

## Data on the recent mollusc fauna of the western part of the Villány Hills, S Hungary

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**Abstract:** The western part of the Villány Hills hasn't been investigated in a quantitative malacological way since before. This paper presents data on the recent mollusc fauna of the area based on 20 soil samples with equal volumes from 5 different sampling sites. Comparison of the newly and previously surveyed areas of the hills is also presented.

**Key-words:** Gastropoda, Ecology, Hungary

### Introduction

Regardless of some sporadic data (from Siklós and Máriagyúd in Pintér et al. 1977) the western part of the Villány Hills have been disregarded in a malacological point of view so far. Several papers have investigated the Fekete Hill and the Szársomlyó on the eastern part of the hills (Gebhardt, A.1958, Kovács, Gy. – Richnovszky, A. 1989, Sólymos, P. 1996, 1999, Sólymos, P. – Nagy, A. 1997), but the western part is almost unknown yet. Gebhardt probably collected molluscs from the western areas but he has never published it (Varga (1988) mentions *Monacha cartusiana* (O.F. Müller, 1774) and *Perforatella incarnata* from the Tenkes in Gebhardt's revidated material).

### Material and methods

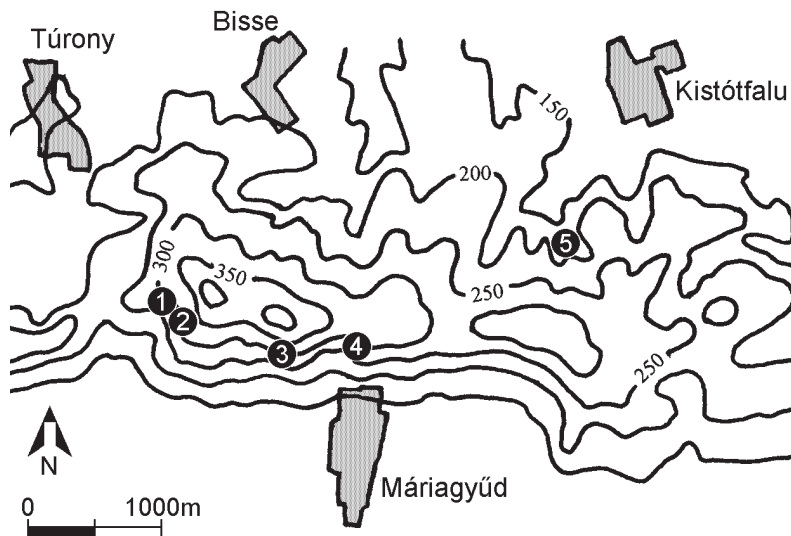


Fig.1. Map of the western part of the Villány Hills with the location of the sampling sites: 1: Tenkes 1 (clumps of trees), 2: Tenkes 2 (steppe grassland), 3. Köves-mály (rocky grassland), 4: Felső-legelő

- I sampled the mollusc assemblages of the western part of the Villány Hills in 1998 and 1999. Four soil samples were taken per area. The sampling areas were the following (see Fig. 1):
- 1: Tenkes 1: solitary clumps of trees (*Quercus* and *Fraxinus*) surrounded by steppe grassland (Tenkes 2 area), S exposure.
  - 2: Tenkes 2: steppe grassland (*Cleistogeni-Festucetum rupicolae*), S exposure.
  - 3: Köves-mály: rocky grassland (*Sedo sopianae-festucetum dalmaticae*) surrounded by sparse *Quercus* and *Fraxinus* forest, S exposure.
  - 4: Felső-legelő: (“upper pasture”) rocky grassland, SW exposure.
  - 5: Átai Hill: ravine forest fragment (*Scutellario-Aceretum*), strait valley on the N slope formed by erosion.

The samples contained equal volume of soil in order to the comparability of them. The samples were washed on 0.8 mm sieve. The individuals were identified according to Soós (1943) and Kerney et al. (1983).

## Results and discussion

From the 20 soil samples of the 5 sampling areas 2571 individuals of 28 species was identified (Table 1). On Tenkes 1 area *Aegopinella minor* was the most abundant with high constancy. This species and *Euomphalia strigella*, which was also constant, indicates the woody vegetation. *Zebrina detrita*, *Helicella obvia* and *Granaria frumentum* show the influence of the nearby open vegetation. This dualism is a nice example of the niche overlapping of the species living in small woody patches embedded in a grassland matrix because of the edge effect (Murcia 1995). On Tenkes 2 area the absence of *G. frumentum* is quite interesting in comparison with Tenkes 1 area, where the species is present with high constancy. Tenkes 2 area is not too rich in molluscs, the species diversity is much lower than it is on Tenkes 1 area. Besides *G. frumentum*, *Z. detrita* and *H. obvia* are the constant and dominant grassland species here.

The case of Köves-mály is just the opposite as the case of Tenkes 1 area, because here the grassland forms the patch in a sparse woody vegetation matrix. The species richness is quite the same on both compared area, but there is a one magnitude difference concerning the number of individuals. The area is dominated by *H. obvia*, *G. frumentum*, *Z. detrita* and *Truncatellina cylindrica*. Species preferring woody vegetation like *A. minor*, *Punctum pygmaeum* and *Ena obscura* are less abundant than the above mentioned grassland species. *Euconulus fulvus* is a typical species of the transitional vegetation, and is also present in Tenkes 1 area. The occurrence of the two *Daudebardia* species is remarkable as well.

The Felső-legelő area is very poor in molluscs. *H. obvia*, *G. frumentum* and *Z. detrita* tolerate only the extreme climate of the open rocky grassland (Sólymos, P.–Nagy, A. 1997) which was used as pasture few decades earlier (Dénes, A. 1998).

Átai Hill is the most diverse among the examined areas in this paper. *Carychium tridentatum* was constant and the most abundant. Clausiliidae species (*Laciniaria plicata*, *Cochlodina laminata*), *Vitrea contracta*, *Punctum pygmaeum* and *Acanthinula aculeata* were present in relatively large numbers. The soil dwelling *Cecilioides acicula* and *Daudebardia* species were also present. The Átai Hill is the only known occurrence of *Carychium tridentatum*, *Carychium minimum* and *Helicodonta obvoluta* in the Villány Hills.

Table I.

Distribution of the individuals among the sampling sites. First numbers represent the number of individuals came out from 4 soil samples per area, second numbers represent the spatial constancy of the species by the number of soil samples in which the species was present.

	Tenkes 1	Tenkes 2	Köves-mály	Felső-legelő	Átai Hill
<i>Carychium minimum</i> O. F. Müller, 1774	–	–	–	–	1/1
<i>Carychium tridentatum</i> (Risso, 1826)	–	–	–	–	359/4
<i>Truncatellina cylindrica</i> (Férussac, 1807)	–	1/1	117/4	–	–
<i>Truncatellina</i> sp. indet.	–	3/2	91/2	–	–
<i>Granaria frumentum</i> (Draparnaud, 1801)	13/3	–	237/4	122/4	4/2
<i>Chondrina clienta</i> (Westerlund, 1883)	–	–	48/4	–	–
<i>Vallonia pulchella</i> (O. F. Müller, 1774)	2/1	–	–	–	–
<i>Acanthinula aculeata</i> (O. F. Müller, 1774)	–	–	–	–	15/4
<i>Chondrula tridens</i> (O. F. Müller, 1774)	2/1	–	–	–	–
<i>Ena obscura</i> (O. F. Müller, 1774)	–	–	2/2	–	3/2
<i>Zebrina detrita</i> (O. F. Müller, 1774)	21/3	67/4	145/4	7/3	–
<i>Punctum pygmaeum</i> (Draparnaud, 1801)	–	–	7/2	–	83/4
<i>Vitrea contracta</i> (Westerlund, 1871)	–	–	–	–	32/3
<i>Aegopinella minor</i> (Stabile, 1864)	67/4	–	4/2	–	28
<i>Oxychilus inopinatus</i> (Uliéný, 1887)	2/1	2/1	9/2	–	–
<i>Daudebardia rufa</i> (Draparnaud, 1805)	2/2	–	8/3	–	34/4
<i>Daudebardia brevipes</i> (Draparnaud, 1805)	–	–	2/1	–	9/1
<i>Limacidae</i>	–	–	2/2	–	3/2
<i>Euconulus fluvus</i> (O. F. Müller, 1774)	2/2	–	22/3	–	–
<i>Cecilioides acicula</i> (O. F. Müller, 1774)	–	–	9/2	–	8/3
<i>Cochlodina laminata</i> (Montagu, 1803)	–	–	–	–	24/3
<i>Laciniaria plicata</i> (Draparnaud, 1801)	2/1	–	–	–	100/3
<i>Helicella obvia</i> (Menke, 1828)	11/2	22/3	472/4	296/4	–
<i>Perforatella incarnata</i> (O. F. Müller, 1774)	–	–	–	–	13/4
<i>Euomphalia strigella</i> (Draparnaud, 1801)	13/4	–	–	–	12/2
<i>Helicodonta obvoluta</i> (O. F. Müller, 1774)	–	–	–	–	8/3
<i>Cepaea vindobonensis</i> (Férussac, 1821)	1/1	–	1/1	–	–
<i>Helix pomatia</i> Linnaeus, 1758	2/1	–	–	–	4/2
Sum	140	93	1176	425	737

Varga (1988) mentions *Perforatella incarnata* from the Tenkes, but this is the first published occurrence of the species since Gebhardt's collector work.

According to the above the fauna of the secondary grasslands (Tenkes 1, Köves-mály, Felső-legelő) is very similar to the fauna of the grasslands of the Szársomlyó (Kovács, A. – Richnovszky, A. 1989, Sóllymos, P. 1996, Sóllymos, P. – Nagy, A. 1997) and the Fekete Hill (Sóllymos 1999). The Köves-mály show similarities especially to the diverse scrub vegetation of the Szársomlyó (ridge area) concerning the number of species.

The fauna of Átai Hill show similarities to that of the Mecsek Mountains concerning some mountainy species (*Helicodonta obvoluta*, *Perforatella incarnata*) (Gebhardt, A. 1960, compared with the revision of Varga 1988). The Átai Hill keeps the remnants of the mollusc fauna of the S slopes in the Villány Hills. This area and the beech and oak-hornbeam forests of the S slopes need further researches.

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