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## Hydrofaunistic study of the Tetovska River, Macedonia

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With 1 Table

Schlagwörter: Makrozoobenthos, Tetovska, Vardar, Mazedonien, Faunistik

The study gives information about the species composition of selected groups of invertebrates and their distribution in the Tetovska River, Macedonia. A total of 71 species has been identified: 2 Nematoda, 1 Nematomorpha, 20 Oligochaeta, 21 Trichoptera, 11 Simuliidae, 4 Blephariceridae, 12 Chironomidae.

### 1 Introduction

The hydrofauna of the Tetovska River is still insufficiently known. The data published so far concern the orders Ephemeroptera and Plecoptera, IKONOLMOV (1960, 1969, 1973, 1986), MEMETI & al. (1998) and VIDINOVA (1998). Recently an assesment of the saprobiological state and its influence on the distribution of the species was carried out by MEMETI & JANEVA (in press).

The Tetovska River rises in the Shar Mountains at an altitude of 2400 m. It is a stony creek with high velocity, located in an attractive valley as a result of erosion activity. Towards the town of Tetovo, because of the increased water quantity, the river forms a deep valley, especially between the villages of Shipkovitsa and Seltse, and the velocity is still relatively high. There exists a hydropower station at Tetovo (built in 1939) with a capacity of 2 MW. Below Tetovo the river is considerably influenced by municipal and industrial wastes. In this lower part of the stream the velocity is considerably slower entering in a plain down to its mouth in the Vardar River. The total length of the river is about 38 km.

### 2 Sampling sites and material

The benthic material was collected by Avzi Memeti during various seasons of 1996 to 1998. The following sites were visited along the river: 1. Leshnitsa village, 2. Bozovtsi village, 3. Veshala village, 4. Brodets village, 5. Banja village, 6. At the power station above Tetovo, 7. Below Tetovo, 8. The mouth above Vardar River, 9. A group of small rills above site 4 noted as tributaries. The identification of the species has been made by Kovachev (Simuliidae, Blephariceridae), Stoichev (Nematoda, Nematomorpha, Chironomidae), Uzunov (Oligochaeta) and Kumanski (Trichoptera).

### 3 Results

A total of 71 species of macroinvertebrates were identified at species level: 2 Nematoda, 1 Nematomorpha, 20 Oligochaeta, 21 Trichoptera, 12 Chironomidae, 11 Simuliidae and 4 Blephariceridae (Tab. 1). Actually, the number of the species is larger, as some juvenile species could not be identified, like *Fridericia*, *Henlea* (Oligochaeta) *Glossosoma*, *Chaetopteryx*, *Stenophylax*, *Tinodes* and others (Trichoptera), while *Rhyacophyla* gr. *vulgaris* includes at least 5 species.

The longitudinal distribution of the species is obviously unequal. The greater number occur in the upper mountain part of the stream and its tributaries, where the water is not influenced by human impact or pollution. Less than one third of the species were found in the lower part of the river below Tetovo. Blephariceridae and Simuliidae are totally absent in the lower section. However, Tubificidae like *Limnodrilus* and others, adapted to polluted waters, occur only here. No doubt, the human activity below Tetovo is an explanation for the poorer species composition in this stretch of the river. These considerations are subject of a saprobiological study, carried out by MEMETI & JANEVA (in press).

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**Tab. 1: Invertebrates found in Tetovska River. Sampling sites see in text above**

Taxon	Sampling site								
	1	2	3	4	5	6	7	8	9
<b>NEMATODA</b>									
<i>Dorylaimus stagnalis</i> DUJARDIN	X		X	X				X	
<i>Monhistera filiformis</i> BASTIAN	X								
<b>Nematomorpha</b>									
<i>Gordius aquaticus</i> LINNAEUS					X				
<b>OLIGOCHAETA</b>									
<i>Allolobophora calliginosa</i> (EISEN)									X
<i>Allolobophora rosea</i> (FIGUET)		X							
<i>Eisenia foetida</i> SAVIGNY		X							
<i>Eiseniella tetraedra</i> (SAVIGNY)									X
<i>Enchytraeus albidus</i> HENLE							X	X	
<i>Haplotaxys gordioides</i> (HARTMANN)	X								X
<i>Limnodrilus udekemianus</i> CLAPAREDE							X	X	
<i>Limnodrilus hoffmeisteri</i> CLAPAREDE							X		
<i>Lumbriculus variegatus</i> GRUBE		X							
<i>Lumbriculus rubellus</i> (HOFFMEISTER)			X						X
<i>Nais barbata</i> (O. F. MUELLER)					X				
<i>Nais elinguis</i> (O. F. MUELLER)						X	X	X	
<i>Nais pardalis</i> FIGUET					X		X		
<i>Octoclasium lacteum</i> (ORLEY)				X					X
<i>Psamoryctides barbatus</i> (GRUBE)								X	
<i>Rhyacodrilus coccineus</i> VEJDOVSKY	X		X					X	X
<i>Spirosperma ferox</i> (EISEN)	X								
<i>Stylaria lacustris</i> (LINNAEUS)								X	
<i>Stylodrilus heringianus</i> CLAPAREDE	X		X						
<i>Tubifex tubifex</i> (O. F. MUELLER)							X	X	
<b>TRICHOPTERA</b>									
<i>Allogamus auricollis</i> PICTET	X				X	X	X		

Taxon	Sampling site									
	1	2	3	4	5	6	7	8	9	
<i>Drusus discolor</i> (RAMBUR)	X	X	X	X						
<i>Hydropsyche guttata</i> PICTET		X	X		X				X	
<i>Hydropsyche instabilis</i> (CURTIS)					X	X	X		X	
<i>Hydropsyche pellucidula</i> (CURTIS)							X			
<i>Hydropsyche tabacarii</i> BOTOSANEANU		X	X	X					X	
<i>Limnephilus sparsus</i> CURTIS									X	
<i>Micrasema minimum</i> McLACHLAN			X						X	
<i>Philopotamus montanus</i> (DONOVAN)				X						
<i>Potamophylax cingulatus</i> (STEPHENS)	X	X	X	X		X	X		X	
<i>Rhyacophylla armeniaca</i> GUERIN-MENEVILLE	X	X		X	X					
<i>Rhyacophylla fasciata</i> HAGEN							X			
<i>Rhyacophylla loxias</i> SCHMID	X	X	X						X	
<i>Rhyacophylla moesaryi</i> KLAPALEK	X	X	X	X						
<i>Rhyacophylla nubila</i> (ZETTERSTEDT)				X	X		X			
<i>Rhyacophylla obliterated</i> McLACHLAN	X						X			
<i>Rhyacophylla palmeri</i> McLACHLAN		X		X			X			
<i>Rhyacophylla polonica</i> McLACHLAN	X									
<i>Rhyacophylla tristis</i> PICTET		X								
<i>Rhyacophylla vulgaris</i> PICTET	X	X	X	X	X	X	X		X	
<i>Sericostoma flavicorne</i> SCHNEIDER						X				
SIMULIIDAE										
<i>Prosimulium hirtipes</i> (FRIES)	X	X								
<i>Cneta bertrandi</i> (GRENIER & DARRIER)	X									
<i>Eusimulium aureum</i> (FRIES)	X	X	X							
<i>Odagmia caucassica</i> (RUBZOV)									X	
<i>Odagmia ornata</i> (Meigen)	X	X	X	X	X	X	X			
<i>Odagmia spinosa</i> (DOBY & DEBLOCK)					X					
<i>Odagmia reophila</i> KNOZ		X			X	X	X			
<i>Odagmia variegata</i> (MEIGEN)		X	X	X	X	X				
<i>Tetisimulium crinitum</i> (RUBZOV)			X	X	X					
<i>Tetisimulium bezzii</i> (CORTI)					X					
<i>Cleitosimulium argenteostriatum</i> (STROBE)							X			
BLEPHARICERIDAE										
<i>Blepharicera fasceata</i> (WESTWOOD)	X						X	X		
<i>Liponeura brevirastris</i> LOEW	X		X							
<i>Liponeura cinerascens</i> LOEW	X		X			X				
<i>Liponeura cordata</i> VIMMER	X	X	X				X			
CHIRONOMIDAE										
<i>Chironomus riparius</i> MEIGEN	X	X	X	X	X	X	X	X		
<i>Chironomus plumosus</i> KIEFFER				X						
<i>Chironomus gr. plumosus</i> KIEFFER				X						
<i>Cryptochironomus defectus</i> KIEFFER	X									
<i>Cryptochironomus gr. defectus</i> KIEFFER	X						X	X		
<i>Dicrotenipes nervosus</i> (STAEGER)			X		X	X	X	X		
<i>Endochironomus tendens</i> FABRICIUS			X							
<i>Tanytarsus gregarius</i> KIEFFER	X								X	
<i>Cricolopus sylvestris</i> (FABRICIUS)			X						X	
<i>Eukiefferiella s. f. similis</i> GOETGHEBUER		X					X			
<i>Eukiefferiella brevicar</i> (KIEFFER)					X					
<i>Tvetenia calvoscens</i> (EDWARDS)					X					
TOTAL:	27	21	23	17	19	17	20	13	15	

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