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The first record of (Nematoda: Camallanidae) genus *Onchocamallanus* Petter, 1979 from Sindh province of Pakistan

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Abstract

Host catfishes *Rita rita* for the study of helminth parasites were collected from river Indus Jamshoro, Sindh, Pakistan. During current study from the month of April 2015 to January 2016 helminth parasites belong to genus *Onchocamallanus* Petter, 1979 were collected from stomach of *Rita rita* Hamilton. Total 13 female nematode specimens were collected, closely resemblance with species *Onchocamallanus globoconchus* in all essential diagnostic characters. Previously this genus was recorded from India, Bangladesh and Balochistan province of Sindh. The present species recorded from Jamshoro, Sindh, Pakistan. However this genus reported as first record from Sindh province of Pakistan.

Keywords: *Rita rita*, Nematodes, *Onchocamallanus*, Indus River

1. Introduction

Potential and economic loss of fishes, even mortality in fishes cause by fish parasites. Importance of fishes health effected by parasites directly related with the importance of fish parasite [1]. Under favorable conditions parasites reproduce rapidly [2] and cause economic loss of fishes [3]. Nematodes (round worms) are commonly important helminth parasites of freshwater and marine fishes [4]. Nematodes utilize fishes as intermediate or final hosts because of indirect life cycles [5]. Adult nematodes that parasitize in intestinal tract of fishes but larval nematodes of fishes may be found in almost every organ [5]. To increase of the fish parasitological research, result in improvement of fish yield and can mainly achieve healthy fish stock [6].

Genus *Onchocamallanus* erected by Petter [7] nematodes of this genus parasites in fishes. Only two species recorded from world under this genus, *Onchocamallanus bagarii* (Karve and Naik, [9] and *Onchocamallanus globoconchus* Ali [8]; Petter [7]; Kakar and Bilqees [9]. Whereas, no much attempt has been made to undertake research on the helminth parasites of catfishes in Sindh Pakistan especially in anticipated area of study. It was therefore proposed that present study has been carried out for the presence of helminth fauna of catfishes of river Indus at Jamshoro district, Sindh, Pakistan.

2. Materials and Method

During current studies from the month of April 2015 to January 2016 sample of host *Rita rita* were collected from River Indus Jamshoro, Sindh, Pakistan for examination of helminth parasites. Live fishes were brought to the Parasitology Laboratory, Department of Zoology University of Sindh, Jamshoro, Pakistan. Fishes were dissected and viscera were separated in Petri dishes and examined under stereo dissecting microscope. During examination of 21 host fishes (13 ♀) nematode specimens were collected. Live specimens were killed in hot 70% ethanol, cleared in lacto-phenol and glycerol solutions and preserved in alcohol-glycerol solution. Temporary slide were made for drawing with the help of camera Lucida. Photographs taken with Camera Olympus DP12. Measurements are given in millimeter (mm). Identification were made with keys and literature [7-9]. Specimens deposited in the Department of Zoology, University of Sindh, Jamshoro, Sindh, Pakistan.

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3. Result

***Onchocamallanus globoconchus* Ali, 1960**

(Figs. 1-2)

Type host: *Rita rita*
 Site of infection: Stomach
 Type locality: River Indus at Jamshoro,
 Sindh, Pakistan
 Number of specimen: (13 ♀) from 21 hosts

Description:

Worms were thick, smaller to medium in size measuring 2.769–2.892. Widest at the level of buccal capsule measures 0.128–0.162 and narrower at posterior end, with pointed bifurcated tip. Striations along the entire body length. Buccal

capsule is large, wider, almost elongated measures 0.153–0.176 X 0.084–0.090, with strongly chitinous, dark brown sides, containing 12 to 14 transverse thickenings, with 5 knob like structures at the base of buccal capsule; two knobs at lateral sides, two knobs below to them, one at center. Basal ring present at the end of buccal capsule, width 0.035–0.040. Muscular esophagus was thick, wide, with uniform thickness throughout its length measures 0.538–0.765 X 0.046–0.055. Muscular esophagus was smaller in size than glandular esophagus; glandular esophagus was thinner than muscular esophagus which lead into the intestine measures 0.878–0.90 X 0.038–0.040. Excretory pore not visible. Genital opening pre-equatorial. Tail measures 0.038–0.043 X 0.022–0.030 mm in size.

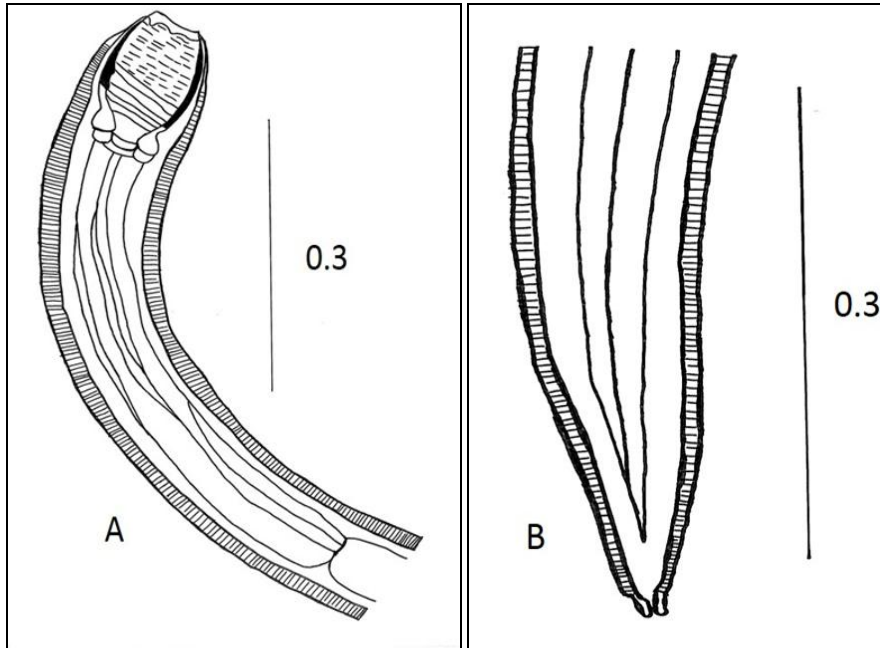


Fig 1: Diagram. A, Anterior end and B, Posterior end of worm with scale bar. 0.3



Fig 2: Photographs. A, Anterior end and B, Posterior end of worm

4. Discussion

The genus *Onchocamallanus* (Camallanidae, Procamlaninae) was erected by Petter [7] to accommodate nematodes belonging to the genus *Spirocamallanus* having transverse

thickening in the buccal capsule. Petter separated *Onchocamallanus* from other genera of the subfamily Procamlaninae on the basis of having incomplete transverse crests on the inner wall of the buccal capsule and three

chitinous projection at the base of the capsule. Only two species are known under this genus, *Onchocamallanus bagarii* Karve and Naik ^[9] from *Rita rita*, *Bagarius bagarius*, *Ompok bimaculatus* and *Onchocamallanus globoconchus* Ali ^[8]; Petter ^[7]; Kakar and Bilqees ^[9] from *Rita rita*, *Rita kuturnee*, *Channa punctatus*, *Mystus seenghala*.

Present species compare with previously recorded species of genus *Onchocamallanus* Petter ^[7].

O. bagarii Karve and Naik ^[9] collected from fish intestine of *Rita rita*, *Bagarius bagarius*, *Ompok bimaculatus* of India, Bangladesh similar in many characters but differs from present species in having rounded shape of buccal capsule; lacking knob like structures at the base; vulvar opening pre-equatorial; tail became larger, with three spines; a pair of caudal papillae in female.

O. globoconchus Ali ^[8, 7, 9] collected from intestine of fish *Rita rita*, *Rita kuturnee*, *Channa punctatus*, *Mystus seenghala* of Pakistan, India similar in many characters but differ from present species in having buccal capsule almost rounded, with three knob like structures at base; tail became triangular, with three rudimentary blunt spines; vulvar opening post-equatorial.

5. Conclusion

The present species has close resemblance with *Onchocamallanus globoconchus* Ali, 1960 all essential diagnostic features and identified as such. However this genus reported first time from Sindh province of Pakistan.

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