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PARASITES AND PARASITE COMMUNITIES OF *Squalius orpheus* Kottelat & Economidis, 2006 FROM THE CHEPELARSKA RIVER

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Abstract

In the autumn of 2022, 37 specimens of Orpheus dace (Squalius orpheus Kottelat & Economidis, 2006) were subjected to helminthological examination. The fish were caught from the lower section of the Chepelarska River (in the area of Katunitsa village). Three endohelminth species were isolated - Acanthocephalus tenuirostris (Achmerov & Dombrovskaja-Achmerova, 1941) Yamaguti, 1963 (class Trematoda), Contracaecum sp., Rhabdochona denudata (Dujardin, 1845) Railliet, 1916 (class Nematoda). The component community and infracommunity of Orpheus dace were reviewed. One core species (Contracaecum sp.; P% = 32.43) was found in the component community of Sq. orpheus. Brillouin's diversity index (HB), Pielou's evenness index (E), and Simpson's dominance index (C) were calculated. The research aims to provide data on the helminths and helminth communities of Orpheus dace from the freshwater ecosystem of the Chepelarska River. The studied biotope (Katunitsa) is a new habitat for the found helminth species of Orpheus dace.

Key words*: Acanthocephalus tenuirostris, Bulgaria, Contracaecum sp., Maritsa River Basin, Rhabdochona denudata.*

INTRODUCTION

The Maritsa River (Έβρος; Meriç) is the longest river on the Balkan Peninsula (539 km) (Chunchukova et al., 2019a). On Bulgarian territory, it flows for 321.6 km (Chunchukova et al., 2019a; 2019b). The river begins from the Rila Mountains, flows through the Upper Thracian Plain, and enters the Aegean Sea (Chunchukova et al., 2019a). The river partially forms the Bulgarian-Greek border and the Greek-Turkish border (Kirin, 2013; 2014). On Bulgarian territory, the Maritsa River has over 100 tributaries. The left tributaries spring from the Balkan Mountains, the Sredna Gora Mountains, the Sarnena Gora Mountains, and the right – from the Rhodope Mountains. The number of left and right tributaries of the river is approximately equal. The longest tributaries of the river flowing into it on Bulgarian territory are the Topolnitsa River with a length of 155 km, the Rakitnitsa River with a length of 145 km, the Vacha River with a length of 112 km, the Stryama River with a length of 110 km, the Chepelarska River with a length of 86 km, etc. (Ministry of environment and waters). The Chepelarska River begins from the Rhodope Mountains (in the area of the Pamporovo resort complex), passes through the Upper Thracian Plain, where it flows into the Maritsa River between the towns of Plovdiv and Sadovo. Several settlements are located along the river (the town of Chepelare, the village of Hvoyna, the village of Narechenski bani, the village of Bachkovo, the town of Asenovgrad, the village of Katunitsa) (Assenovgrad Municipality Program, 2018).

The Chepelarska River is anthropogenically influenced as a result of urbanization, sewerage, the entry of waste water from industrial enterprises and enterprises from the food industry (dairy farm), the construction of dams, changes in the river bed, extraction of aggregates, construction of barriers, etc. (Project PURB, 2016-2021).

Dospatliev et al. (2015) studied the pollution of the Chepelarska River with Cd and Pb. The authors reported that the source of Cd pollution is the Non-ferrous Metals Smelter (KCM S.A.), and of Pb - a tailings pond of Gorubso-Lucky. Anthropogenic pollution affects aquatic organisms (Juhásová et al., 2019). Various authors investigated heavy metal pollution in water, sediments, or aquatic organisms from

rivers being part of Eastern Aegean Sea River Basin (Atanasov et al., 2012; Atanasov et al., 2013; Zhelyazkov et al., 2014; Valkova et al., 2015; Valkova et al., 2016; Zhelyazkov et al., 2018; Valkova et al., 2020; Valkova et al., 2021; others). Fish and their parasites are basic biological elements of the freshwater ecosystem, used for ecological assessment of the condition of the aquatic environment (Kirin, 2013; Kirin & Kuzmanova, 2014). Few authors study parasites of fish from the Chepelarska River (Kakacheva-Avramova, 1965; Kirin, 2002a; Chunchukova, 2020). Most of the existing studies focus on the parasite fauna of fish from the Maritsa River (Kirin, 2000; 2001b; 2013; 2014; Chunchukova et al., 2019a; 2019b) and its tributaries - the Arda River (Kirin, 2002b; 2003; 2006; Kirin et al., 2002; Kuzmanov et al., 2002; Kirin et al., 2003; Kuzmanov et al., 2003; Kirin & Shukerova, 2006; 2007; Kirin et al., 2013b); the Stryama River (Kirin et al., 2005; Kirin et al., 2019b); the Tundzha River (Kirin et al., 2012; 2013a; Chunchukova & Kirin, 2020b; Kirin & Chunchukova, 2021; 2022); the Topolnitsa River (Chunchukova et al., 2020a); others.

The present study aims to provide new data on the helminths and helminth communities of Orpheus dace (*Squalius orpheus* Kottelat & Economidis, 2006) from the freshwater ecosystem of the Chepelarska River.

MATERIALS AND METHODS

A total of 37 specimens of Orpheus dace (*Squalius orpheus* Kottelat & Economidis, 2006) were examined for the presence of helminths. The fish were collected from the Chepelarska River in the vicinity of the village of Katunitsa (designated as Katunitsa biotope); in the autumn of 2022. Biotope Katunitsa (42°06'05.7"N, 24°51'58.1"E) is located on the right bank of the river, about 8 km from the mouth of the Chepelarska River in the Maritsa River (Figure 1).

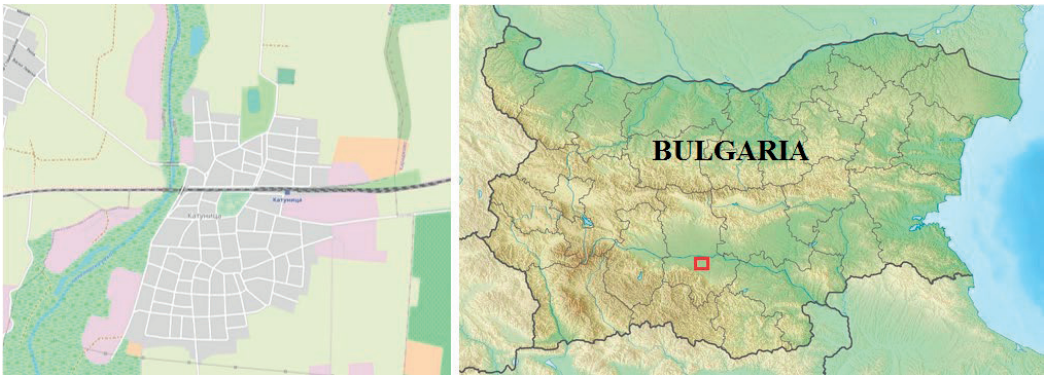

Figure 1. Location of the studied biotope from the Chepelarska River (Caynax Sports Tracker GPS; https://bg.wikipedia.org/wiki/Катуница with changes)

The fish species are recorded according to Fröse & Pauly (2022). Immediately after capture (in the field), a visual inspection of the fish was carried out. The helminthological examination of the fish was completed in laboratory conditions according to standard methods (Zashev & Margaritov, 1966; Bauer (Ed.), 1987; Moravec, 2013; others). The isolated helminth specimens were stored in 70% ethyl alcohol. Temporary preparations were prepared from the stored helminths of classes Acanthocephala and Nematoda, according to standard methods (Zashev & Margaritov, 1966; Moravec, 2013; others). Found helminth taxa were noted according to commonly accepted taxonomy (Bauer (Ed.), 1987; Moravec, 2013; others). The structure of helminth communities was examined at two levels: component communities and infracommunities. The component communities were represented by the indices: mean intensity (MI); mean abundance (MA); prevalence (P%), and the infracommunities - by the indices: total number of species; mean number of species; the total number of specimens; mean number of specimens;

Brillouin's diversity index (HB); Pielou's evenness index (E); Simpson's dominance index (C) (Magurran, 1988).

RESULTS AND DISCUSSIONS

Model fish species

The object of study is 37 specimens of *Sq. orpheus* (syn. *Squalius cephalus* (Linnaeus, 1758); *Leuciscus cephalus* (Linnaeus, 1758) in the Aegean catchment basin until 2006); family Cyprinidae. Orpheus dace is a freshwater, pelagic fish. The species is omnivorous and uses mainly insects for food (Fröse & Pauly, 2022). Orpheus dace is included in the IUCN Red List with the category "LC=Least Concern"; endemic of Europe (Freyhof & Brooks, 2011); endemic of the rivers from the Aegean catchment basin (Economidis et al., 2009).

Structure of the helminth communities

The present study of Orpheus dace revealed infection with three taxa of helminths – 1 species of class Acanthocephala (*Acanthocephalus tenuirostris* (Achmerov & Dombrovskaja-Achmerova, 1941) Yamaguti, 1963) and 2 species of class Nematoda (*Contracaecum* sp.; *Rhabdochona denudata* (Dujardin, 1845) Railliet, 1916).

Component community

During the study on the component community of Orpheus dace, it was found that the representatives of class Nematoda (2 species with 35 specimens) had the largest number of specimens. In the component community of Orpheus dace, one core species was found - *Contracaecum* sp. with prevalence P% = 32.43, as well as two accidental helminth species – *Ac. tenuirostris* and *Rh. denudata* with prevalence P% = 5.41 and P% = 2.70, respectively, according to the selected criteria (Kennedy, 1993). *Contracaecum* sp. also had the highest values for MI and MA (MI = 2.75 and MA = 0.07). The number of detected specimens of *Ac. tenuirostris* in one specimen Orpheus dace varied from 1 to 2 specimens; of *Contracaecum* sp. - from 2 to 5 specimens, and of *Rh. denudata* had 2 specimens (Table 1).

Table 1. Component community of *Squalius orpheus* from the Chepelarska River
(N - number of investigated fish; n - number of infected fish; p - number of fish parasites; MI - mean intensity; MA - mean abundance; P% - prevalence; R - range)

***Squalius orpheus* (N = 37 / Katunitsa biotope)** **Parasite species**	**n**	**p**	**MI**	**MA**	**P%**	**R**
Acanthocephalus tenuirostris (Achmerov & Dombrovskaja-Achmerova, 1941) Yamaguti, 1963	2	3	1.50	0.04	5.41	1-2
Contracaecum sp.	12	33	2.75	0.07	32.43	2-5
Rhabdochona denudata (Dujardin, 1845) Railliet, 1916	1	2	2.00	0.05	2.70	2

Infracommunity

From the 37 examined specimens of *Sq. orpheus*, it was found that 15 specimens (40.54%) were infected with 1 helminth species, and 22 specimens (59.46%) were not infected. In the infracommunity of Orpheus dace from the Chepelarska River, the number of the found helminth specimens varied from 1 to 5. Thirty-eight helminth specimens were isolated. In 2 Orpheus dace specimens, 1 and 2 specimens of *Ac. tenuirostris* was found; in 7, 3, and 2 *Sq. orpheus* specimens, 2, 3, and 5 specimens of *Contracaecum* sp. were found, respectively; in 1 Orpheus dace specimen, 2 specimens of *Rh. denudata* were found. Brillouin's diversity index HB = 0.65, and the Pielou's evenness index E = 0.73. The dominance index is low, associated with the dominance of a taxon - *Contracaecum* sp. (Table 2).

Kakacheva-Avramova (1965) studied parasites of fish (*Barbus cyclolepis* Heckel, 1837, *Gobio gobio* (Linnaeus, 1758), *Sq. cephalus*) from the Chepelarska River and reported infection with *Allocreadium isoporum* (Looss, 1894) Looss, 1902 (syn. *Allocreadium isoporum macrorchis* Koval & Kulakowskaya in Koval, 1957); *Caryophyllaeus brachycollis* (Janiszewska, 1951); *Caryophyllaeides fennica* (Schneider, 1902) Nybelin, 1922; *Bathybothrium rectangulum* (Bloch, 1782) Lühe, 1902; *Acanthocephala* gen. sp.; *Rh. denudata*.

Table 2. Infracommunity of *Squalius orpheus* from the Chepelarska River

	Number of parasite species	
	0	**1**
Number of specimens *Sq. orpheus*	22	15
Total number of species (Mean number of species ± SD)	3 (0.42±0.50)	
Total number of specimens (Mean number of specimens ± SD)	38 (1.03±1.37)	
Range	1-5	
Brillouin's diversity index (HB)	0.65	
Pielou's evenness index (E)	0.73	
Simpson's dominance index (C)	0.54	

Chunchukova (2020) studied the parasite fauna of *B. cyclolepis* from the Chepelarska River (Bachkovo biotope) and reported two helminth species - *Pomphorhynchus laevis* (Zoega in Müller, 1776) Porta, 1908 and *Rhabdochona hellichi* (Sramek, 1901). Kirin (2002a) studied the helminth fauna of *Sq. orpheus* from the Chepelarska River (between the town of Asenovgrad and the village of Bachkovo), and reported 5 endohelminth species - *B. rectangulum*; *Acanthocephalus anguillae* (Müller, 1780) Lühe, 1911; *Ac. tenuirostris*; *Contracaecum squalii* (Linstow, 1907) Skrjabin, 1917 (larvae); *Rh. denudata*.

There are a number of studies on the parasite fauna of Orpheus dace from the Maritsa River and its tributaries on the territory of Bulgaria. During ecologoparasitological studies of *Sq. orpheus* from the Maritsa River, *All. isoporum*; *Clinostomum complanatum* (Rudolphi, 1814) Braun, 1899 (metacercaria); *C. brachycollis*; *B. rectangulum*; *Ac. tenuirostris*; *Ac. anguillae*; *P. laevis* and *Philometra ovata* (Zeder, 1803) Skrjabin, 1923 (syn. *Philometra abdominalis* Nybelin, 1928) were reported in the region of the city of Plovdiv (Kirin, 2000); *All. isoporum*; *Cl. complanatum* (metacercaria); *C. brachycollis*; *B. rectangulum*; *Ac. anguillae* and *P. laevis* in the area of the city of Pazardzhik (Kirin, 2001b). The study of Orpheus dace from the Arda River found infection with – *All. isoporum*;*Cl. complanatum* (metacercaria); *Ichthyocotylurus pileatus* (Rudolphi, 1802) Odening, 1969 (metacercaria); *C. fennica*; *C. brachycollis*; *B. rectangulum*; *Ac. anguillae*; *Ac. tenuirostris* and *Rh. denudata* from the confluence of the Cherna, Rodozemska and Madanska rivers to the Kardzhali Rezervoir (Kirin, 2002b); *C. fennica* and *Rh. denudata* in the region of the village of Rabovo; *Ichth. pileatus* (metacercaria); *C. fennica* and *C. brachycollis* in the area of the town of Madzharovo (Kirin et al., 2002; Kuzmanov et al., 2002; Kirin, 2006); *Ichth. pileatus* (metacercaria); *Cl. Complanatum* (metacercaria); *C. fennica*; *C. brachycollis*; *Schyzocotyle acheilognathi* (Yamaguti, 1934) Brabec, Waeschenbach, Scholz, Littlewood & Kuchta, 2015 (syn. *Bothriocephalus acheilognathi* Yamaguti, 1934); *Ligula intestinalis* (Linnaeus, 1758) Gmelin, 1790 (plerocercoid); *Ac. anguillae* and *Rh. denudata* in the region of the village of Huhla (Kirin et al., 2003; Kuzmanov et al., 2003; Kirin, 2006); *Ichth. pileatus* (metacercaria); *Posthodiplostomum cuticola* (von Nordmann, 1832) Dubois, 1936 (metacerc); *C. fennica*; *C. brachycollis*; *Sch. acheilognathi*; *L. intestinalis* (plerocercoid); *Paradilepis scolecina* (Rudolphi, 1819) (cysticerc); *Ac. anguillae*; *Rh. denudata* and *Raphidascaris acus* (Bloch, 1779) Railliet & Henry, 1915 (larvae) in the area of the village of Slaveevo (Kirin, 2006; Kirin & Shukerova, 2006); *Ichth. pileatus* (metacercaria); *Cl. Complanatum* (metacercaria); *C. fennica*; *C. brachycollis*; *Sch. acheilognathi*; *L. intestinalis* (plerocercoid); *P. scolecina* (cysticerc); *Ac. anguillae*; *Rh. denudata* and *R. acus* (larvae) (Kirin & Shukerova, 2007). Few studies on helminths of *Sq. orpheus* from the Stryama River, indicated the species as a host of *All. isoporum*; *C. fennica*; *C. brachycollis*; *B. rectangulum*; *P. laevis*; *Ac. anguillae*; *Ac. tenuirostris* and *Rh. denudata* (Kirin et al., 2005); *All. isoporum*; *C. brachycollis*; *P. laevis* and *Rh. denudata* (Kirin et al., 2019b). Some studies on Orpheus dace from the Tundzha River and the Topolnitsa River, found infection with *Ichth. pileatus* (metacercaria); *Cl. Complanatum* (metacercaria); *C. fennica*; *C. brachycollis*; *Sch. acheilognathi*; *L. intestinalis* (plerocercoid); *Ac. anguillae*; *Rh. denudata*

(Kirin et al., 2012; 2013a) and *P. laevis* (Chunchukova et al., 2020a), respectively. The three helminth species of Orpheus dace detected in the present study were reported in the same species as well as other fish species in Bulgaria (Table 3).

Table 3. Fish hosts of *Acanthocephalus tenuirostris*, *Contracaecum* sp., and *Rhabdochona denudata* in Bulgaria

Authors	Localities	Host
STUDY ON *ACANTHOCEPHALUS TENUIROSTRIS*		
Kakacheva-Avramova & Menkova, 1978	Palakariya River	*Barbus petenyi* Heckel, 1852 (syn. *Barbus meridionalis petenyi* Heckel, 1847), *Sq. cephalus*
Kirin, 2000	Maritsa River, Plovdiv	*Sq. orpheus*
Kirin, 2001c	Mesta River	*Sq. orpheus*, *B. petenyi*
Kirin, 2002a	Chepelarska River, between Asenovgrad and Bachkovo	*Sq. orpheus*
Kirin, 2002b	Arda River, cascade Gorna Arda	*Sq. orpheus*
Kirin et al., 2005	Stryama River	*Sq. orpheus*
Chunchukova & Kirin, 2020b	Tundzha River, Yambol	*Leuciscus aspius* (Linnaeus, 1758) (syn. *Aspius aspius* (Linnaeus, 1758))
STUDY ON *CONTRACAECUM* SP. (syn. *Contracaecum bidentatum* (Linstow, 1899); *Hysterothylacium aduncum* (Rudolphi, 1802) Deardorff & Overstreet, 1981; *Contracaecum microcephalum* (Rudolphi, 1809) Baylis, 1920; *C. squalii*)		
Margaritov, 1959	Danube River, Krivina	*Acipenser ruthenus* Linnaeus, 1758
	State Fisheries Yambol	*Cyprinus carpio* Linnaeus, 1758
Margaritov, 1966	Danube River, between the mouth of the Timok River and Novo Selo	*Ac. ruthenus*, *Zingel zingel* (Linnaeus, 1766) (syn. *Aspro zingel* (Linnaeus, 1758)), *Zingel streber* (Siebold, 1863) (syn. *Aspro streber* Siebold, 1863), *Gymnocephalus cernua* (Linnaeus, 1758) (syn. *Acerina cernua* (Linnaeus, 1758)), *Gymnocephalus schraetser* (Linnaeus, 1758) (syn. *Acerina schraetser* (Linnaeus, 1758)), *Neogobius fluviatilis* (Pallas, 1814) (syn. *Gobius fluviatilis* Pallas, 1814), *Ponticola constructor* (Nordmann, 1840) (syn. *Gobius cephalarges constructor* Nordmann, 1840)
	Danube River, between the mouth of the Timok River and Novo Selo; between Svishtov and Ruse	*Alosa immaculata* Bennett, 1835 (syn. *Alosa kessleri pontica* (Eichwald, 1838))
Kakacheva-Avramova et al., 1978	Danube River, Svishtov, Vidin, Silistra	*Lota lota* (Linnaeus, 1758), *Ponticola kessleri* (Günther, 1861) (syn. *Gobius kessleri* Günther, 1861), *N. fluviatilis*, *Perca fluviatilis* Linnaeus, 1758, *Barbus barbus* (Linnaeus, 1758)
Kirin, 2001d	Mesta River	*C. carpio*
Shukerova, 2010	Srebarna Lake	*Alburnus alburnus* (Linnaeus, 1758), *L. aspius*
Shukerova, 2005; 2010	Srebarna Lake	*Carassius gibelio* (Bloch, 1782)
Shukerova, 2006; 2010	Srebarna Lake	*C. carpio*
Shukerova, 2010; Shukerova et al., 2010	Srebarna Lake	*P. fluviatilis*
Chunchukova, 2017; Chunchukova et al., 2016	Danube River, Vetren	*Alb. alburnus*, *Abramis brama* (Linnaeus, 1758)
Chunchukova, 2017	Danube River, Vetren	*B. barbus*
Shukerova, 2010; Shukerova & Kirin, 2019	Srebarna Lake	*Rutilus rutilus* (Linnaeus, 1758)

Authors	Localities	Host
STUDY ON *CONTRACAECUM* SP. (syn. *Contracaecum bidentatum* (Linstow, 1899); *Hysterothylacium aduncum* (Rudolphi, 1802) Deardorff & Overstreet, 1981; *Contracaecum microcephalum* (Rudolphi, 1809) Baylis, 1920; *C. squalii*)		
Kirin, 2002a	Chepelarska River, between Asenovgrad and Bachkovo	*Sq. orpheus*
Kirin et al., 2013b	Danube River, Vetren	*Al. immaculata*
Kirin & Kuzmanova, 2014	Ivaylovgrad Reservoir	*Silurus glanis* Linnaeus, 1758
Stoyanov et al., 2018	Atanasovsko Lake	*Lepomis gibbosus* (Linnaeus, 1758), *Knipowitschia caucasica* (Berg, 1916), *Gasterosteus aculeatus* Linnaeus, 1758
Kirin & Chunchukova, 2021	Tundzha River	*S. glanis*
Kirin & Chunchukova, 2022	Tundzha River	*C. gibelio*
Nachev et al., 2022	Danube River	*Al. immaculata*
STUDY ON *RHABDOCHONA DENUDATA*		
Margaritov, 1959	Iskar River, Vrazhdebna	*B. barbus*, *Sq. cephalus*
Kakacheva-Avramova, 1962	Strumeshnitsa River	*Scardinius erythrophthalmus* (Linnaeus, 1758)
Margaritov, 1964	Maritsa River, Vacha River, Chepinska River Maritsa River Maritsa River, Chepinska River Maritsa River, Vacha River, Chepinska River, Topolnitsa River	*Sq. orpheus* *Vimba melanops* (Heckel, 1837) *Alb. alburnus* *B. cyclolepis*
Kakacheva-Avramova, 1965	reservoirs of Thrace	*Sq. orpheus*, *Alb. alburnus*, *L. aspius*, *B. cyclolepis*
Kakacheva-Avramova, 1969	Ogosta River, Vrabnishka River, Burzia River, Nishava River, Botunya River, Leva River, Archar River, Berkovska River, Vrabnishka River, Chuprenska River Chuprenska River, Burzia River, Leva River Leva River Burzia River Ogosta River, Lom River, Leva River	*Sq. cephalus* *B. petenyi* *B. barbus* *G. gobio* *Alb. alburnus*
Margaritov, 1977	Shiposhnitsa River, Iskar Reservoir	*Sq. cephalus*
Kakacheva-Avramova & Menkova, 1978	Palakariya River	*Sq. cephalus*
Kakacheva-Avramova et al., 1978	Danube River, Vidin	*Z. zingel, Z. streber, Alb. alburnus*
Kakacheva-Avramova & Nedeva-Menkova, 1981	State Fisheries Blagoevgrad Zheleznitsa River Blagoevgradska Bistritsa River, Gradevska River, Struma River	*Cobitis taenia* Linnaeus, 1758 *Sq. cephalus*
Kirin, 2001a	Kardzhali Rezervoir	*Sq. orpheus*
Kirin, 2001c	Mesta River	*Sq. orpheus*
Kirin, 2001d	Mesta River	*C. carpio*
Kirin, 2001e	Veleka River, Rezovska River	*Alb. alburnus*
Kirin, 2002a	Chepelarska River, between Asenovgrad and Bachkovo	*Sq. orpheus*
Kirin, 2002b	Arda River, from the confluence of the Cherna, Rodozemska and Madanska rivers to the Kardzhali Rezervoir / cascade Gorna Arda	*Sq. orpheus*
Kirin, 2003	Arda River, from the confluence of the Cherna, Rodozemska and Madanska rivers to the Kardzhali Rezervoir	*Alb. alburnus*

Authors	Localities	Host
STUDY ON *CONTRACAECUM* SP. (syn. *Contracaecum bidentatum* (Linstow, 1899); *Hysterothylacium aduncum* (Rudolphi, 1802) Deardorff & Overstreet, 1981; *Contracaecum microcephalum* (Rudolphi, 1809) Baylis, 1920; *C. squalii*)		
Kirin et al., 2002; Kuzmanov et al., 2002	Arda River, Rabovo, Madzharovo	*Alb. alburnus*
Kirin et al., 2002; Kuzmanov et al., 2002; Kirin, 2006	Arda River, Rabovo	*Sq. orpheus*
Kirin et al., 2003; Kuzmanov et al., 2003; Kirin, 2006	Arda River, Huhla	*Sq. orpheus*
Kirin et al., 2005	Stryama River	*Sq. orpheus*
Kirin, 2006; Kirin & Shukerova, 2006	Arda River, Slaveevo	*Sq. orpheus*
Kirin & Shukerova, 2007	Arda River	*Sq. orpheus*
Shukerova & Kirin, 2008	Srebarna Lake	*Sc. erythrophthalmus*
Shukerova, 2010	Srebarna Lake	*L. aspius*, *Sc. erythrophthalmus*
Atanasov, 2012	Danube River, Archar	*B. barbus, Sc. erythrophthalmus, Sq. cephalus*
Kirin et al., 2012, 2013a	Tundzha River	*Sq. orpheus*
Chunchukova et al., 2019a	Maritsa River	*Alb. alburnus*
Chunchukova et al., 2019b	Maritsa River	*Sc. erythrophthalmus*
Kirin et al., 2019a	Luda Yana River, Popintsi	*R. rutilus*
Kirin et al., 2019b	Stryama River	*Sq. orpheus*
Kuzmanova et al., 2019	Osym River, Lovech	*Sq. cephalus*
Chunchukova & Kirin, 2020a	Danube River, Silistra	*Abr. brama*
Chunchukova & Kirin, 2020b	Tundzha River, Yambol	*L. aspius*
Chunchukova et al., 2020b	Ogosta River	*Sq. cephalus*

CONCLUSIONS

In the autumn of 2022, 37 specimens of *Sq. orpheus* from the Chepelarska River were examined for the presence of helminths. Infection was found in 40.54% of the examined Orpheus dace specimens. Thirty-eight specimens of helminths were found, belonging to 3 species and 2 classes. One core parasite species and two accidental species were found in the component community of Orpheus dace. The present study provides new data on helminths and helminth communities of Orpheus dace from the Chepelarska River. Katunitsa biotope is a new habitat for the found helminths (*Ac. tenuirostris*; *Contracaecum* sp. and *Rh. denudata*) of Orpheus dace. In the present study, a pathogenic parasite species (*Contracaecum* sp.) to fish and humans was found. Studies on parasites have significance for the conservation of the fish populations.

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