

# The Helminth Fauna of Adriatic Roach (*Rutilus rubilio*) in Iznik Lake

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## Abstract

Sixty-five roach (*Rutilus rubilio*) in Iznik lake were examined for helminth parasites. A total of 3 species of helminth parasites were found on 57 of 65 fish examined. The following parasites were found : 168 *Dactylogyrus sphyrna*, 73 *Neoechinorhynchus rutili* , 9 *Eustrongylides* sp

There are no published records of helminth fauna of *R. rubilio* in Turkey. The aim of this study therefore, was to increase our knowledge of the helminth parasites of *R. rubilio* in Turkey

Sixty-five Adriatic roach (*R. rubilio*) were caught by fishermen in Iznik lake in May, June, July 1997 and June, July, August 1998. Fish were immediately placed into a tank containing local lake water and transported to the laboratory for helminthological dissection. During the dissection all internal organs (liver, kidney, heart, intestine the gill filaments, the eyes, the fins and the skin) were examined. The examinations included dissections under stereomicroscope and the helminthological findings observed were recorded. The taxonomic classification of the parasites observed was done on the basis of Bychovskaya-Pavloskaya (1964), Yamaguti (1958, 1963), Markevic (1950) and Moravec (1994).

*Dactylogyrus sphyrna* was found on the gill filaments. The prevalence of *D. sphyrna* infections in *R. rubilio* was 67.2%. The species has not previously been found in Turkey and this study presents the first record. *Dactylogyrus*

*sphyrna* has been reported previously as a parasite of *R. rutilus*, *Blicca björkna*, *Abramis brama*, and *Vimba vimba* (Markevic 1951) in Germany, Poland, Hungary (Lambert 1977) and Finland (Koskivaara and Valtonen 1991). In addition, the present work is a new record for geographical distribution extending it to Turkey. Representatives of the genera *Eustrongylides* sp. have been found in larval stages, Infestation prevalence was lowest in fish (3.6%). The level of species could not be identified. In this case, the genus *Eustrongylides* could not be indentified to species level. Generally, *Eustrongylides* sp. are found in birds, but their larval stages have been recorded in fish, frogs and reptiles living close to the water (Yamaguti, 1961), thus it is unsurprising for the present study to report them in *R. rubilio*.

The prevalence of *Neoechinorhynchus rutili* Müller 1878 was 29.2%. This species, an acanthocephalan worm parasitizing the small intestine of freshwater fish, was redescribed by Van Cleave (Van Cleave and Lync 1750). The authors reported its distribution to be continuous throughout the northern holoretic region,

including Sweden, Finland, Russia, Central Europe. The adult worm is found in 14 families of fish; Salmonidae, Thymymallidae, Cyprinidae (Golvon 1959). However *Neoechinorhynchus rutili* larvae were observed also in other invertebrates (Leeches, Megopteras) serving probably only as paratenic hosts (Moravec 1984). *Neoechinorhynchus rutili* and *Eusterongylides* sp. have previously been found by the current authors on *Cyprinus carpio* (Aydogdu et al. 1997a), *Rutilus frisii* (Aydogdu et al. 1997b), *Silurus glanis* (Aydogdu et al. 1996a) and *Tinca tinca* (Aydogdu et al. 1996b). The record of *Neoechinorhynchus rutili* and *Eusterongylides* sp in *R. rubilio* provides a further example.

## References

- Aydogdu A, Yıldırımha H.S, and Altunel F.N.,(1996a) An investigation on catfish (*Silurus glanis* L.) in Iznik lake. XIII. National Biology Congress 63- 70.
- Aydogdu A, Yıldırımhan H.S, and Altunel F.N.,(1996b) An investigation on parasites of Tench (*Tinca tinca* L .) in Iznik lake. T. parazitoloji Dergisi. 20(2): 261-270.
- Aydogdu A, Yıldırımhan H.S, and Altunel F.N.,(1997a) An investigation on some metazoon parasites of Common carp (*Cyprinus carpio* L .) in Iznik lake. T. parazitoloji Dergisi. 21(4): 442-445
- Aydogdu A, Yıldırımhan H.S, and Altunel F.N.,(1997b) An investigation ekto and endo helminth of Roach (*Rutilus frisii* L.) caught in Iznik lake. IX . National water product symposium 431-437
- Bykhovskaya -Pavlovskaya, E, Gusev AV, Dubinina MN, et. al.(1962) Key to parasites of freshwater fish of the USSR ( ed. Pavlovskii Leningrad, (Translated from Russian:IPST, Jerusalem, 1964).
- Golvon Y.J.(1959) Le phylum des acanthocephala la classe des Eoacanthocephala. Ann. Parasit , 35,45-53.
- Koskivaara. M., Valtonen E. T.(1991) *Dactylogyrus* (Monogenea ) communities on gill of roach in three lakes in Central Finland. Department of Biology, University of Jyvaskyla, 40100 Jyvaskyla. Finland
- Lambert, A. P.(1977) Les Monogenes Monopistocotylea parasites des poissons d'eau douce de la France mediterraneenne. Laboratoire de sciences et Techniques du Languedoc, Place E. Bataillon ,34060 Montpellier Cedex, France.
- Markevic A.P.(1951) Parasitic fauna of fresh waterfish of the Ukranion, (Israel program for scientific translation Ltd.)
- Moravec F.(1984) Seasonal occurrence and maturation of *Neoechinorhynchus rutili* in carp of Macha lake fish pond system, Czechoslovakia *helmintologia* 21:55 - 65
- Moravec F.(1994) Parasitic nemotodes of freshwater fishes of Europe. Kluwer Academic publishers,
- Van Cleave H.J. and Lync J. E.(1950) The circumpolar distribution of *Neoechinorhynchus rutili* an Acanthocephala parasite of freshwater fishes. Tr. Am. Micr. Soc. 69. 156- 171.
- Yamaguti S.(1961) *Systema Helminthum* Nematoda of fishes and amphibians. John Wiley and Sons, London.