

Parasite Fauna of Greater weever (*Trachinus draco* Linnaeus, 1758)

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A lot of 87 greater weever (Trachinus draco Linnaeus, 1758) caught in the period April - May 2002 around the Gökçeada were investigated parasitologically. In 57 (65.52 %) of these fish, 5 species of parasites were observed. The parasites were determined as Aspinatrium trachini (Monogenea), Helicometra fasciata (Digenea), Contraeaecum fabri (Nematoda), Botriocephalus scorpii (Cestoda) and Stibadobdella loricata (Hirudinea).

Key words: Gökçeada, Greater weever, Monogenea, Digenea, Nematoda, Certoda, Hirudinea

INTRODUCTION

The demand for food is increasing with the increase of the world population, so countries are taking measures to meet this need. One of these measures is to utilize water resources to the utmost. Fishing and farming are the major ways of usage. Parasites and their effects, which are not noticed in their habitat despite of causing many problems and being frequently encountered during growth, adversely affect this progress.

Approximately, 300 fish species are living in the Aegean Sea (KOCATAŞ & BILECIK, 1992) which forms a rich biotope for fisheries, and 144 species around Gökçeada (ULUTÜRK, 1987). The greater weever, which is a commercially important fish in many countries, is not considered commercially interesting in Turkey, despite its delicious meat (YÜCE, 1998). The major reason for this is the presence of poisonous

thorns on its dorsal fins that are strong enough to cause serious injuries.

There are some studies of Gökçeada in the literature (TARKAN, 2000; AVŞAR & ERGIN, 1988; DEDE, 1998; AKMIRZA, 2002), but there are no studies of the parasite fauna of the greater weever. Our objective is to fill this gap.

MATERIALS AND METHODS

Greater weever samples caught by gill nets and long-line in April and May 2002 were put in aquariums in the laboratory and were kept alive until its sacrifice and dissection. Firstly ectoparasite and then endoparasites were studied in these investigations. Ectoparasites and endoparasites were put in Petri dishes with seawater and physiologic water respectively. These parasites were observed *in vivo*: Monogenea samples were placed in 70 % alcohol solution Digenea, Nematoda and

Cestoda samples were placed in AFA solution to be used for further investigations. All found parasites were processed by standard methods (BYLUND *et al.* 1980; KRUSE & PRITCHARD, 1982) for examination by light microscopy. Latter on samples were also prepared as permanent slides and photographed. The following papers of BYKHOSKAYA-PAVLOVSKAYA *et al.* 1964; PETTER & MAILLARD, 1987; YAMAGUTI, 1958, 1959, 1962, 1963; DEMIRSOY, 1998 were used for identification of the parasites. The paper of AKŞIRAY, 1987 was used for identification of the fish. The measurements were carried out by using a micrometric ocular.

RESULTS

In total 87 of the greater weever caught around the Gökçeada were investigated parasitologically. The parasites were found in 57 of them (65.52 %), 5 species of which belong to Monogenea, Digenea, Nematoda,

Cestoda, and Hirudinea group. 33, 22, and 2 fish were parasitized upon by species 1, 2, and 3, respectively. The parasite species detected in the greater weever and their infection rates are given in the Table 1. The data of polyparasitism are given in the Table 2. The systematic, morphologic and anatomic properties and original photographs of these parasites are shown below.

Systematic accounts

Class : Trematoda

Order : Monogenea

Family : Microcotylidae

Aspinatrium trachini (Parona & Perugia, 1889)

Synonym : *Microcotyle trachini* Parona & Perugia, 1889

Microcotyle draconis Briot, 1904

Table 1. Parasites species detected in the greater weever caught around Gökçeada and their infection rates (N.F.I.: Number of Fish Investigated; N.F.P.: Number of Fish with Parasite; T.N.P: Total Number of Parasites)

Species of parasites found	Habitat	N.F.I.	N.F.P.	T.N.P.	Prevalence	Abundance		
						Min.	Max.	Ave.
<i>Aspinatrium trachini</i>	Gill	87	6	9	6.90	1	3	1.5
<i>Helicometra fasciata</i>	Intestine	87	19	73	21.84	2	9	3.84
<i>Contraecum fabri</i>	Intestine	87	52	461	59.77	1	23	8.87
<i>Bothriocephalus scorpii</i>	Intestine	87	5	26	5.75	2	11	5.2
<i>Stibarobdella loricata</i>	Skin	87	1	1	1.15	1		1

Table 2. The data of polyparasitism in Greater weever

N.F.I.	Number of fish with parasite		With one species		With two species		With tree species	
	N	%	N	%	N	%	N	%
87	57	65.52	33	37.93	22	25.29	2	2.30

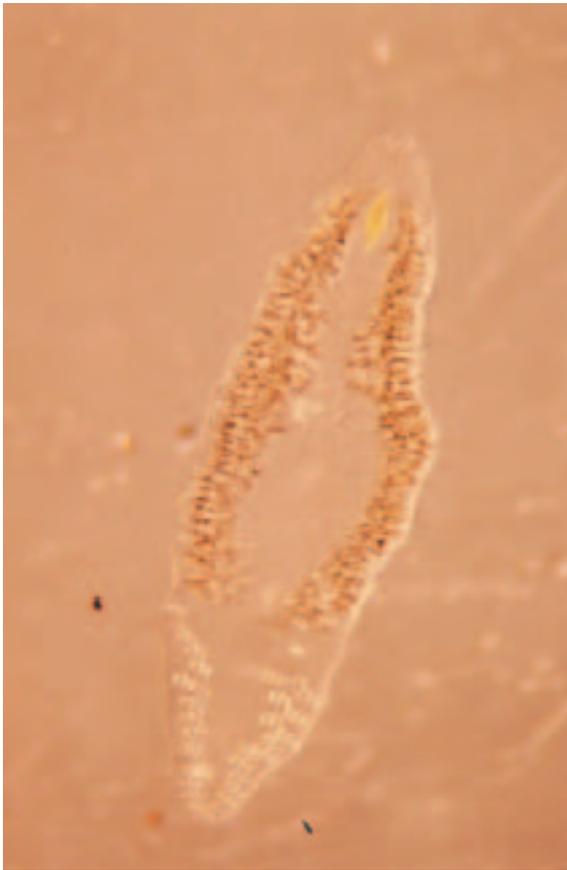


Fig. 1. *Aspinatrium trachini*

Length 3.2 (2.7 – 4.1) mm, width 0.7 (0.62 – 0.79) mm, mouth located subterminally and ventrally, testes are approximately 50-55 in number, clamps consist of two rows in the prohaptor are approximately symmetric and are number approximately 18-26 and similar in size (0.09 mm).

Order : Digenea

Family : Opecoelidae

Helicometra fasciata (Rudolphi, 1819)

Synonym : *Distoma fasciatum* Rudolphi, 1819 nec Stossich, 1885

Allocreadium fasciatum (Rudolphi, 1819) Odhner, 1902

Helicometra mutibilis Stossich, 1903



Fig. 2. *Helicometra fasciata*

Body is oval: 2.2 (1.9-2.6) mm in length, 0.67 (0.61-0.70) mm in width. Mouth sucker is subterminal, circular (diameter: 0.17 mm). Prepharynx and esophagus are short. Ceca terminating at posterior extremity. Ventral sucker is in the anterior region, and has a diameter of 0.25 mm. Two testes (length about 0.33 (0.3 –0.4) mm) with lobes are localized tandem. Ovary also with lobes is placed in front of the testes. Uterus is winding between ovary and ventral sucker. The pear shaped eggs are 0.075 mm in length and 0.03 mm in width.

Class : Nematoda

Order : Ascarida

Family : Anisakidae

Contraecum fabri (Rudolphi, 1819)

Synonym : *Ascaris fabri* Rudolphi, 1819

In the larval phase, the species is of 18 (10-28) mm in length and the esophagus 0.62



Fig. 3. *Contracaecum fabri*

(0.32-1.42) mm. The intestinal caecum is short 0.069 (0.055 - 0.082 mm) and the esophageal caecum is long (0.87 (0.59 - 1.48) mm).

Class: Cestoda

Order: Pseudophyllidea

Family: Bothriocephalidae

Bothriocephalus scorpii (Müller, 1779)

Synonym: *Bothriocephalus punctatus*

(Rudolphi, 1802)

Bothriocephalus bipunctatus (Zeder, 1800)

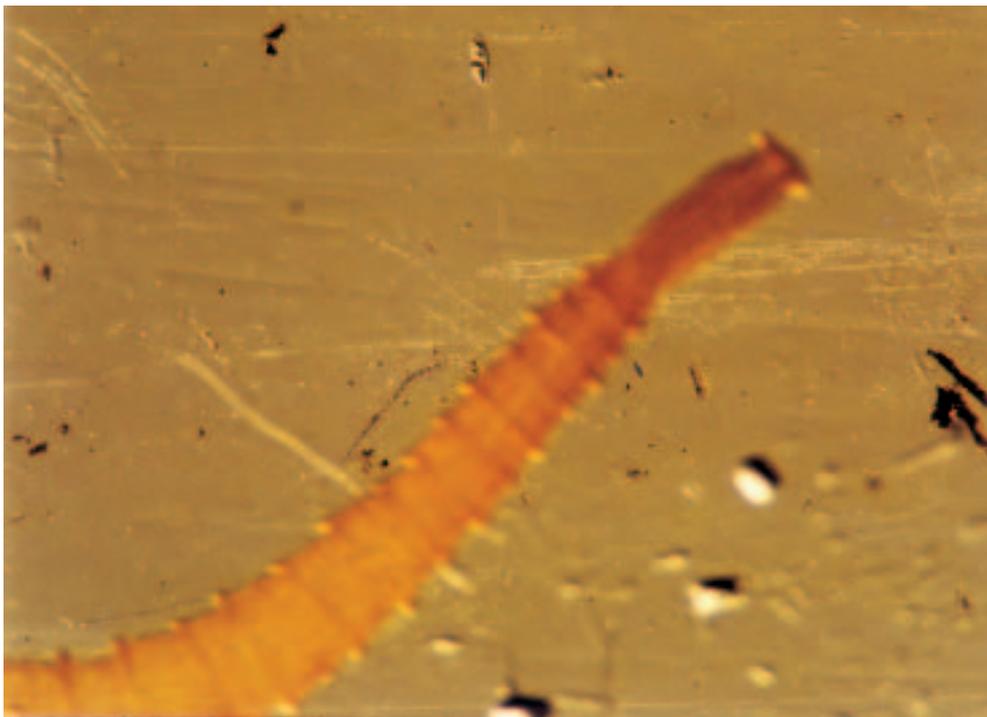


Fig. 4. *Botriocephalus scorpii*



Fig. 5. *Stibarobdella loricata*

This species is characteristic with its long, flat, almost rectangular head with apical discs, and two lobes. The head is 1.5 (0.85-2.6) mm in length and 0.39 (0.31-0.47) mm in width. There isn't any neck. Segmentation starts at backside of head. Strobila has many proglotis, which are narrow near the head, and more and more enlarged approaching to the end.

Class : Hirudinea

Order : Rynchobdella

Family : Piscicolidae

Stibarobdella loricata (Schmarda, 1861)

This parasite has a trunk that can be flung out at the front end of the digestive system, there is evidence of oral and caudal suckers, and a cylindrical body. There are three annuli per segment. This parasite has not eyespot on the caudal sucker, but has a lot of photoreceptors. This parasite is 6.95 mm in length and 0.61 mm in width. The lengths of front and rear suckers are 0.33 and 0.22 mm respectively, and the width of both is 0.28 mm.

DISCUSSION AND CONCLUSIONS

In this study, 570 parasites belonging to 5 species was encountered in 57 greater weever from a sample of 87. The species most often observed was *Contracaecum fabri*

(Nematode) with a prevalence of 59,77%. This parasite is not host specific, but is seen in many species of fish. This parasite was found in 23 fish species around the Adriatic Sea (PETTER & RADUJKOVIĆ, 1989). Near Gökçeada 2 fish species that belong to the Sparidae family (*Diplodus annularis*, *Spondylisoma cantharus*) also were observed carrying this parasite (AKMIRZA, 2000).

Helicometra fasciata (Digenea) is the second most prevalent parasite after *Contracaecum fabri* with a prevalence of 21,84 % and is observed in many fish species (RADUJKOVIĆ *et al.*, 1989). This parasite was found in 7 different fish species around the Gökçeada besides the greater weever (AKMIRZA, 2001).

Aspinatrium trachinii, a monogenetic trematod, is specific to the greater weever and

was observed on *Trachinus radiatus* as well as on *Trachinus aeraneus* (PAPOUTSOGLU, 1976, RADUJKOVIĆ, 1989).

The damage caused by parasites in fish differs not only with the species of parasite, but also with the abundance of these parasites. The abundance of nematode parasites in some fish is

between 200-400, whereas the abundance value is much lower for the greater weever encountered in Turkey (PORA, 1979). The abundance values of the other parasites are also low, therefore it can be concluded that the parasitic risk is very low around the Gökçeada.

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Parazitska fauna pauka bijelca (*Trachinus draco* Linnaeus, 1758)

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SAŽETAK

Između travnja i svibnja 2000. godine uhvaćeno je oko otoka Gökçeada 87 primjeraka pauka bijelca (*Trachinus draco* Linnaeus, 1758) na kojima je izvršena parazitološka analiza. U 57 riba (65.52 %), pronađeno je 5 vrsta parazita, a to su *Aspinatrium trachini* (Monogenea), *Helicometra fasciata* (Digenea), *Contracaecum fabri* (Nematoda), *Botriocephalus scorpii* (Cestoda) i *Stibadobdella loricata* (Hirudinea).

Ključne riječi: Gökçeada, pauk bijelac, Monogenea, Digenea, Nematoda, Cestoda, Hirudinea