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**A Study About *Biacetabulum appendiculatum* Szidat, 1937  
(Cestoda: Caryophyllaeidea) on *Barbus plebejus escherichi*  
Steindachner, 1864**

Mustafa Koyun

Department of Biology-Zoology Section, Faculty of Science and Arth,  
Bingol University, Bingöl, Turkey

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**Abstract:** In this research, the parasitic infections of some fish species were studied and identified. During the study, six fish species have been recorded in Enne Dam Lake, namely; *Alburnus alburnus* (bleak), *Carassius carassius* (Crucian carp), *Carassius auratus* (golden carp), *Barbus plebejus escherichi* (barb), *Leusciscus cephalus* (chub) and *Nemacheilus* sp. (loach). From all this fish, *Biacetabulum appendiculatum* Szidat, 1937 was recorded only on barb. This cestode (tapeworm) species that is *B. appendiculatum* Szidat, 1937, synonym *B. siaboldi* Szidat, 1937 is known very rare as a fish parasites in the World. That was only one species known in America, in Cyprinids and Catastomidae and one species in Russia and in present study only one specimens was found on *Barbus plebejus escherichi*, that is very important for the parasitic fauna of Turkey and the world.

**Key words:** Enne Dam Lake, *B. appendiculatum*, *B. plebejus escherichi*

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## INTRODUCTION

Cestodes are an important parasite in freshwater ecosystems and also pathogen (Wyatt and Kennedy, 1989). Some metazoan parasites are responsible for fish mortality by causing directly or indirectly (Brown, 1989). For this reason the helminth fauna of fish parasite must be important in natural and artificial habitats.

*Biacetabulum appendiculatum* Szidat, 1937 is a Caryophyllydean cestode parasitizing cyprinid fish. The helminth fauna of fresh water habitats have rarely been studied and consequently little known about it, in comparison with lakes and breeding ponds and less studies have been conducted, so far on fish parasites at Enne Dam Lake of Turkey and this cestodes was first detected from Enne Dam Lake in our investigation. There wasn't any record before for this species in Turkey and also only a few studies are found in other country (Aydogdu *et al.*, 2000, 2001; Bychovskaya-Pavlovskaya, 1962; Gussev, 1985; Koyun, 2006; Koyun and Altunel, 2007). Therefore, the aim of this present study to report and add *Biacetabulum appendiculatum* for the fauna of Turkey.

## MATERIALS AND METHODS

Fish samples (*Barbus plebajus escherichi*) were caught with monthly intervals. Cashed fishes were transported to the laboratory alive. Fish were killed by a sharp blow to the head, The intestine tract (from oesophagus to vent) was removed and transverse sections were taken. The sections were examined for the presence of endoparasites with a

stereomicroscope. Parasite numbers were enumerated and stored in 70% ethanol for further examination. Identification was made according to the keys of Bychovskaya-Pavlovskaya (1962) and Bauer (1962). In this study, on *Barbus plebajus escherichi*, *Allecreadium isoporum*, *Biacetabulum appendiculatum* and *Pomphorincus leavis* were recorded, from this parasites *B. appendiculatum* was found only one specimens and also it was new species for Turkey. The parasitic specimens were fixed with 70% ethanol stained with Mayer's haematoxylin and after dehydration in alcohol series mounted in Canada balsam. The taxonomic classification of the parasites was done according to Baychovskaya-Pavlovskaya and Bauer.

#### Morphologic and Anatomic Structure

According to other member of cestodes, *B. appendiculatum* (Caryophyllaeidea) is rather small and slender worm Fig. 1. It can be distinguished easily from other Caryophyllydean cestode, differences of the cephalic shape and the measurements of eggs. Twenty one hundred micro meter long (1700-3200) and 700  $\mu\text{m}$  width in uterine region. Cephalic end round, slightly expanded at level of structural fossae (bothridia), two in number. Lying on dorsal and ventral surface of cephalic and. Cephalic structure is slowly active from anterior to posterior direction, neck unmarked, anterior boundaries of vitellaria and testes extend at same level, slightly behind cephalic expansion. Vitellaria extend at lateral sides of body, with interruption in region of ovary. *Vitellaria follicles* small, transversely elongated. Postovarial group of vitellariy follicles present. Testes medial between lateral rows of vitellaria and several rows in central portion of body between vitellaria rows. External seminal vesicle present. Ovary dumbbell-like shaped and 325  $\mu\text{m}$  width. Uterus medial, with numerous loops and extend far in front of cirral bursa. Eggs spherical shape and 54-58 (56) $\times$ 60-64 (62)  $\mu\text{m}$  in diameter.



Fig. 1: *Biacetabulum appendiculatum* total view x40

## RESULTS AND DISCUSSION

*Biacetabulum appendiculatum* is seen on Siluriformes and Cypriniformes fishes which are feed with benthic forms in general. This parasite is rather rare one in all over the World, because, when we scrutinized, scientific and parasitic datum, only a few studies have been found. So, we can say that this study must be very important for parasitic fauna of Turkey and the World. That was only a few species in America, in Cyprinids and Catastomidae and one species in Russia (Gussev, 1985), also one species on *Rutilus rutilus* in England were known (Kennedy, 1974). In present study, only one specimens was found in intestine of *Barbus plebejus escherichi* that is very important for the parasitic fauna of Turkey and World. According to Bychovskaya-Pavlovskaya (1962), this parasite was recorded in intestine of tenc, bream, barbel, white-eye bream, carp and dace. Progenetic larval form of species (*Archigetes appendiculatus* Ratzel) develops in coelom of Tubificidae (*Tubifex tubifex* and *Limnodrilus claparedeanus*); Zheimeni River (Litbuanian SSR), Dniester River basin, Donets and Volga Rivers. And named for this parasite in Turkey only in our study, so, it must be interesting for the parasitic fauna.

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