

NEW HOST AND LOCALITY RECORD OF *Comephoronema multipapillatum* FROM *Wallago attu* OF INDUS RIVER JAMSHORO, SINDH, PAKISTAN

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ABSTRACT: The aim of research is to study on helminth parasites of catfishes related to the order Siluriformes of River Indus, Jamshoro, Sindh, Pakistan. A total of 23 host catfishes *Wallago attu* carried to the Laborator, Department of Zoology University of Sindh, Jamshoro, Pakistan. During examination of gut contains and visceral organs 37 helminth parasites were collected from intestine. Nematode specimens were processed according to standardized parasitological methods and techniques. Present nematodes identified as *Comephoronema multipapillatum*. This is first record of genus *Comephoronema* Layman, 1933 from new host *Wallago attu* and locality Pakistan.

Key Word: Nematodes, *Comephoronema multipapillatum*, *Wallago attu*, new record, Pakistan.

INTRODUCTION

The genus *Comephoronema* Layman, 1933 belong to family Cystidicolidae Skrjabin, 1946, contain parasites of several marine and freshwater fishes [1, 2, 3]. Species of genus *Comephoronema* reported from different hosts and localities of world, but no report have been recorded from Pakistan [2-4-, 6, 7]. Nematodes are parasites live in all vertebrates including fishes, inhabiting the digestive tract, accessory tubes and cavities [8]. These parasites are transmitted to humans by the food material and can cause variety of diseases [9]. The habitat geography, season of the year and water characteristics of host fishes usually influenced on the collection of nematodes carried by fishes [10]. The fishes are main source of food and economy of country, suffering from parasitic infection or disease result into severe damage of fishes, fisheries industry, economy of country and cause other health problems, so it should be necessary to assess the parasitic infection [1]. To control and removal of nematode infection achieve by correct diagnosis of parasite species [11]. The work on host catfishes belong to Siluriformes order from Pakistan are inadequate of those including, Ahmad *et al.* [12], Ayaz *et al.* [13], Khanum *et al.* [14], Kakar and Bilqees [15], Shakir and Khan [16], Soofi *et al.* [17-23], hence existing work is vital part of research study on helminth parasites of Siluriformes catfishes of Indus river Jamshoro, Pakistan.

MATERIALS AND METHODS

There were 23 host catfishes *Wallago attu* collected during May 2016 from Indus river Jamshoro district Sindh. The fishes were captured in trapping nets with the help of local fisherman. Freshly killed fishes was placed longitudinally on dissecting tray. An initial cut was made from lower region of body which further progressed longitudinally till mouth region. Later on, fat layer remove and expose the visceral organs. The visceral and accessory organs were removed from body and placed separately in different Petri dishes containing normal saline solution. Each organ were carefully observed under dissecting microscope for the presence of helminths. A total of 37 nematode specimens were collected from intestine during examination. Recovered live nematodes were killed in hot

70% ethanol and preserved in alcohol-glycerol solution in glass vials. Temporary slide were made in glycerol and lactophenol for the detail observation. Diagrams were made with the help of camera Lucida. Measurements of the body were taken in millimeters (mm) and data were identify with the help of literature and keys.

RESULTS

Systematic position:

Family Cystidicolidae Skrjabin, 1946

Genus *Comephoronema* Layman, 1933

Comephoronema multipapillatum Felipe Bisaggio Pereira, Aldenice de Nazare Pereira and Jose Luis Luque, 2014 (Fig. 1-6)

Status: New host and locality record

Number of specimen recovered: 37 (37 ♀)

Number of host infected: 23

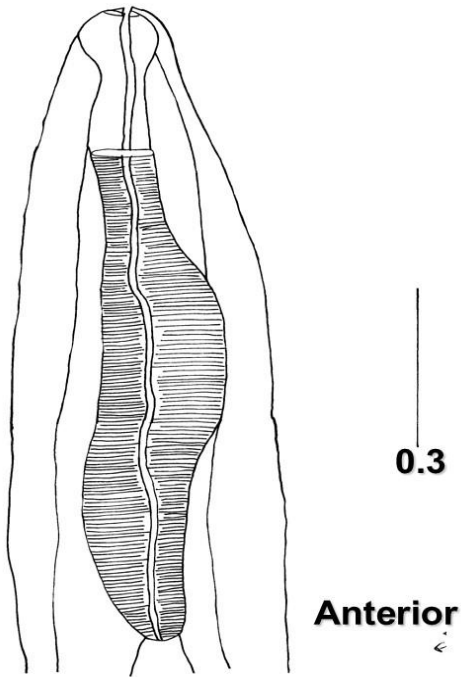
Host: *Wallago attu*

Site of infection: Intestine

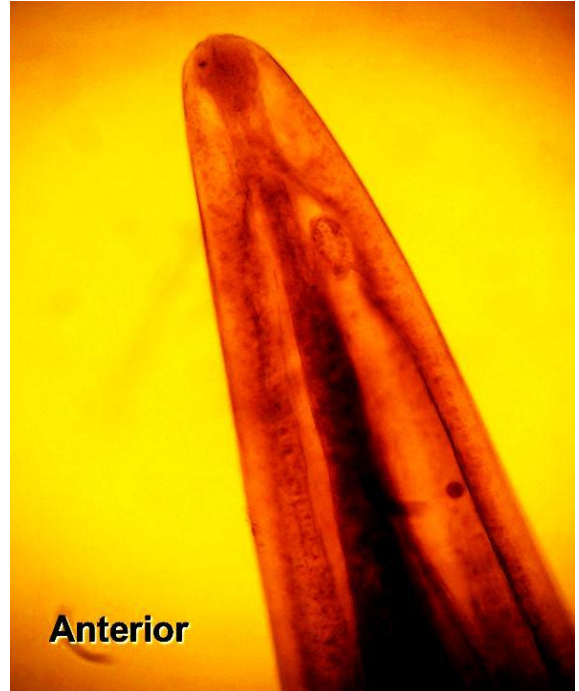
Locality: River Indus Jamshoro, Sindh, Pakistan

DESCRIPTION

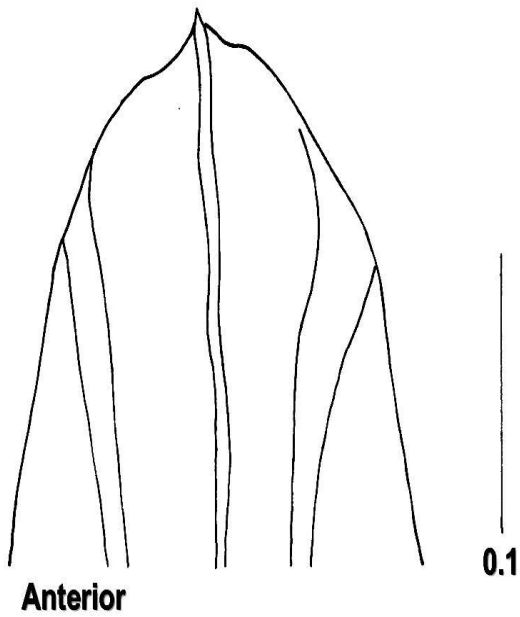
Body of worm elongate with rounded extremities, covered with fine striations measures 9.32-13.97 X 0.34-0.39. Anterior end of body with elongate broad, bulb shape vestibule measures 0.24-0.39. Body widest at pre- equatorial region. Cephalic end bear 4 labia and 4 submedian sublabia and each with single papilla, lateral amphids present. Nerve ring encircle at the anterior end of muscular esophagus measures 0.24-0.29. Muscular esophagus elongate broad at center region measures 0.83-0.92 × 0.17-0.19, glandular esophagus narrow and larger as compare to muscular esophagus measures 3.29-3.47 × 0.14-0.18. Excretory pore near to nerve ring. Tail with rounded tip and bear papillae like structure protuberance measures 0.06-0.09 mm in size. Vulva equatorial measures 4.68-4.83. Vagina muscular and uterus fill with rounded to spherical in shape eggs.



(Fig: 1) *Comephoronema multipapillatum*. Diagram of anterior end of female worm. Scale bar: in mm.



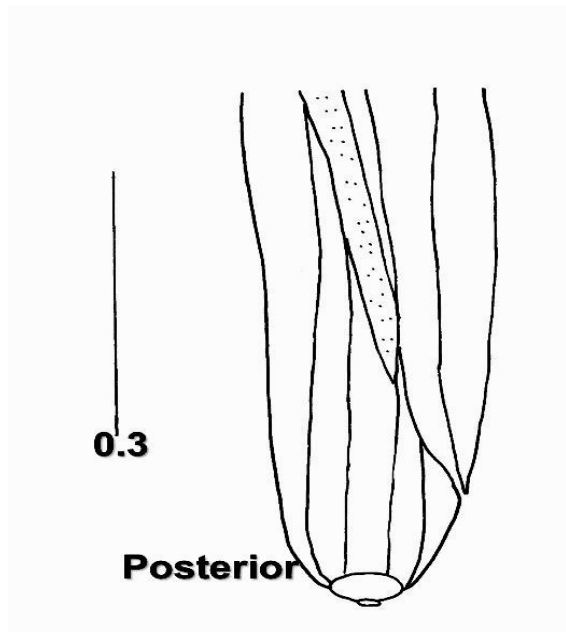
(Fig: 3) *Comephoronema multipapillatum*. Photograph of anterior end of female worm (2.5 x 10).



(Fig: 2) *Comephoronema multipapillatum*. Diagram of anterior end of female worm. Scale bar: in mm.



(Fig: 4) *Comephoronema multipapillatum*. Photograph of anterior end of female worm (10 x 40).



(Fig: 5) *Comephoronema multipapillatum*. Diagram of posterior end of female worm. Scale bar: in mm.



(Fig: 6) *Comephoronema multipapillatum*. Photograph of posterior end of female worm (10 x 40).

DISCUSSION

The genus *Comephoronema* established created by Layman in 1933 belong to family Cystidicolidae Skrjabin, 1946 [1-3]. The type species of genus is *C. werestschagini* Layman, 1933 [1-3]. The genus contain parasites of several marine and freshwater fishes [1-3]. Species of genus reported from different hosts and localities of world including, *C.*

oschmarini Trofimeko [6] and Frantisek Moravec, Vladimira Hanzelova and Daniel Gerdeaux [4] gathered from stomach of fish *Lota lota* from Eurasia; *C. beatriceinsleyae* Holloway et Klewer [1-7] from Antarctica; *C. multipapillatum* Pereira, F. B. et al [2] reported from fish *Holocentrus adscensionis* of Brazil; *C. johnsoni* Arya [1] and *C. mackiewiczzi* Molhotra et Rautela [1-7] gathered from intestine of fish *Scombermorus guttatus* of India. Present species compare with previously reported species of genus in detail and show following differences including, *C. oschmarini* Trofimeko [6] and Frantisek Moravec, Vladimira Hanzelova and Daniel Gerdeaux [4] gathered from stomach of fish *Lota lota* of France varies from present species in having larger in length; cephalic end with pseudolabial terminals and rounded lips; vestibule funnel shape; nerve ring encircle anterior end of esophagus; vulva postequatorial; eggs filaments. *C. johnsoni* Aray [1] gathered by intestine of fish *Scombermorus guttatus* of India varies from present species in having larger in length; body without cuticle striations; cephalic end with 4 teeth and 4 lips each bear 1 papillae; nerve ring encircle anterior end of esophagus; tail fan shape with caudal alae; eggs filaments. But the comparison of present species with description of already recorded *Comephoronema multipapillatum* Pereira, F. B. et al. [2], there is no difference of present and previously reported species. Hence it is described as *Comephoronema multipapillatum*. Present species belong to genus *Comephoronema* Layman, 1933 reported first time from new host *Wallgo attu* and locality Indus river Jamshoro Pakistan, but previous species *Comephoronema multipapillatum* was reported from host fish *Holocentrus adscensionis* of Brazil. Hence this is new host and locality record of genus *Comephoronema* Layman, 1933.

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