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Paramonostomum bilqeesae, New Species (Trematoda: Notocotylidae) from Common Teal (*Anas crecca* L.) in Sindh

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Abstract.- A new trematode, *Paramonostomum bilqeesae* new species. recovered from common teal, *Anas crecca* L. is described here. The fluke is characterized by having small body with a thin delicate cuticle. Oral sucker terminal, oesophagus relatively short, pharynx absent; ceca long terminate some distance above the posterior extremity, testes situated in posterior most region of the body, male terminal genitalia simple comprises of a cirrus sac situated far behind the central bifurcation, enclosing the seminal vesicle, genital opening posterior to cecal bifurcation, Receptaculum seminis is irregular in shape, vitellaria in posterior half of the body, uterus extensive and egg with or without polar prolongation. The differences in the diagnostic features of the present and previously described species of the genus *Paramonostomum* substantiate the statement that the specimens understudy are new to science and named as *Paramonostomum bilqeesae*. This is the second new species of the genus being reported from Sindh, Pakistan.

Keywords: Trematode, *Paramonostomum bilqeesae*.

INTRODUCTION

Common teal (*Anas crecca* L.) is a small duck which breeds widely in Asia from the borders of the Arctic tundra to steppic latitudes and is a winter migrant to Pakistan (Roberts, 1991). They are widespread in Punjab and Sindh and wherever there is a suitable swampland or water in Balochistan and Khyber Pakhtoonkhwa (Roberts, 1970). They are by far the commonest duck in winter in Pakistan. They often feed throughout the night and by day roost in big flocks on more open bodies of water (Dharejo, 2006). They feed mostly on rice grains, seeds of water weeds and sedges. They also eat small mollusks, water beetles and insect larvae (Savage, 1965). Because of the food and feeding habit Common teal acquires parasitic infection from their habitats. Jones *et al.* (2005) reported that the genus *Paramonostomum* Lühe, 1909 was found in the intestinal tract of birds (mainly Anseriformes, Ciconiiformes, Charadriiformes, Galliformes, Gruiformes) and mammals (Muridae). The distribution of this genus is cosmopolitan. The only species reported from Pakistan is *Paramonostomum macrovesiculum* (Dharejo *et al.*, 2006) from Black coot *Fulica atra*. In the present study a new trematode *Paramonostomum bilqeesae,* new species is being described from the intestine of *Anas crecca* L. in Jhimpir, Sindh, Pakistan.

MATERIALS AND METHODS

Eight common teal (*Anas crecca* L.) were shot down in Jhimpir, Sindh, Pakistan. The viscera were taken out and brought to the laboratory for detailed examination for helminth parasitic infection. Four trematodes were recovered from the intestine of two birds. The specimens were fixed in A.F.A. solution (a solution of ethyl alcohol, formaline, acetic acid in the ratio of 92:5:3) for 24 h, washed with 70% ethanol, stained with Mayer's carmalum, dehydrated in graded alcohol, cleared in clove oil, rinsed with xylene and mounted permanently in Canada balsam. Drawings were prepared with the aid of camera Lucida. Measurements are in millimeters. Specimens are deposited in the collection of Crop Diseases Research Institute, PARC, University of Karachi Campus, Karachi-75270.

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Paramonostomum bilqeesae, new species
(Fig. 1)

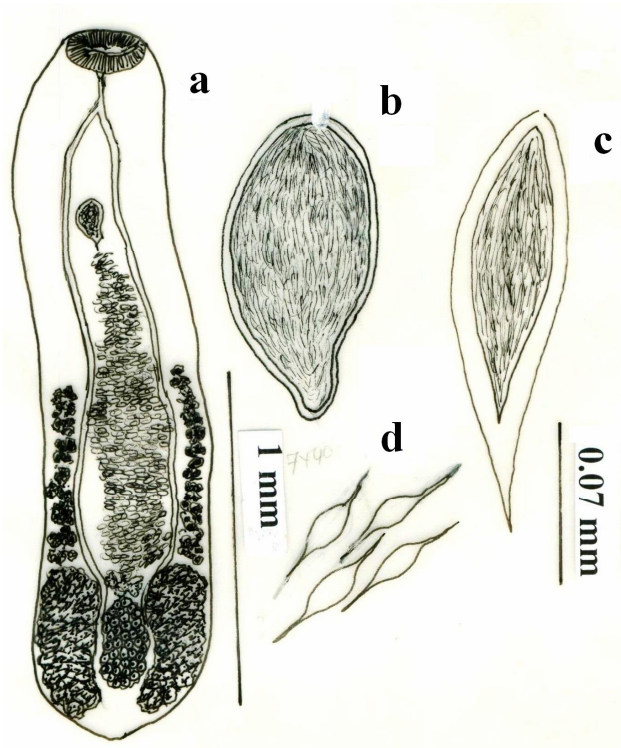

Fig. 1. *Paramonostomum bilqeesae* new species, a, entire worm, holotype; b, cirrus sac; c, cirrus sac in paratype specimens; d, eggs.

Description

Based on 4 adult specimens, with characters belonging to the genus *Paramonostomum* Lühe, 1909. Trematodes body was small, with a delicate thin cuticle. Total body size was 1.81–1.94 (1.87) mm by 0.35–0.48 (0.41) mm, maximum width acquired at the posterior, testicular region. Fore body was approximately ⅓ of total body length or 30% of the body length. Oral sucker was terminal, 0.12–0.125 (0.122) mm by 0.22–0.23 (0.22) mm in size. Oesophagus was relatively short measuring 0.09–0.1 (0.095) in length. Pharynx was absent. Ceca were long, terminated some distance above the posterior extremity (Fig. 1a).

Testes were situated in the posterior most region of the body, elongated, slightly flattened anteriorly with indented lobed walls. Left testis 0.31–0.33 (0.32) mm by 0.18–0.19 (0.18) mm, right testis is 0.41–0.48 (0.44) mm by 0.17–0.19 (0.18) mm in size. Male terminal genitalia was simple, comprises of a cirrus sac situated far behind the cecal bifurcation, enclosing the seminal vesicle, which has a broader, circular anterior portion, while the posterior region ends into a narrower end, in roughly mango shape (Fig. 1b).

However, in the paratype specimens the cirrus sac is elongated with its anterior end being quite pointed (Fig. 1c) and measures 0.11–0.12 (0.11) mm by 0.068–0.069 (0.068) mm, while the narrower portion measure 0.016–0.017 (0.016) mm in width. The genital opening was posterior to cecal bifurcation. Ovary lobed with irregular walls, intertesticular in position measuring 0.22–0.24 (0.23) by 0.10–0.13 (0.11) mm in size. Receptaculum seminis was irregular in shape, immediately above the ovary, with the size of 0.05–0.07 (0.06) by 0.09–0.1 (0.095) mm. Vitellaria was in posterior half of the body, consists of rounded, compact follicles, extracecal, arranged in lateral fields, and extend forward from base of the uterus up to nearly half length of the uterus at about mid of the body length. Uterus was extensive between the ovary and the cirrus sac with several intercecal-loops occupying nearly half of the body. Eggs were numerous, oval and elongated with or without polar filaments (Fig. 1d). The size of eggs without filaments 0.025–0.031 (0.028) by 0.01–0.01 (0.01) mm and polar filaments had a length of 0.065–0.07 (0.067) mm.

DISCUSSION

Lühe (1909) introduced the genus *Paramonostomum*. *Paramonostomum alveatum* Mehlis in Creplin, 1846 which is the type species for this genus has been isolated from the intestinal tract of the following organisms *Anas platyrhynchos*, *Clangula hyemalis*, *Somateria mollissima*, *Oidemia nigra*, *O. fusca*, *Nyroca marila*, *Mareca Penelope*, *Anser anser*, *Cygnus cygnus*, *C. olor* and *Branta bernicla* in Europe (Kossack, 1911). Lal (1936) reviewed the hitherto known species of the genus *Paramonostomum* on the basis of position of the genital pore. He further divided it into two genera, coining the name *Neoparamonostomum* for the second genus.

Harwood (1939) did not accept validity of Lal's genus. Yamaguti (1971) recognized two subgenera *Paramonostomum* and *Paramonostomoides* Groschaft and Tenora (1981) and Jones *et al.* (2005) did not accept it valid because of overlapping characters. Here we agree with them and no subdivisions are recognized. Later, 38 species were added to the genus *Paramonostomum*.

The present species differs from all the reported species of the genus in one or more characters. This species resembles *P. brantae, P. bucephalae, P. echinum, P. elongatum, P. microstomum, P. partum, P. microstomum punjabensis, P. macrovesiculum* and *P. kanpurensis* in having genital pore behind intestinal bifurcation. Other species have genital pore anterior to intestinal bifurcation or at the posterior level or near the oral sucker.

The present species differs from *P. macrovesiculum* which is the only species reported of this genus from Pakistan in a number of characters such as shape of the body, shape of the cirrus sac, shape of the ovary, absence of pharynx and in having a different host. The combination of diagnostic features separates the present specimens from all the previously described. Therefore a new species *Paramonostomum bilqeesae* is proposed. The species is named in honour of Prof. Dr. Fatima Mujib Bilqees for her extensive contribution to our knowledge of helminth parasites.

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