International Journal of Fauna and Biological Studies
Available online at www.faunajournal.com

IJFBS
International Journal of Fauna And Biological Studies

ISSN 2347-2677
IJFBS 2016; 3(3): 17-19
Received: 12-02-2016
Accepted: 04-03-2016

**Hira Soofi**
Department of Zoology,
University of Sindh, Jamshoro,
Sindh, Pakistan.

**Nadir Ali Birmani**
Department of Zoology,
University of Sindh, Jamshoro,
Sindh, Pakistan.

**Ali Murtaza Dharejo**
Department of Zoology,
University of Sindh, Jamshoro,
Sindh, Pakistan.

**Correspondence**
**Hira Soofi**
Department of Zoology,
University of Sindh, Jamshoro,
Sindh, Pakistan.

# *Dendrorchis ritata* n.sp. (Trematoda: Gorgoderidae) from catfish *Rita Rita* (Siluriformes: Bagridae) of Jamshoro district, Sindh, Pakistan

**Hira Soofi, Nadir Ali Birmani, Ali Murtaza Dharejo**

## Abstract
During the course of study conducted for helminth parasites of catfish *Rita rita* (Siluriformes: Bagridae), a new trematode of genus *Dendrorchis* Travassos, 1926 (Trematoda: Gorgoderidae) is described from intestine of the host fish. The new trematode species is characterized by having small body size; Oral sucker rounded to pentagonal in shape, terminal, small and ventral sucker rounded, sub equal or larger than oral sucker; testes small, branched, irregular in shape; ovary triangular in shaped, broad posteriorly and narrow anteriorly, situated at left side of body; seminal receptacle present; uterine loops much compact; two vitelline bodies rounded to oval in shape; eggs are oval in shaped. On the basis these diagnostic characteristics, a new species *Dendrorchis ritata* is proposed to accommodate the recent trematode. This is first record of the genus *Dendrorchis* from Pakistan and *Rita rita* is new host record for the genus *Dendrorchis* Travassos, 1926. The name of new species refers to the name of the host fish.

**Keywords:** Fishes trematode, *Dendrorchis ritata*, Siluriformes cat fish, Indus River.

## Introduction
Genus Dendrorchis Travassos, 1926 contain thick, pyriform body shape worm found in swim bladder of neotropical fishes. Genus *Dendrorchis* closely resemble with genus *Phyllodistomum* but after Travassos, 1926 separated *Dendrorchis* from *Phyllodistomum* on the basis of type species *Dendrorchis neivai* in having hind body broad, foliate and main uterus extend extracaecally into fore body and hind body. Type species *D. neivai* Travassos, 1926 [1-3].
Catfishes (order Siluriformes) are a diverse group of ray-finned fish. Named for their prominent barbels, which resemble a cat's whiskers. Despite their name, not all catfish have prominent barbel. Members of the Siluriformes order are defined by features of the skull and swim bladder. Catfish are of considerable commercial importance; many of the larger species are farmed or fished for food form hundreds of years throughout world.
*Rita rita* (Hamilton, 1822) a freshwater catfish, locally called as "Khaggo", is bottom-dwelling carnivorous catfish, feeds on mollusks, small fish, crustacean, and insects as well as on decaying organic matter Shrestha [5]. *Rita rita* is an edible and delicious fish distributed in Afghanistan, Pakistan, India, Nepal, Bangladesh and Myanmar Mirza [4].Throughout world fishes suffer from varieties of parasitic diseases that cause mortality directly or indirectly Lerssutthichawal [6]. Particularly the helminth parasites of fish which stay in alimentary canal, damage the lining wall of the fish intestine and some other organs such as liver and bile duct and cause injuries Khanum *et al*., [7]. Besides mortality in fish, some helminth parasites are also transmitted to humans through fish. These parasites either cause diseases in fish directly or make them susceptible to other diseases. Both cases result in the fish loss Onyedineke *et al*., [8]. The reports on helminth parasites of freshwater fishes in Pakistan so diverse but, reports on the catfishes specially *Rita rita* of Pakistan are limited to those of Ahmad *et al*. [9]; Ayaz *et al*. [10]. Khanum *et al*. [7]. Shakir and Khan [11]. Soofi *et al*. [14].

## 2. Materials and method
During current studies a total of 67 fishes *Rita rita* were examined for the presence of helminth parasites. Live fishes were collected during January-October, 2015 from different areas of the province and brought to the Parasitology Laboratory of 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 helminthic examination, only 04 trematodes belonging to the genus *Dendrorchis* Travassos, 1926 were collected from Intestine of 04 host fishes.

Methods described by Garcia and Ash [12]. and Schmidt [13]. were followed for collection and preparation of trematodes for detailed study. Diagrams are made with the help of a camera lucida. Photographs were taken with camera Olympus DP12. Specimens were identified with keys and literature available. Permanent mounts of the specimens are deposited in the department of Zoology, University of Sindh, Jamshoro, Sindh, Pakistan.

## 3. Result

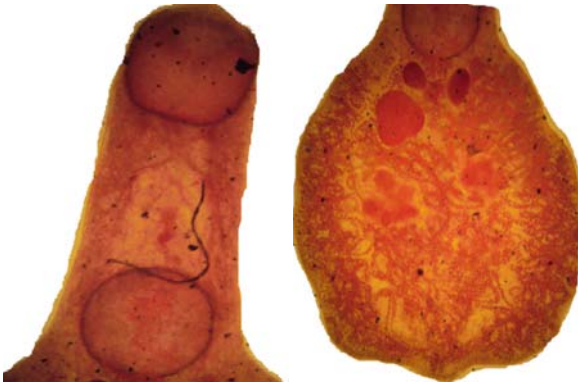
### 3.1. Taxonomic summary

*Dendrorchis ritata* n.sp.
No of specimen recovered: 04
No of fishes dissected: 67
No of fishes infected: 04
Host: *Rita rita*
Site of infection: Intestine
Locality: Jamshoro
Etymology: The name of new species refers to the name of the host fish.

### 3.2. Description

Body of worm is pyriform, vase shape, thick, measures 4.95-5.10 X 3.21-3.23 with narrow fore body 2.1-2.80 and broad hind body 2.85-2.8 with many undulations. Oral sucker rounded to pentagonal in shape, terminal, small measures 0.69-0.71X0.72-0.73 and ventral sucker rounded, sub equal or larger than oral sucker measures 0.69-0.72 X 0.75-0.77. Prepharynx and pharynx absent. Oesophagus wide, short measures 0.18-0.19 X 0.21-0.24. Intestinal bifurcation near to oral sucker and caeca end at posterior extremity. Testes two branched at left and right side of body separated by seminal receptacle anterior testis at right side, branched, small measures 0.3-0.3X0.48-0.49 and posterior testis at left side, large, branched measures 0.45-0.47X 0.57-0.59. Seminal receptacle long at anterior to ventral sucker. Genital pore submedian in between intestinal bifurcation and ventral sucker. Seminal vesicle long anterior to ventral sucker measures 0.24-0.24X 0.15-0.16. Genital atrium long posterior to oral sucker. Ovary triangular shape broad posteriorly and narrow anteriorly, at anterior to anterior testis measures 0.48-0.49 X 0.48-0.48. Seminal receptacle elongate in between ovary and posterior testis measures 0.12-0.14 X0.6-0.7. Uterus in form of loops, extends from oral sucker to posterior extremity, in between intracecal to retrocaecal fields of hind body and fore body. Paired vitelline masses compact, in between ventral sucker and ovary, One at left side small measures 0.33-0.37X0.21-0.22 0 other at right side large, oval in shape measures 0.18-0.21X0.3-0.5. Excretory vesicle triangular in shape overlapped by uterus, pore terminal. Eggs oval to round shape in shape varies in size measures 0.012-0.015X0.029-0.029

**Fig 1:** *Dendrorchis ritata* new species. Diagram of entire worm. Scale bar: 1 mm



A B

**Fig 2:** A-B: *Dendrorchis ritata* new species. A. Anterior photograph of worm and B. posterior photograph of worm.

## 4. Discussion

The Present species only compare with type species *Dendrorchis neivai* Travassos, 1926 collected from swim bladder of fish *Brycon lundi* of Brazil differs from present species in having smaller in size; oral sucker rounded, sub terminal; ventral sucker sub equal to oral sucker; pharynx absent; testes diagonal different in shape; ovary irregular in shape, at right side of body; seminal receptacle absent; vitelline masses elongate, irregular in shape; excretory vesicle I-shaped [1-3].

## 5. Conclusion

On the basis of body size and shape, oral sucker and ventral sucker size, shape and position, testes size and shape, ovary triangular in shape at left side of body, seminal receptacle present, uterine loops much compact, vitelline bodies rounded to oval in shape, eggs shape, a new species *Dendrorchis ritata* is proposed.

## 6. References


1. Bray RA, Gibson DI, Jones A. Keys to the Trematoda. CABI Publishing and the Natural History Museum, London, UK 2008; 3:25-35.
2. Yamaguti S. Synopsis of digenetic trematodes of vertebrates. Keigaku publishing Co. Ltd Hagwara Bldg., 3-1 chome Sarugaku-Cho, Chiyoda-Ku, Tokyo, Japan. 1971; 1:176-177.
3. Yamaguti S. Synopsis of digenetic trematodes of vertebrates. Keigaku publishing Co. Ltd Hagwara Bldg., 3-1 chome Sarugaku-Cho, Chiyoda-Ku, Tokyo, Japan. 1971; 2:190-191.
4. Mirza MR. Checklist of Freshwater fishes of Pakistan. Pakistan Journal of Zoology. 2003; 3:1-30.
5. Shrestha TK. Rare fishes of Himalayan Waters of Nepal. Journal of Fish Biology. 1990; 37:213-216.
6. Lerssutthichawal T. Monogeneans of fresh water Siluriform fish of Thailand. Dissertation submitted to the Institute of Postgraduate Studies and Research, Uni. of Malaya, Kuala Lampur, 1990; 465.
7. Khanum H, Ferdows J, Farhana R. Community of Helminth Parasites in Rita rita (Hamilton Buchanun). Journal of Biosciences. 2008; 16:133-135.
8. Onyedineke NE, Obi U, Ofoegbu PU, Ukogo I. Helmimth parasites of some freshwater fish from River Niger at Illushi, Edo State, Nigeria. Journal of Animal Sciences. 2010; 6(3):16-21.

9. Ahmad N, Ayaz S, Shams S, Karimullah. Prevalence and Morphology of Helminth Parasites of Fish from River Swat, Khyber Pakhtunkhwa, Pakistan. Journal of Agricultural Research. 2014; 27(2):142-148.
10. Ayaz S, Khan MA, Rehman IU, Anwar M, Saeed S, Zarin S. Prevalence of Endoparasites in Fresh Water Fishes in River Punjkorha, Khyber Pukhtunkhwa Pakistan. International Journal of Biology, Pharmacy and Allied Sciences. 2013; 2(1):111-115.
11. Shakir HA, Khan AM. The Prevalence of Cestode Infection in a Freshwater Catfis, Sperata Sarwari, Dept. Zool., P.U., Lahore, Pakistan. Punjab University, Journal of Zoology. 2006; 21(1-2):41-47.
12. Garcia LA, Ash LR. Diagnostic Parasitology Clinical laboratory manual. The CV Mosby Company. 11830 Westline Industrial Drive, St. Louis, Missouri 63141, 1979.
13. Schmidt GD. Essentials of Parasitology 4th Edition. W.M.C. Brown Publishers 2460 Keper Boulevard, Dubuque, IA 52001, 1988, 294.
14. Soofi H, Birmani NA, Dharejo AM, Abbasi AR. First record of genus *Thaparotrema* Gupta, 1955 (Trematoda: Ophisthorchiidae) in Pakistan. Journal of Entomology and Zoology Studies. 2015; 3(6):232-234.