NEW RECORD OF *TANAISIA LONGIVITTELLATA* SHTROM AND SKRJABIN, 1947 IN URINARY TRACT OF GREATER COUCAL *CENTROPUS SINENSIS* (CUCULIFORMES: CUCULIDAE) OF PANO AKIL, DISTRICT SUKKUR, SINDH, PAKISTAN

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ABSTRACT

In continuation of the research work on the diversity of helminths of Greater Coucal *Centropus sinensis* (Cuculiformes: Cuculidae), the trematodes of the genus *Tanaisia* are reported from the urinary tract of the host birds. These specimens are identified as *Tanaisia longivittellata* Shtrom and Skrjabin, 1947. Several authors have reported species of genus Tanaisia around the world. In Pakistan only, single report is available from the host bird *Fulica atra*. However, this is second report of the genus *Tanaisia* from any avian host in Sindh province. Whereas, Greater Coucal *Centropus sinensis* is being recorded as the new host for the genus *Tanaisia*.

Key-words: *Tanaisia longivittellata*; Greater Coucal *Centropus sinensis*; New host record.

INTRODUCTION

Pakistan has great variety of habitats for the diverse avian forms. This region hosts great number of migratory and resident birds due to availability of varied food items wide range of peaceful habitats (Roberts, 1991. These platforms offer wonderful environment for breeding and growth of intermediate hosts like snails, crustaceans and insect species which in result increase the chances of transporting parasitic species to these birds (Birmani *et al*., 2013; Thebo, 2019 and 2022). These avian forms spread potential source of helminths and other microbes of zoonotic importance in other resident and guest birds (Hubálek, 2004). These birds also play vital role in dissemination of zoonosis in human (Abulreesh *et al*., 2007). The Greater Coucal, *Centropus sinensisis*, is a common non-migratory resident bird of Sindh that inhabits a range of environments, including jungle and agriculture. Insects, caterpillars, and small vertebrates like saw-scaled vipers are the main food sources for Greater Coucal. They have also been observed consuming bird eggs, fruits, seeds, nestlings, and snails (Ramel, 2023). Birds are among the most prevalent species and excellent indicators of the health of the ecosystem (Roberts, 1991). Reports available on metazoan parasites of Greater Coucal *Centropus sinensis* include of Amin *et al*., 2015; Siyal *et al*., 2020 and Samejo *et al*., 2025. This report is another adition of helminths of greater Coucal *Centropus sinensis* in Pakistan.

MATERIAL AND METHODS

Greater Coucal *Centropus sinensis* were collected from rural areas of taluka Pano Akil of Sukkur District and dissected to recover the helminth parasites. During dissection and checking of the material in gut, 13 trematodes from two host birds were revealed which belong to the genus *Tanaisia*. The site of infection was urinary tract. These trematodes were eased in a little hot distilled water, quickly put in Alcohol-Formalin-Acetic Acid solution under light cover slip pressures for fixation. After fixation, these trematodes were stained in Borax-Carmine and dehydrated in alcohol. Clearing was done in clove oil and xylene. Mounting was done in Canada Balsm. Photographs were taken with OMAX Digital Trinocular LED Microscope with 10MP Digital USB Microscope Camera. Trematodes are identified with the help of literature cited and key books given by Yamaguti, 1971. Measurements are given in micrometer.

RESULTS

Family: Eucotylidae
Genus *Tanaisia*
Tanaisia longivittellata (Figure-1)

DESCRIPTION

(Based on 13 specimens). Cuticle of these trematode is armed with small spines making the cuticle rough. These spines are densely assembles anteriorly as compared to posteriorly, scattered throughout body. Entire body is cylindrical, elongated, broader at both ends but anterior end is more tapered. The whole worm ranges 3110–3740 X 500–540 µm in measurement. A terminal, highly muscular oral sucker, cup-shaped in form is present which measures 120 X 160–190 µm in size. No pre-pharynx is observed which is present in most of the species of the genus *Tanaisia*. Behind the oral sucker, a small, oval-shaped pharynx is present which is highly muscular. Pharynx measures 40–50 X 60–80 µm in size, which extend in a short tube-like structure called esophagus with visible dilation after the pharynx. Esophagus diverticulate in cylindrical intestinal ceca which run in lateral sides of the trematode body, extend posteriorly, fuse together near posterior end of body, forming a complete arch. The acetabulum is not seen in any trematode.

Male gonads are two place as right and left testes. These are located in 2nd quarter of the trematodes body. Testes are pre-equatorial in position, irregular in outline, triangular in shape, oblique in arrangement, close with each other and in many specimens, they share their margins. Right testis is 160–180 X 80–130 and left testis 360–370 X 260–350 in size. Vitellaria arranged in lateral sides of the trematode body, overlapping ceca in both sides, extending from top level of front testis, extending posteriorly, ending up to the cecal arch near posterior end of the trematode. The vitelline glands in both lateral sides have same size. Obliques duct from the vitelline glands called as vitelline duct extends from anterior part of vitellaria and fuse to form small yolk reservoir.

The female gonad called ovary is lobed, located in front of the testes pretesticular. Ovary has 4 lobes, the anterior lobe is masked with uterus eggs, and the hind lobes of ovary are divided into smaller lobes. Ovary measures 150–280 X 300 in size. The space between ovary and anterior end of the trematode body is 620–800. Seminal receptacle located very behind the ovary in left part of trematode, measured 80–110 X 180 in size. Eggs are compactly filled in uterus in almost most of trematode body, commencing from position of pharynx till posterior margins of trematode body. Eggs dark-brown in color, double-walled, thick-shelled, 22–31 X 7–14 in size.

TAXONOMIC SUMMARY

Type Host	Greater Coucal *Centropus sinensis* (Cuculiformes: Cuculidae)
Type Locality	Sukkur, Sindh, Pakistan
Site of infection	Urinary Tract
No. of specimen recovered	13 from 02 hosts

DISCUSSION

Trematodes of genus *Tanaisia* reported in Pakistan include *T. karachiensis* collected in *Corvus splendens* of Karachi (Begum *et al*. (1997), *T. manchhari* Birmani, 2011; *T. fedtschenkoi, T. longivittellata* and *T. atra* in *Fulica atra* (Birmani, 2011).

Current trematodes share common major characteristics like gonads shape and location in trematode body, distribution of vitellaria and other diagnostic characteristics with *Tanaisia longivittellata* Shtrom in Skrjabin, 1947. With these closely characteristics, the current trematodes are identified as *Tanaisia longivittellata* Shtrom in Skrjabin, 1947.

Previously this species is reported from *Porzana baillonia*, *P. porzana*, *Fulica atra* and *Sterna hirundo* of Russia including Siberia, Slovakia and Poland. Only single report of *T. longivittellata* is available in Pakistan from the bird *Fulica atra* (Birmani, 2011). However, this is second report of *T. longivittellata* in avian host from Pakistan and Greater Coucal *Centropus sinensis* is new host being reported. Pakistan hosts wide range of avifauna resident as well as migrating from various countries of the world. These birds are potential source of spreading

variety of helminthic parasites. They share habitats with other birds and may transfer infections in them. Current results are an edition to the previously known helminth parasites reported from the avian hosts of Pakistan.

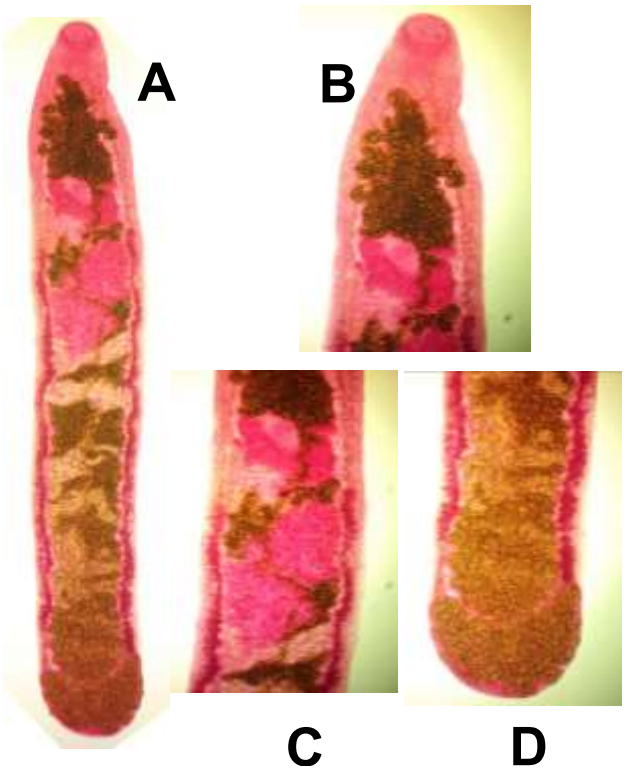

Fig. 1. *T. longivittellata*: A. Entire trematode; B. Anterior portion enlarged; C. Genital organs enlarged; D. Posterior portion enlarged.

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