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Ophiotaenia europaea, from *Natrix natrix* of North of Iran

[1]M.R. Youssefi, [2]S.H. Hoseini, [2]I. Mobedi, [2]M.B. Ahoo and [3]M. Rajabloo

[1]Department of Parasitology, Faculty of Veterinary Medicine, University of Islamic Azad University, Babol Branch, Babol, Iran
[2]Department of Medical Parasitology and Mycology, University of Tehran, Tehran, Iran
[3]Department of Veterinary Parasitology, Faculty of Veterinary Medicine, University of Tehran, Tehran, Iran

Abstract: The tapeworm Ophiotaenia europaea is a common parasite of Asian water snakes, the grass snake (*Natrix matrix*) and the dice snake (*N. tessellata*). Ophiotaeniidae was considered to be a distinct proteocephalidean taxon which was characterized by a three host life cycle. We found *Natrix natrix* killed around Islamic Azad University, Babol Branch and after necropsy. The morphologic and morphometric data allowed to conclude that the tapeworm involved in the parasitism was a species of the genus *Ophiotaenia*.

Key words: *Ophiotaenia europaea* · Natrix matrix · Morphometric · Iran

INTRODUCTION

The tapeworm *Ophiotaenia europaea* is a common parasite of Asian water snakes, the grass snake (*Natrix natrix*) and the dice snake (*N. tessellata*). Its life-cycle has been studied by many authors [1, 2]. As a result, a three-host life-cycle has been suggested in which copepods serve as the first inter- mediate hosts and fish or amphibian tadpoles are the second intermediate hosts [2].

Freze [3] considered the Ophiotaeniidae to be a distinct proteocephalidean taxon which was characterized by a three host life cycle. The validity of this family, however, has not been accepted. In addition, the studies by Wood [4] and Mead and Olsen [5] on Ophiotaenia filaroides, a North American parasite of tiger salamanders (Ambystomat tigrinum), have revealed a two-host life-cycle with a tissue phase in the development of the metacectode within the final host, followed by a migration to the gut [6, 7].

Taxonomic studies on the *Ophiotaenia* genus have showed that there are more than 70 species reported in the world. We describe the detection of *Ophiotaenia erupica* in a *Natrix natrix* in Iran, which is the first report of an infected *Natrix natrix* in Iran.

Case Report: We found *Natrix natrix* killed around Islamic Azad University, Babol Branch and after necropsy we examined the digestive tract for endoparasite with screen (Mesh 70). The specimens were fixed and preserved in a solution composed of 70 % ethanol and formalin 10% then studied in wet and temporary mounts. For definitive identification we sent samples to Veterinary Parasitology Museum in University of Tehran. Worm recovery, fixing the staining by carmine acid procedures. Dissected rostellum was mounted in aceto carmine. The number, shape and morphological characteristics of the mature segment were studied. Obtained 1 Cestod helminthes which were identified as *Ophiotaenia erupica*. The worm tends to be white, thick bodied.

The observed morphologic characteristics were the following: unarmed scolex, with four suckers, 95.2 μm diameter; short neck, strobile acraspedote; imature proglottids 390 μm long and 1820 μm wide; mature proglotidds 1626μm long and 2084μm wide; gravid proglottids 1780 μm long and 2161μm wide; genital pore irregularly distributed, opening in the middle of the proglottids; vagina anterior or posterior to the cirrus pouch; cirrus pouch 461μm long and 191μm wide; testicle in two separated fields; ovary 1512 μm wide, vitellines distributed as a lateral line, uterus with numerous lateral diverticules.The morphologic and morphometric data allowed to conclude that the tapeworm involved in the parasitism was a species of the genus *Ophiotaenia*.

Corresponding Author: Mohammad Rajabloo, Department of Veterinary Parasitology, Faculty of Veterinary Medicine, University of Tehran, Tehran, Iran. Tel: +989356029087, E-Mail: rajabloo.mohammad@gmail.com.

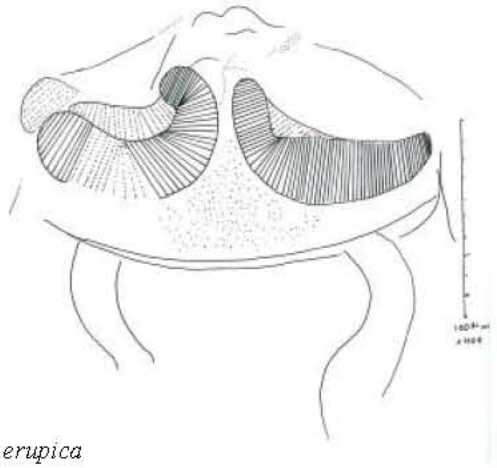


Fig. 1: Anterior end of *Ophiotaenia erupica*

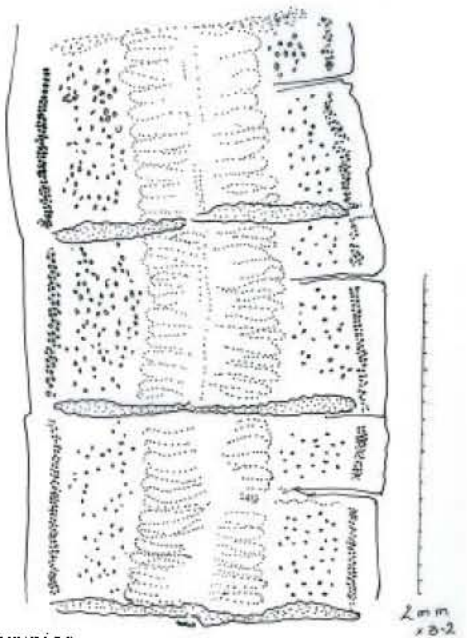


Fig. 2: Mature segment of *Ophiotaenia erupica*

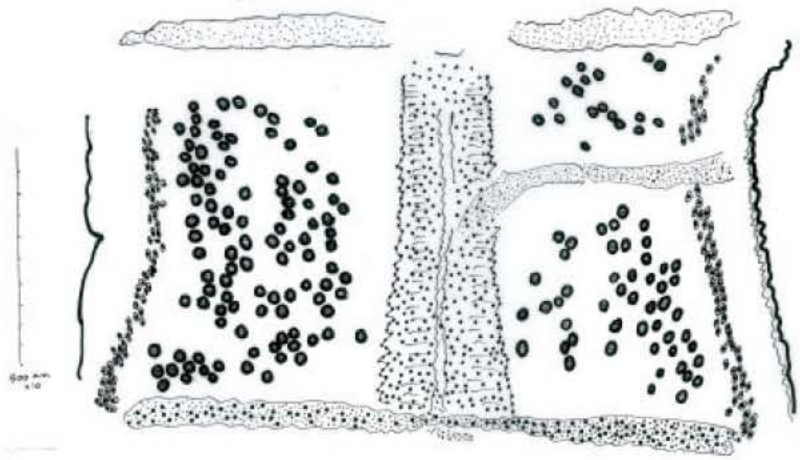
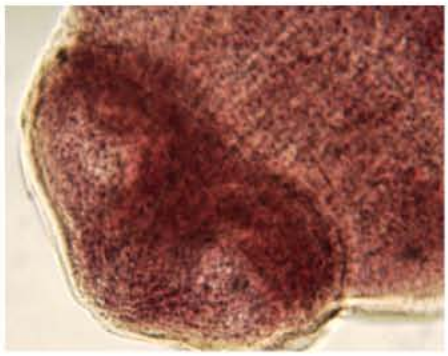
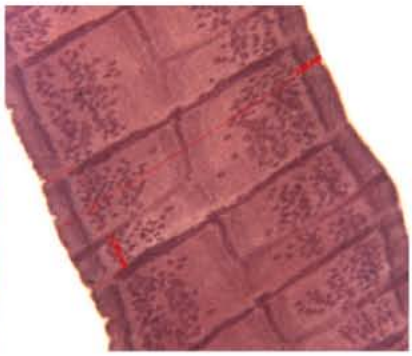


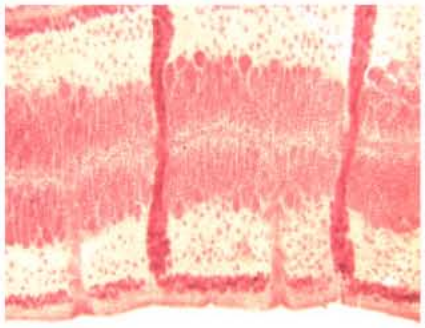
Fig. 3: Gravid segment of *Ophiotaenia erupica*



Scolex



Immature segment



Mature segment

Gravid segment

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