

## SUPPLEMENTARY MATERIAL 2 TO:

Alexandrowicz, W. P., 2024. Record of environmental changes during the Holocene in the light of malacological studies of river sediments in the Łapszanka Stream valley (Spisz area, Carpathians, Southern Poland). *Annales Societatis Geologorum Poloniae*, 94: 187–204.

### DETAIL FAUNAL COMPOSITION OF PROFILE LP-II

F<sub>F</sub> – forest species, F<sub>B</sub> – shadow-loving species of rare forests and shrub zones, F<sub>H</sub> – shadow-loving, moist forest species, O<sub>O</sub> – open-country species, M<sub>I</sub> – mesophilous species of medium humid habitats, M<sub>H</sub> – mesophilous species of humid habitats, H – hygrophilous species, W – aquatic species; E – ecological group of molluscs after: Ložek (1964), Alexandrowicz and Alexandrowicz (2011) and Juříčková *et al.* (2014a). For sample location see Figure 4.

E	Taxon	Profile Lp-II (samples)													
		13	14	15	16	17	18	19	20	21	22	23	24	25	26
	<i>Platyla polita</i> (Hartm.)	43	16	21	22	31	88	25	53	38	22	14	8		
	<i>Acanthinula aculeata</i> (Müll.)	2				7		5	6						
	<i>Vertigo pusilla</i> Müll.	6	8	1	21	19	32	49	42	39	14	8	12		
	<i>Ena montana</i> (Drap.)	17	3	8	11	13	42	18	12	17			8		
	<i>Cochlodina laminata</i> (Mont.)	4	3	3	10	14	21	22	20	10		8			
	<i>Ruthenica filograna</i> (Rossm.)				25	29	51	49	52	21					
	<i>Calusilia cruciata</i> (Stud.)				14	10	33	38	31	14					
	<i>Macrogastra plicatula</i> (Drap.)	7		2	2	8	12	17	11	7					
	<i>Macrogastra borealis</i> (Boett.)							5	15						
	<i>Bulgarica cana</i> (Held)				3			3		3					
	<i>Discus ruderratus</i> (Hartm.)	214	128	147	15	7	12	7	10	5	8		4		
	<i>Discus perspectivus</i> (Mühlf.)				31	89	121	132	83	42					
F <sub>F</sub>	<i>Vitrea diaphana</i> (Stud.)	1	14	7		8	49	17	34	17	17	4			
	<i>Vitrea transsylvanica</i> (Cless.)	5	10	12		14	32	32	21	20	6	6			
	<i>Mediterranea depressa</i> (Sterki)								8		2				
	<i>Aegopinella pura</i> (Ald.)	82	26	17	84	94	141	93	94	38	21				
	<i>Aegopinella nitens</i> (Mich.)	7				19	21	17	19						
	<i>Eucobresia nivalis</i> (Dum et Mort)									3	1	2	2		
	<i>Semilimax semilimax</i> (Fér.)	1				10	8	3	2		3		1		
	<i>Monachoides incarnatus</i> (Müll.)	21	19	5	29	24	43	28	17	10	7	8	5		
	<i>Petasina unidentata</i> (Drap.)	16	5	4	26	10	17	10	14	8		5			
	<i>Faustina faustina</i> (Rossm.)	21	3	8	21	16	21	8	7	5					
	<i>Isognomostoma isognomostomos</i> (Schröt.)	27	5	9	32	29	34	26	21	19	17		3		

E	Taxon	Profile Lp-II (samples)													
		13	14	15	16	17	18	19	20	21	22	23	24	25	26
F <sub>B</sub>	<i>Vertigo alpestris</i> Ald.	6			2	7	7								
	<i>Alinda biplicata</i> (Mont.)	2		5				5		10		2			
	<i>Discus rotundatus</i> (Müll.)				15	21	36	12	18	17					
	<i>Aegopinella minor</i> (Stab.)	1			36	27	38	28	21						
	<i>Semilimax kotulae</i> West.	43	31	42	7	4	4								
	<i>Fruticicola fruticum</i> (Müll.)	30	6	4	19	10	29	17	21	18	3	1		1	
F <sub>H</sub>	<i>Macrogastra tumida</i> (Rossm.)						8	11	7						
	<i>Vestia turgida</i> (Rossm.)	5	1		1	2		10	14	8					
	<i>Vestia gulo</i> (Bielz)					2		8	7	2					
	<i>Vitrea crystallina</i> (Müll.)	247	86	58	97	131	214	196	152	57	38	41	31		
	<i>Monachoides vicinus</i> (Rossm.)	45	24	14	46	36	82	42	42	27	15	12	17		
	<i>Urticicola umbrosus</i> (C.Pfe.)		11	4	7	14	31	19	21	14					
O <sub>o</sub>	<i>Vallonia costata</i> (Müll.)	8	4	4	5	12	34	21	14	12		1	2	58	82
	<i>Vallonia pulchella</i> (Müll.)	5	7	3	8	6	28	25	18	10	3	3	5	86	143
	<i>Columella columella</i> (Mart.)	34	10	9											
	<i>Vertigo pygmaea</i> (Drap.)								3	7				12	10
	<i>Pupilla muscorum</i> (L.)	6			2		3	8	7					19	8
M <sub>I</sub>	<i>Cochlicopa lubrica</i> (Müll.)	98	16	19	20	26	58	17	19	8	21	14		8	12
	<i>Clausilia dubia</i> Drap.	5	2	1	8	5	17	21	17	8		5			
	<i>Punctum pygmaeum</i> (Drap.)	50	5	8	12	8	44	8	17	21	2	1	5	1	7
	<i>Euconulus fulvus</i> (Müll.)	37	8	2	12	11	10	12	12	3	5	1	2	3	
	<i>Perpolita hammonis</i> (Ström)	52	13	14	21	36	72	34	54	24	21	4	7	4	3
	<i>Vitrina pellucida</i> (Müll.)	2	1			1		5	2		1	1			
M <sub>H</sub>	<i>Carychium tridentatum</i> (Risso)	63	34	48	59	129	294	92	126	73	17	19	14		
	<i>Succinella oblonga</i> (Drap.)	61	9	12	17	21	45	12	21	10	7	7	3		1
	<i>Vertigo substriata</i> (Jeffr.)	56	39	42	7	6	12	12	8						
	<i>Vertigo angustior</i> Jeffr.				19	12	19	21	25	21			7		
	<i>Perpolita petronella</i> (L.Pfe.)	24	8	7	16	18	53	22	32	11	2				
	<i>Trochulus villosulus</i> (Rossm.)	14	6	5	12	7	8								
	<i>Perforatella bidentata</i> (Gmel.)	57	26	37	27	54	121	32	44	42	19	14	6		
	<i>Arianta arbustorum</i> (L.)	34	15	32	20	14	56	29	30	24	10	3	3		

E	Taxon	Profile Lp-II (samples)													
		13	14	15	16	17	18	19	20	21	22	23	24	25	26
H	<i>Carychium minimum</i> Müll.	195	26	18	86	84	183	63	83	21	21	22	10		
	<i>Succinea putris</i> (L.)			5		1									
	<i>Zonitoides nitidus</i> (Müll.)	26	7	5	19	21	42	15	27						
	<i>Vertigo antivertigo</i> (Drap.)				15		8								
	<i>Vertigo genesii</i> (Gred.)	31	14	17											
	<i>Vertigo geyeri</i> Lindh.	29	12	6											
W	<i>Galba truncatula</i> (Müll.)	153	8	9	121	6	87		14	8					
	<i>Stagnicola palustris</i> (Müll.)	16			8										
	<i>Radix balthica</i> (L.)	51	3		71		42								
	<i>Anisus leucostoma</i> (Mill.)	89			82		121								
	<i>Pisidium casertanum</i> (Poli)	22			26										
	<i>Pisidium obtusale</i> (Lam.)	41			22		19								
	<i>Pisidium personatum</i> Malm	12	4	5	39	2	17	5	15	5					
<b>Total species</b>	<b>52</b>	<b>41</b>	<b>42</b>	<b>51</b>	<b>51</b>	<b>51</b>	<b>50</b>	<b>52</b>	<b>43</b>	<b>26</b>	<b>26</b>	<b>22</b>	<b>10</b>	<b>9</b>	
<b>Total individuals</b>	<b>2088</b>	<b>676</b>	<b>675</b>	<b>1331</b>	<b>1186</b>	<b>2620</b>	<b>1406</b>	<b>1464</b>	<b>777</b>	<b>303</b>	<b>208</b>	<b>157</b>	<b>206</b>	<b>274</b>	
Plates of slugs			1	1	1			1			2	2	14	8	
<b>Indeterminate shell fragments</b>															
	Vertiginidae	17	13	11	12	10	11	8	10	5	1	1		1	
	Clausiliidae	21	16	15	21	16	33	29	32	28	3	9	2	1	2
	Zonitidae	29	14	16	38	26	21	33	46	47	13	7	6	8	6
	Helicidae	33	16	11	34	24	31	40	38	26	21	15	8	7	4
	Other fragments	141	73	82	69	54	71	88	115	91	35	25	21	17	12
<b>Total indeterminate shell fragments</b>	<b>241</b>	<b>132</b>	<b>135</b>	<b>174</b>	<b>130</b>	<b>167</b>	<b>198</b>	<b>241</b>	<b>197</b>	<b>73</b>	<b>57</b>	<b>37</b>	<b>34</b>	<b>24</b>	