

## Contributions to the terrestrial snail assemblages of the Túr Crevice, Romania.

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### Abstract

Mollusc assemblages on stream banks and in rock grasslands were studied in the Túr Crevice (Muntii Trascaului region, Romania). The 33 species encountered in this survey have not been mentioned in the literature for this locality before.

### Zusammenfassung

In der Túr-Schlucht (Muntii Trascaului, Rumänien) wurden die Molluskengesellschaften der Flussufer und Felsensteppen untersucht. Dieser Standort, an dem 33 Arten gefunden wurden, war bisher aus der Literatur nicht bekannt.

### Introduction

The Túr Crevice is a three-kilometer-long fissure along the stream Túr between the villages Túr and Koppánd (CSÚRÖS-KÁPTALAN 1992). Like the better known Torda Crevice, Cheile Turzii), the Túr Crevice also lies in the Torockó Mountains (Muntii Trascaului), a subregion of to the Transylvanian Middle Range (Muntii Apuseni) (BÁBA 1998). The crevice's fauna is little known yet. Not a single reference to this crevice is given in the literature listed at the end of this paper.

### Material and methods

Mollusc assemblages in streambank and rock grassland vegetation in the Túr Crevice were sampled by using 10x25x25 cm sized squares in June 1993 and in July 1996. The studied plant associations were as follows. Streambank: 1. Petasitetum hybidi DOSTAL 1933, SOÓ-ZÓLYOMI fac. Urtica dioica 1993. 06. 1.; 2. Petasitetum hybidi DOSTAL 1933, SOÓ-ZÓLYOMI fac. Aegopodium podagraria 1996. 07. 10. (In the latter, the sample site was located 100-200 m away from a garbage heap at the valley entrance.) Rock grassland: 3. Seslerietum rigidae praebiharicum ZÓLYOMI 1939. 1996. 07. 10. (This phytocoenosis is typical to the limestone fissures of Transsylvania (CSÚRÖS-KÁPTALAN 1992).

Species density (mean species number in 10 squares), frequency, abundance of juveniles (in percentage), and percentage mortality were considered in the evaluation of data.

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### Species encountered

Altogether 318 individuals of 33 species were collected (Table 1.). Only dead specimens of four species (*Oxychilus depressus* and *Perforatella rubiginosa* on the streambank, and *Laciniaria plicata* and *Helix lutescens* in the rock grassland) were found. All these 33 mollusc species are new for the literature of the Túr Crevice. Only Soós (1943) mentioned five species from the large Bihar Mountains which encompass numerous subregions. Among these snails, *Pyramidula* and *Balea biplicata* are reported as common species in limestone areas, and *Chondrula*, *Clausilia pumila* and *Trichia hispida* are listed from the nearby Torda Crevice. No reference to the Túr Crevice is given by GROSSU 1955-1987.

The three sampling sites in our study differ in species number and abundance. The low species number at site 2 is particularly remarkable (Table 1), which must be due to a strong anthropogenic influence (nearby garbage heap) there. The rich Clausiliid fauna in the Petasitetum (site 1) is certainly caused by the surface precipitation runoff from the high walls of the narrow crevice. Rock dwelling thermophilous species dominate the mollusc fauna in the Seslerietum. Species density is high, while the percentage of juveniles is low at the sites 1 and 3. High proportion of juveniles, high percentage mortality and low species density reflects the strong human impact on site 2.

Species frequency values also give ecological indication. These frequencies are fairly homogeneous in the Seslerietum grassland at site 3, where the frequent-dominant *Granaria* and *Chondrina* reach 90%, *Vallonia pulchella* possesses 70%, and the subfrequent-subdominant *Vallonia* and *Phenacolimax* attain 50%.

From the *Urtica* facies at site 1 the subfrequent-subdominant species are absent. Disturbance is reflected in the gap between the frequency of *Bradybaena* (70%) and that of the other species (10-40%), and also in the dominance of *Urtica dioica*. The latter cannot be explained by the abrupt floods of the stream, that otherwise can alter the frequencies and dominance relationships in snail assemblages and may increase the proportion of accessory elements.

Diversity values also support the above differences between habitat types. The lowest diversity was found at the disturbed site 2.

## Conclusions

The 33 mollusc species found in the Túr Crevice are new for the locality, since this place has been malacologically unexplored till now. From the three study sites, in the Petasitetum association (site 2 at a valley entrance) a marked decline in species number was observed between 1993 and 1996, most probably due to a strong human impact (nearby garbage heap). In the Seslerietum rock grassland the proportion of frequent-dominant (*Granaria*, *Chondrina*) and subfrequent-subdominant species (*Vallonia pulchella*, *Phenacolimax*) is balanced, species density is high, and the share of juveniles is low. All these reflect the absence of disturbance.

## Literature

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Fig.: List of mollusc species of the Túr Crevice.

	<b>Art</b>	<b>1</b>	<b>2</b>	<b>3</b>	
1.	<i>Oxyloma elegans</i> (RISSE 1826)	2	20	-	-
2.	<i>Pyramidula rupesiris</i> (DRAPARNAUD 1801)	-	-	13	40
3.	<i>Truncatellina cylndrica</i> (A. FERUSSAC 1807)	-	-	1	10
4.	<i>Truncatellina claustralilis</i> (GREDLER 1856)	-	-	4	30
5.	<i>Vertigo alpestris</i> ALDER 1838	-	-	1	10
6.	<i>Granaria frumentum</i> (DRAPARNAUD 1801)	-	-	58	90
7.	<i>Chondrina clienta</i> (WESTERLUND 1883)	-	-	91	90
8.	<i>Pupilla bigranata</i> (ROSSMÄSSLER 1839)	-	-	10	40
9.	<i>Vallonia costata</i> (O. F. MÜLLER 1774)	-	-	2	10
10.	<i>Vallonia pulchella</i> (O. F. MÜLLER 1774)	-	-	14	70
11.	<i>Chondrula tridens albolineata</i> (C. PFEIFFER 1859)	-	-	2	20
12.	<i>Punctum pygmaeum</i> (DRAPARNAUD 1801)	-	-	1	10
13.	<i>Vitrina pellucida</i> (O. F. MÜLLER 1774)	1	10	-	-
14.	<i>Phenacolimax annularis</i> (STUDER 1820)	-	-	13	50
15.	<i>Aegopinella minor</i> (STABILE 1864)	2	10	-	-
16.	<i>Oxychilus depressus</i> (STERKI 1880)	+	-	-	-
17.	<i>Zonitoides nitidus</i> (O. F. MÜLLER 1774)	1	10	-	-
18.	<i>Lehmannia marginata</i> (O. F. MÜLLER 1774)	1	10	-	-
19.	<i>Deroferas</i> sp. (juv.)	1	10	-	-
20.	<i>Cochlodina laminata</i> (MONTAGU 1803)	3	20	-	-
21.	<i>Ruthenica filograna</i> (ROSSMÄSSLER 1836)	20	40	-	-
22.	<i>Clausilia dubia gratiosa</i> SAJÓ 1965	3	20	-	10 30
23.	<i>Clausilia pumila</i> C. Pfeiffer 1828	1	10	-	-
24.	<i>Laciniaria plicata</i> (DRAPARNAUD 1801)	1	10	-	+
25.	<i>Balea biplicata</i> (MONTAGU 1803)	7	40	-	-
26.	<i>Bradybaena fruticum</i> (O.F.MÜLLER 1774)	15	70	1 10	7 10
27.	<i>Xerolenta obvia</i> (MENKE 1828)	-	-	-	1 10
28.	<i>Perforatella vicina</i> (ROSSMÄSSLER 1842)	2	20	-	-
29.	<i>Perforatella rubiginosa</i> (A. SCHMIDT 1853)	+	-	-	-
30.	<i>Trichia hispida</i> (LINNÉ 1758)	2	20	-	-
31.	<i>Chilostoma faustinum</i> (ROSSMÄSSLER 1835)	1	10	-	-
32.	<i>Cepaea vindobonensis</i> (A. FERUSSAC 1821)	2	10	-	2 20
33.	<i>Helix lutescens</i> ROSSMÄSSLER 1837	8	40	4 30	+
	<b>Number of species</b>	<b>18</b>	<b>2</b>	<b>16</b>	
	<b>Dead individuals</b>	2	-	2	
	<b>Number of individuals</b>	72	5	241	
	<b>Density of species</b>	4,0	0,4	4,3	
	<b>Juveniles %</b>	27,77	60,0	26,31	
	<b>Mortality %</b>	42,4	75,0	71,20	
	<b>Diversity (H')</b>	3,34	- 0,72	- 2,71	-

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