Occurrence of *Ophidonais serpentina* in *Potamon persicum* from Jajrood River, Iran

Ardalan, A. A.[1]; Mooraki, N.[1*]; Sadeghi M. S.[1]

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1- Faculty of Marine Science and Technology, Islamic Azad University, North Tehran Branch, Tehran, Iran.
*Corresponding Author's email: Nargess_Mooraki@Yahoo.com

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Crustaceans are ecologically important, because of their effective role in food web and community structure of ecosystems. Taxonomic identity of fresh water crabs has been studied in Iran representing Potamidae family as dominant fluvial crabs (Khatami, 2001). Khatami (2001) also recorded an unknown oligochaete in the mantle cavity of fresh water crab *"Potamon persicum"*. The present study further separated and identified an oligochaete from *Potamon persicum* in Jajrood River, east of Tehran, Iran.Two hundred and fifteen specimens of *Potamon persicum* were collected using a trap during four seasons from Jajrood River (51º 41´ to 51º 48´N and 35º 37´ to 35º 47´E) during March to August 2004. Crab specimens were taken to the research laboratory in plastic tanks filled with river water. Crabs were dissected after biometry and the mantle and branchial cavities were examined for existence of oligochaet specimen by using of stereomicroscope 100 × magnification (Hickman et al., 1988; Lal, 1998). Separated oligochaets were preserved in 4% formaldehyde, stained with Asocarmine and lactophenole, dehydrated in a graded alcohol series 50, 70, 90, 96 and 100% followed by alcohol-xylene and the xylene, mounted in DPX (Klemm, 1985). The identification was carried out using the taxonomic keys (Pennak, 1978; Merritt and Cunnis 1996; Wetzel and Taylor 2001; Wetzel et al., 2002; Rebi et al., 2004). Prevalence (total of crabs containing oligochaets) and the mean abundance of oligochaets per total number of crabs were calculated, and to determine the hypotheses that these two indices differ significantly between male and female crabs as well as among four seasons, analysis of similarity (ANOSIM) in PRIMER version 6 (Plymouth Marine Laboratories, Clarke and Warwick, 2001) were was used. The separated specimen as a new report from the Iran fresh water fauna was identified as a member of Phylum: Annelida, Class: Oligochaeta, Family: Naidaidae, Subfamily: Naidinae, Genus/Species: *Ophidonais serpentina* (Muller, 1773) (Figure 1).Prevalence and mean abundance of *Ophidonais serpentina* in *P. persicum* were 8.3% and 0.15± 0.004

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respectively. There were no significant differences between the prevalence and mean abundance of *O. serpentia* in male and female crabs (*p>0.05*, with Global R= 0.07 and 0.23 respectively) (Table 1). Although, the prevalence and mean abundance of *O. serpentia* were higher in crabs with larger carapace length, no significant differences were found in prevalence and mean abundance of *Ophidonais serpentina* with respect to its host size (Global R=0.78, *p>0.05*) (Table 2). Likewise, no significant seasonal variations were detected in prevalence and mean abundance of *O. serpentia* (Global R=0.58, *p>0.05*) (Table 3). The present study is the first record of *O. serpentia* in Iran.

Table 1: Prevalence and abundance (Mean ±S.D.) of *O. serpentia* according to host sex

	Female	Male
Prevalence	6.70	9.20
Mean abundance	147±2.05	153±1.87

Table 2: Prevalence and abundance (mean ±S.D.) of *O. serpentia* according to carapace length groups (mm)

	<35	35-40	40<
Prevalence	9.00	5.00	10.00
Mean abundance	1±0.002	1±0.001	2±0.001

Table 3: Prevalence and abundance (mean ±S.D.) of *O. serpentia* in different seasons

	Spring	Summer	Autumn	Winter
Prevalence	10.33	6.00	9.00	7.00
Mean abundance	2±0.001	3±0.000	4±0.000	1±0.001

This species has been reported before by Ohtaka and Nishino (1999) in Biwa Lake, Japan; Arsalan and Sahin (2004) in Sakarya River basin, Turkey; Martinovic-Vitanovic et al. (2007) in Danube River, Belgrade, and George et al. (2009) in Niger Delta, Nigeria. In this specimen, dorsal hair chaetae are absent; the ventral chaetae ranges from 2 to 6, with those on segment 2 elongate; there are 3 or 4 anterior dark band, which have 2 to 4 sigmoid, bifid dorsal chaetae per bundle. Eyes and coelomocytes are present; 6-36 mm in length, and it is a cosmopolite species. The abundance of this species positively related to pH, biochemical oxygen demand and conductivity (George et al., 2009).Finding an insignificant relationship between prevalence and mean abundance of *O. serpentia* and host sex, host's carapace size and among seasons, could be due to low intensity of the organism. The kind of biological relationship between *P. persicum* and *O.*

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serpentia still remains unknown. Nevertheless, Conn et al. (1994) have reported the occurrence of *O. serpentia* as a parasite in the mantle cavity of *Dreissena polymorpha* and *Dreissena bugenis* mussels in Lawrence River, USA. Further studies would reveal the kind of biological relationship and also the effect of *O. serpentia* on the life cycle and health of *P. persicum*.

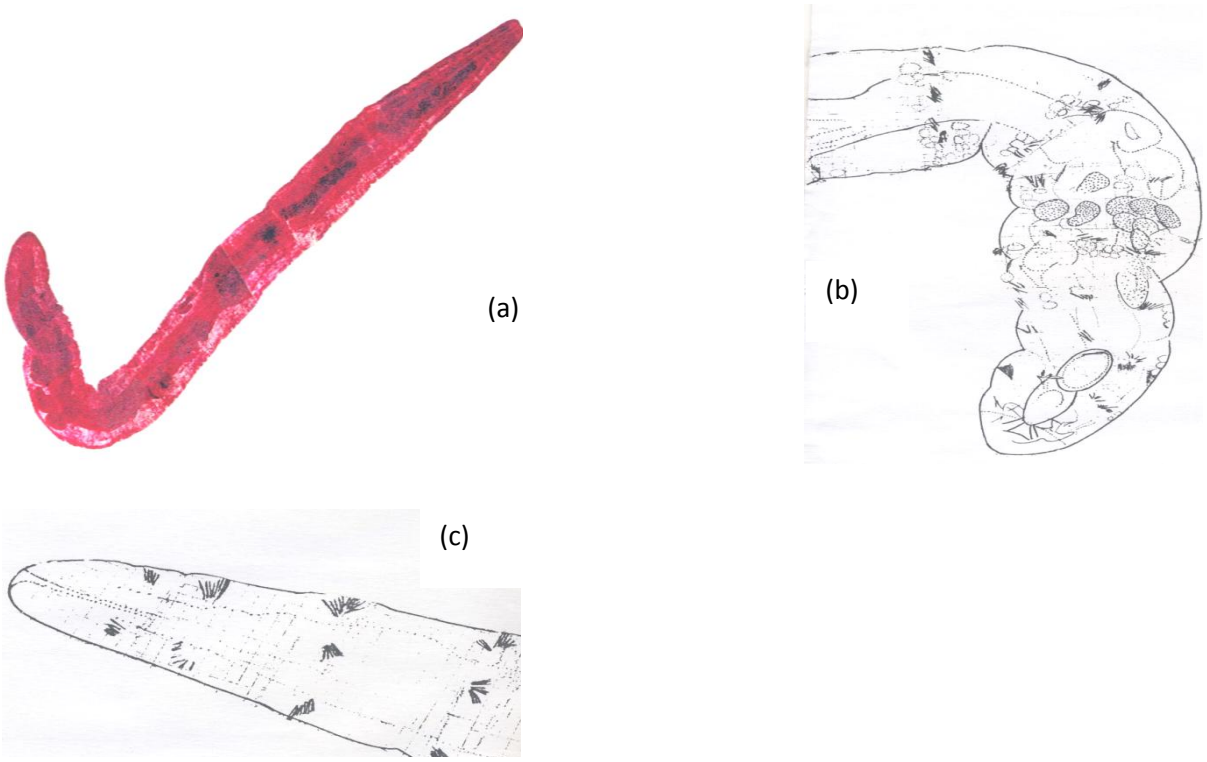

Fig.1: (a) *Ophidonais serpentina*; (b) Cephalic end; (C) Cadual end

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