The first record of *Philometra rischta* (Nematoda: Philometridae) in *Blicca bjoerkna* of Anzali wetland, Iran

Tajbakhsh F.[1]; Pazooki J.[1]*; Masoumian M.[2]; Daghigh Rouhi J.[3]

Received: April 2009 Accepted: September 2009

1- Faculty of Biological Sciences, Shahid Beheshti University G.C, Tehran, Iran.
2-Iranian Fisheries Research Organization P.O.Box: 14155-6116 ,Tehran, Iran.
3-Inland Water Aquaculture Research Center P.O.Box: 66,Bandar Anzali ,Iran.
*Corresponding author's email: pazooki2001@yahoo.com

Keywords: Philometridae, *Blicca bjoerkna*, Caspian Sea, Iran

The aim of the present study was to report *Philometra rischta* from *Blicca bjoerkna* from the Caspian Sea. During this study, from August (2008) to April (2009), 78 fish specimens were collected and transferred to the aquatic research laboratory of Shahid Beheshti University and were examined for parasitic infection. Parasites were fixed in formalin (10%). The parasites were indentified according to standard keys (Moravec, 1994, 1998). Prevalence (total of infected fish per total of fish) and mean intensity (number of parasite per total of infected of fish) were calculated for this parasite.

According to the results, *P. rischta* (Skrjabin, 1923) was detected from abdominal cavity, gill and operculum of *B. bjoerkna*. Prevalence and intensity of infection were estimated as 12.8% and 1.4, respectively. This is the first record of *P. rischta* from Iran. Anzali Wetland is an international wetland (listed under Ramsar convention), located in the southwestern Caspian Sea. There are several reports of fish parasite from Anzali Wetland (Sattari, 1996; Sattari & Faramarzi, 1997; Asadzadeh Mangili *et al*. 2000; Sattari *et al*. 2001). Philometrid nematodes are common and frequent in the freshwater and marine fishes (Molnar & Pazooki, 1995). Due to the morphological and biological peculiarities, many species of this family remain undiscovered or poorly known to date (Chabaud, 1975; Moravec, 2004). Identification of Philometridae mostly has been done by gravid female of this family (Molnar & Pazooki, 1995). *P. rischta* is a nematode with smooth cuticle, cephalic papillae, muscular esophagus and well developed esophageal gland, gravid females with larvae in uterus yellow-red to red in colour, 30-42 mm in length, male body whitish, and 1.53-2.05 mm in length. It occurs mainly in lakes and in the lower and middle depth of rivers (Moravec, 1994), and infects the numerous of cyprinid fishes (Molnar, 1966).Gravid females of *P. rischta* with larvae in uterus were found on inner surface of operculum and abdominal cavity, also huge numbers of larvae were found on gill cavity and subcutaneous tissues of the head. The length of gravid female and larvae were measured as 2.7-3.1 cm and 0.37-0.42 mm, respectively (Fig. 1).

[Downloaded from jifro.ir on 2026-11-23]

[DOR: 20.1001.1.15622916.2010.9.3.14.0]

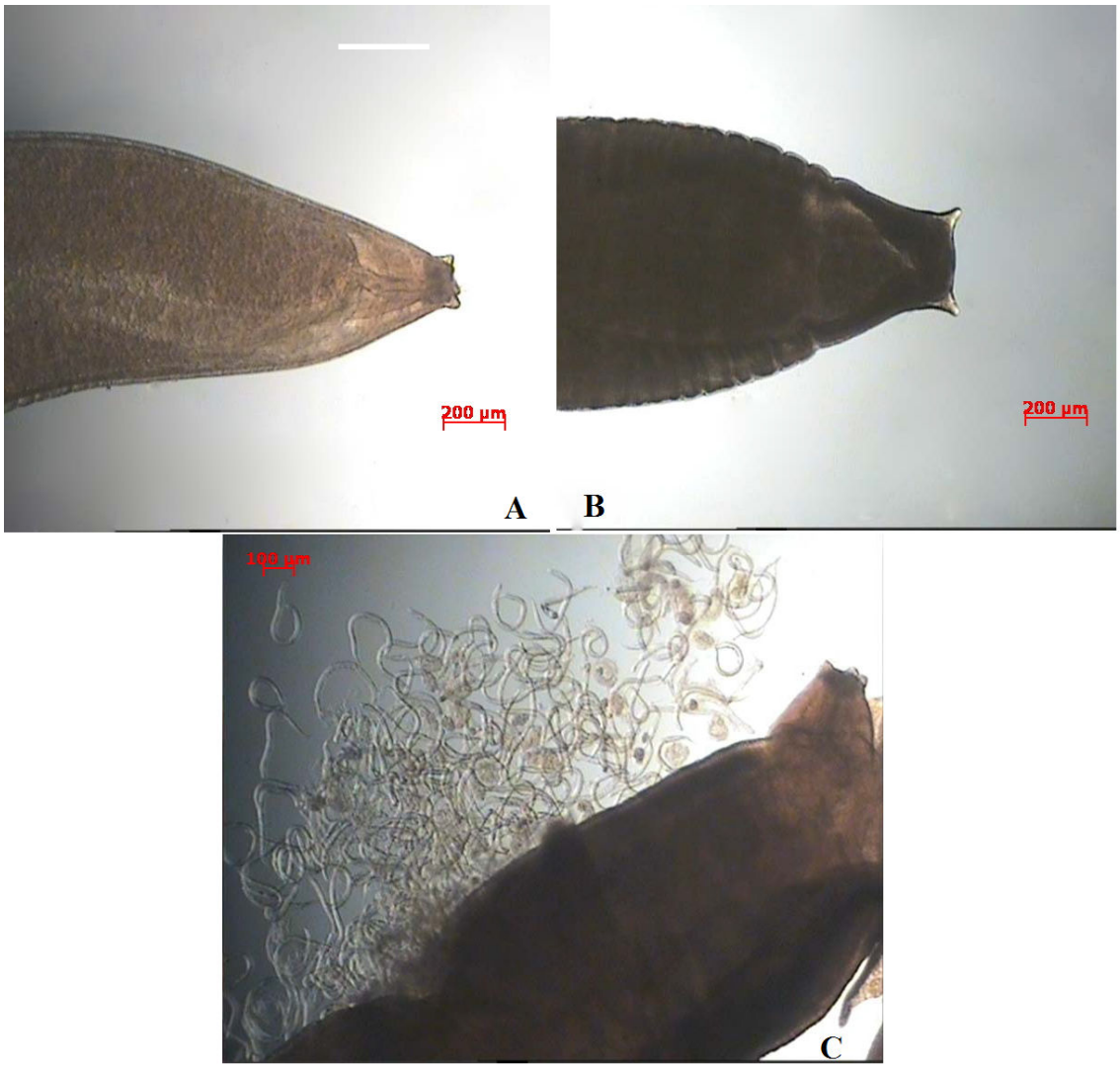

Figure1: *Philometra rischta*: A) Anterior end of a female; B) Posterior end of a female; C) Fertilized female with larvae

P. rischta occurs in different areas of Europe, and outside Europe it was observed in the River Amur and Lake Baikal (Moravec, 1994). Several reports of Philometridae in Iran were published by Ebrahimzadeh & Nabawi (1975) and Moghainemi & Abasi (1992). These authors identified *Philometra* specimens only to the genus level. Molnar & Pazooki (1995) and Pazooki & Molnar (1998) studied *Philometra* infection in Iranian barbells. According to Molnar (1966), *P. rischta* infects numerous cyprinid fishes and occurs especially on *Alburnus alburnus*. 1 to 35 female worms were found in a single host. Our findings have shown the presence of *P. rischta* gravid female on *B. bjoerkna* with frequency 1 to 3 in a single fish. The maturity of this species in the definitive host is strongly

[Downloaded from jifro.ir on 2026-11-23]

[DOR: 20.1001.1.15622916.2010.9.3.14.0]

related to season. In the Lake Balaton and River Danube, the fully development gravid female occurred at the end of May and at the early of June (Molnar, 1966). Lewaschoff (1929) observed *P. rischta* gravid female (containing larvae) in the River Volga as late as in July. At the present study, gravid females with larvae in uterus were observed at the mid-April and high numbers of larvae were found on gill cavity and skin of the head. Environment temperature traced on the rate of larval development (Molnar, 1966) and it seems *P. rischta* life cycle depends on the water temperature. Anzali Wetland temperature might be higher than Lake Balaton, River Danube and River Volga, explaining finding of the fully developed females in mid April.

Acknowledgments

We thank to Dr. Mehdinejad, former Head of the Fisheries Research Center in Anzali (Iran) and the staff of the Ichthyology Department for their help to collect samples.

References

Asadzadeh Mangili, A., Mokhayyer, B. and Jalali, B., 2000. [Health assessment of external parasites of culture Cyprinidae in pen culture of Anzali Lagoon]. *Pajouhesh and Sazandegi*, **47,** 96-101. (in Persian)

Chabaud, A. G., 1975. Keys to genera of the order Spiruridae. Part1. Camallanoidae, Dracunculidae, Gnathostomatidae, Physaloteroidae, Rictularoidae and Thelazioidae. CIH keys to the nematod parasites of vertebrates Vol. 3. Commonwealth Agricult. Bureaux, Farnham Royal, Bucks, 27pp.

Ebrahimzadeh, A. & Nabawi, L., 1975. [Survey on parasitic in infection in the fishes of Karun River]. Iran:Chamran University Publication, 87, 1-34. (in Persian)

Lewaschoff, M.,1929. Beitrage zur Kenntniss der Parasitischen Nematoden des unteren Volgagebiets. Z. *Parasitenk*, 2, 121-128.

Moghainemi, R. S. & Abasi, S., 1992. [Parasitic fauna of economically important fishes from Hoor-Elazim Marsh]. IFRO Publication, pp. 80. (in Persian)

Molnar, K., 1966. Life history of *Philometra ovata* (Zeder, 1803) and *Ph. rischta* Skrjabin. 1917: *Acta Veterinaria Hungarica*, **16**,227-242.

Molnar, K. & Pazooki, J., 1995. Occurrence of Philometrid nematodes in barboid fished of River Karun, Iran. *parasitology of Hungarica*, 28, 57-62.

Moravec, F., 1994. Parasitic nematodes of freshwater fishes of Europe. Dordrecht :Kluwer Academic Publishers.

Moravec, F., 2004. Some aspects of the taxonomy and biology of Dracunculid nematodes parasitic in fishes: a review. *Folia Parasitologica*. 51, 1-13.

[Downloaded from jifro.ir on 2026-11-23]

[DOR: 20.1001.1.15622916.2010.9.3.14.0]

Pazooki, J. & Molnar, K., 1998. *Philometra karunensis* sp. n. (Nematoda: Philometridae) from *Barbus sharpeyi* (Pisces) in freshwaters of Southwest Iran. *Acta Veterinaria Hungarica*, 46(**4**), 465-471.

Sattari, M., 1996. [A study on parasitic infection of pike in Anzali wetland], 30, 174-175. (in Persian)

Sattari, M., and Faramarzi, N., 1997. [A study oninfection of fishes of Anzali wetland with parasites of Genus *Caryophyllaeus*]. *Pajouhesh & Sazandegi*, 5(**4**), 63-72. (In Persian)

Sattari, M., Roostaei, M. and Shafii, S., 2001. [Occurrence and intensity of *Raphidascaris acus* (Nematoda: Anisakidae) in some fish species of Anzali wetland in the southwest of the Caspian Sea (Iran)]. *Pajouhesh & Sazandegi*, 52, 79-83. (In Persian)

[Downloaded from jifro.ir on 2026-11-23]

[DOR: 20.1001.1.15622916.2010.9.3.14.0]