrinum* (Young).

Habitat - Spiral valve.

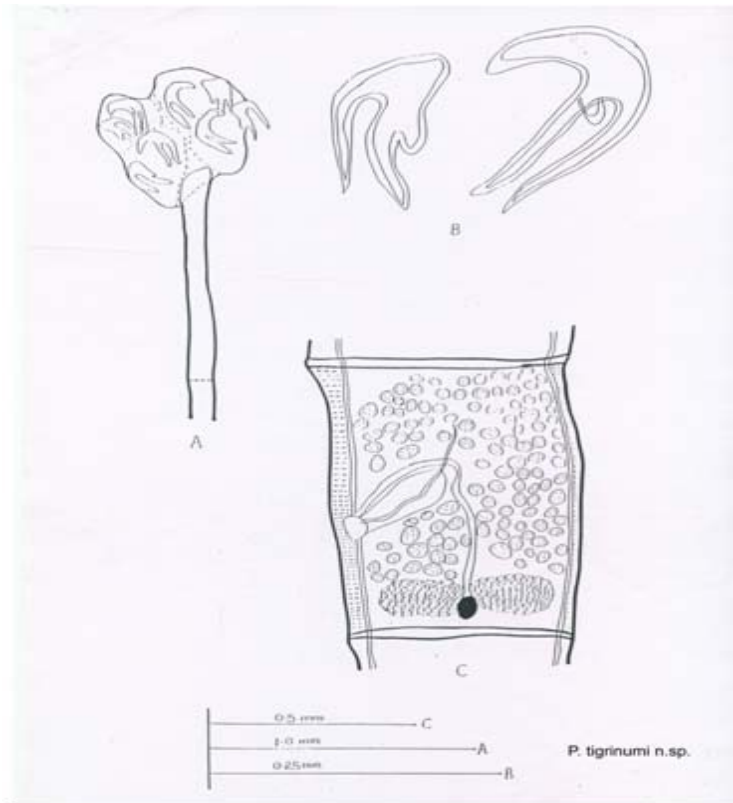
Locality - Bombay, M.S. (West coast of India), India.

Date of collection - 11th December, 1991.

The present form differs from *P. globicephalum* in not having length of worm 1.6 - 5.0 cm x 0.600; scolex globular, bothridia globular, with prominent margin, testes 170-180, ovary 'U' shaped, in 2-3 rows, on each side of the segments; it further differs from *P. longispine* in not having length of worm 1.5 cm x 0.540, scolex square shaped, bothridia leaf like, with crenulate broader, neck spinose, testes 70, ovary 'U' shaped; also it differs from *P. brevispine* in not having absence of accessory suckers, hooks two pronged, inner prong of each hooks straight; also differs from *P. hutsoni* in not having size of worm 7cm x 0.650 cm, hooks rose thorn shaped, number of segment over 100, testes 80-130, ovary 'U' shaped, vitellaria in 7-8 rows on each side, further it differs from *P. stegostomae* n.sp. (described earlier) in not having size of worm 3.5 cm x 0.34 — 0.56; scolex large, bothridia oval, testes 145-155 (149), ovary indistinctly bilobed, vitellaria granular, cortical strips of medium width and differs from *P. alii* n.sp. (described earlier) in not having size of 4.5 cm x 0.41 - 0.46cm, scolex, 0.393 - 0.485 x 0.451 - 0.509; testes 90-100 (95), ovary slightly broader at lateral side, narrow at middle, near posterior margin of the segment and vitellaria granular and in cortical region.

By observing all these above characters, it is desirable to accommodate these worms and hence the name *Pedibothrium tigrinumi* n.sp. is proposed, after the species name of the host.

Fig. A, B and C *Pedibothrium tigrinumi* n.sp



### Acknowledgement

Authors are thankful to Professor and Head, Department of Zoology, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad for providing the laboratory facilities and encouragement during entire work.

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