TRACHEOPHILUS BUBULCUM N.SP. (TREMATODA: CYCLOCOELIDAE) IN CATTLE EGRET (*BUBULCUS IBIS* LINN. 1758) FROM SINDH

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ABSTRACT

Tracheophilus bubulcum n.sp. (Trematoda: Cyclocoelidae) is described from nasal sinus in Cattle egret (*Bubulcus ibis* Linn., 1758) from Oderolal station District Matiari, Sindh, Pakistan. The new species differs from previously described species in having testes and ovary at a proximity. This genus is fairly uncommon. It is being reported for the first time in Cattle egret from Sindh, Pakistan.

Keywords: *Tracheophilus bubulcum* n. sp., nasal sinus, Cattle egret, Oderolal station, Sindh.

INTRODUCTION

Cattle egret (*Bubulcus ibis* Linn., 1758) is a biological insect pest control agent in agricultural ecosystems. It is a cosmopolitan species of heron found in tropics, subtropics and warm temperate zones. Their habitats for feeding include pastures, grasslands, rice paddies, farmlands and wetlands. They mostly accompany cattle and large mammals catching insect and small vertebrate prey. When foraging with large mammals it has been shown to be 3.6 times more successful in capturing the prey as compared to while foraging alone (Dinsmore, 1973). Their diet includes spiders, flies, crickets, grasshoppers, earth worms, lizards and frogs (Siegfried, 1971).

Since Cattle egret is an insectivorous bird (Abdullah *et al.*, 2017) therefore it is important to protect it from different helminths and promote their natural environments. During the examination of Cattle egret for its parasitic infection, a new species *Tracheophilus bubulcum* has been recovered, also the genus makes a new locality and new host record.

MATERIALS AND METHODS

A total of seven Cattle egret (*Bubulcus ibis* Linn., 1758) were collected during January, 2019 from Oderolal station, District Matiari (25.6319°N, 68.59933°E) Sindh, Pakistan were brought to Parasitology laboratory, University of Karachi, after identification of birds using literature of Roberts (1991) autopsy was carried out of 7 birds out of which two birds were infected with trematodes. Prior to processing the trematodes were put into 0.9% saline, relaxed in hot water, fixed under slight cover glass pressure in alcohol-formalin-acetic acid (AFA), stained with Mayer's carmalum, dehydrated in graded series of ethanol solutions, cleared in clove oil and xylol and mounted in Canada balsam. Diagrams were prepared with the help of camera Lucida. All measurements are given in millimeter (mm). The Holotype and Paratype are with the senior author (S.W).

RESULTS

Genus *Tracheophilus* Skrjabin, 1913
***Tracheophilus bubulcum* n.sp.**
(Fig. 1a-b)

Host: Cattle egret (*Bubulcus ibis* Linn. 1758)
Locality: Oderolal station, District Matiari, Sindh, Pakistan
Location: Nasal sinus
Number of host examined/infected: 7/2
Number of specimens recovered: 2

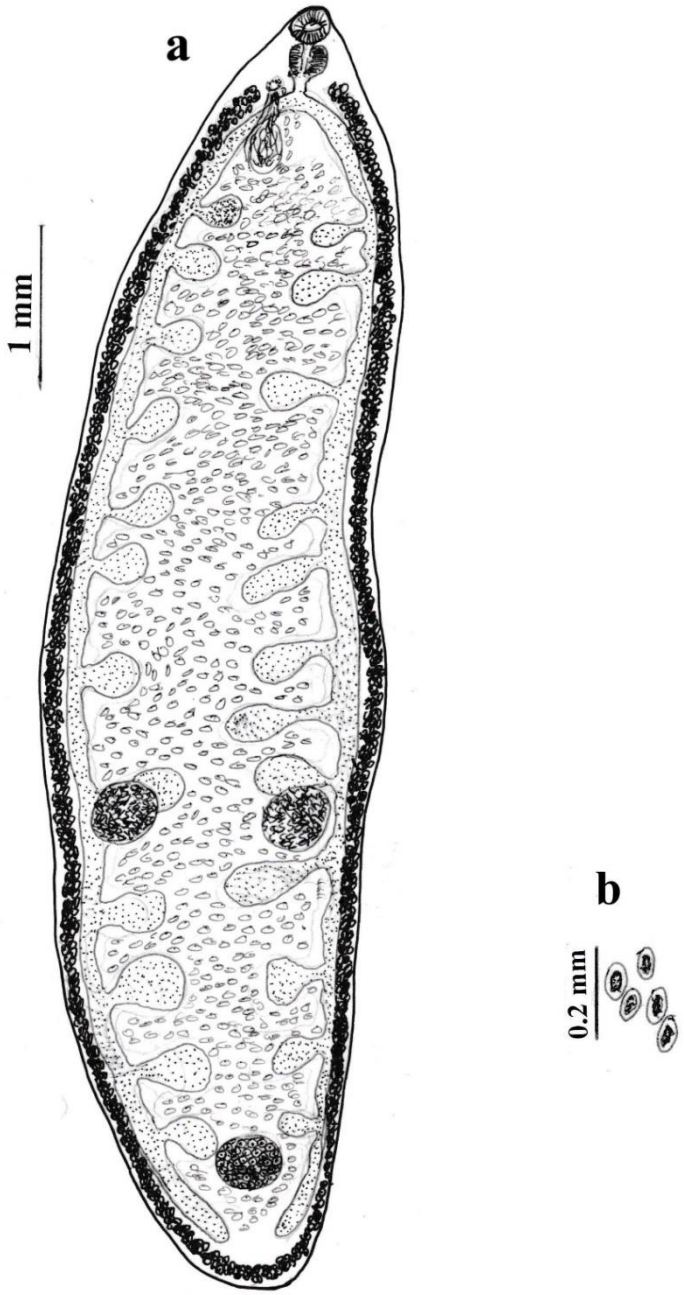

Fig. 1a: *Tracheophilus bubulcum* n.sp., b: eggs

DESCRIPTION: Based upon permanently mounted, stained specimens.

Body attenuated at both ends. Oral sucker small, terminal 0.29-0.30 by 0.30-0.32. Total body length 7.2-8.1 mm while maximum width is attained in the post equatorial region, little above the testes measuring 2.3-2.5. Pharynx well developed, globular 0.20 by 0.29 in size, esophagus short 0.14- by 0.10-0.12. Caeca with well developed, internally grown diverticles on inner walls throughout their length 0.7-0.8 long. Testes juxtaposed, post equatorial, rounded in shape, separated from each other by the uterine coils, measuring 0.41 by 0.44-0.45 right testis and 0.42 by 0.45 left testis. Distance between right testis and ovary is 1.3-1.8 while distance between left testis and ovary is

1.2-1.8. Genital pore bifurcal, a little anterior to the bifurcation of caeca or post pharyngeal. Cirrus pouch small 0.6-0.7 by 0.29-0.30 containing coiled seminal vesicle 0.5 by 0.25. Ovary rounded, situated inside posterior caecal arch 0.37-0.38 by 0.46-0.48. Uterus confined to intercaecal fields. Vitellaria ventral to caeca, united posteriorly. Eggs small, oval, elongated, measuring 0.068-0.079 by 0.044-0.051.

DISCUSSION

The family Cyclocoelidae (Stossich, 1902) Kossack, 1911 are trematodes related to Nudacotylidae and Notocotylidae in adult morphology and also in life cycle pattern. These worms are parasitic in nasal cavity, trachea, body cavity and rarely intestine of birds. The genus *Tracheophilus* was erected by Skrjabin, 1913 to incorporate *T. sisowi* in the trachea of *Anas* spp.; *Aythya; Nyroca; Netta; Anser* and *Dafila* from Siberia, Europe, Tonkin, Formosa and Mexico. It is fairly uncommon trematode (Jeyathilakan *et al.,* 2019). The two species of this genus were known species from India *T. cymbius* (Diesing, 1850) and *T. cucumerinum* (Rudolphi, 1809). The present specimens differ from the species *T. cucumerinum* is which the ovary and testes are in close proximity while in present specimens they are at a distance although in posterior half of the body and in the present specimens the vitellaria are confluent in posterior end while in *Tracheophilus sisowi* Skrjabin, 1913 they are not confluent in posterior end. The present specimens have eggs (0.068-0.079 by 0.044-0.051) are smaller as compared to *T. cymbium* (0.096-0.132 by 0.050-0.068) and larger as compared to *T. sisowi acirratus* Jain, 1967 (0.010 by 0.0075) has fewer caecal diverticula while *T. hepaticus* (Sugimoto, 1919) Morishita, 1924 is from a different host (domestic duck) in Formosa. The genus is recorded for the first time in the host Cattle egret from Sindh, Pakistan. The New report will help to understand diversity in avian fauna of Pakistan. The species name refers to the bird host Cattle egret (*Bubulcus ibis* Linn., 1758).

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