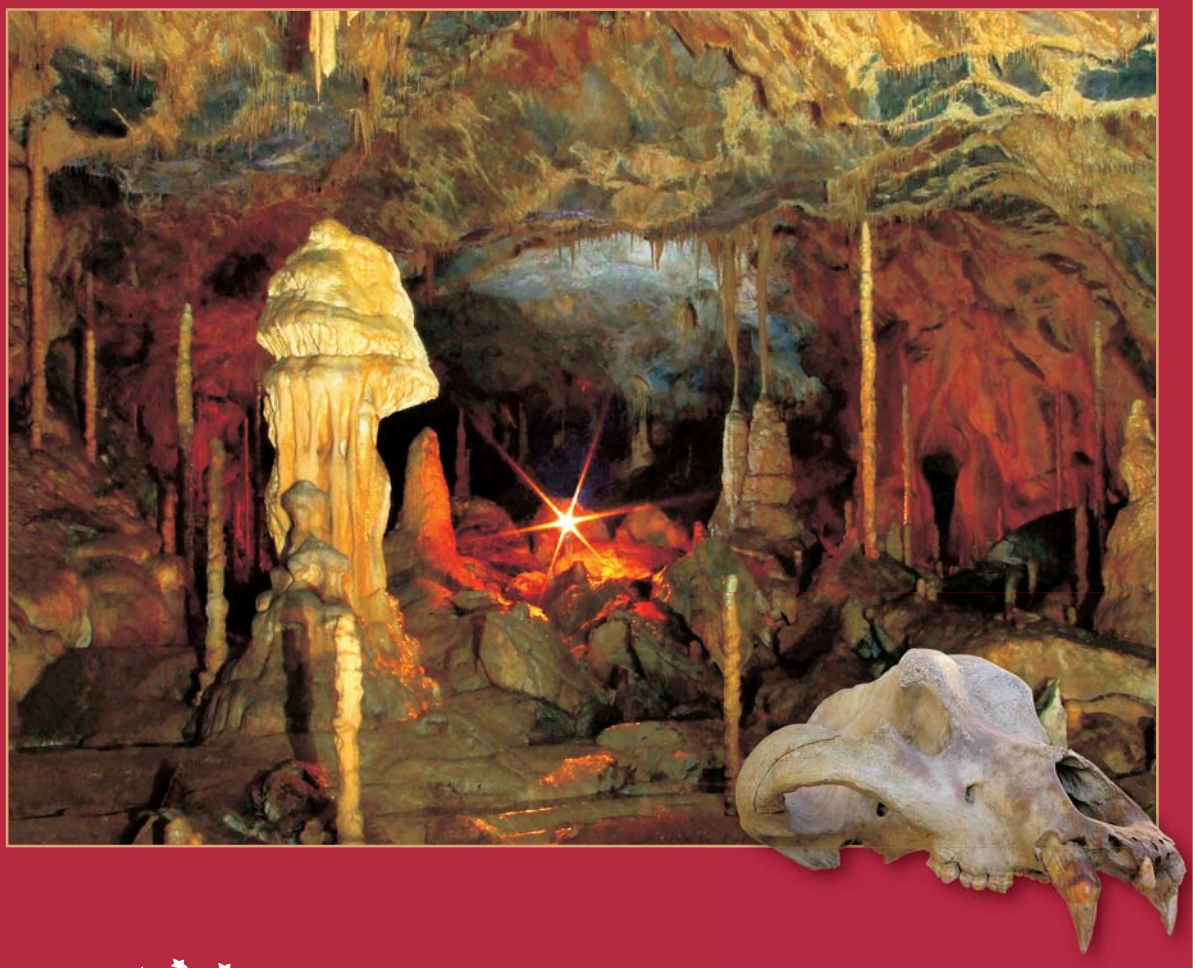
6TH MEETING OF THE EUROPEAN ASSOCIATION OF VERTEBRATE PALAEONTOLOGISTS

30TH JUNE – 5TH JULY 2008

SPIŠSKÁ NOVÁ VES, SLOVAK REPUBLIC

VOLUME OF ABSTRACTS



EAVP
European Association of Vertebrate Palaeontologists

MÚZEUM SPIŠA

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INTRODUCTION

Dear colleagues

The Volume of Abstracts includes the contributions of the participants of the 6th Meeting of the European Association of Vertebrate Palaeontologists (EAVP) which took place on the 30th of June in Spišská Nová Ves, Slovak Republic. The meetings of the EAVP are, from the year 2003, regulary repeated by an exchange of information between European palaeontologists and in the Year 2008 this meeting was organized about The Museum of Spiš in Spišská Nová Ves.

The meeting's intention and result was fulfilled and after the first time meeting in Slovakia museum professionals of scientific institution from 13 European countries with the aim of discovering the final presentation and their publications in the area of palaeontology also how improvements in international cooperation, form partnerships in the area of museums, participation in foreign projects and mediating exchanges professional knowledge and experience in the area of natural scientific palaeontology at an European level.

A part of the conference was also an excursion on unique paleontological localities Dreveník near Spišské Podhradie – registered into world and natural heritage of UNESCO, archaeological and paleontological locality Gánovce close Poprad and Medvedia jaskyňa (Bear's cave) in National Park of Slovenský raj (Slovak Paradise).

The conference had not only scientific significance, but it also was important cultural, cooperation and social event for the Museum of Spiš and the town Spišská Nová Ves, which in the year 2008 celebrated 740 anniversary of the first written mention about the town.

We believe that the Conference was dignified propagation for the Spiš region and its cultural and natural heritage, of the town Spišská Nová Ves, also how Slovak publicity, Slovak museums and the Museum of Spiš in Spišská Nová Ves, which becomes more visible within the framework of European museums.

ZUZANA KREMPASKÁ

MORFOMETRIC IDENTIFICATION OF MOLARS M_1 *MICROTUS AGRESTIS* L. AND *MICROTUS EX. GR. ARVALIS* PALL. IN FOSSIL FAUNAS OF HOLOCENE BELARUS

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Species *Microtus agrestis* L. and *Microtus ex. gr. arvalis* Pall. are not genetic twins and usually it easy to diagnose them by external morphological characters and morphometric sings. It much harder to identify them by morphological characters of molars in research of fossil residues. And if diagnostics *M. agrestis* L. by cephalic the second M^2 don't arouse doubts, because they has accessory ansa in difference with *M. ex. gr. arvalis* Pall., that identification of this species by inferior the first molar M_1 may be difficult.

The constitution of manducatory surface of *M. agrestis* L. and *M. ex. gr. arvalis* Pall. Is amenable to sthenic morfotip changeability and at all differ much. However comparative research (Reckovec, 1994; Ivanov, 2007) show the occurrence overall and interjacent (морфотипов) among species, count of that in some recesses and locations is big number.

The comparative analysis of morphometric sings of manducatory surface of M_1 was executed for more accurate diagnostics of designated species. For comparison by mentioned characters were explored recent

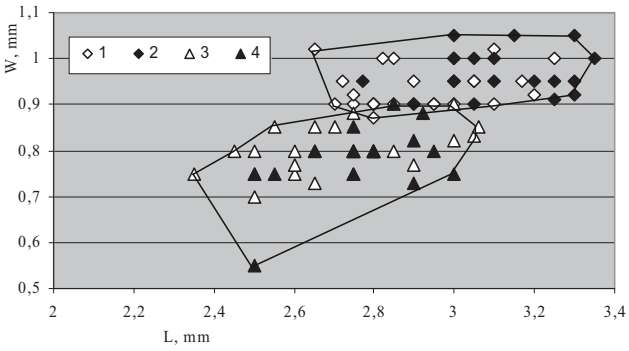

Fig. 1. Relation of length M_1 (L) and width anteroconid (W_2) for recent and holocenic *Microtus agrestis* L. and *Microtus ex. gr. arvalis* Pall. for the territory of Belarus.
1 – recent *Microtus agrestis* L., 2 – holocenic *Microtus agrestis* L., 3 - recent *Microtus ex. gr. arvalis* Pall., 4 – holocenic *Microtus ex. gr. arvalis* Pall.

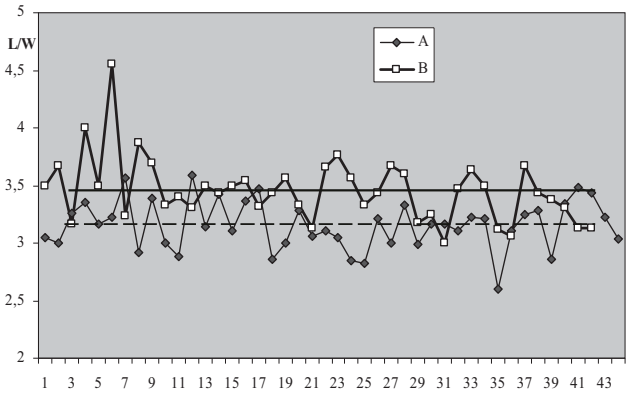

Fig. 2. Fluctuations of index L/W_2 for recent and holocen *Microtus agrestis* L. and *Microtus ex. gr. arvalis* Pall. for the territory of Belarus.
A - *Microtus agrestis* L.; **B** - *Microtus ex. gr. arvalis* Pall.;
- average value of index L/W_2 for *Microtus ex. gr. arvalis* Pall
- average value of index L/W_2 for *Microtus agrestis* L.

Table 1. The morphometric sings of manducatory surface of M_1 of recent and holocenic *M. agrestis* L. and *M. ex. gr. arvalis* Pall. from Belarus.

Specie	**Age**	**Morphometric sings of M_1, mm (lim; x)**			
		Length M_1 (L)	**Width M_1 (d)**	**Width of anteroconiden (W_2);**	**L / W_2**
***M. agrestis* L.**	Recent	n=25	n=25	n=25	n=25
		2,65-2,92-3,25	1,0-1,11-1,27	0,87-0,93-1,02	2,82-3,12-3,48
	Holocenic	n=19	n=22	n=24	n=19
		2,77-3,13-3,45	1,0-1,19-1,35	0,9-0,98-1,05	2,86-3,19-3,57
***M. ex. gr. arvalis* Pall.**	Recent	n=25	n=25	n=25	n=25
		2,35-2,71-3,06	0,9-0,97-1,05	0,7-0,8-0,9	3,0-3,39-3,77
	Holocenic	n=19	n=20	n=18	n=17
		2,5-2,77-3,0	0,7-0,97-1,15	0,55-0,79-0,9	3,17-3,56-4,55

animals that were caught in different parts of Belarus (the collection of zoological museum of the BSU and Berezina biospheric reserve), specific belonging of which is clear. This results were used in diagnostics of fossil remains of mentioned species from Holocene locations of Belarus.

The analysis of morphometric sings of molar M_1 is executing by A. Nadahovskij's method [1], in its analysis length of manducatory surface (L), it width (d), slanting width of anteroconid (W_2) and index of relation L / W_2 was calculated.

Received results show that manducatory surface of molar M_1 *M. agrestis* L. on the average has more size than *M. ex. gr. arvalis* Pall., but it overlap in much (tab. 1). The most overlap inherent for length and width of manducatory surface of M_1. That for species identification we can use only extreme value of this parameters (L; d), for the present instance less 2,65 for *M. ex. gr. arvalis* Pall., and more than 3,06 for *M. agrestis* L. Parameters by width is more less variable.

Comparison of parameters (W_2) and L/W_2, show that value of this parameters overlap insignificantly (figure 1.), especially for the first of them (overlap in this case is only about 0,03 mm (tab. 1). Evident, that this parameter may be use for the more correct identification of named species.

In general and transition morfotipen of structure of manducatory surface presence M_1 molars has parameter (W_2) less then 0,87 mm, (more then 93%) label as *M. ex. gr. arvalis* Pall., and more than 0,9 mm (more than 64%) – as *M. agrestis* L. This results were used to fossil holocenic molars M_1 from the territory of republic, that has bigger size, but the parameter (W_2) is a accurate indicator of specific belonging (fig. 1).

The index L/W_2 in this respect not so accurate (tab. 1). For *M. ex. gr. arvalis* Pall. it much higher and it is at the average 3,46, and for *M. agrestis* L. – 3,16 (fig. 2). Grounding on value of this parameter the molars M_1 that has value of index L/W_2 more than 3,57 belongs to *M. ex. gr. arvalis* Pall., and with value less than 3.0 - *M. agrestis* L. Other intermediate values of this index don't give species identification.

It should be noted that mentioned morphometric sings is enough variable for different regions. Researches showed that all sizes and indexes of molars M_1 *M. ex. gr. arvalis* Pall. and *M. agrestis* L. from the territory of Belarus higher than such characteristics of molars from the territory of Poland, Germany et al. (Nadohovskij, 1982 et al.).

Thus, discounted analysis of morphological structure and morphometry of the molars M_1 *Microtus ex gr. arvalis* Pall. and *Microtus agrestis* L. show that though this species has same or very much alike to morphology and morphometry of molars, but differences in morphology and morphometry exist, it help to identify of this species by separate molars M_1, it's very important for paleontologic research. May be used following identification chain:

-research of the parameters of length of manducatory surface of molar, 24% of *Microtus arvalis* and more than 36% of *Microtus agrestis* may be identify on this stage;

-research of the features of morphology M_1 and selection of molars with characteristic diagnostic (морфотипами);

- research of other molars by parameters of width anteroconid (W_2) and inspection of select specimens by this parameter, such we can to diagnose more than 93% *Microtus arvalis* Pall. and more than 64% *Microtus agrestis* L.

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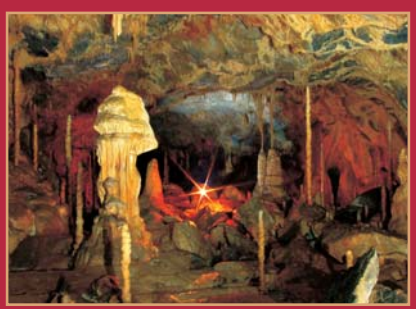

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