

QUALITATIVE COMPOSITION OF ROTATORIA IN THE TIMOK RIVER AND ITS TRIBUTARIES IN SUMMER

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ABSTRACT. Investigations of the fauna of Rotatoria in our country have for the most part been carried out on lakes and reservoirs, where they are represented by a large number of species and where they are the dominant members of the zooplankton community as far as productivity is concerned. The fauna of Rotatoria has been much less thoroughly investigated in large and small streams (the Danube is an exception). Such investigations have usually dealt only with certain aspects (above all the summer aspect) of the fauna and were therefore incapable of giving a complete picture of the composition and dynamics of Rotatoria in rivers. In these investigation 36 taxa were registreted.

INTRODUCTION

Investigations of zooplankton in our country primarily refer to lakes and reservoirs, where development of planktonic forms is massive. In rivers, especially smaller ones, zooplankton lacks conditions favorable for development. Accordingly, zooplankton has been studied considerably more rarely in running waters, with the exception of the Danube [8,9,14,15]. Still, some data are available on the composition of zooplankton in rivers, both larger ones like the Tisa [7,8] and smaller ones like the Kolubara [12] and its tributaries [2], and other small rivers or channels in Serbia [1,4,5,10,11,14].

The present work represents a contribution to knowledge on the fauna of Rotatoria in rivers of our country. However, it covers only the summer aspect, which is not enough to give a complete picture of the representation of individual species.

MATERIAL AND METHODS

One-time hydrobiological investigation of the Timok River and its drainage area was carried out during the summer months of 1998. Sampling was conducted at 12 localities (1-Crnovrška reka;

2-Stanjanska reka; 3-Trgovački Timok, Gornja Kamenica; 4-Trgovački Timok, Trgovište; 5-Svrljiški Timok, Podvis; 6-Svrljiški Timok, Banica; 7-Beli Timok, Knjaževac; 8-Beli Timok, Zaječar; 9-Crni Timok, Zvezdan; 10-Dobropoljska reka; 11-Veliki Timok; 12-Borska reka). Certain physical and chemical parameters were measured at the time of sampling [6]. Sampling was done by standard methods, and samples were fixed with 4% Formalin at the sites where they were taken. Qualitative and quantitative analysis of the collected material was performed in the laboratory at the Institute of Biology and Ecology of the University of Kragujevac Faculty of Science (qualitative analysis was carried out to the level of species or to the genus level where it was impossible to identify the species).

The present work represents a contribution to knowledge on distribution of the fauna of Rotatoria on the territory of Serbia.

RESULTS AND DISCUSSION

Analysis of the collected material indicates that the greatest diversity and highest abundance are recorded in the group Rotatoria (36 taxa were registered). Representatives of Nematoda are also registered in fairly great numbers in some rivers [6]. In addition to these two groups, Hydracarina, Cladocera, larvae of Copepoda, and adults of Ostracoda are found from time to time at certain localities. Present too in the collected material were numerous representatives of Protozoa (above all Ciliata), whose determination is difficult in the fixed state and which represent one of the main components of the fauna of plankton and microzoobenthos [3]. Specimens were not found in Borska reka where recorded high concentrations of heavy metals originating from industrial waste waters [6].

Table 1 presents the qualitative composition of Rotatoria. The different number of recorded taxa is in keeping with size of the investigated rivers. Such a phenomena was also noted by other authors who studied streams in Serbia.

Table 1. Qualitative composition and number of Rotatoria species at investigated localities (1-11 – localities, see Material and methods).

Rotatoria / locality	1	2	3	4	5	6	7	8	9	10	11
<i>Brachionus angularis bidens</i> Plate		+	+								
<i>Brachionus quadridentatus brevispinus</i> Ehrb.											+
<i>Brachionus quadridentatus quadridentatus</i> Herm.											+
<i>Cephalodella</i> sp.						+		+			+
<i>Colurella adriatica</i> Ehrb.	+					+		+	+	+	+
<i>Colurella colurus</i> Ehrb.		+	+	+	+	+		+	+		+
<i>Colurella obtusa</i> Gosse				+	+	+		+	+		+
<i>Colurella uncinata</i> (O.F. Müller)											+
<i>Colurella</i> sp.									+		
<i>Euchlanis dilatata</i> Ehrb.			+	+				+	+		+
<i>Filinia longiseta</i> (Ehrb.)											+
<i>Keratella cochlearis</i> (Gosse)								+			
<i>Keratella cochlearis tecta</i> Gosse		+			+			+			
<i>Keratella quadrata</i> (O.F. Müller)					+						

Table 1. continue

<i>Kellicotia longispina</i> (Kellicot)												+
<i>Lecane (M.) bulla</i> (Gosse)												+
<i>Lecane (M.) closterocerca</i> (Schmarda)			+	+				+	+			+
<i>Lecane (M.) cornuta</i> (O.F. Müller)				+		+				+		+
<i>Lecane (L.) luna</i> (O.F. Müller)										+		
<i>Lecane</i> sp.					+				+			
<i>Lepadella oblonga</i> Ehrb.					+	+				+		
<i>Lepadella patella</i> (O.F. Müller)			+			+	+			+	+	+
<i>Lepadella</i> sp.									+			
<i>Mytilina mucronata</i> (O.F. Müller)									+			
<i>Mytilina ventralis</i> (Ehrb.)												+
<i>Mytilina</i> sp.	+			+		+				+		+
Philodinidae		+	+	+	+	+	+	+	+	+	+	+
<i>Scaridium longicaudum</i> (O.F. Müller)									+			
<i>Trichocerca dixon-nuttali</i> Jenn.			+									
<i>Trichocerca inermis</i> (Linder)				+								
<i>Trichocerca longiseta</i> (Schrank)										+		
<i>Trichocerca ruttneri</i> Donner				+		+						
<i>Trichocerca similis</i> (Wierz.)				+	+							
<i>Trichocerca</i> sp.									+	+		
<i>Trichotria tetractis</i> Ehrb.				+					+	+		+
<i>Trichotria</i> sp.										+		
Σ	2	4	6	12	8	10	2	15	16	3	18	

Dominance of benthic forms was observed in small rivers, whereas typically planktonic forms (*Filinia longiseta*, *Kellicotia longispina*) were recorded only in the Great Timok.

The obtained results supplement data on the distribution of individual species of Rotatoria in our country. However, more detailed and longer-term investigations are needed to get an idea of the real state of composition of Rotatoria (and other groups).

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