

Quantitative records of larvae of Ephemeroptera, Odonata and Plecoptera from the Zakarpats'ka Region, Ukraine (2004, 2006)

TIBOR KOVÁCS, ROMAN J. GODUNKO, PÉTER JUHÁSZ, BÉLA KISS & ZOLTÁN MÜLLER

ABSTRACT: The first part of this paper (Tables 1-2) provides data on 38 Ephemeroptera, 3 Odonata and 19 Plecoptera taxa from the Zakarpats'ka Region, Ukraine. The species *Taeniopteryx auberti* Kis & Sowa, 1964 and *T. schoenemundi* (Mertens, 1923) are recorded in the first time from Ukraine. The following species are new to Zakarpats'ka Region and Tysa River: *Cloeon dipterum* (Linnaeus, 1761), *Kageronia fuscogrisea* (Retzius, 1783) (Borzhava), *Isogenus nubecula* Newman, 1833 (Rika, Teresva, Tysa). The second part (Tables 3-5) is a still unpublished data list of GODUNKO & KOVÁCS (2008).

Introduction

This paper is divided into two parts. The first part (Tables 1-2) contains results of a quantitative sampling focused on the Tysa and its inflows (06.05.2004-07.05.2004, 29.06.2004-30.06.2004, 19.10.2004-20.10.2004). The water courses investigated are Chorna Tysa, Bila Tysa, Tysa (six sampling spots), Shopurka, Apshytisia, Teresva, Tereblia, Rika, Borzhava. Faunistic results of this work were published by KOVÁCS & GODUNKO (2008).

Composit type samples were taken using the “kick and sweep” method. Three semiquantitative samples were taken from five meter long sections at each sampling spot. This meant the sampling of a 3.75 m² (3 × 1.25 m²) area at each site. The three separately processed samples represented characteristic habitat-types of the given river-section. The collectors are Péter Juhász, Béla Kiss and Zoltán Müller.

The Ephemeroptera and Plecoptera material on which the present part is based has been preserved in 70% ethanol and housed in the Mátra Museum (Gyöngyös, Hungary).

Identification of the genera: *Caenis luctuosa/macrura*, *Ecdyonurus*, *Rhithrogena* (Ephemeroptera); *Amphinemura*, *Chloroperla*, *Dinocras cephalotes/megacephala*, *Isoperla*, *Leuctra*, *Nemoura*, *Perla marginata/pallida*, *Perlodes*, *Protonemura*, *Rhabdiopteryx*, *Siphonoperla* (Plecoptera) is still in progress.

The second part (Tables 3-5) contains the unpublished data on which GODUNKO & KOVÁCS (2008) provided information and conclusions. Only one quantitative record was published in that paper, namely that of *Baetis beskidensis* Sowa, 1972 which was reported as new to Ukraine.

Table 1. Taxonomical composition and number of collected Ephemeroptera, Odonata, Plecoptera specimens of the Choma Tysa, Bila Tysa, Tysa River (2004)

	I/1.			I/2.			I/3.			I/4.			I/5.			I/6.			I/7.			I/8.												
	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c										
<i>Acantrella sinatica</i>		3																																
<i>Baetis alpinus</i>	25			11																														
<i>B. fuscatus</i>					12		26	1													28	1		27	18	63	24							
<i>B. gracilis</i>																								31		1								
<i>B. lutheri</i>	7	13		14	2		5			6						1																		
<i>B. melanonyx</i>	2																																	
<i>B. muticus</i>	5						3	1													1			8										
<i>B. rhodani</i>	36	5	6	30			9		9							1					1			3										
<i>B. scambus</i>	26	1			20		13		2																									
<i>B. vardarensis</i>							2		9							14	12																	
<i>B. vernus</i>	6							1													1													
<i>Caenis beskidensis</i>																	2							23										
<i>C. luctuosad/macrura</i>																1								2										
<i>C. pseudovivulorum</i>																								3										
<i>Centropilum pulchrum</i>																								3										
<i>Ecdyonurus sp.</i>	14	1	8	3	1	12	9	36	6	17	21	57	1			2	6	1	9	7	16	11	11	11	11	240	20							
<i>Electrogena lateralis</i>	1				3	2							1																					
<i>Epeorus assimilis</i>	3		3						4												2													
<i>Ephemerella lineata</i>																									1									
<i>Ephemerella mucronata</i>	14			21			16			48			10																					
<i>Habroleptoides confusa</i>	22	8	1				2	1				1																						
<i>Heptagenia coenulans</i>																																		
<i>H. sulphurea</i>																																		
<i>Oligoneuriteella rhemana</i>																																		
<i>Potamanthus luteus</i>																																		
<i>Paraleptophlebia submarginata</i>																																		
<i>Rhithrogena sp.</i>	154	156	139	4	7	6	189	78	101	151	32	81	47	22	10	24	37	31	155	14	20	33												
<i>Serratella ignita</i>	10				24		69				42			7			6								46									
<i>Torleya major</i>	5	1	4	3	2	1										6									2	5								
Ephemeroptera Σ	280	229	169	90	72	19	235	342	114	240	489	141	89	60	17	62	322	44	232	208	56	104	413	60										
<i>Onychogomphus forcipatus</i>										1																								
Odonata Σ	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	5	2	0	4	1	0	5	2	0										

	I/1.			I/2.			I/3.			I/4.			I/5.			I/6.			I/7.			I/8.			
	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c	
<i>Amphinemura</i> sp.	3						1																		
<i>Brachyptera risi</i>			1																						
<i>B. seticornis</i>	2		4				1																		
<i>Chloroperla</i> sp.	7	1	1	9	1	6																			
<i>Dinoceras cephalotes/megacephala</i>	1	1	1																		1				
<i>Isogenus nubecula</i>	62	17	13	2	15	52							18		4						2			10	
<i>Leuctra</i> sp.	16	4	1	1	2	3	2	1													1				
<i>Nemoura</i> sp.													1												
<i>Perla bipunctata</i>																						2			
<i>P. burmeisteriana</i>																									
<i>P. grandis</i>													1												1
<i>P. marginata/pallida</i>	1	2	5	5	7	8				2	1	3													1
<i>Perlodes</i> sp.	4		13			75				4		5	1												
<i>Protonemura</i> sp.							2																		
<i>Rhabdiopteryx</i> sp.			1																						
<i>Siphonoperla</i> sp.	2		1																						
<i>Taeniopteryx auberti</i>			2			5																			
<i>T. schoenenundi</i>																									
Plecoptera Σ	98	23	25	24	7	92	32	3	9	59	2	9	25	0	3	5	0	7	50	1	10	6	0	10	
Total number of specimens	378	252	194	114	79	111	267	345	123	300	491	150	115	60	20	72	324	51	286	210	66	115	415	70	

I/1. = Chorna Tysa (Feketesztiza: Fekete-Tisza); a = 07.05.2004, b = 29.06.2004, c = 20.10.2004 – I/2. = Roztoky: Bila Tysa (Nyilas: Fehér-Tisza); a = 07.05.2004, b = 29.06.2004, c = 20.10.2004 – I/3. = Vil'khovaty: Tysa (Kiscserjés, Tisza); a = 07.05.2004, b = 29.06.2004, c = 20.10.2004 – I/4. = Khmeliv: Tysa (Komlós: Tisza); a = 06.05.2004, b = 29.06.2004, c = 20.10.2004 – I/5. = Luh: Tysa (Lonka, Tisza); a = 06.05.2004, b = 29.06.2004, c = 19.10.2004 – I/6. = Tiachiv: Tysa (Téesó: Tisza); a = 06.05.2004, b = 29.06.2004, c = 19.10.2004 – I/7. = Vyshkiv: Tysa (Visk: Tisza); a = 06.05.2004, b = 29.06.2004, c = 19.10.2004 – I/8. = Tekovo: Tysa (Tekeháza: Tisza); a = 07.05.2004, b = 30.06.2004, c = 19.10.2004.

Table 2. Taxonomical composition and number of collected Ephemeroptera, Odonata, Plecoptera specimens of the tributaries of the Tysa River: Shopurka, Apshtyisia, Teresva, Tereblia, Rika, Borzhava (2004)

	II.			III.			IV.			V.			VI.			VII.		
	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c
<i>B. beskidensis</i>		4																
<i>B. buceratus</i>																1		
<i>B. fuscatus</i>		7		3	5		12	1		6			15	3	1			
<i>B. gracilis</i>							2											
<i>B. lutheri</i>	34						1											
<i>B. muticus</i>	2		1	4			7											
<i>B. rhodani</i>	5		1	3			2		1			2			4			
<i>B. scambus</i>		1			1								2					
<i>B. tricolor</i>																		2
<i>B. vardarensis</i>	49		1	2	2		28	3	5	3	16	4	8	7	2			
<i>B. vernus</i>							1											
<i>Caenis beskidensis</i>								2			9							
<i>C. luctuosa/macrura</i>				2	16			2			2		2		3	1	1	
<i>C. pseudovivolorum</i>					1					3			1					
<i>Centropitulum pulchrum</i>											1		2					
<i>Choroterpes picteti</i>																		
<i>Cloeon dipterum</i>																		2
<i>Ecdyonurus</i> sp.	8	4	9	6	36	1	4	29	20	2	25	5	32	17	10	5		
<i>Electrogena affinis</i>																		4
<i>E. lateralis</i>				5						3		2						
<i>Epeorus assimilis</i>	5		13					1										1
<i>Ephemera lineata</i>								1										6
<i>E. vulgata</i>																		
<i>Ephemerella mucronata</i>	46						2											
<i>Habroleptoides confusa</i>									6									
<i>Heptagenia coeruleans</i>										1								
<i>H. sulphurea</i>											1	2	3	1	16	1	1	
<i>Kageronia fuscognisea</i>																		1
<i>Oligoneuriella rhenana</i>								698		760				621				
<i>Paraleptophlebia submarginata</i>		458			38			2			1		2					64
<i>Potamanthus luteus</i>			1															7
<i>Proclleon bifidum</i>																		16

	II.			III.			IV.			V.			VI.			VII.		
	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c
<i>Rhithrogena</i> sp.	133	39	91	1	28	7	97	9	52	1	1	101	17	75	2			
<i>Serratella ignita</i>		44			16			32		39			33					
<i>Torteya major</i>	5		4				5		2	2		1						
Ephemeroptera Σ	287	557	121	23	141	14	146	789	91	9	863	10	122	735	114	26	37	74
<i>Gomphus vulgatissimus</i>																		2
<i>Onychogomphus forcipatus</i>	2	1	6	7	10		1			5	5	20	1	1				
<i>Platynemis pennipes</i>																2	1	3
Odonata Σ	2	1	6	7	10	0	1	0	0	5	5	20	1	1	0	2	1	5
<i>Amphinemura</i> sp.	1						1											
<i>Brachyptera risi</i>	1																	
<i>Chloroperla</i> sp.	5																	
<i>Dinoceras cephalotes/megacephala</i>	1																	
<i>Isogenus nubecula</i>									1									
<i>Isoperla</i> sp.	29						31						1					
<i>Leuctra</i> sp.			2		2				18	1			8	4				
<i>Nemoura</i> sp.																		1
<i>Pera bipunctata</i>							1	1										
<i>P. burmeisteriana</i>			1															
<i>P. marginata/pallida</i>	8	2	6															
<i>Perlodes</i> sp.			13						6									
<i>Taeniopteryx auberti</i>			1															
<i>T. schoenemundi</i>			17						18									15
Plecoptera Σ	45	2	40	0	2	0	33	1	44	0	1	0	1	9	20	1	0	0
Total number of specimens	334	560	167	30	153	14	180	790	135	14	869	30	124	745	134	29	38	79

II. = Velykyi Bychki; Shoporka (Nagybocskó: Sopurka); a = 06.05.2004, b = 29.06.2004, c = 20.10.2004 – III. = Dibrova; Apshytisia (Alsóapsa: Apsica); a = 07.05.2004, b = 30.06.2004, c = 20.10.2004 – IV. = Teresva (Taracköz: Tarac); a = 07.05.2004, b = 30.06.2004, c = 19.10.2004 – V. = Bushtyno; Tereblia (Bustyaháza: Talabor); a = 07.05.2004, b = 30.06.2004, c = 19.10.2004 – VI. = Iza; Rika (Iza: Rika (Iza: Nagy-ág); a = 07.05.2004, b = 30.06.2004, c = 19.10.2004 – VII. = Bene; Borzhava (Bene: Borzsa); a = 07.05.2004, b = 30.06.2004, c = 19.10.2004.

UZa0506	UZa0606	UZa0806	UDu0506	UDu0606	UDu0806	UPe0506	UPe0606	UPe0806	UOn0506	UOn0606	UOn0806	LSa0506	LSa0606	LSa0806	LCh0406	LCh0506	LCh0606	LKa0506	LKa0606	LKa0806	LMG0506	LMG0606	LMG0806	BHr0506	BHr0606	BHr0806	BKhm0506	BKhm0606	BKhm0806	BBen0506	BBen0606	BBen0806	BVa0506	BVa0606	BVa0806		
	6	2										37	13	4	3	3		1	1	7																	
<i>Toxeya major</i>																																					
<i>Ephemerella micronata</i>									4																												
<i>Serratella ignita</i>	96	255	123	105	123	73	291	182	124	162	150	122	17	217	22		223	207						25	34	14	17	20	19	6	6	9					
<i>Caesia luctuosa</i>		5	2	3	2	7	6	2	1						4	2	5	6						17	1	5	15	13	13	6	4	4	10	8	15		
<i>C. macrura</i>																		2	9																		
<i>C. pseudovivitorum</i>																																					
<i>C. robusta</i>																																					
<i>Habrophlebia fusca</i>									2	3	5																										
<i>H. lauta</i>																																					
<i>Paraleptophlebia cinca</i>																																					
<i>P. submarginata</i>																																					
<i>Ephemerella danica</i>									1																												
<i>E. vulgata</i>																																					
<i>Potamanthus litens</i>																																					
Total number of specimens	407	790	467	416	395	291	758	613	358	632	672	451	260	158	215	344	270	839	821	16	28	53	2	4	8	218	162	141	155	212	129	61	73	42	65	114	73
Σ	4018 specimens: 3994 – larvae; 24 – imagoes female																						1445 specimens of larvae														
	6250 specimens: 6191 – larvae; 59 – imagoes female											4018 specimens: 3994 – larvae; 24 – imagoes female											1445 specimens of larvae														

Remarks. The localities of the Uzh River: UZab0506-0806 – 2 km up of Zabrid' village; UDub0506-0806 – Dubrynichi village, near the bridge towards Chornoholova village; UPer0506-0806 – Perechyn town, near of the mouth of Turia River; UOno0506-0806 – vicinity of Onokivtsi village, near the bridge towards Ortkhovysia village; the localities of the Latorys'ka River: LSva0506-0806 – Svaliava town, near the bridge towards Mukacheve town; LCha0406-0806 – Chamadievo village, near railway station; LKol0506-0806 – Kolchyno village, near railway station; LMG0506-0806 – 3 km S of Mali Heivtsi village, near the bridge towards Chop town; the localities of the Borzhava River: BHre0506-0806 – Hreblia village, near the bridge towards Vilkhivka village; BKhm0506-0806 – 2 km S of Khmilnyk village; BBen0506-0806 – Bene village, near the bridge towards Berehove-Vilok; BVa0506-0806 – Vary village, near the bridge in the village centre.

The dates of sampling of mayflies (Insecta: Ephemeroptera) of the basins of the Uzh River (1), the Latorys'ka River (2) and Borzhava River (3): 1 – 04.05.2006, 14-15.06.2006, 05.08.2006; 2 – 30.04.2006, 05.05.2006, 16.06.2006, 06.08.2006; 3 – 06.05.2006, 17.06.2006, 07.08.2006.

UZab0506

A

The acronym of locality

The date

of sampling (April, 2006)

	UTIa0506	174	309	221	218	335	611	138	182	269	164	105	144	157	362	458	163	97	58	142	209	145	126	102	86	407	522	307	336	389	188
	UTIa0606	3	10	8																4	26	8									
	UTIa0806		10	22	32	32	6	15	32					7	35	56															
	UTYa0606						9																								
	UTYa0806									1																					
	UTYa0506					1	3	1	1						3							2	1								
	UTYa0606												4																		
	UTKc0506																														
	UTKc0606																														
	UTKc0806																														
	UTKc0506																										2	6	8	12	
	UTKc0606																														
	UTKc0806																														
	RhS0506																														
	RhS0606																														
	RhS0806																														
	UTB0506																				4										
	UTB0606																														
	UTB0806																														
	BIS0506																														
	BIS0606																														
	BIS0806																														
	UTR0506																														
	UTR0606																														
	UTR0806																														
	UTKd0506																														
	UTKd0606																														
	UTKd0806																														
	UTD0506																														
	UTD0606																														
	UTD0806																														
	Total number of specimens																														
	Σ																														

7124 specimens: 7119 – larvae; 3 – imagoes; female; 2 – subimagoes female

Remarks. The localities: UTLa0506-0806 – Yasinia village, the mouth of Lazeshchyna River; UTYa0506-0806 – E vicinity of Kvasy village, the bridge towards Chorna Tysa village; UTKc0506-0806 – mouth of Keveliv stream, vicinity of Kvasy village, Keveliv settlement; Keve0506-0806 – N vicinity of Kvasy village, near Keveliv settlement, Keveliv stream (left-bank tributary of the Chorna Tysa River), 1 km up the stream mouth; UTB0506-0806 – Blyn village (central part of village); BiS0506-0806 – Blyn village, W slope of the Shev'era Mountain, small unnamed stream (left-bank tributary of the Chorna Tysa river), river, 0.2 km at the stream mouth; UTBT0506-0806 – vicinity of Rakhiv town, near the mouth of Bila Tysa river; RhS0506-0806 – E slope of the Lisina Mountain, small unnamed stream near the quarter office of the Carpathians Biosphere Reserve, Long. 47°57'25" E, Lat. 24°9'28" N, 14.07.2001, type locality of *E. riziui* Godunko et al. 2004; UTKo0506-0806 – near Kosylyv village, near bridge; UTD0506-0806 – Dilove village, near bridge.

The dates of sampling of mayflies (Insecta: Ephemeroptera) of mountain section of the Tysa river-basin (main current and small tributaries): 19-20.05.2006, 26-27.06.2006, 09-10.08.2006.

Results and discussion

Thirty-eight Ephemeroptera (8246 specimens, 328 data), 3 Odonata (88 specimens, 23 data) and 19 Plecoptera taxa (699 specimens, 106 data) have been recorded from 14 sites sampled between 6th May 2004 and 20th October 2004 in the Zakarpats'ka Region, Ukraine. *Taeniopteryx auberti* Kis & Sowa, 1964 and *T. schoenemundi* (Mertens, 1923) are new to Ukraine (cf. GODUNKO & KLONOWSKA-OLEJNIK 2003, GODUNKO & KOVÁCS 2008, GODUNKO *et al.* 2004, KHARCHENKO *et al.* 2003, KOVÁCS 2006, KOVÁCS & GODUNKO 2008, ZHILTZOVA 2003).

The following species represent new records to the Zakarpats'ka Region and Tysa River: *Cloeon dipterum* (Linnaeus, 1761), *Kageronia fuscogrisea* (Retzius, 1783) (Borzhava), *Isogenus nubecula* Newman, 1833 (Rika, Teresva, Tysa) (cf. CSER 2003, CSER & ANDRIKOVICS 2001, GÁLDEAN 1999, GODUNKO 2000, GODUNKO & KOVÁCS 2008, KOVÁCS 2006, KOVÁCS & GODUNKO 2008, MOCSÁRY 1900, ZHILTZOVA 1967, 1968).

Acknowledgements: Thanks are due to Ottó MERKL (Hungarian Natural History Museum, Budapest) for linguistic help. This study was supported by the Grant Agency of the Academy of Sciences of the Czech Republic (Project No. QS500070505) for the second author.

References

- CSER, B. (2003): Újabb adatok Kárpátalja kérészfauájának ismeretéhez. [New data to the knowledge of mayflies of the Zakarpats'ka Region, Ukraine.] – In: PENKSZA, K., KORSÓS, Z. & PAP, I. (eds.): III. Kárpát-medencei Biológiai Szimpózium. Magyar Biológiai Társaság, Budapest: 121–124.
- CSER, B. & ANDRIKOVICS, S. (2001): A Tisza-forrásvidék patakjainak gerinctelen makrofauájája. (Invertebrate macrofaunal investigations on the streams of Tisza headwater area) – Hidrológiai Közlöny 81(5-6): 346-348.
- GÁLDEAN, N. (1999): Some considerations about the reophilic elements of the bentic fauna (ord. Ephemeroptera, Plecoptera and Trichoptera) of the Upper Tisza Region. – In: HAMAR, J. & SÁRKÁNY-KISS, A. (eds.): The Upper Tisa Valley, Tiscia monograph series, Szeged: 413–425.
- GODUNKO, R. (2000): Historical changes of the fauna and questions of reservation of reservation of mayfly (Ephemeroptera, Insecta) of Ukrainian Carpathians. (Історичні зміни фауни та питання охорони одноденок (Ephemeroptera, Insecta) Українських Карпат). – Proceedings of State Natural History Museum 15: 158–168. (in Ukrainian with English summary)
- GODUNKO, R. J. & KLONOWSKA-OLEJNIK, M. (2003): A checklist of the Ukrainian mayflies (Ephemeroptera). – Polskie Pismo Entomologiczne 72: 203–210.
- GODUNKO, R. J. & KOVÁCS, T. (2008): The mayflies larvae (Insecta: Ephemeroptera) of the Ukrainian section of the Tysa river-basin collected during 2006. (Личинки одноденок (Insecta: Ephemeroptera) української частини басейну р. Тиси зібрані протягом 2006 року.) – Scientific Bulletin of the Uzhgorod University. Series Biology. Issue 23: 164-166. (in Ukrainian with English summary)
- GODUNKO, R. J., KLONOWSKA-OLEJNIK, M. & SOLDÁN, T. (2004): Ecdyonurus rizuni sp. nov. (Ephemeroptera: Heptageniidae) from the eastern Carpathians. – Annales Zoologici (Warszawa) 54(3): 519–524.
- KHARCHENKO, T. A., KARPEZO, YU. I. & LIASHENKO, A. V. (2003): Hidrobiota r. Tisy i ee izmeneniia v usloviakh antropogennogo pressa. (Гидробиота р. Тиси и ее изменения в условиях антропогенного пресса). – Gidrobiol. zhurn. 39(3): 11-26. (in Russian with English summary)
- KOVÁCS, T. (2006): Cloeon petropolitanum Kluge et Novikova, 1992 in the Carpathian Basin (Ephemeroptera: Baetidae) – Folia Historico-Naturalia Musei Matraensis 30: 139–142.
- KOVÁCS, T. & GODUNKO, R. J. (2008): Faunistical records of larvae of Ephemeroptera, Odonata and Plecoptera from the Zakarpats'ka Region, Ukraine. – Folia Historico-Naturalia Musei Matraensis 32: in press.
- MOCSÁRY, S. (1900): Ordo. Pseudo-neuroptera. – In: A Magyar Birodalom Állatvilága (Fauna Regni Hungariae) III. K. M. Természettudományi Társulat, Budapest: 23–32.

ZHILTSOVA, L. A. (1967): Survey of Plecoptera of the Ukrainian Carpathians I. Families Taeniopterygidae and Nemouridae. – Vestnik Zoologii 4: 34-42. (in Russian with English summary)

ZHILTSOVA, L. A. (1968): A review of Plecoptera of the Ukrainian Carpathians. II. Families Leuctridae, Capniidae, Perlodidae, Perlidae, Chloroperlidae. – Vestnik Zoologii 2: 61-67. (in Russian with English summary)

ZHILTSOVA, L. A. (2003): Plecoptera, gruppe Euholognatha. – Fauna of Russia and Neighbouring Countries 145: 1–538.

Tibor KOVÁCS

Mátra Museum

H-3200 GYÖNGYÖS

Kossuth Lajos u. 40

E-mail: koati@t-online.hu

Roman J. GODUNKO

State Museum of Natural History

National Academy of Sciences of Ukraine

UA-79008 LVIV

Teatralna str. 18

Ukraine

and

Biology Centre

Academy of Science of the Czech Republic

Institute of Entomology

CZ-37005 ČESKÉ BUDĚJOVICE

Branišovská str. 31

Czech Republic

E-mail: godunko@museum.lviv.net

godunko@seznam.cz

Péter JUHÁSZ

Béla KISS

Zoltán MÜLLER

BioAqua Pro Kft.

H-4032 DEBRECEN

Soó Rezső u. 21

E-mail: juhaszp@bioaquapro.hu, bkiss@bioaquapro.hu, mullerz@bioaquapro.hu