

Molluscan assemblages in the surroundings of the Rokytka brook (Prague area)

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Abstract. In 1987-1988 were examined molluscan assemblages in the surroundings of the Rokytka brook (Prague) with results of 67 collected species. The quantitative structure of molluscan assemblages in 11 localities is presented.

INTRODUCTION

Rokytka is the longest brook in the area of Prague, rising in the fields south-west of Tehovec and emptying into the Vltava river by Libeň bridge. There are some valuably preserved regions on its upper stream, where fairly well-preserved molluscan assemblages could be supposed to be found.

MATERIAL AND METHODS

The proper quantitative and qualitative research was done in 13 localities, laid out in cadastres of villages: Tehovec (locality number 1 - area of the sources), Nedvězí (locality number 2 - quarry, locality number 3 - wet meadow, locality number 4 - former tipping, locality number 5 - woods), Královice (locality number 6 - sunny hillside, locality number 7 - woods), Hájek (locality number 8 - wet meadow under Koloděje preserve), Dolní Počernice (locality number 9 - the Počernice pond, locality number 10 - wetlands along the railways, locality number 11 - the Park of Počernice, locality number 12 - meadow by the sand pit, locality number 13 - flooded sand pit).

RESULTS AND DISCUSSION

In the observed area I found 67 species of molluscs, 48 species from which are terrestrial and 19 freshwater. According to their ecological requirement it is possible to state that woodland species form 28.4% of all species found, the open-ground species 8.9%, indifferent types 25.4% and marshland and aquatic species 37.3% (ecological characteristics of simple species taken from the publication by Ložek (1964)).

Various structure of mollusc fauna is based on fairly preserved vegetation, favourable moisture conditions on mollusc fauna of the Elbe and Sázava lowlands. That is why we meet here a lot of species which are rare in the Prague area. In the observed area they were found mostly only in some localities (Table 1) in rather low number of specimens, which means that in those communities they exist in relatively low numbers (their dominance does not overcome 5%). From terrestrial snails there appear mostly woodland species, from which 8 can be ranked among very rare for the Prague region. They are *Aegopinella pura*, *Cochlodina laminata*, *Discus perspectivus*, *Vertigo pusilla* which were found only in one locality; *Clausilia pumila*, *Eucobresia*



Table 1. The results of quantitative and qualitative research on molluscs in the surroundings of the Rokytka brook. Description of localities see text. Number in column represents the dominant species (in per cent) in the locality examined counted from the quantitative research. + Occurrence of the species in the locality examined, the species not having been found during quantitative research. R - Rokytka

SPECIES	Tehovec		Nedvězí				Královice			Hájek		Dolní Počernice					
	1	R	2	3	4	5	R	6	7	R	8	R	9	10	11	12	13
Woodland species																	
<i>Acanthinula aculeata</i>			+		+	3.3			0.2								
<i>Aegopinella pura</i>														15.6			
<i>Alinda biplicata</i>			12.3	0.2	24.0	2.6			35.9					11.8	2.8		
<i>Arion circumscriptus</i>	+																+
<i>Arion subfuscus</i>	+			+					+								+
<i>Cepaea hortensis</i>			4.6	0.4	2.7				+								
<i>Clausilia pumila</i>			3.1	0.9	+	0.7			0.9								
<i>Cochlodina laminata</i>									0.2								
<i>Discus perspectivus</i>									0.5								
<i>Discus rotundatus</i>			53.8		61.3	26.3		1.1	4.1								19.6
<i>Ena obscura</i>									3.2								
<i>Eucobresia diaphana</i>			+	0.6		0.7			0.3								
<i>Helix pomatia</i>			3.1	+					+						+	+	+
<i>Malacolimax tenellus</i>			+			+			0.2								+
<i>Monachoides incarnata</i>			3.1	+	+	3.9			3.4		0.1			+	9.8		+
<i>Sphyradium doliolum</i>					+				0.3								
<i>Semilimax semilimax</i>			4.6	0.7	2.7				0.6								
<i>Urticicola umbrosa</i>					+				0.2		0.3						
<i>Vertigo pusilla</i>			+														
Open-ground species																	
<i>Ceciloides acicula</i>															2.0		
<i>Euomphalia strigella</i>																	+
<i>Pupilla muscorum pratensis</i>				0.1													
<i>Truncatellina cylindrica</i>								78.5	13.2								
<i>Vallonia pulchella</i>								3.4		5.1				2.0	1.7		
<i>Vertigo pygmaea</i>				1.1				1.1	0.3	2.3							3.6
Indifferent species																	
<i>Arion hortensis</i> agg.				+													
<i>Arion rufus</i>	+			0.3					+		+						
<i>Carychium tridentatum</i>	0.2		+	24.1					7.1		1.4						

continued

SPECIES	Tehovec		Nedvězí				Královice			Hájek		Dolní Počernice						
	1	R	2	3	4	5	R	6	7	R	8	R	9	10	11	12	13	
<i>Cochlicopa lubrica</i>	7.4			5.6		4.6			7.3		7.9					+	2.3	
<i>Cochlicopa lubricella</i>								15.9										
<i>Deroceras laeve</i>	+			0.1					+		0.2							
<i>Euconulus fulvus</i>	1.5		+	1.3		2.0												
<i>Nesovitrea hammonis</i>	9.5			10.5					0.6		5.1						7.7	
<i>Oxychilus cellarius</i>					6.7	36.2			0.2								7.8	
<i>Punctum pygmaeum</i>				0.4		15.8												
<i>Succinea oblonga</i>				7.6													13.9	
<i>Tandonia rustica</i>			+															
<i>Trichia hispida</i>	19.3			1.2	1.3				0.3								0.9	
<i>Trichia sericea</i>				0.1					0.5								+	
<i>Vertigo angustior</i>				2.7							0.5							
<i>Vertigo substriata</i>				0.4														
<i>Vitrina pellucida</i>	15.7		15.4	0.1	1.3	2.6			12.4		+						1.1	
Marshland and aquatic sp.																		
<i>Ancylus fluviatilis</i>								+	+	+								
<i>Anisus vortex</i>																+		
<i>Anodonta cygnea</i>														+		+		
<i>Aplexa hypnorum</i>																5.9	1.1	
<i>Carychium minimum</i>	3.4			23.1		+			0.3		36.5						30.7	
<i>Gyraulus albus</i>											+							
<i>Gyraulus laevis</i>												+						
<i>Hippeutis complanatus</i>											+							
<i>Lymnaea auricularia</i>														+		+	+	
<i>Lymnaea palustris</i>														+		+		
<i>Lymnaea peregra peregra</i>		+										+						
<i>Lymnaea stagnalis</i>														+				
<i>Lymnaea truncatula</i>		+								+	9.3	+	+			13.7	6.6	+
<i>Oxyloma elegans</i>				0.6					0.3		21.8		+			+		
<i>Physa acuta</i>														+		+		
<i>Pisidium casertanum</i>	0.4	+									+		+					
<i>Pisidium personatum</i>	0.2	+																
<i>Planorbarius corneus</i>																+		

continued

SPECIES	Tehovec		Nedvězí					Královice			Hájek		Dolní Počernice				
	1	R	2	3	4	5	R	6	7	R	8	R	9	10	11	12	13
<i>Sphaerium corneum</i>											+		+				
<i>Succinea putris</i>	28.4			5.0							6.7		0.5				2.0 + +
<i>Unio pictorum</i>																	+
<i>Vallonia enniensis</i>																	0.2
<i>Vertigo antivertigo</i>													0.5				0.6
<i>Viviparus conectus</i>																	+
<i>Zonitoides nitidus</i>	14.0			12.6		1.3				0.8		8.5					9.8 26.8
Number of all species	15	4	15	28	12	14	1	5	32	6	19	3	9	4	21	19	3
Number of all specimens (gained during quantitative research)	528	-	65	934	75	152	-	88	645	-	1321	-	57	-	51	469	-

diaphana, *Sphyradium doliolum*, *Semilimax semilimax* were found in more localities. From the open-ground species it is possible to include *Pupilla muscorum pratensis*, found only in one specimen on the meadow in Nedvězí. Due to gradational vegetation changes on the meadow (original phytocoenological union *Calthion* is replaced by union *Phragmition communis* in many places) it can be expected to disappear in a short time from the locality. From indifferent species, *Tandonia rustica*, *Trichia sericea* and *Vertigo substriata* can be included among the rare species in the Prague area.

The marshland and aquatic species as *Vallonia enniensis*, *Ancylus fluviatilis*, *Anisus vortex*, *Anodonta cygnea*, *Aplexa hypnorum*, *Gyraulus laevis*, *Lymnaea palustris*, *Physa acuta*, *Unio pictorum* and *Viviparus conectus* can be found here preferring pure water and pure moist habitats. As it is obvious from the survey a lot of species survive there, although they have disappeared from other Prague areas especially due to the damage their original places.

In the observed area, as in most of our region, some changes appeared in the structure of mollusc fauna. There were noticed especially during the quantitative research of the structure of associations in individual localities. I found high dominance of tolerant species almost in all stand-points. Their representatives are, for example, *Alinda biplicata*, *Discus rotundatus* and *Trichia hispida*. Their increase in number is evident also in other Prague localities (Ložek 1985). On wet meadows there are other representatives: *Carychium minimum*, *C. tridentatum*, *Oxychilus cellarius*, *Succinea putris*, *S. oblonga*, *Oxyloma elegans* and *Vitrina pellucida*.

From the point of further development of mollusc fauna in the observed area the greatest changes can be expected in the structure of meadow communities, which are affected by the expansion of *Phragmites* (localities number 3, 8, 12). In this respect, directly endangered are *Pupilla muscorum pratensis*, *Aplexa hypnorum* and *Vallonia enniensis*, the populations of which are already very low.

Aquatic species are endangered especially by ploughing of safety belts of meadows in the stream area of the Rokytká, which increases the possibility of water pollution by agriculture.

The woodland malacocoenoses which are rather preserved seem to be least endangered. Even rarer species are represented by populations which are able to secure their preservation and development by their numerousness. Most localities are marked by the expansion of high vegetation so that there is no threat of destroying the natural plant life. Only locality number 11

represents an exception: in 1988 the trees there were cut down and the "tree floor" heavily damaged, more substantial changes can be expected here.

SUMMARY

The authors research followed the researches of molluscan assemblages in the area of Prague and ratified the contemporary trends of development of mollusc fauna in the whole area (Ložek & Pflieger 1988). The observed area has some specific features due to the location. It is situated in the wettest part of widest Prague area, so that the steppe species common in the north, west and south-west of Prague do not reach here. Some species were found that are typical of wetter and colder areas (joined the mollusc fauna of Posázaví; for example, *Vertigo substriata*, *Semilimax semilimax*, *Euobresia diaphana*). Originally, only forest fauna was represented here; today, the landscape is influenced by substantial agricultural activities. In spite of this fact it was found that mollusc fauna, found especially in wood areas, has been fairly conserved.

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