

Cestode Fauna of Fishes in River Ganges around an Indian Sub-humid Region.

I. *Senga gangesii* n. sp. from *Mystus vittatus*

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Key words: *Senga gangesii*, Ptychobothriidae, Pseudophyllida, Ganges, *Mystus vittatus*

Introduction

Dollfus (1935) established the genus *Senga* for ptychobothriid cestodes possessing apical crown of spines divided into two semi-circles on scolex. The validity of this genus was upheld by Yamaguti (1959) but later on Tadros (1968) suggested this genus to be synonym of *Polygonchobothrium* Löennberg (1889) and proposed new combinations for the close species. The views of Yamaguti (1959) were, however, agreed upon by Ramadevi and Rao (1973), Wardle, McLeod and Radinovsky (1974), Shinde and Jadhav (1980) and Malhotra (in press). In the present work, therefore, the authors consider *Senga* as a distinct genus and suggest to accommodate *S. gangesii* as a new species under family Ptychobothriidae Lühe (1902), order Pseudophyllidea Carus (1863), class Pseudophyllida Ubelaker (1983) of phylum Cestoidea Ubelaker (1983).

Materials and Methods

Cestodes were collected from the intestine of one out of 125 examined *Mystus vittatus* netted in River Ganges at Allahabad. Specimens were killed and stretched in lukewarm

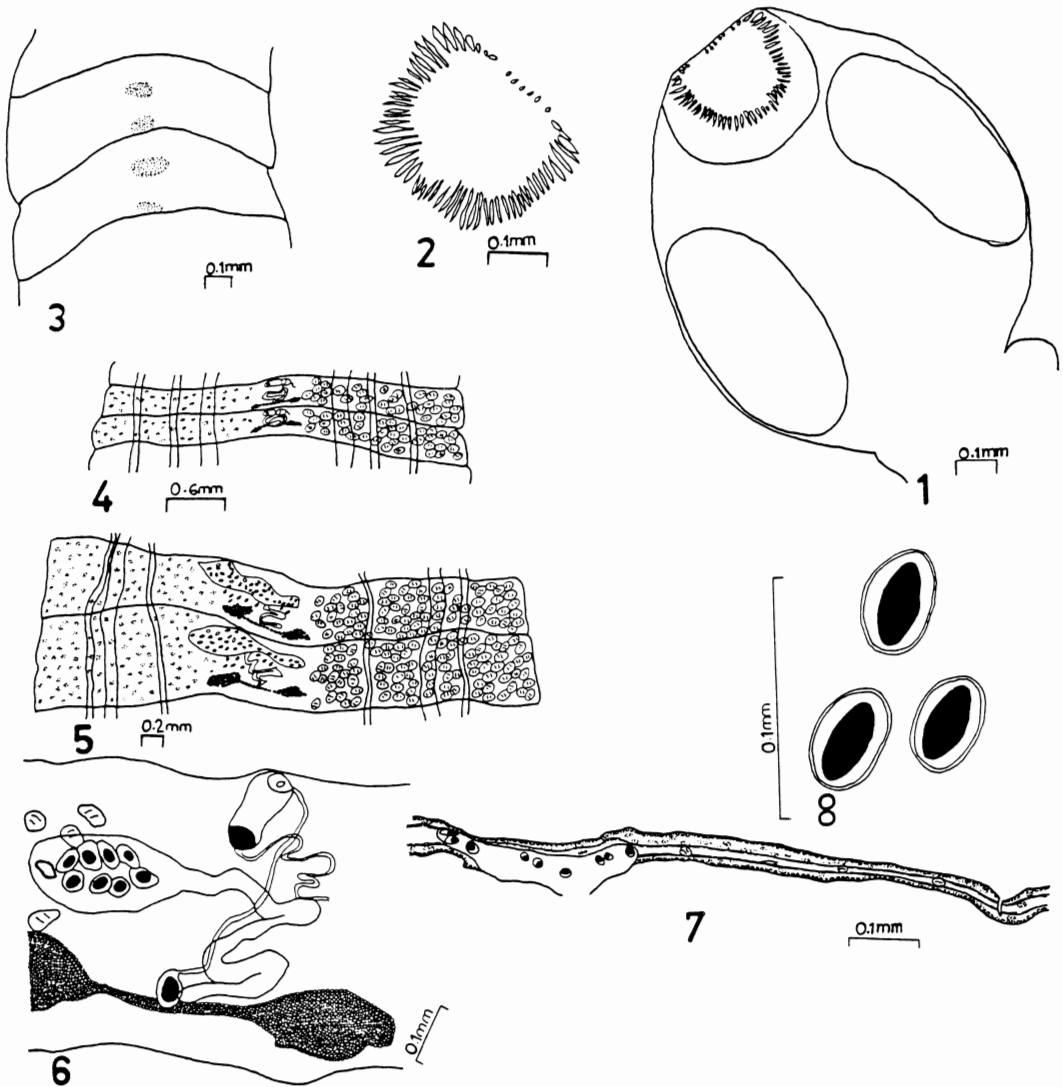
water; fixed in aqueous Bouin's solution; stained in Haemalum; dehydrated through a series of alcohols; cleared in xylol and mounted in canada balsam. Paraffin blocks were prepared and serial sections were cut at 0.005 mm. Camera lucida drawings were prepared. All measurements are in mm. unless otherwise stated and are given as range followed by means \pm S.D./S.E.

Senga gangesii n. sp. (Figs. 1–8)

Description (based on 15 specimens): Worms measure 194–215 ($204.5 \pm 10.5/7.43$) in length and 3.645–4.855 ($3.76 \pm 0.087/0.05$) in maximum width. Scolex pear shaped, broad in the middle, measure 1.039–1.173 ($1.156 \pm 0.017/0.012$) \times 0.90–1.02 ($1.003 \pm 0.017/0.012$). Bothria 2 measure, 0.187–0.527 ($0.317 \pm 0.15/0.086$) \times 0.595–0.697 ($0.646 \pm 0.051/0.036$). Rostellum armed measure, 0.30–0.374 ($0.366 \pm 0.009/0.006$) \times 0.42–0.527 ($0.519 \pm 0.009/0.006$). Rostellar hooks 72–75 in two semi-circles; 27–28 hooks in first row and 28–29 in second row. Sixteen rudimentary hooks are present. Rostellar hooks of the first semi-circle measure, 0.01–0.072 ($0.056 \pm 0.011/0.002$) in length and those of second semi-circle 0.015–0.076 ($0.056 \pm 0.013/0.003$) long. Neck absent. Proglottides craspedote, broader than long. Immature, mature and gravid proglottides, 0.135–0.3 ($0.234 \pm 0.064/0.024$) \times 0.321–1.05 ($0.601 \pm 0.176/0.053$);

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Figs. 1–8 *Senga gangesii* n. sp. 1. Scolex ($\times 130$), 2. Rostellar hooks ($\times 200$), 3. Immature proglottides ($\times 90$), 4. Mature proglottides ($\times 200$), 5. Gravid proglottides ($\times 72$), 6. Gravid proglottid (magnified) ($\times 200$), 7. T.S. of a mature proglottid showing disposition of cirrus pouch and uterine sac ($\times 230$), 8. Eggs with oncosphere ($\times 800$).

0.32–0.585 ($0.423 \pm 0.119/0.032$) \times 0.825–3.675 ($2.08 \pm 1.234/0.23$); and 0.18–0.92 ($0.275 \pm 0.104/0.06$) \times 3.645–4.855 ($3.76 \pm 0.087/0.05$), respectively. Testes, 240–280 ($259.875 \pm 13.242/4.683$) in number distributed in single continuous layer. Testes oval to spherical, measure, 0.02–0.045 ($0.031 \pm 0.01/0.005$) \times 0.024–0.065 ($0.045 \pm 0.016/0.008$). Cirrovaginal aperture measure, 0.016–

0.06 ($0.036 \pm 0.018/0.009$) in width and 0.014–0.053 ($0.026 \pm 0.015/0.007$) in depth. Cirrus pouch elongated, near anterior margin of each proglottid at the level of uterine sac or even anterior to uterine sac. Cirrus pouch opens on the dorsal side and measure, 0.09–0.196 ($0.132 \pm 0.031/0.008$) \times 0.044–0.075 ($0.063 \pm 0.008/0.002$). Cirrus, 0.004–0.007 ($0.006 \pm 0.002/0.001$) in diameter. Vas def-

erens, 0.0016–0.004 ($0.004 \pm 0.001/0.0005$) in diameter. Internal seminal vesicle small, 0.01–0.04 ($0.015 \pm 0.004/0.003$) \times 0.016–0.05 ($0.022 \pm 0.032/0.016$). Ovary bilobed, each lobe compact, transversely elongated, measuring 0.028–0.14 ($0.061 \pm 0.024/0.005$) \times 0.090–0.956 ($0.447 \pm 0.1460/0.039$). Vagina, 0.003–0.014 ($0.008 \pm 0.004/0.003$) in diameter. Vitellaria follicular, cortical in a single continuous layer in transverse sections, measure, 0.01–0.072 ($0.041 \pm 0.016/0.004$) \times 0.04–0.152 ($0.068 \pm 0.030/0.007$). Receptaculum seminis 0.016–0.045 ($0.033 \pm 0.009/0.004$) \times 0.048–0.068 ($0.06 \pm 0.009/0.005$). Uterus with a coiled uterine duct ending into a uterine sac which alternates on right and left side of the median line near anterior margin of each proglottid, occupies greater part of proglottid in gravid segments and opens midventrally. Uterine duct measure, 0.016–0.064 ($0.041 \pm 0.016/0.007$) in diameter. Uterine sac measure, 0.105–0.16 ($0.131 \pm 0.018/0.008$) \times 0.108–0.3 ($0.169 \pm 0.043/0.025$). Uterine pore measure, 0.018–0.028 ($0.023 \pm 0.005/0.004$) in depth and 0.033–0.045 ($0.039 \pm 0.006/0.004$) in width. Eggs round to oval, operculate, measure 0.02–0.032 ($0.023 \pm 0.005/0.002$) \times 0.03–0.056 ($0.048 \pm 0.004/0.002$). Oncosphere spherical to oval, 0.012–0.024 ($0.02 \pm 0.005/0.002$) \times 0.03–0.04 ($0.033 \pm 0.005/0.003$). Longitudinal excretory vessels three pairs.

Discussion

Senga gangesii n. sp. comes closer to *S. pycnomera* (Woodland, 1924), *S. raoi* (Majid and Shinde, 1984) and *S. jagannathae* (Majid and Shinde, 1984). However, it shows certain differences from each of the above species in various characters. The new species differs from *S. pycnomera* in having larger worms, greater number of rostellar hooks, larger mature proglottides with distinct segmentation, wider gravid proglottides, greater number of testes, cirrus pouch extends about 1/3rd the depth of proglottid, vitellaria not

discontinuous in two groups and instead form a single continuous layer, eggs shorter and wider and excretory vessels three pairs. It also differs from *S. raoi* in having larger scolex, wider bothria, greater number of longer rostellar hooks and testes, larger mature proglottides, shorter and wider gravid proglottides, narrower cirrus pouch, shorter and wider ovary. Vitellaria fill up complete proglottid along with testes in single continuous layer and eggs shorter but wider. The new form can be differentiated from *S. jagannathae* in having larger scolex, shorter and wider bothria, greater number of larger rostellar hooks and testes, larger mature proglottides, cirrus pouch longer and narrower, ovary shorter and wider and shorter but wider cirrovaginal pore.

Host: *Mystus vittatus*

Habitat: Small intestine

Locality: River Ganges, Allahabad, India.

Holotype: Holotype slide no. PCLS 103/85 deposited with the Parasitological Collection, Department of Zoology, University of Allahabad, Allahabad, India.

Summary

Senga gangesii n. sp. has been described and figured from *Mystus vittatus* found in River Ganges at Allahabad, U.P., India. The worms measuring more than 200 mm. bear 72–75 rostellar hooks in two semicircles. The new species has been compared with other close species of the genus.

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インドの半湿地帯附近を流れるガンジス川に生息する食用魚の条虫相 I. *Mystus vittatus* より得た新種 *Senga gangesii*

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インド、ウッタル プラデシュ州、アラハバードのガンジス川で捕えた食用魚 *Mystus vittatus* から得た新種 *Senga gangesii* を記載、図示した。この

条虫は 200 mm を越え、額嘴には 2 列の半円形に並んだ鈎 72~75 個を有す。この新種を他の同属近縁の種と比較した。