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Recent and subrecent diet of the barn owl (*Tyto alba*) in Slovakia

Recentná a subrecentná potrava plamienky driemavej (*Tyto alba*) na Slovensku

Ján OBUCH, Štefan DANKO & Michal NOGA

Abstract: We completed data on the diet of the barn owl (*Tyto alba*) predominately from pellets for the period of the last 50 years from Slovakia. We analyzed material from 251 locations and 16 territorial units. The aggregate represents 119,231 pieces of prey from 47 species of mammals (Mammalia, 95.7%) and 58 species of birds (Aves, 3.9%), with a small representation of amphibians, reptiles (Amphibia and Reptilia, 0.2%) and invertebrates (Invertebrata, 0.2%). The obtaining of food among the owls is limited to synanthropic environments and the surrounding agricultural landscape, and the centre of its distribution in the recent period (i.e. the past 50 years: 1965–2015) has been concentrated mainly on the southern parts of Slovakia. In this environment the common vole (*Microtus arvalis*, 59.6%) is the primary prey. Additional prey are rodents of the family Muridae: *Mus musculus* (5.6%), *Micromys minutus* (2.2%), *Apodemus microps* (2.2%), *A. flavicollis* (2.0%), *A. sylvaticus* (1.6%) and *A. agrarius* (1.5%); insectivores of the family Soricidae: *Sorex araneus* (6.2%), *S. minutus* (2.4%), *Crocidura leucodon* (4.8%) and *C. suaveolens* (2.8%); and the house sparrow *Passer domesticus* (2.9%). In the higher situated Turčianska kotlina Basin the species *M. arvalis* (74.3%) has higher domination, and instead of the white-toothed shrews the water shrews *Neomys anomalus* (2.8%) and *N. fodiens* (1.3%) are more abundantly represented. In 3 localities owls focused on hunting bats; for example, in the church in Ratková the order Chiroptera made up 35.2% of prey. From the subrecent period (i.e. from before more than 50 years ago) we evaluate 4 samples from the territory of Slovakia with 15,601 pieces of prey of *T. alba*. Before more than 50 years ago owls were also more abundantly represented at higher elevations in Slovakia, evidence of which is Weisz's collection of pellets from 16 localities in the Ondavská vrchovina Upland in the years 1945 to 1963, but also a registry of data from the 19th and 20th centuries from higher located basins. In 4 samples of food from the subrecent period diversity in the representation of owl prey is higher, accompanied by low domination of *M. arvalis* and a more abundant representation of murids from the genera *Mus* and *Apodemus*. The oldest sample, dated to the 16th century, is from a church in Žilina-Rudiny.

Abstrakt: Skompletizovali sme údaje o potrave plamienky driemavej (*Tyto alba*) prevažne z vývržkov za obdobie posledných 50 rokov zo Slovenska. Analyzovali sme materiál z 251 lokalít a 16 územných celkov. Súhrn predstavuje 119 231 kusov koristi zo 47 druhov cicavcov (Mammalia, 95,7 %), 58 druhov vtákov (Aves, 3,9 %) s malým zastúpením obojživelníkov a plazov (Amphibia a Reptilia, 0,2 %) a bezstavovcov (Invertebrata, 0,2 %). Získavanie potravy je u plamienky obmedzené na synantropné prostredie a na okolitú poľnohospodársku krajinu a centrum jej rozšírenia je v recentnom období (t.j. posledných 50 rokov: 1965 – 2015) sústredené hlavne do južných častí Slovenska. V tomto prostredí je hlavnou korisťou hraboš poľný (*Microtus arvalis*, 59,6 %). Doplnkovou korisťou sú druhy čeľade Muridae: *Mus musculus* (5,6 %), *Micromys minutus* (2,2 %), *Apodemus microps* (2,2 %), *A. flavicollis* (2,0 %), *A. sylvaticus* (1,6%), *A. agrarius* (1,5%), druhy čeľade Soricidae: *Sorex araneus* (6,2%), *S. minutus* (2,4 %), *Crocidura leucodon* (4,8 %), *C. suaveolens* (2,8%) a vrabec domový (*Passer domesticus*, 2,9 %). Vo vyššie položenej Turčianskej kotline má *M. arvalis* (74,3 %) vyššiu dominanciu a namiesto bielozubiek sú početnejšie zastúpené dulovnice: *Neomys anomalus* (2,8 %) a *N. fodiens* (1,3 %). Na 3 lokalitách sa plamienky zamerali na lov netopierov, napríklad v kostole v Ratkovej tvorili Chiroptera 35,2 % koristi. Zo subrecentného obdobia (t.j. pred viac ako 50 rokmi) vyhodnocujeme z územia Slovenska 4 vzorky s 15 601 kusmi koristi *T. alba*. Pred viac ako 50 rokmi boli plamienky početnejšie zastúpené tiež vo vyšších polohách Slovenska, o čom svedčia zbery vývržkov Weisza zo 16 lokalít v Ondavskej vrchovine v rokoch 1945 až 1963, ale tiež súpis údajov z 19. a 20. storočia z vyššie položených kotlín. V 4 vzorkách potravy zo subrecentného obdobia je vyššia diverzita v zastúpení koristi plamienky sprevádzaná nižšou dominanciou *M. arvalis* a početnejším zastúpením myšovitých hlodavcov z rodov *Mus* a *Apodemus*. Najstaršia vzorka je z kostola v Žiline-Rudinách, datovaná do 16. storočia.

Key words: barn owl, *Tyto alba*, diet, Slovakia

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Introduction

The barn owl (*Tyto alba*) lives in the vicinity of human beings. Its food residues in the form of pellets are available in buildings. The skulls of mammals are relatively well preserved in them and easily determined. For these reasons more work has been published about the barn owl's food than any other species of owls. However, these works often contain only data on the mammals found in the residues. These are used in faunistic works, e.g., of Erfurth & Stubbe 1986 in Germany or Pucek & Raczyński 1983 in Poland, or with statistical analyses, e.g. Libois 1984. The first collections from the territory of Slovakia were processed by foreign authors: Schaefer 1933, Balát 1956 and Schmidt & Štollmann 1972. Later, we processed data from several regions, e.g. Obuch 1982, 1995, 1998, 2000. Data from students' works are also evaluated: Darolová 1976, Noga 2005 and Latková 2007, which were used during the mapping of the occurrence of mammals in Slovakia (Krištofík & Danko 2012). Unpublished data from the analysis of owl pellets were also included in this atlas. We processed many of the collections of M. Sárossy, which he obtained when mapping the occurrence of *T. alba* in some areas of south Slovakia (Sárossy 1999a, b, c). In the work we also summarize recent published and unpublished data on the food of *T. alba* from individual localities, evaluated in modified tables according to regions. We compare the summary data with samples from the subrecent period.

The main aim of the work is the preservation of basic data from individual localities for the future, because the declining trend of *T. alba* and changes in the make up of fauna in agrarian landscapes is striking.

Materials and methods

In addition to published data in the table overviews, we also present the results of our own analysis of the food residues of *T. alba*. Recent material comes from pellets or from nest linings. By decomposition of organic parts in 5% NaOH and rinsing in water we obtained osteolo-

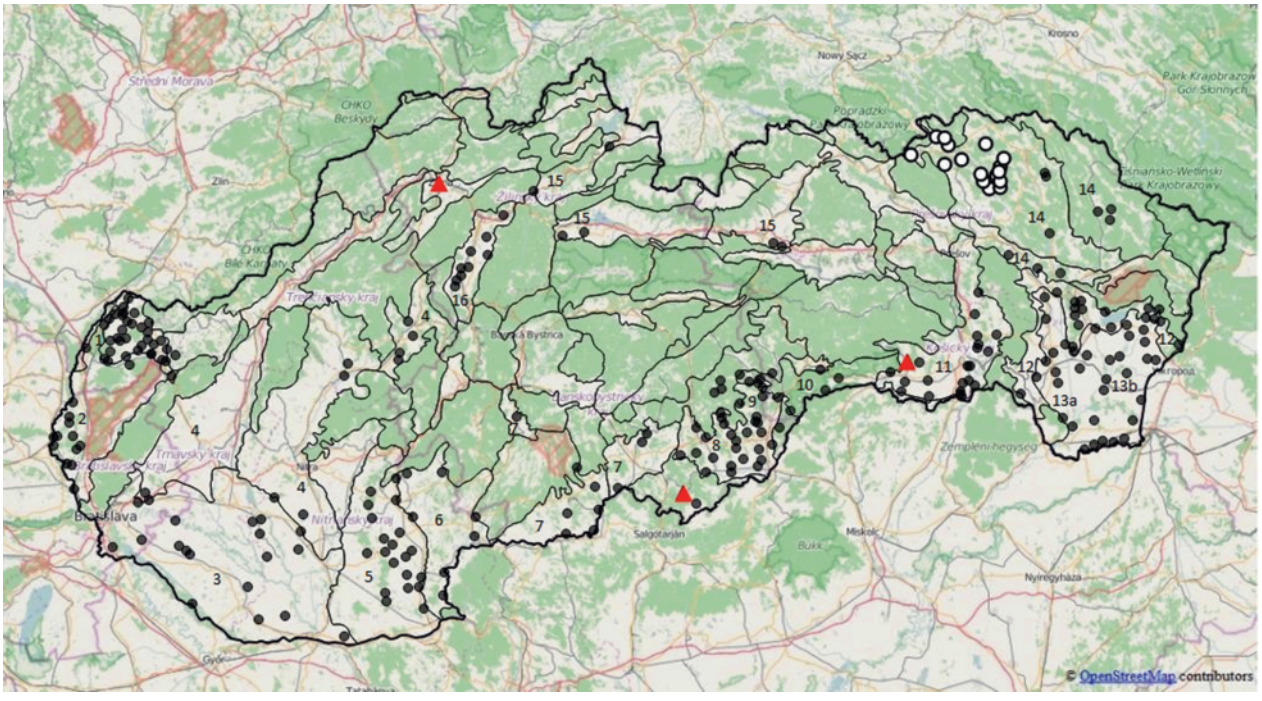


Fig. 1. Position of collection localities with samples of food of *Tyto alba*. Explanations: solid circle – recent localities, empty circle – collections of T. Weisz from 1945–1961, red triangle – subrecent sites. The boundaries of the herein considered territorial units are marked with a black line.

Obr. 1. Poloha zberových lokalít so vzorkami potravy *Tyto alba*. Vysvetlivky: plný krúžok – recentné lokality, prázdny krúžok – zbery T. Weisza z rokov 1945 – 1961, červený trojuholník – subrecentné náleziská. Hranice tu uvažovaných územných celkov sú vyznačené čiernou čiarou.

gical material, from which we sorted out for determination the maxilla and mandubula of mammals; the beaks, humerus, metacarpus and tarsometatarsus bones of birds; the os ilium of frogs; the maxilla and mandibula of reptiles; and the heads and some other parts of invertebrates. We determine the abundance of the species in the sample from the most numerous determined body parts. We consider the most abundant species in the sample as the dominant species, and species with abundance over 2% as subdominant. We use the synonym *Apodemus microps*, Kratochvíl & Rosický (1952), for the species described from the Košická kotlina Basin, which has a smaller maxilla size than the nominal species *Apodemus uralensis* described from Russia. Instead of the genus name, we use the name of the subgenus for the species *Terricola* (*Microtus*) *subterraneus*. The species *Mus spicilegus* was differentiated from *M. musculus* only in the part of the sample in the Podunajská nížina Lowland and the Východoslovenská nížina Lowland, where it was confirmed by trapping (Krištofík & Danko 2012). Because all individuals from *Mus musculus* cannot be differentiated, but we assume that this is the species involved, we introduce the term *Mus* cf. *musculus*. The abundance of samples at some localities in the table appendices (Appendix 1–17) is the summary of the results of several collections. An overview of the localities is presented in the table appendix (Appendix 18) and on the map of Slovakia, with geographical units taken from the document of Mazúr & Lukniš (1980). In the appendix we also present the numbers of the orographic units according to the Databank of Slovak Fauna. We do not present works in which only mammals were determined (e.g. Tirinda 1993), or in which the results are untrustworthy (e.g. Sanitár 2001). We considered samples more than 50 years old as subrecent. For setting the boundary of what is no longer contemporary, but older, we set the boundary of changes which occurred in Slovakia in consequence of socialist collectivization of agriculture.

In the modified tables the samples are arranged according to the similarity of the species spectra. The order of the species is set so that + marked differences from the mean (MDFM, Obuch 2001) are assigned to blocks which are bordered in the tables by a solid line. The calculation of plus and minus MDFM values in the contingency table come from calculation of the χ^2 values. The similarity of the samples in the set are not tested as a whole, but species whose abundance in the sample significantly differentiate from the mean (summary) values are ascertained. The measure of the marked difference is derived from geometrical progression of the parameters of the basic linear boundary axis: 1.2 (coefficient) and 4 (constant). The more abundant species without significant marked differences from the mean are given under the dotted line in the tables. They are arranged according to declining total abundance. In the last line of the tables, indexes of diversity H', calculated according to Shannon & Weaver (1949), are given. Less abundant species and inexactly determined taxons are given under the tables (e.g. *Apodemus* sp., Passeriformes). We made the calculations of the marked differences from the mean (MDFM) and design of the modified tables using the computer program Zber (Šipöcz 2004).

Results and discussion

Recent diet

We completed data on the diet of *T. alba* on the basis of determination of osteological residues from pellets for the period of the last 50 years. We analyzed material from 251 localities in 16 territorial units (Tab. 1). Recent samples are mainly from the southern lowland areas (Fig. 1). Collections of food residues from the central Považie and Pohronie regions are mainly absent, although Sárossy (1999c) presents the occurrence of *T. alba* from these parts of Slovakia at the end of the 20th century. The summary represents 119,231 pieces of prey from 47 species of mammals (Mammalia, 95.7%), 58 species of birds (Aves, 3.9%) with a small representation of amphibians and reptiles (Amphibia and Reptilia, 0.2%) and invertebrates (Invertebrata, 0.2%). The obtaining of diet is limited with *T. alba* to synanthropic environments and to the surrounding agricultural landscape, and the centre of its distribution is at present concentrated mainly in the southern parts of Slovakia. In this environment the main prey is the common vole (*Microtus arvalis*, 59.6%). Supplementary prey are the murids (Muridae): *Mus musculus* (5.6%), *Micromys minutus* (2.2%), *Apodemus microps* (2.2%), *A. flavicollis* (2.0%), *A. sylvaticus* (1.6%) and *A. agrarius* (1.5%); the shrews (Soricidae): *Sorex araneus* (6.2%), *S. minutus* (2.4%), *Crocidura leucodon* (4.8%) and *C. suaveolens* (2.8%); and the house sparrow (*Passer domesticus*, 2.9%). In the higher located Turčianská kotlina Basin the species *M. arvalis* (74.3%) has a higher domination and instead of the white-tooth shrew, the water shrews – *Neomys anomalus* (2.8%) and *N. fodiens* (1.3%) – are more abundantly represented. The species

Tab. 1. Comparison of recent food of *Tyto alba* from 16 areas of Slovakia. Numerical values in the Table are presented in absolute value; positive and negative deviations (1+, 2+, and 1-, 2-) are a marked differences from the mean (Obuch 2001) within a respective species, across locations. For more details see Methods. The diversity index H' is used, calculated according to the work of Shannon & Weaver (1949).

Tab. 1. Porovnanie recentnej potravy *Tyto alba* zo 16 oblastí Slovenska. Číselné hodnoty v tabuľke sú uvedené v absolútnych hodnotách, kladné a záporné odchýlky (1+, 2+ a 1-, 2-) sú významné odchýlky od priemeru (Obuch 2001) v rámci toho istého druhu, naprieč lokalitami. Pre viac informácii pozri Metodiku. Použitý je index diverzity H', vypočítaný podľa práce Shannon & Weaver (1949).

localities / lokality		**16**	**9**	**10**	**15**	**14**	**12**	**11**	**8**
taxa / taxón									
Microtus arvalis	n	1+ 4705	1- 2143	1- 1641	850	1- 466	3962	1976	6218
	%	74.32	40.91	45.80	66.20	35.25	52.57	54.65	54.41
Myotis myotis		1+ 62	4+ 589	1- 8	7	1- 2	2- 15	2- 3	1- 30
Apus apus		2+ 24	2+ 18	2			1		2
Arvicola amphibius		1+ 20	2+ 38	1+ 12	2+ 14	2	13	7	16
Neomys anomalus		2+ 176	42	1+ 46	2+ 44	1+ 19	1+ 82	1- 14	1+ 119
Neomys fodiens		3+ 80	16	7	1+ 11	1+ 9	15	10	2- 6
Apodemus sylvaticus		1+ 182	70	1+ 82	1+ 35	21	3- 14	49	1- 135
Phoenicurus ochruros		1+ 29	12	1+ 23	1		1- 3	4	1- 7
Myotis blythii		4	3+ 26	2			5	1	1
Nyctalus noctula		1	1+ 6			2	3		7
Muscardinus avellanarius		1- 0	2+ 20	2+ 15		2	4	3	10
Crocidura leucodon		6- 1	1+ 389	1+ 321	3- 8	1+ 114	1+ 657	146	639
Crocidura suaveolens		2- 49	1+ 267	1+ 141	2- 10	40	1- 172	1- 73	1+ 466
Apodemus flavicollis		105	3+ 513	3+ 381	2- 5	2+ 79	1- 71	1+ 96	1- 148
Apodemus agrarius		5- 1	1+ 128	2+ 154	2- 3	2+ 65	1+ 266	1+ 86	1+ 229
Micromys minutus		1- 98	118	1+ 102	2- 3	2- 6	185	1+ 138	1+ 430
Hirundo rustica		11	11	2+ 25	1+ 8		2- 1	5	1- 13
Microtus agrestis		1	3	1+ 6		3	2		
Coleoptera		1- 2	1+ 14	8	1+ 10		2- 0	9	1- 6
Mus cf. *musculus*		392	1- 144	1- 107	1+ 176	2+ 253	1+ 594	1+ 290	1- 492
Clethrionomys glareolus		2- 2	23	7	1- 0	1+ 15	1- 11	8	3- 3
Gryllotalpa gryllotalpa			1			2+ 11	1	1+ 7	3
Passer domesticus		1- 138	1- 84	88	3- 3	3- 2	1+ 326	128	381
Passer montanus		1- 3	6	2			1+ 21	9	1+ 29
Pelobates fuscus		1- 0	1- 0	1			1- 0	1+ 15	1- 3
Terricola subterraneus		2- 1	1- 10	13	2	5	26	1+ 24	47
Talpa europaea		5		1	2	1	4	1+ 9	6
Alauda arvensis		3	2		1		4	1+ 6	8
Eptesicus serotinus		1	1	1		4	2	3	1+ 7
Apodemus microps		6- 0	3- 17	1- 43	29	2- 3	2- 40	86	1+ 584
Sorex minutus		2- 54	133	1+ 109	3- 3	2- 6	1- 120	88	1- 222
Sorex araneus		2- 113	341	1- 169	2- 25	79	425	209	806
Hymenoptera									
Poecile montanus				1					
Delichon urbica		6	2	3					5
Motacilla alba		3	1	1					
Erithacus rubecula					1				1
Parus major		1	3	1			6	2	1- 1
Fringilla coelebs				1					
Rattus norvegicus		4- 1	1- 14	2- 7	1- 1	1- 4	50	2- 8	99
Rana arvalis								1	
Pelophylax cf.*esculentus*			3	2				2	4
Melolontha melolontha									
Streptopelia decaocto									1
Cricetus cricetus							1	3	
Mus spicilegus		3- 0	3- 0	2- 0	1- 0	1- 0	3- 0	2- 0	4- 0
Columba livia dom.			2	1				1	2
Carduelis chloris		2		1					2
Sturnus vulgaris		3							
Plecotus austriacus		3					2	1	2
Coturnix coturnix			1				1		
Rana temporaria		4	2	1			1	2	1
Emberiza citrinella			1					3	1
Mammalia		**6090**	**5064**	**3416**	**1258**	**1308**	**7065**	**3410**	**10,920**
Aves		**235**	**1- 153**	**155**	**2- 16**	**4- 2**	**1+ 449**	**169**	**481**
Amphibia, Reptilia		**1- 4**	**5**	**4**	**0**	**1**	**1+ 21**	**1+ 21**	**17**
Invertebrata		**1- 2**	**1+ 16**	**8**	**1+ 10**	**1+ 11**	**2- 1**	**1+ 16**	**1- 10**
∑		**6331**	**5238**	**3583**	**1284**	**1322**	**7536**	**3616**	**11,428**
H'		1.24	2.21	2.14	1.40	2.14	1.90	1.95	1.92

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Areas / oblasti: 16 – Turčianska kotlina Basin, **9** – Revúcka vrchovina Upland, **10** – Slovenský kras Mts, **15** – Oravská, Liptovská and Popradská kotlina Basin, **14** – Ondavská and Laborecká vrchovina Upland and Beskydské predhorie Foothills, **12** – Východoslovenská pahorkatina Hills, **11** – Košická kotlina Basin, **8** – Rimavská kotlina Basin, **7** – Cerová vrchovina Upland, Lučenská and Ipeľská kotlina Basin, **1** – Chvojnická pahorkatina Hills, **2** – Borská nížina Lowland,**13** – Východoslovenská rovina Plain, **5** – Hronská pahorkatina Hills, 4 – Trnavská and Nitrianska pahorkatina Hills and Hornonitrianska kotlina Basin, **3** – Podunajská rovina Plain, **6** – Ipeľská pahorkatina Hills.

7	**1**	**2**	**13**	**5**	**4**	**6**	**3**	**∑**	**%**
1- 1384	6606	8593	11166	13220	1282	1716	5102	71,030	59.57
38.69	66.56	61.93	55.87	69.92	62.81	53.48	68.94		
3- 1	4- 0	5- 1	4- 4	4- 3	2- 0	2- 1	4- 0	726	0.61
	1- 0	3	2- 0	1- 1				51	0.04
1+ 15	1- 8	1- 8	31	2- 5		10	2- 0	199	0.17
2+ 101	1- 33	3- 12	3- 17	1- 48	14	2- 3	3- 2	772	0.65
1- 2	15	1+ 39	1- 22	3- 3	3	4	2- 0	242	0.20
1+ 90	1+ 220	1+ 461	3- 44	309	41	47	122	1922	1.61
1+ 20	1+ 30	19	2- 11	27	1+ 14	7	12	219	0.18
		1- 0	1- 2	1- 0		1		42	0.04
		1	8	2	1			31	0.03
4	1- 1	1- 4	10	15		2	1- 0	90	0.08
149	1- 364	610	852	1- 744	101	1+ 257	339	5691	4.77
1+ 187	1- 217	435	1- 347	1- 421	1+ 107	2+ 225	217	3374	2.83
1+ 94	1- 120	2- 95	1- 190	347	2- 11	1- 36	2- 34	2325	1.95
3- 6	6- 0	6- 0	2+ 806	6- 1	3- 0	4- 0	5- 0	1745	1.46
1+ 193	1- 130	1- 179	1+ 699	1- 172	45	1- 44	2- 49	2591	2.17
2+ 25	1- 12	20	1- 14	1+ 60	8	5	11	229	0.19
		1	2	1		1	2	22	0.02
4	2- 0	2+ 50	21	16			2- 0	140	0.12
1+ 279	1- 330	730	1042	1192	1- 87	146	383	6637	5.57
8	39	2+ 155	1- 33	1- 37	4	1- 3	29	377	0.32
			2	4				29	0.02
1+ 140	324	399	1+ 704	1- 312	1+ 116	1+ 130	198	3473	2.91
4	2- 0	18	32	27	2	4	6	163	0.14
5	2- 0	1- 2	2+ 52	2- 1		2+ 22	1- 0	101	0.08
10	3- 2	1- 21	1+ 159	1- 37	3	1+ 17	3- 1	378	0.32
1	4	3	7	6	1	1		51	0.04
2		7	7	5	1		2	48	0.04
				1		1		21	0.02
83	260	2- 85	1+ 629	1+ 605	1- 19	1- 36	146	2665	2.24
2+ 266	1+ 310	1+ 447	1+ 583	1- 185	46	83	175	2830	2.37
1+ 432	1+ 781	1+ 1324	1+ 1713	2- 333	1- 97	181	1- 322	7350	6.16
3+ 29			1- 0	1- 0				29	0.02
	1+ 5							6	0.005
1	6	1+ 12	3	1- 2	3	1		44	0.04
		1+ 6	1	1				13	0.01
	4	1+ 7	2	4		1		20	0.02
	2	1+ 26	13	8			3	66	0.06
	2	2+ 14	3	1				21	0.02
26	80	2- 2.31	1+ 189	1+ 293	1+ 33	1- 16	58	910	0.76
			1+ 7					8	0.007
4	1- 0	6	1+ 24	1- 3			2	50	0.04
			1+ 9					9	0.008
			1+ 7	4	1			13	0.01
			8	1+ 10				22	0.02
2- 0	4- 0	4- 0	3- 7	2+ 327	1- 0	1- 4	2+ 101	439	0.37
			1	1+ 9			1+ 6	22	0.02
		3	2	4				14	0.01
	1	1	3	6				14	0.01
2	1	2						13	0.01
1			5	2			1	11	0.009
								11	0.009
		2	1	1		1		10	0.008
3336	**9530**	**13,250**	**19,027**	**18,390**	**1896**	**3001**	**7153**	**114,114**	**95.71**
1+ 198	**395**	**568**	**844**	**1- 491**	**1+ 145**	**152**	**246**	**4699**	**3.94**
9	**3- 0**	**1- 8**	**1+ 83**	**2- 6**	**0**	**2+ 26**	**2- 2**	**207**	**0.17**
2+ 34	**3- 0**	**1+ 50**	**32**	**1- 21**	**0**	**1- 0**	**2- 0**	**211**	**0.18**
3577	**9925**	**13,876**	**19,986**	**18,908**	**2041**	**3179**	**7401**	**119,231**	**100.00**
2.25	1.46	1.60	1.85	1.41	1.58	1.84	1.40	1.82	

diversity of the diet of *T. alba* is here at its lowest (H' = 1.24). Some barn owls focused on the hunting of bats. For example, in the church in Ratkova (Revúcka vrchovina Upland) Chiroptera made up 35.2% of prey in one observed individual of *T. alba*. Species diversity of prey in the scope of the compared 16 territorial units of Slovakia is the highest in the more rugged territory of the Revúcka vrchovina Upland, the Cerová vrchovina Upland and the Slovenský kras Mts, and lower in the more uniform agricultural large-surfaces of the managed lowlands and basins. With the exception of distribution of the species *A. agrarius* in eastern Slovakia, it is more difficult in other species to characterise specific geographical regularities. This partially involves differences in the intensity of the anthropic use of the land, but a definite factor is also the capability of individuals or breeding pairs of these owls to favour some prey from species of rodents, insectivores or passerines. Deviations in the represented dominant species *M. arvalis* are associated with its population dynamic. With large samples from several years the value of dominance is closer to the average than with the collections from years of gradations or population minimums.

Chvojnická pahorkatina Hills
Latková (2007) devoted herself to more detailed research of the *T. alba* population in the Upper Záhorie region in the years 2002 to 2006 (Appendix 1). Food residues were analysed from 34 localities. The dominant common vole (*M. arvalis*; average representation 66.6%, minimally 39.2%, maximally 93.2%) had a significantly higher abundance at 3 localities, while the species *Sorex araneus* (7.9%), *Crocidura leucodon* (3.7%) and *Passer domesticus* were subdominant at 6 localities. The Muridae had a more balanced proportionate representation in the samples: *Mus* cf. *musculus* (3.3%), *Apodemus microps* (2.6%) and *Apodemus sylvaticus* (2.2%). Upon checking 28 breeding locations listed by Latková, Vongrej (2015) found only 2 breeding pairs. A rapid decline has occurred in the last 2 to 5 years.

Borská nížina Lowland
Increased attention was paid to the collection of food residues of *T. alba* in the 1990s (Appendix 2). Noga (2005) summarized the results of analyses. The species *M. arvalis* (average of 61.5%, minimum 25.4%, maximum 75.6%) predominates. The Soricidae: *S. araneus* (9.5%), *S. minutus* (3.2%), *C. leucodon* (4.4%) and *Crocidura suaveolens* (3.1%); the sparrow *P. domesticus* (3.6%) and the Muridae: *M.* cf. *musculus* (5.2%) and *A. sylvaticus* (3.3%) are more abundantly represented. The samples from Jakubova, with 8 more abundant species, and from Plavecký Štvrtok, with a higher abundance of 7 species, differ the most from the average.

Podunajská rovina Plain
Tirinda (1986) published recent data on the representation of mammals in the food of *T. alba* from this area. Collections from the 1990s are presented in the Appendix 3. *M. arvalis* dominates (average 68.9%, minimum 16.4%, maximum 89.9%). The Soricidae: *C. leucodon* (4.6%), *S. araneus* (4.4%), *C. suaveolens* (2.9%) and *S. minutus* (2.4%) are represented more abundantly than the Muridae: *M.* cf. *musculus* (5.2%), *A. microps* (2.0%) and *A. sylvaticus* (1.6%). In 3 localities the sparrow *P. domesticus* (2.7%) was more abundantly hunted. The highest species diversity of *T. alba* prey was found in the collections from Dunajská Lužna (H' = 2.17). Upon checking 63 sites of the Podunajská nížina Lowland in which *T. alba* was observed in the past, Veselovský (2014) did not find a single living owl.

Trnavská and Nitrianska pahorkatina Hills and the Hornonitrianska kotlina Basin
Although much of the data on the occurrence of *T. alba* from the listed orographic units before the year 2000 is from Sárossy (Sárossy 1999c), a part of whose collections were processed by Sanitár (2001), reliable analysis of the food residues of *T. alba* were made only from 10 localities (Appendix 4). The proportional representation of *M. arvalis* (average 62.8%, minimum 42.3%, maximum 80.0%) and several subdominant species: *S. araneus* (4.8%), *M. musculus* (4.3%) and *A. sylvaticus* (2.0%) is relative balanced in the samples. Greater differences are in the representation of the white-toothed shrews *C. suaveolens* (2.2%) and *C. leucodon* (2.0%) and the sparrow *P. domesticus* (5.7%), which was hunted more abundantly in 2 localities.

Ipeľská pahorkatina Hills
Beyond the older published works (Darolová 1976, Vondráček & Hošek 1984) the unpublished collections of M. Sárossy are also given in the Appendix 6. They are distinguished by notable variability in the dominance of *M. arvalis* (average 54.0%, minimum 26.1%, maximum 80.9%), but also more abundant representa-

tion of species of the family Soricidae: *C. leucodon* (8.1%), *C. suaveolens* (7.1%) and *S. araneus* (2.6%). The dominance of species of the family Muridae is lower: *M.* cf. *musculus* (4.6%), *A. sylvaticus* (1.5%) and *M. minutus* (1.4%). In Salka the sparrow *P. domesticus* (4.1%) was more abundantly hunted.

Hronská pahorkatina Hills
Older analyses of food are from the southern part of the Hronská pahorkatina Hills (Balát 1956, Vondráček & Hošek 1984). G. Demeter (Obuch 2014) collected larger samples from Tekovské Lužany and the surrounding villages, and M. Sárossy collected food remnants of *T. alba* at several localities (Appendix 5). In the residues of food from the nest in the tower of the Reformed Church in Tekovské Lužany the recent occurrence of the southern birch mouse (*Sicista subtilis*) was confirmed on the territory of Slovakia (Demeter & Obuch 2004). In the collection of pellets of J. Korňan from Arad the first occurrence of the root vole (*Microtus oeconomus*) for the territory of the national nature reserve Parížske močiare Marsh (Noga & Obuch 2004) was determined. The high dominance of *M. arvalis* (average 69.9%, minimum 43.9%, maximum 95.6%) and the relatively low species diversity (in 7 samples H' < 1) testifies about a habitat with intensive agriculture production. From the family Muridae the most abundantly represented species are *M.* cf. *musculus* (6.3%) and *A. microps* (3.2%), and from the family Soricidae the species *C. leucodon* (3.9%) and *C. suaveolens* (2.2%).

South-central Slovakia
Data from the Lučenská kotlina Basin were published (Obuch & Uhrin 1997). The Appendix 7 includes samples from 5 orographic units: Pliešovská kotlina Basin, Ostrôžky Mts, Ipeľská kotlina Basin, Lučenská kotlina Basin and the Cerová vrchovina Upland. The set is distinguished by the low average domination of *M. arvalis* (average 38.7%, minimum 10.3%, maximum 72.7%). The representation of the family Soricidae: *S. araneus* (12.1%), *S. minutus* (7.4%), *C. suaveolens* (5.2%), *C. leucodon* (4.2%) and *N. anomalus* (2.8%) is higher than the species of the family Muridae: *M.* cf. *musculus* (7.8%) and *M. minutus* (5.4%). At 2 localities the sparrow *P. domesticus* (3.9%) is more abundantly represented. The collection from the settlement Majša is exceptional with the number of residues of invertebrates from the orders Hymenoptera and Coleoptera.

Rimavská kotlina Basin
The largest sample is from the church in Rimavské Janovce, where in addition to the listed collections (Darolová 1976, Obuch 1995, Sárossy); Vohralík (in litt.) also collected pellets of *T. alba*. Alongside the dominant common vole *M. arvalis* (average 54.45%, minimum 19.7%, maximum 65.6%) species of the family Soricidae: *S. araneus* (7.1%), *C. leucodon* (5.6%) and *C. suaveolens* (4.1%) are more abundant than those of the family Muridae: *A. microps* (5.1%), *M.* cf. *musculus* (4.3%) and *M. minutus* (3.8%) (Appendix 8). The house sparrow *P. domesticus* (3.3%) is the most abundantly hunted bird species. Samples of food are distinguished by relatively high species diversity (11 samples have H' > 1.9).

Revúcka vrchovina Upland
Obuch (2000) surveyed the food of owls in this area in more detail. The rugged hilly terrain is reflected in more differentiated samples of food of *T. alba*. The average dominance of *M. arvalis* (40.9%) is low, but in 5 localities it is significantly higher (54.6%–77.3%) (Appendix 9). At 4 localities the proportional representation of *M. musculus* (average 2.8%) and *P. domesticus* (average 1.6%) is higher, and at the higher elevations Lipovec and Nandraž the forest species *A. flavicollis* (9.8%) and *Clethrionomys glareolus* (0.4%) are more abundantly represented. The sample from Šivetice with 6 differentiated species has a special character. The collections from Ratková, where the barn owl adapted to hunting bats (8 species) and common swifts (*Apus apus*) flying out of the loft of the church in the centre of the village, are exceptional. Petrželková et al. (2004) state that when hunting the barn owl preferred younger individuals of the species *Myotis myotis* from a female colony estimated at 4000 individuals (Uhrin et al. 2002).

Slovenský kras Mts
Obuch (1998) published collections from the 1990s. The localities were found predominately in deep valleys bounded by the steep forested slopes of the karstic plateau. The dominance of *M. arvalis* (average 45.8%, minimum 19.8%, maximum 86.0%) varies significantly (Appendix 10). From the family Muridae the species with the highest abundance are *A. flavicollis* (10.6%) and *A. agrarius* (4.3%), from the family Soricidae *C. leucodon* (9.0%) and *S. araneus* (4.7%). Samples of food of *T. alba* in half of the localities (4 localities) are characterized by high species diversity (H' > 2).

Košická kotlina Basin
Danko & Štollmann (1977) published the first results of collections of pellets of *T. alba* from the southern part of the Košická kotlina Basin. A systematic collection of pellets from the church was carried out in the 1990s (Obuch & Matis 1998). In part of the samples the domination of *M. arvalis* is above average (average 54.6%, minimum 26.7%, maximum 91.9%) (Appendix 11). From the family Muridae the species *M.* cf. *musculus* (8.0%) and *M. minutus* (3.8%) are more abundantly represented, and from the family Soricidae *S. araneus* (5.8%) and *C. leucodon* (4.1%), and from the birds the sparrow *P. domesticus* (3.5%). In addition 5 species of frogs (Amphibia, 0.6%) were determined.

Východoslovenská pahorkatina Hills
The majority of the collections of *T. alba* pellets come from the end of the 20th century. Anděra et al. (1982) collected them in the foothills of the Vihorlat Mts. The domination of *M. arvalis* (average 52.6%, minimum 0%, maximum 83.3%) varied considerably (Appendix 12). In the large part of the samples the species of the sub-genus *Sylvaemus* (*Apodemus* sp. = 4.3%) were not differentiated; therefore the abundances of the species *A. flavicollis*, *A. sylvaticus* and *A. microps* is underestimated. From the species of the family Soricidae the most abundantly represented species are *C. leucodon* (8.7%) and *S. araneus* (5.6%). The house sparrow *P. domesticus* (4.3%) was most hunted in Zalužice.

Východoslovenská rovina Plain
Food samples of *T. alba* from the Východoslovenská rovina Plain were obtained from 34 localities by systematic survey. We present the results in 2 tables: 16 localities from the western part (Appendix 13a) and 18 localities from the eastern part (Appendix 13b). The dominance of *M. arvalis* (average 55.9%) on average does not differ between the areas, but in 7 localities it is significantly above average (68%–82%). In both areas the species *S. araneus* (8.6%) and *C. leucodon* (4.3%) are the most represented from the family Soricidae, and the species *M.* cf. *musculus* (5.2%) and *A. agrarius* (4.0%) from the family Muridae. The house sparrow *P. domesticus* (3.5%) was the most hunted in Zemplínske Hradište. The highest species diversity is in the samples from Biel (H' = 2.24) with multiple representation of 3 species of frogs (Amphibia, 3.4%) and beetles (Coleoptera, 2.3%).

North-eastern Slovakia
Recent samples of the diet of T. alba are from 4 localities in the Ondavská vrchovina Upland, 3 localities of the Laborecká vrchovina Upland and 3 localities of the Beskydské predhorie Foothills. The average dominance of *M. arvalis* (35.2%) is low and is significantly higher in 3 localities (49.2%–68.7%) (Appendix 14). From the family Muridae the species *M. musculus* (19.1%) and *A. agrarius* (4.9%) have the highest abundance, and from the family Soricidae the species *C. leucodon* (8.6%) and *S. araneus* (6.0%). Birds and amphibians are only slightly represented in the whole set, and from invertebrates the European mole cricket *Gryllotalpa gryllotalpa* was more abundant in one locality.

Basins of northern Slovakia
From 1998 up through 2015 collections from 2 localities in the Popradská kotlina Basin and one each in the Liptovská kotlina Basin and in Orava, were analysed. In Párnica barn owls in 2015 were fed with barnyard chicks (Flajs & Obuch 2015); we do not list their representation in the food in the table (Appendix 15). The dominance of *M. arvalis* (average 66.2%, minimum 52.3%, maximum 79.3%) is high. From the family Muridae the more abundantly represented species are *M. musculus* (13.7%) and *A. sylvaticus* (2.7%), and from the family Soricidae the species *N. anomalus* (3.4%) and *S. araneus* (2.0%). The proportional representation of birds is low (Aves, 6 species, 1.2%).

Turčianska kotlina Basin
Schmidt & Štollmann (1972) and Obuch (1982, 1991, 2002) present older data on the diet of *T. alba* in Turčianská kotlina Basin. The dominance of *M. arvalis* (average 74.3%, minimum 25.8%, maximum 84.9%) is high (Appendix 16). The sample from Socovce is exceptional with its high abundance of the species *M. musculus*, *M. minutus* and *P. domesticus*. In Necpaly *T. alba* hunted an increased number of bats (Chiroptera, 6 species) and synanthropic species of birds. A large colony of bats was also in the nave of the church in Turany, but *T. alba*, which bred in the church tower, hunted them only in a small number (Obuch & Kadlečík 1997). From the family Muridae the most represented species are *M. musculus* (6.2%) and *A. sylvaticus* (2.9%), and from the family Soricidae the species *N. anomalus* (2.8%) and *S. araneus* (1.8%).

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Subrecent diet

In 4 subrecent samples of diet of *T. alba* changes are reflected in the method of using the human landscape, especially in agricultural production (Tab. 2). In the recent period from the mid-1960s large agricultural enterprises with vast areas of parcels for a single crop predominated in Slovakia as well as the use of machinery for ploughing them. The chemical method of protecting plants against damage and weeds predominates, and animal production is concentrated into large complexes with a specialization on one product. A consequence of reducing the diversity of plants and animal production, the diversity of the animals inhabiting the landscape is also lower. On large areas of multiyear feeds and winter crops the common vole (*M. arvalis*) mainly prospers. In contrast, rodents, with the exception of the species *A. agrarius*, in which a trend of expansion to new territories has been recorded in the recent period, are in decline. Its subrecent occurrence in Šurice and in Žilina, however, indicates that it also inhabited the margins of today's territory in the past.

Šurice

A sample from cliff hollows at Soví hrad Castle in Šurice, located in the Cerová vrchovina Upland, is characterised by high species diversity of prey of *T. alba* (H' = 2.83) with a high share of frogs (Amphibia, 5 species) bats (Chiroptera, 6 species) and white-toothed shrews (*Crocidura leucodon* and *C. suaveolens*). A higher representation of the Miller's water shrew (*N. anomalus*) and the harvest mouse (*M. minutus*) indicates the occurrence of more extensive wetlands in the past, which have now dried out.

Hatiny

A sample of the diet of *T. alba* with a high diversity of prey (H'= 2.28) from the ceiling of a cave near the Hatiny settlement on the eastern edge of the Slovenský kras Mts pointed to the occurrence of wetlands in the alluvia of the Bodva River. Alongside the high abundance of *M. minutus*, the species *Sicista subtilis* and *Microtus oeconomus*, whose recent occurrence after improvement of the surrounding meadows is not probable, also lived here.

Žilina

For subrecent samples, a high domination of species of the family Muridae is characteristic, especially *M. musculus* and the sub-genus *Sylvaemus* (species *A. flavicollis*, *A. sylvaticus* and *A. microps*). Perhaps it is best to demonstrate these changes by comparing samples from the 16th century from a church in Žilina, Rudiny



J Obuch

Fig. 2. Determination of species of the family Muridae from a subrecent sample from the Church of Saint Stephen the King in Žilina.
Obr. 2. Detrminácia druhov čeľade Muridae zo subrecentnej vzorky z Kostola sv. Štefana kráľa v Žiline.

Tab. 2. Comparing the food of *Tyto alba* according to age of the site. Numerical values in the Table are presented in absolute value; positive and negative deviations (1+, 2+, and 1-, 2-) are a marked differences from the mean (Obuch 2001) within a respective species, across locations. For more details see Methods. The diversity index H' is used, calculated according to the work of Shannon & Weaver (1949).

Tab. 2. Porovnanie potravy *Tyto alba* podľa veku nálezísk.Číselné hodnoty v tabuľke sú uvedené v absolútnych hodnodnotách, kladné a záporné odchýlky (1+, 2+ a 1-, 2-) sú významné odchýlky od priemeru (Obuch 2001) v rámci toho istého druhu, naprieč lokalitami. Pre viac informácii pozri Metodiku. Použitý je index diverzity H', vypočítaný podľa práce Shannon & Weaver (1949).

localities / lokality		**1**	**3**	**4**	**2**	**5**	**∑**	**%**
taxa / taxón								
Microtus arvalis	n	71,030	2- 182	1- 821	3897	1- 1102	77,032	57.13
	%	59.57	19.76	27.67	51.05	27.40		
Bufo bufo		4- 0	4+ 71		1- 0		71	0.05
Limacidae		2- 1	3+ 20				21	0.02
Crocidura leucodon		5691	2+ 149	170	1- 284	2- 62	6356	4.71
Crocidura suaveolens		3374	2+ 91	95	186	1- 59	3805	2.82
Plecotus austriacus		13	1+ 5	1			19	0.01
Parus major		66	1+ 6	2	1- 0		74	0.05
Passer domesticus		3473	1+ 45	2- 17	3- 35	96	3666	2.72
Passer montanus		163	1+ 6	1	2- 0	1	171	0.13
Bombina sp.		1- 0	1+ 7				7	0.005
Pelobates fuscus		101	1+ 7	3	1- 0		111	0.08
Pelophylax cf. *esculentus*		50	1+ 7				57	0.04
Neomys anomalus		1- 772	2+ 43	1- 15	2+ 155	2+ 89	1074	0.80
Rhinolophus hipposideros		2- 5	2+ 17	1+ 6	4		32	0.02
Micromys minutus		2591	1+ 31	2+ 181	3- 23	1- 60	2886	2.14
Muscardinus avellanarius		1- 90	1	2+ 22	11	3	127	0.09
Sicista subtilis		1- 3		2+ 12			15	0.01
Pipistrellus pipistrellus		7		1+ 7			14	0.01
Sorex araneus		7350	45	1+ 388	419	3- 43	8245	6.12
Clethrionomys glareolus		377	3	1+ 17	32	1- 3	432	0.32
Terricola subterraneus		378	1	1+ 28	1- 13	18	438	0.32
Mus cf. *musculus*		1- 6637	69	2+ 668	1+ 999	2+ 1401	9774	7.25
Apodemus flavicollis		2325	25	1+ 140	1+ 305	1+ 128	2923	2.17
Neomys fodiens		1- 242		1+ 26	1+ 54	3+ 103	425	0.32
Apodemus microps		2665	16	1+ 111	2- 71	2+ 337	3200	2.37
Apodemus agrarius		1745	2- 3	1+ 88	2+ 350	1- 52	2238	1.66
Arvicola amphibius		199	2	6	2+ 57	6	270	0.20
Nyctalus noctula		31			1+ 14		45	0.03
Eptesicus serotinus		21	1	1	1+ 9	1	33	0.02
Plecotus auritus		1- 6		2	1+ 8		16	0.01
Talpa europaea		1- 51	2	5	1+ 12	2+ 19	89	0.07
Apodemus sylvaticus		1922	12	1- 35	147	3+ 395	2511	1.86
Rana temporaria		1- 11	1			2+ 14	26	0.02
Coleoptera		140		1	2- 0	1+ 16	157	0.12
Hirundo rustica		229	1	1- 0	2- 1	1+ 13	244	0.18
Coturnix coturnix		11				1+ 5	16	0.01
Rattus norvegicus		910	2	3- 0	4- 0	3- 0	912	0.68
Mus spicilegus		439		2- 0	3- 0	2- 0	439	0.33
Sorex minutus		2830	2- 1	77	1- 97	2- 18	3023	2.24
Myotis myotis		726	5	2- 1	38	3- 0	770	0.57
Phoenicurus ochruros		219		1- 0	1- 3	1- 0	222	0.16
Vespertilio murinus		1- 2	1	1	1	3	8	0.006
Apus apus		51	2		1		54	0.04
Alauda arvensis		48	1			4	53	0.04
Delichon urbica		44	1				45	0.03
Myotis blythii		42		2			44	0.03
Hymenoptera		29				1	30	0.02
Gryllotalpa gryllotalpa		29					29	0.02
Fringilla coelebs		21	3	1		3	28	0.02
Microtus agrestis		22			4		26	0.02
Columba livia dom.		22					22	0.02
Cricetus cricetus		22					22	0.02
Erithacus rubecula		20				1	21	0.02
Mammalia		**114,114**	**1- 714**	**2931**	**7582**	**3906**	**129,247**	**95.86**
Aves		**4699**	**1+ 86**	**2- 28**	**3- 46**	**136**	**4995**	**3.70**
Amphibia, Reptilia		**1- 207**	**4+ 101**	**7**	**1- 10**	**16**	**341**	**0.25**
Invertebrata		**211**	**2+ 20**	**1- 1**	**2- 0**	**1+ 17**	**249**	**0.18**
∑		**119,231**	**921**	**2967**	**7638**	**4075**	**134,832**	**100.00**
H'		1.82	2.83	2.28	1.91	2.4	1.90	

(Fig. 2), with recent diet of *T. alba* in the neighbouring Turčianská kotlina Basin: in the past the dominance of *M. arvalis* (19.8%), which consumes green vegetation, was significantly lower, and in contrast there was a high proportional representation of the seed-eating species *M. musculus* and from the genus *Apodemus*, which had access to grain from the harvest in July up through the threshing in the autumn. Many seeds of weeds are also found in and around the fields. At present the harvest together with threshing lasts 2 to 3 weeks and after ploughing under the stubble in August the access of rodents to grain ends. Small poultry farms in village yards are also gradually disappearing. In the sample from Žilina from the 16th century the represented white-toothed shrew *C. leucodon*, which recently occurred in the low elevations of Slovakia and is gradually disappearing from mountain basins, was more abundant (Obuch & Darola 1980).

Ondavská vrchovina Upland: 1945–1961

At 16 localities of the Ondavská vrchovina Upland, where T. Wiesz collected pellets of *T. alba* in the years 1945 to 1961, the occurrence of these owls was not confirmed in later years. The material was loaned to us for determinations from the collection of the Šariš Museum in Bardejov. In the results of the analyses (Appendix 17) the domination of *M. arvalis* (average 51.0%, minimun 0%, maximum 61.8%) did not differ from the recent period; however, the share of some species of the family Muridae is higher (the species *M. musculus* (13.1%), *A. flavicollis* (4.0%) and *A. agrarius* (4.6%)). From the family Soricidae the abundant representation of Miller's water shrew (*N. anomalus*, 2.0%) is characteristic for higher elevated localities, but the share of the species *S. araneus* (5.5%) and *C. leucodon* (3.7%) is higher. Significant variability in the proportion of representation was determined in the species *S. araneus*, *M. musculus*, *A. flavicollis* and *A. agrarius*.

Uttendörfer (1952) carried out the first summation of data on the diet of *T. alba*. He presents 77,602 vertebrates and 587 invertebrates from collections from the years 1922 through 1949 from 180 German localities (Germany during the Third Reich, including Silesia and Eastern Prussia). A sample from Ľubica near Kežmarok, which was processed by Schaefer (1933), is also included there. He collected pellets in the years 1931 through 1933. He determined 876 pieces of prey, among which were 12 bats and 14 birch mice (*Sicista* sp.). Data from present-day Poland were used in their Atlas of Mammals (Pucek & Raczyński 1983). For the needs of the atlas, in 1955–1977 they acquired 958 collections of owl pellets from 735 localities and determined 378,000 small mammals. From this, there were pellets of *T. alba* in 90% of the collections. In the Czech Republic, Poprach (2008) presents data from 29 literature sources, a total of 120,026 vertebrates and 185 invertebrates, in a monograph on *T. alba*. The collections are from the years 1941 through 2004. Schmidt (1973) presented data on the diet of *T. alba* from Europe. Schmidt & Sipos (1971) corroborated the occurrence of the species

Tab. 2. Continuation
Tab. 2. Pokračovanie

Samples / vzorky: 1 – Slovakia, recent (collections from 1965 – 2015), **3** – Šurice, Soví hrad Castle, subrecent, 12.11.1997, **4** – Hatiny, cave., subrecent, 25.9.1977 (Obuch 1992a), **2** – Ondavská vrchovina Upland, 1945–1963, leg. Weisz, **5** – Žilina, Rudiny, Church of St. Stephen the King, 16th century, 5.10.2009 (Obuch & Dorica 2011).

Other species (sample–number) / ostatné druhy (vzorka–počet):

Erinaceus roumanicus (3–1), *Neomys* sp. (1–2), *Rhinolophus euryale* (1–1), *Myotis mystacinus* (1–3; 3–1; 4–1), *Myotis brandtii* (1–2), *Myotis emarginatus* (1–6; 5–2), *Myotis nattereri* (1–3; 2–1), *Myotis daubentonii* (1–1), *Myotis dasycneme* (1–1), *Nyctalus leisleri* (1–2), *Pipistrellus nathusii* (1–3), *Barbastella barbastellus* (1–1), Chiroptera (1–1), *Lepus europaeus* (1–1), *Glis glis* (1–1; 3–2; 4–1), *Eliomys quercinus* (4–2), *Apodemus* sp. (1–1556; 2–391), *Rattus rattus* (5–2), *Microtus oeconomus* (1–4; 4–1), *Mustela erminea* (1–2; 3–1), *Mustela nivalis* (1–6), *Felis silvestris* (3–1), *Sus scrofa* (3–1), *Anas platyrhynchos* (3–1), *Falco tinnunculus* (1–1; 3–2), *Perdix perdix* (1–1; 3–1), *Phasianus colchicus* (1–2), *Gallus gallus dom*. (3–1), *Crex crex* (4–1), *Actitis hypoleucos* (5–1), *Streptopelia decaocto* (1–13), *Streptopelia turtur* (1–1; 4–1), *Tyto alba* (1–9; 5–4), *Athene noctua* (1–3), *Melopsittacus undulatus* (1–1), *Upupa epops* (1–2; 3–1), *Picus canus* (1–1; 3–1), *Lullula arborea* (1–3; 5–3), *Galerida cristata* (1–2; 4–1; 5–3), Alaudidae (1–1; 5–1), *Riparia riparia* (1–5), *Anthus trivialis* (1–4), *Anthus* sp. (4–1), *Motacilla alba* (1–13), *Lanius minor* (1–2), *Lanius collurio* (1–2), *Locustella* sp. (1–1), *Acrocephalus palustris* (1–8), *Hippolais icterina* (1–2), *Sylvia curruca* (1–1), *Sylvia nisoria* (1–1), *Sylvia atricapilla* (1–4), *Phylloscopus collybita* (1–2), *Regulus* sp. (1–2), Sylviidae (1–1; 4–1), *Muscicapa striata* (1–2), *Saxicola torquata* (1–1), *Saxicola rubetra* (1–5), *Luscinia megarhynchos* (1–4), *Turdus merula* (1–6; 3–2), *Turdus pilaris* (1–1), *Turdus philomelos* (1–4), *Turdus viscivorus* (3–1), *Turdus* sp. (1–3; 4–1), *Cyanistes caeruleus* (1–5), *Poecile palustris* (1–1), *Poecile montanus* (1–6), *Sitta europaea* (1–7; 3–1), *Troglodytes troglodytes* (1–6; 3–1), *Emberiza citrinella* (1–10; 3–4), *Carduelis carduelis* (1–8; 3–1), *Linaria cannabina* (1–3), *Chloris chloris* (1–14; 3–3), *Coccothraustes coccothraustes* (1–3; 3–1), *Sturnus vulgaris* (1–14), *Garrulus glandarius* (1–1; 4–1), *Corvus cornix* a *C. frugilegus* (1–1), *Coloeus monedula* (1–1), Passeriformes (1–134; 2–6; 5–1), Aves sp. juv. (1–4), *Bufo* sp. (4–1), *Rana arvalis* (1–8), *Pelophylax ridibundus* (1–1; 5–1), *Rana* sp. (1–13), Amphibia (1–22; 2–10), *Lacerta viridis* (3–3), *Lacerta agilis* (1–1; 3–2; 5–1), *Lacerta* sp. (4–2), cf. *Ablepharus kitaibeli* (3–1), *Natrix natrix* (3–1), *Coronella austriaca* (3–1), Reptilia (4–1), Diptera (1–1), *Melolontha melolontha* (1–9), Orthoptera (1–2)

Sicista subtilis from the pellets of *T. alba* in the catchment area of the River Hornád in Hungary near the Slovak border. Tatarinov (1960) studied the diet of this owl in Sub-Carpathian Rus.

Most of the mentioned collections are older than 50 years. The problem of comparing them with our subrecent data is in the level of processing of collections and determination of the species of prey of *T. alba*. In the results of Uttendörfer the majority of mammals is determined only on the level of the genus, or a higher taxonomical unit (e.g. Muridae). Similarly, in the data from Czech areas the majority of field mice is determined to the genus *Apodemus* sp., or *Apodemus sylvaticus/flavicollis*. Poprach (2008) states that the species *Apodemus microps* has thus far not been recorded in the Czech Republic in the diet of *T. alba*, although Vohralík (2002) described the sub-species *Apodemus microps cimrmani* from measures on maxilla obtained from the pellets of *T. alba* at Žetecká kotlina Basin, and Obuch (1992b) presents it as abundant in the diet of this owl from the Pálava area in southern Moravia. Likewise, the share of birds is strongly underestimated in the majority of works. For example, from 29 works presented from the Czech Republic by Poprach, in 4 of them birds were not determined at all and in another 9 works only on the level of class Aves. In many works the numbers of birds are determined only from the number of beaks. In Slovakia in the last 40 years we have used a 5% solution of NaOH for processing pellets, and we determined 4 types of bird bones according to the proposal in the handbook of Märza (1969). With determinations we use a comparative collection of bones from more than 200 bird species. By comparing the results of the determinations only from the beaks from 4 species of bones in 10 samples of food of *T. alba* we found out that the number of species and the number of individuals was lower by one-third (according to beaks 65% of species and 69% of individuals were determined versus 100% with determinations from 4 types of bones: humerus, metacarpus, tarsometatarsus and beaks). In the majority of European countries the method of manual dismantling of individual pellets still predominates and even the newest handbook (e.g. Yalden 2009) does not recommend the using of a NaOH solution for decomposing organic components. For us one collection from one location from one date, which we process at one time, is a sample. After removal of foreign matter we work with clean osteological materials from which we classify the individual elements for determination. We thus exclude the impreciseness of examining maxilla in fur, from the lack of integrity of pellets and the incompleteness of remnants of determined individuals. We determine the number of individuals of more difficult to determine taxons only after their thorough classification, as can be seen with certain species of the family Muridae in Fig. 2 from the subrecent sample from the Church of St. Stephen the King in Žilina.

Conclusion

Among the owls, the most data has been published on the diet of the cosmopolitan species *T. alba*. This is related to the easy availability of its pellets in buildings. The results of analyses reflect proportions in the representation of prey in the parts of the landscape intensively managed by human beings. More comprehensive work from Slovakia about its diet is thus far absent. Therefore, only fragmentary parts from Slovakia are presented when evaluating the share of some taxons in its food within Europe. For example, Roulin & Christe (2013) in their evaluation of the share of bats from the material of more than 4 million prey from Europe list 192 bats from Slovakia in 23,431 items of diet, thus a 0.82% share. In our set we present from the recent period 877 items from 19 species of bats, thus a 0.74% share of the analysed prey. Roulin (2015), working from the same Slovak materials of 23,431 pieces, evaluated the share of birds in the diet of *T. alba* at 1013 items (4.32%) and the species *P. domesticus* with a share of 85.5%. In our work we present from the recent period (Table 1) 58 species of birds, 4,699 pieces (3.94%) with *P. domesticus* having a share of 73.9% of the material 5-times larger than the mentioned authors.

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Appendix 1.

Samples of *Tyto alba* diet from Chvojnická pahorkatina Hills. Numerical values in the table are presented in absolute value; positive and negative deviations (1+, 2+, and 1-, 2-) are a marked differences from the mean (Obuch 2001) within a respective species, across locations. For more details see Methods. The diversity index H' is used, calculated according to the work of Shannon & Weaver (1949).

Vzorky potravy *Tyto alba* z Chvojnickej pahorkatiny. Číselné hodnoty v tabuľke sú uvedené v absolútnych hodnodnotách, kladné a záporné odchýlky (1+, 2+ a 1-, 2-) sú významné odchýlky od priemeru (Obuch 2001) v rámci toho istého druhu, naprieč lokalitami. Pre viac informácii pozri Metodiku. Použitý je index diverzity H', vypočítaný podľa práce Shannon & Weaver (1949).

localities / lokality		**2**		**5**		**3**		**4**		**6**		**19**		**18**		**1**
taxa / taxón																
Sorex araneus		1+ 39		2+ 189		1+ 73		1+ 31		1+ 30		1+ 19		63		29
Neomys fodiens		1		1+ 8		1						1				2
Sorex minutus		9		2+ 84		1+ 19		6		7		2		1- 21		6
Crocidura leucodon		13		1+ 44		1+ 41		1+ 15		6		9		1- 20		16
Passer domesticus		7		1- 9		11		1- 2		1+ 20		6		37		14
Mus cf. *musculus*		2- 0		2- 3		12		7		4		1+ 16		1+ 80		1+ 19
Rattus norvegicus				1- 0		2		1						4		3
Phoenicurus ochruros				1		1		2				1		2		1
Crocidura suaveolens		6		1+ 28		5		4		6		7		14		7
Neomys anomalus		1		5		1										
Hirundo rustica				2												
Micromys minutus		5		1+ 22		3		1				6		17		3
Apodemus flavicollis				2- 0		3		5		1				1- 2		3
Apodemus sylvaticus		4		2- 3		10		7		1- 0		4		20		6
Apodemus microps		3		19		9		1+ 19		1- 0		7		1+ 36		13
Microtus arvalis	n	156		1- 273		1- 191		1- 118		146		1- 75		622		210
	%	63.93		39.22		48.97		53.15		65.77		47.47		65.54		63.25
Clethrionomys glareolus				2		5		2		2		1				
Arvicola amphibius				3										3		
Delichon urbica												1				
Mammalia		**237**		**684**		**375**		**216**		**202**		**147**		**906**		**317**
Aves		**7**		**1- 12**		**15**		**6**		**1+ 20**		**11**		**43**		**15**
∑		**244**		**696**		**390**		**222**		**222**		**158**		**949**		**332**
H'		1.30		1.75		1.74		1.70		1.21		1.89		1.42		1.48

localities / lokality		**14**		**13**		**21**		**20**		**15**		**17**		**24**		**26**
taxa / taxón																
Sorex araneus		2- 14		1- 9		2- 15		1- 10		1- 29		2- 2.2		1- 0		
Neomys fodiens																
Sorex minutus		1- 7		1- 5		2- 5		4		1- 7		2				
Crocidura leucodon		1- 12		13		27		10		21		1- 1				
Passer domesticus		3- 1		1- 3		28		9		1- 8		6				
Mus cf. *musculus*		27		8		21		12		1- 6		6		1		3
Rattus norvegicus		1- 1				1- 1		1		4						
Phoenicurus ochruros		1+ 8		1		3										
Crocidura suaveolens		1+ 23		1+ 14		16		3		1- 6		2				1
Neomys anomalus				2+ 14		1+ 7										
Hirundo rustica		2				1+ 6										
Micromys minutus		1- 1		1+ 12		5		1+ 12		5		4		1		
Apodemus flavicollis		1+ 20		1+ 13		7		6		1+ 21		1		1		
Apodemus sylvaticus		1+ 32		6		1- 9		1- 0		1+ 23		5				
Apodemus microps		23		1+ 18		2- 4		3		1+ 30		2+ 20				
Microtus arvalis	n	542		254		537		160		376		134		1+ 68		1+ 38
	%	75.07		68.10		76.60		69.26		69.63		72.83		93.15		90.48
Clethrionomys glareolus		1		1		4				1				1		
Arvicola amphibius		1														
Delichon urbica		3				2										
Mammalia		**706**		**369**		**659**		**222**		**532**		**178**		**72**		**42**
Aves		**1- 16**		**1- 4**		**1+ 42**		**9**		**1- 8**		**6**		**1**		**0**
∑		**722**		**373**		**701**		**231**		**540**		**184**		**73**		**42**
H'		1.15		1.40		1.14		1.28		1.30		1.11		0.36		0.37

Locality / lokalita: 2 – Borský Peter, **5** – Brodské, **3** – Štefanov, **4** – Smolinské, **6** – Smrdáky, **19** – Hlboké, **18** – Vrádište, 1993 + Latková (2007), **1** – Skalica, **7** – Cunín, **23** – Gbely, **8** – Čáry, **9** – Oreské, **10** – Letničie, **11** – Senica, **12** – Petrova Ves, **16** – Prietržka, **22** – Radimov, **14** – Dubovce, **13** – Chropov, **21** – Čáčov, **20** – Radošovce, **15** – Unín, **17** – Trnovec, **24** – Popudinské Močidlany, **26** – Rovensko, **27** – Mokrý Háj, **28** – Koválov, **29** – Holíč, **30** – Dojč, **25** – Kunov, **31** – Rybky, **32** – Kopčany, **33** – Horné Suroviny, **34** – Prietrž. Published in Latková (2007).

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7	**23**	**8**	**9**	**10**	**11**	**12**	**16**	**22**
9	23	13	27	1- 6	6	30	1- 36	50
	1						1	
1+ 10	1+ 24	9	13	2	1	10	24	18
10	9	1+ 12	1+ 18	1+ 13	1	1- 3	1- 19	1- 16
1- 0	1- 3	1- 1	1- 1	1+ 21	2+ 24	1+ 29	1+ 35	1+ 39
2	9	7	1- 1	4	5	13	20	20
	2+ 24			4		1	2	2+ 30
						3	1	4
5	9	2	8	7	5	3	1- 5	16
	1				1	1		1
1	3	2	2	3	4	2	6	2- 0
3	1		1+ 14			4	1- 2	7
	11	1	8	2		6	1+ 29	16
1	7	3	1- 2	3	1	8	1- 7	1.8
101	181	125	179	135	59	166	546	438
70.63	58.58	71.43	64.62	67.16	54.63	58.87	74.18	65.57
1	3		4	1		2	1	5
						1		
143	**306**	**174**	**276**	**180**	**1- 83**	**250**	**698**	**625**
1- 0	**1- 3**	**1- 1**	**2- 1**	**1+ 21**	**2+ 25**	**1+ 32**	**38**	**1+ 43**
143	**309**	**175**	**277**	**201**	**108**	**282**	**736**	**668**
1.15	1.61	1.13	1.36	1.30	1.45	1.56	1.14	1.42

27	**28**	**29**	**30**	**25**	**31**	**32**	**33**	**34**	**∑**	**%**
1- 7	1- 0	1- 13	1- 4		1	2	2		781	7.87
									15	0.15
1- 0		11	1- 0			1	2	1	310	3.12
1- 3		1- 5	3		2	1		1	364	3.67
1- 0	5	2- 0	5						324	3.26
1- 1	2	14	3		2	1	1		330	3.32
	2								80	0.81
			1			1			30	0.30
3	2	6	3		1				217	2.19
1									33	0.33
			2						12	0.12
1		7	1		1				130	1.31
		1- 0	3					3	120	1.21
1- 0	1	11	6						220	2.22
6		7	2				1		260	2.62
1+ 219	42	286	101	19	40	18	37	14	6606	66.56
90.87	77.78	79.22	74.81	100.00	83.33	69.23	84.09	73.68		
			1				1		39	0.39
									8	0.08
									6	0.06
241	**49**	**360**	**127**	**19**	**47**	**25**	**44**	**19**	**9530**	**96.02**
2- 0	**5**	**2- 1**	**8**	**0**	**1**	**1**	**0**	**0**	**395**	**3.98**
241	**54**	**361**	**135**	**19**	**48**	**26**	**44**	**19**	**9925**	**100.00**
0.46	0.86	0.94	1.15	0.00	0.74	1.15	0.68	0.83	1.46	

Other species (locality–number) / ostatné druhy (lokalita–počet): *Talpa europaea* (5–1; 18–1; 14–2), *Nyctalus leisleri* (18–1), *Pipistrellus nathusii* (21–1), *Plecotus austriacus* (13–1), *Muscardinus avellanarius* (20–1), *Apodemus* sp. (13–1; 15–2; 32–2), *Terricola subterraneus* (18–2), *Mustela erminea* (15–1; 17–1), *Erithacus rubecula* (4–1; 19–2; 18–1), *Parus major* (18–1; 21–1), *Troglodytes troglodytes* (3–2), *Fringilla coelebs* (3–1; 4–1), *Carduelis carduelis* (21–1), *Passer montanus* (11–1; 14–2; 16–2), *Sturnus vulgaris* (19–1), Passeriformes (18–2; 21–1; 24–1; 29–1; 31–1).

Appendix 2.

Samples of *T. alba* diet from Borská nížina Lowland. Numerical values in the table are presented in absolute value; positive and negative deviations (1+, 2+, and 1-, 2-) are a marked differences from the mean (Obuch 2001) within a respective species, across locations. For more details see Methods. The diversity index H' is used, calculated according to the work of Shannon & Weaver (1949).

Vzorky potravy *T. alba* z Borskej nížiny. Číselné hodnoty v tabuľke sú uvedené v absolútnych hodnodnotách, kladné a záporné odchýlky (1+, 2+ a 1-, 2-) sú významné odchýlky od priemeru (Obuch 2001) v rámci toho istého druhu, naprieč lokalitami. Pre viac informácii pozri Metodiku. Použitý je index diverzity H', vypočítaný podľa práce Shannon & Weaver (1949).

localities / lokality		**1**		**3**		**7**		**12**		**13**		**11**		**10**	
taxa / taxón															
Neomys fodiens		1+	18		1		1		11						
Neomys anomalus			5	1+	5										
Parus major			11	2+	11			1-	0						1
Sorex araneus		1-	291	1+	59	1+	25	1+	555	1+	38		73	1-	22
Sorex minutus		1-	69		14	1+	13	1+	189		13	1+	41	1-	4
Coleoptera		2-	0					2+	50						
Clethrionomys glareolus		1-	19		3		4	1+	80		3		3		2
Apodemus flavicollis		1-	8		2		1	1+	41		1		7		1
Apodemus microps		1-	11		6			1+	38				3		2
Hirundo rustica			5		1			1-	0		3		2	1+	9
Micromys minutus		1-	35		7				45	1+	12	1+	20	1+	12
Mus cf. *musculus*			211		22		1	1-	135	1+	20		36	1+	62
Crocidura suaveolens		1-	76		8		2		102		9		22	1+	30
Crocidura leucodon		1-	97		10			1-	106	1+	22	1+	47	1+	46
Rattus norvegicus			7				1		3				1		
Passer montanus			3		2				3				1		1
Passer domesticus			132	2+	46		1		132		4	1-	15	1+	33
Apodemus sylvaticus		1-	101		7				99		6		29	1+	27
Microtus arvalis	n		2784	1-	90	1-	31	1-	1669	1-	100		333	1-	238
	%		70.66		29.80		38.27		50.92		42.37		52.19		47.60
Terricola subterraneus		1-	1				1		8		1		1		1
Phoenicurus ochruros			8		1			1-	0				1		1
Fringilla coelebs			8												3
Delichon urbica			6		3										1
Arvicola amphibius			3						1						2
Alauda arvensis			3						2						1
Erithacus rubecula			5								1				
Motacilla alba			5												
Pelophylax cf. *esculentus*			1						1		1		1		
Mammalia			**3741**		**237**		**80**		**3083**		**225**		**617**		**449**
Aves			**198**	**2+**	**65**		**1**		**143**		**10**	**1-**	**20**	**1+**	**51**
Amphibia			**1**		**0**		**0**		**2**		**1**		**1**		**0**
Invertebrata		**2-**	**0**		**0**		**0**	**2+**	**50**		**0**		**0**		**0**
∑			**3940**		**302**		**81**		**3278**		**236**		**638**		**500**
H'			1.31		2.24		1.59		1.79		1.94		1.76		1.87

Locality / lokalita: 1 – Dolečky, **3** – Jablonica, Noga (2005) + Latková (2007), **7** – Malé Leváre, Obuch & Kürthy (1995), **12** – Vysoká pri Morave, 1992, leg. Darolová + Obuch & Kürthy (1995) + Noga (2005), **13** – Záhorská Ves, **11** – Suchohrad, **10** – Plavecký Štvrtok, **4** – Jakubov, **8** – Marcheggské mosty, **6** – Láb, **5** – Karlov dvor, **2** – Gajary, 9. 1994, leg. Kürthy, **14** – Šaštín–Stráže, 1978, leg. Mayer + Noga (2005), **9** – Nandin dvor.

Other species (locality–number) / ostatné druhy (lokalita–počet): *Talpa europaea* (12–1; 5–1; 9–1), *Myotis nattereri* (8–1), *Myotis myotis* (1–1), *Myotis daubentonii* (1–1), *Nyctalus noctula* (8–1), *Nyctalus leisleri* (1–1), *Pipistrellus pipistrellus* (3–2), *Pipistrellus nathusii* (1–1), *Plecotus auritus* (11–1), *Plecotus austriacus* (5–1; 9–1), *Muscardinus avellanarius* (1–1; 3–1; 5–2), *Apodemus* sp. (14–6), *Microtus agrestis* (5–1), *Falco tinnunculus* (8–1), *Perdix perdix* (5–1), *Phasianus colchicus* (8–2), *Apus apus* (1–2; 4–1), *Melopsittacus undulatus* (1–1), *Lullula arborea* (1–1), *Riparia riparia* (12–2), *Sylvia atricapilla* (1–2; 11–1), *Phylloscopus collybita* (12–1), Sylviidae (13–1), *Luscinia megarhynchos* (1–1), *Turdus pilaris* (8–1), *Turdus philomelos* (8–1), *Sitta europaea* (1–1; 10–1), *Emberiza citrinella* (1–1; 5–1), *Linaria cannabina* (1–1), *Chloris chloris* (1–2; 12–1), *Sturnus vulgaris* (9–1), *Garrulus glandarius* (8–1), *Corvus cornix* a *C. frugilegus* (12–1), *Coloeus monedula* (8–1), Passeriformes (3–1; 12–1; 13–1; 4–3; 8–4), *Pelobates fuscus* (12–1; 8–1).

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4	**8**	**6**	**5**	**2**	**14**	**9**	**∑**	**%**
	2	1			1	4	39	0.28
	1					1	12	0.09
					3		26	0.19
1- 27	1- 48	2	1- 53	1- 9	1- 24	98	1324	9.47
17	2- 7	4	36	1- 3	1- 9	28	447	3.20
	1- 0		1- 0				50	0.36
9	1- 4	4	11		2	11	155	1.11
2	10		1+ 18		3	1- 1	95	0.68
2	1- 1	1	8		1+ 10	3	85	0.61
							20	0.14
1+ 19	1- 4	2	12	1	1- 2	8	179	1.28
2+ 140	3- 5	5	2- 21	18	25	1- 29	730	5.22
1+ 34	1+ 72	4	33	8	1- 6	29	435	3.11
1+ 47	1+ 75	1+ 7	1+ 89	1+ 25	19	1- 20	610	4.36
2+ 15			3	1			31	0.22
1+ 6	2						18	0.13
1+ 58	3- 5	2	1- 27	1- 3	1+ 36	2- 5	499	3.57
1+ 33	1- 27	1+ 9	1+ 89	15	2- 3	1- 16	461	3.30
1- 226	1+ 878	1- 14	914	197	393	726	8593	61.48
35.04	75.62	25.45	68.88	70.36	71.72	73.63		
	2		3		1	2	21	0.15
3			1		4		19	0.14
	1		1			1	14	0.10
2							12	0.09
	1		1				8	0.06
	1						7	0.05
1							7	0.05
					1		6	0.04
	1					1	6	0.04
571	**1139**	**53**	**1296**	**277**	**504**	**978**	**13,250**	**94.80**
1+ 74	**1- 20**	**2**	**1- 31**	**1- 3**	**1+ 44**	**2- 7**	**669**	**4.79**
0	**2**	**0**	**0**	**0**	**0**	**1**	**8**	**0.06**
0	**1- 0**	**0**	**1- 0**	**0**	**0**	**0**	**50**	**0.36**
645	**1161**	**55**	**1327**	**280**	**548**	**986**	**13,977**	**100.00**
2.6	1.9	2.20	1.33	1.15	1.25	1.13	1.61	

Appendix 3.

Samples of *T. alba* diet from Podunajská rovina Plain. Numerical values in the table are presented in absolute value; positive and negative deviations (1+, 2+, and 1-, 2-) are a marked differences from the mean (Obuch 2001) within a respective species, across locations. For more details see Methods. The diversity index H' is used, calculated according to the work of Shannon & Weaver (1949).

Vzorky potravy *T. alba* z Podunajskej roviny. Číselné hodnoty v tabuľke sú uvedené v absolútnych hodnodnotách, kladné a záporné odchýlky (1+, 2+ a 1-, 2-) sú významné odchýlky od priemeru (Obuch 2001) v rámci toho istého druhu, naprieč lokalitami. Pre viac informácii pozri Metodiku. Použitý je index diverzity H', vypočítaný podľa práce Shannon & Weaver (1949).

localities / lokality		**6**	**8**	**12**	**16**	**17**	**5**	**7**	**1**	**2**
taxa / taxón										
Microtus arvalis	n	1+ 67	1+ 258	1+ 80	1+ 107	214	1- 124	2- 26	1- 609	1- 188
	%	88.16	88.36	89.89	89.92	81.68	30.02	16.35	56.39	52.66
Rattus norvegicus				1	3	1+ 7	1+ 9		9	3
Passer domesticus		1	1- 0		1	7	2+ 49	1- 0	3- 0	2- 0
Hirundo rustica							2+ 11			
Phoenicurus ochruros						1	1+ 6			
Sorex araneus			2- 1	1	1	2- 0	2+ 59	3+ 66	1+ 79	18
Sorex minutus		1	5	2		1- 0	1+ 31	1+ 10	1+ 56	1+ 15
Crocidura suaveolens		1	1- 2	2		6	1+ 35	3	1+ 77	10
Crocidura leucodon		2	8	1- 0	1- 1	1- 6	17	5	1+ 83	22
Clethrionomys glareolus			1					2+ 18	5	1
Mus spicilegus					2		2		2+ 64	1- 0
Mus cf. *musculus*		3	13	1- 0	1- 1	13	1+ 51	12	1- 30	1+ 48
Micromys minutus		1				3	6	5	11	1+ 12
Apodemus sylvaticus			1- 0	1		2	6	2	2- 4	2+ 30
Apodemus flavicollis					1		2		6	2
Apodemus microps			3	2		3	1- 3	7	26	7
Columba livia dom.									2	
Passer montanus							1			1
Mammalia		**75**	**292**	**89**	**116**	**254**	**345**	**155**	**1077**	**356**
Aves		**1**	**2- 0**	**0**	**3**	**8**	**2+ 68**	**3**	**3- 3**	**2- 1**
Amphibia		**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**
∑		**76**	**292**	**89**	**119**	**262**	**413**	**159**	**1080**	**357**
H'		0.56	0.56	0.50	0.53	0.84	2.17	1.92	1.66	1.66

Locality / lokalita: 6 – Čalovec, Margita, 25.4.1997, leg. Ambros, **8** – Horná Pôtoň, 1.9.1992, leg. Kürthy, **12** – Michal na Ostrove, 25.3.1993, leg. Kürthy, **16** – Tešedlíkovo, 14.9.2002, leg.Sárossy, **17** – Šaľa, 1999, **5** – Dunajská Lužná, 13.7.2004 + 16.4.2005, leg. Lengyel, **7** – Gabčíkovo, 13.1.2001, leg. Lešičko + 20.1.2002, **1** – Bokroš, 24.2.2004 + 24.2.2006, leg. Lengyel + Botková 2011, **2** – Bufa, 2000, **10** – Zemianska Olča, 2001, **14** – Palárikovo, 13.9.2002 + 28.11.2004 +24.1.2005, leg. Lengyel, **11** – Lehnice, 1992, leg. Darolová + 1998, **15** – Rusovce, 1995, **4** – Dropie, 18.4.1996, leg. Antal, **18** – Tvrdošovce, 14.9.2002, leg. Lengyel, **9** – Ivanka pri Dunaji, 12.3.2004, leg. Sárossy, **3** – Diakovce, 21.9.2003, leg. Sárossy, **13** – Nový Trh, 5.3.2004, leg. Sárossy.

Other species (locality–number) / ostatné druhy (lokalita–počet): *Neomys anomalus* (1–1; 15–1), *Myotis dasycneme* (1–1), *Apodemus* sp. (1–16; 15–52), *Terricola subterraneus* (10–1), *Microtus agrestis* (8–1; 14–1), *Microtus oeconomus* (7–1; 10–1), *Coturnix coturnix* (15–1), *Athene noctua* (11–1), *Alauda arvensis* (11–2), *Locustella* sp. (14–1), *Regulus* sp. (7–1), *Turdus merula* (7–1), *Parus major* (5–1; 7–1; 1–1), Passeriformes (16–2; 15–1), *Pelophylax* cf. *esculentus* (7–1; 11–1).

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10	**14**	**11**	**15**	**4**	**18**	**9**	**3**	**13**	**∑**	**%**
62	929	1376	572	101	58	51	114	166	5102	68.94
65.26	76.40	79.26	67.85	72.14	72.50	60.00	83.21	74.77		
1	6	12	1- 0	1			1	5	58	0.78
1	2- 4	1+ 64	1+ 60					11	198	2.68
									11	0.15
	2	1						2	12	0.16
5	1- 24	2- 23	32	2	2	3	1- 0	6	322	4.35
2	35	3- 5	1- 8			3	1	1- 1	175	2.36
3	30	2- 13	2- 6	6	4	2+ 15	1- 0	4	217	2.93
1- 0	1- 40	1- 57	47	1+ 23	1+ 12	5	9	1- 2	339	4.58
	1	3							29	0.39
	1+ 33	3- 0	2- 0						101	1.36
1+ 17	1- 31	86	51	6	1	2	9	9	383	5.17
	7	1- 4	1- 0						49	0.66
2	25	29	1- 4	1	3	5	1	7	122	1.65
	1+ 13	4	3			1		2	34	0.46
	1+ 34	1+ 53	3- 0				2	6	146	1.97
		1	3						6	0.08
		1	2					1	6	0.08
94	**1209**	**1665**	**776**	**140**	**80**	**85**	**137**	**208**	**7153**	**96.65**
1	**2- 7**	**70**	**1+ 67**	**1- 0**	**0**	**0**	**1- 0**	**1+ 14**	**246**	**3.32**
0	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0.03**
95	**1216**	**1736**	**843**	**140**	**80**	**85**	**137**	**222**	**7401**	**100.00**
1.20	1.11	0.96	1.26	0.93	0.94	1.32	0.68	1.13	1.40	

Appendix 4.

Samples of *T. alba* diet from Trnavská and Nitrianska pahorkatina Hills and Hornonitrianska kotlina Basin. Numerical values in the table are presented in absolute value; positive and negative deviations (1+, 2+, and 1-, 2-) are a marked differences from the mean (Obuch 2001) within a respective species, across locations. For more details see Methods. The diversity index H' is used, calculated according to the work of Shannon & Weaver (1949).

Vzorky potravy *T. alba* z Trnavskej a Nitrianskej pahorkatiny a Hornonitrianskej kotliny. Číselné hodnoty v tabuľke sú uvedené v absolútnych hodnodnotách, kladné a záporné odchýlky (1+, 2+ a 1-, 2-) sú významné odchýlky od priemeru (Obuch 2001) v rámci toho istého druhu, naprieč lokalitami. Pre viac informácii pozri Metodiku. Použitý je index diverzity H', vypočítaný podľa práce Shannon & Weaver (1949).

localities / lokality		**10**	**2**	**1**	**9**	**3**	**4**	**8**	**6**	**5**	**7**	**∑**	**%**
taxa / taxón													
Apodemus microps		1+ 13	1		1	4		1- 0				19	0.93
Crocidura leucodon		1+ 58	1+ 11	1+ 16	1- 0	5	5	2- 6		1- 0		101	4.95
Crocidura suaveolens		2- 7	1	1+ 16	1+ 17	4	1	48	7	6		107	5.24
Sorex minutus		1- 5	2	2	1	1+ 10	2	21	1	2		46	2.25
Neomys anomalus					1		1+ 7	1- 0	1	5		14	0.69
Rattus norvegicus		1- 1						1+ 32				33	1.62
Hirundo rustica								1+ 8				8	0.39
Phoenicurus ochruros		1			1			1+ 12				14	0.69
Passer domesticus		1- 12	1- 0	1- 0	6	1- 1	1	1+ 77	1+ 15	3	1	116	5.68
Micromys minutus		1- 2		1	5	5		18		1+ 14		45	2.20
Sorex araneus		1- 13	1	6	3	6	6	49	2	11		97	4.75
Microtus arvalis	n	376	54	68	73	68	1- 22	492	44	77	8	1282	62.81
	%	72.45	75.00	61.82	57.94	60.71	42.31	58.50	59.46	61.60	80.00		
Mus cf. *musculus*		17	2	1	10	7		40	4	6		87	4.26
Apodemus sylvaticus		12			2	2		24		1		41	2.1
Apodemus flavicollis		1			3			6			1	11	0.54
Mammalia		**506**	**72**	**110**	**117**	**111**	**48**	**742**	**59**	**122**	**9**	**1896**	**92.90**
Aves		**1- 13**	**1- 0**	**1- 0**	**9**	**1- 1**	**4**	**1+ 99**	**1+ 15**	**1- 3**	**1**	**145**	**7.10**
∑		**519**	**72**	**110**	**126**	**112**	**52**	**841**	**74**	**125**	**10**	**2041**	**100.00**
H'		1.12	0.88	1.18	1.56	1.48	1.90	1.64	1.23	1.37	0.64	1.58	

Locality / lokalita: 10 – Poľný Kesov, 26.4.1990, leg. Slobodník, 2 – Bernolákovo, 12.3.2004, leg. Sárossy, 1 – Chorvátsky Grob, 19.3.2004, leg. Sárossy, 9 Zemianske Kostoľany, 6.3.2002 + 2.5.2005, 3 – Močenok, 14.9.2002, leg. Sárossy, 4 – Bojnice, Obuch 1980, 8 – Ostratice, 29.11.2009 + 1.5.2010, leg. S. Harvančík, 6 – Koš, 6.3.2002, leg. Sárossy, 5 – Bystričany, 6.3.2002, leg. Sárossy, 7 – Chynorany, 1.5.2010, leg. Šnírer.

Other species (locality–number) / ostatné druhy (lokalita–počet): *Talpa europaea* (4–1), *Neomys fodiens* (4–1; 8–2), *Rhinolophus hipposideros* (4–1), *Nyctalus noctula* (10–1), *Clethrionomys glareolus* (8–4), *Terricola subterraneus* (9–1; 4–2), *Streptopelia decaocto* (8–1), *Alauda arvensis* (8–1), *Delichon urbica* (4–3), *Passer montanus* (9–2).

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Appendix 5.

Samples of *T. alba* diet from Ipeľská pahorkatina Hills. Numerical values in the table are presented in absolute value; positive and negative deviations (1+, 2+, and 1-, 2-) area marked differences from the mean (Obuch 2001) within a respective species, across locations. For more details see Methods. The diversity index H' is used, calculated according to the work of Shannon & Weaver (1949).

Vzorky potravy *T. alba* z Ipeľskej pahorkatiny. Číselné hodnoty v tabuľke sú uvedené v absolútnych hodnodnotách, kladné a záporné odchýlky (1+, 2+ a 1-, 2-) súvýznamné odchýlky od priemeru (Obuch 2001) v rámci toho istého druhu, naprieč lokalitami. Pre viac informácii pozri Metodiku. Použitý je index diverzity H', vypočítaný podľa práce Shannon & Weaver (1949).

localities / lokality		**4**	**6**	**5**	**1**	**2**	**7**	**3**	**∑**	**%**
taxa / taxón										
Rattus norvegicus		2+ 11		1	1		1	2	16	0.50
Microtus arvalis	n	1+ 141	1+ 258	258	539	1- 189	198	133	1716	53.98
	%	69.80	80.88	59.86	62.75	26.10	44.90	65.52		
Apodemus flavicollis		1	1+ 9	1+ 14	2- 0	2- 0	6	6	36	1.13
Apodemus sylvaticus		1	5	2+ 28	2- 0	2- 0	9	4	47	1.48
Apodemus microps		1	8	1+ 18	2- 0	2- 0	9		36	1.13
Passer domesticus		1- 3	1- 4	2- 4	1+ 62	32	25	2- 0	130	4.9
Arvicola amphibius					1+ 10				10	0.31
Sorex araneus		1- 2	2- 3	3- 0	1+ 102	43	26	1- 5	181	5.69
Sorex minutus		3	4	2- 0	21	1+ 42	10	3	83	2.61
Mus cf. *musculus*		12	1- 5	17	31	1+ 59	15	7	146	4.59
Pelobates fuscus					1- 0	2+ 22			22	0.69
Crocidura suaveolens		11	2- 3	38	2- 19	1+ 78	1+ 67	9	225	7.8
Crocidura leucodon		12	1- 8	32	2- 20	1+ 102	1+ 53	1+ 30	257	8.8
Terricola subterraneus			1	3	1	4	1+ 8		17	0.53
Micromys minutus		3	2	11	1- 2	14	10	2	44	1.38
Phoenicurus ochruros			4		2	1			7	0.22
Hirundo rustica			2		2	1			5	0.16
Mammalia		**199**	**307**	**425**	**792**	**661**	**414**	**203**	**3001**	**94.40**
Aves		**1- 3**	**12**	**2- 5**	**1+ 66**	**39**	**27**	**2- 0**	**152**	**4.78**
Amphibia		**0**	**0**	**1**	**1- 1**	**2+ 24**	**0**	**0**	**26**	**0.82**
∑		**202**	**319**	**431**	**859**	**724**	**441**	**203**	**3179**	**100.00**
H'		1.24	0.98	1.54	1.41	2.19	1.88	1.29	1.84	

Locality / lokalita: 4 – Hrkovce, 7.2000, leg. Sárossy, **6** – Slatina, 2.9.2001, leg. Sárossy, **5** – Rybník, 11.2001, leg. Sárossy, **1** – Salka, Vondráček, Hošek, 1984, **2** – Pastovce, Darolová (1976), **7** – Malé Kozmálovce, 16.2.2002 + 22.5.2005, leg. Sárossy, **3** – Bátovce, 12.8.2002, leg. Sárossy.

Other species (locality–number) / ostatné druhy (lokalita–počet):

Talpa europaea (5–1), *Neomys anomalus* (6–1; 2–1; 7–1), *Neomys fodiens* (1–4), *Myotis myotis* (2–1), *Myotis blythii* (2–1), *Eptesicus serotinus* (2–1), *Pipistrellus pipistrellus* (2–1), *Muscardinus avellanarius* (5–1; 1–1), *Mus spicilegus* (4–1; 5–2; 7–1), *Apodemus* sp. (1–41; 2–124), *Clethrionomys glareolus* (5–1; 2–1; 3–1), *Microtus agrestis* (3–1), *Delichon urbica* (6–1), *Erithacus rubecula* (5–1), *Turdus* sp. (2–1), *Emberiza citrinella* (7–1), *Carduelis carduelis* (2–1), *Passer montanus* (2–3; 7–1), Passeriformes (6–1), *Rana* sp. (1–1; 2–2), Amphibia (5–1).

Appendix 6.

Samples of *T. alba* diet from Hronská pahorkatina Hills. Numerical values in the table are presented in absolute value; positive and negative deviations (1+, 2+, and 1-, 2-) are a marked differences from the mean (Obuch 2001) within a respective species, across locations. For more details see Methods. The diversity index H' is used, calculated according to the work of Shannon & Weaver (1949).

Vzorky potravy *T. alba* z Hronskej pahorkatiny. Číselné hodnoty v tabuľke sú uvedené v absolútnych hodnodnotách, kladné a záporné odchýlky (1+, 2+ a 1-, 2-) sú významné odchýlky od priemeru (Obuch 2001) v rámci toho istého druhu, naprieč lokalitami. Pre viac informácii pozri Metodiku. Použitý je index diverzity H', vypočítaný podľa práce Shannon & Weaver (1949).

localities / lokality		**6**	**8**	**14**	**2**	**19**	**17**	**3**	**9**	**12**
taxa / taxón										
Coleoptera		1+ 12								
Microtus arvalis	n	5948	1+ 43	1+ 972	1- 730	1- 448	588	345	1- 116	1- 103
	%	83.07	95.56	85.34	47.40	47.46	64.26	84.35	45.85	50.49
Neomys anomalus		19			2+ 19		1			
Hirundo rustica		1- 14			2+ 37	1				
Clethrionomys glareolus		1- 4		2	1+ 10	1+ 7	2		1	
Apodemus microps		1- 142		1- 19	1+ 68	3+ 223	1+ 44	3- 0	4	9
Micromys minutus		1- 28		6	2+ 43	1+ 20	13	3		2
Sorex minutus		1- 27		6	1+ 42	2- 0	1+ 17	1+ 10	4	5
Sorex araneus		1- 70		1- 7	2+ 111	3- 0	1- 6	1+ 24	9	1+ 12
Apodemus sylvaticus		1- 52	1	1- 9	1+ 67	1+ 29	1- 6	2- 0	1+ 16	1+ 9
Mus cf. *musculus*		1- 342	1	60	1+ 168	3- 6	2- 18	36	2+ 62	1- 4
Apodemus flavicollis		2- 44		1- 9	1- 15	1+ 40	13	2- 0	1+ 14	1+ 12
Terricola subterraneus		2- 0			1+ 8	1				1
Muscardinus avellanarius		2		1	4			1		
Passer montanus		7			5	3	1			
Rattus norvegicus		128		22	3- 1	2- 0	2- 1	1- 0	1	2
Passer domesticus		1- 81		2- 2	34	1- 8	2- 0	7	3	1
Phoenicurus ochruros		13			1	1				1
Mus spicilegus		5- 0		1- 6	3- 0	3+ 151	3+ 112	2- 0	1- 0	
Crocidura suaveolens		2- 58		2- 7	28	3- 1	1+ 53	1+ 18	6	5
Crocidura leucodon		1- 125		2- 9	1+ 141	4- 0	39	17	12	2+ 37
Cricetus cricetus		3							2	
Columba livia dom.		2								
Parus major						4				
Talpa europaea		2								
Sturnus vulgaris		5			1					
Arvicola amphibius		1			2					
Alauda arvensis		2			1					
Mammalia		**7000**	**45**	**1135**	**1459**	**926**	**914**	**501**	**247**	**201**
Aves		**1- 146**	**0**	**2- 3**	**1+ 80**	**18**	**3- 1**	**1- 7**	**6**	**3**
Amphibia, Reptilia		**2**	**0**	**1**	**1**	**0**	**0**	**1**	**0**	**0**
Invertebrata		**12**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
∑		**7160**	**45**	**1139**	**1540**	**944**	**915**	**509**	**253**	**204**
H'		0.88	0.21	0.74	1.96	1.50	1.37	1.27	1.72	1.72

Locality / lokalita: 6 – Tekovské Lužany, Obuch 2014, **8** – Maláš, Arma, 6.5.2010, leg., det. Tulis, 14 – Nýrovce, 14.7.2002 + 9.12.2004, leg. Sárossy, **2** – Arad, 29.7.1995, leg. Korňan, **19** – Keť, 10.3.2005, leg. Lengyel, Muránsky, **17** – Bruty, 12.2.2005, leg. Lengyel, Muránsky, **3** – Kamenný Most, Vondráček & Hošek, 1984, **9** – Čaka, 7.5.2010, leg., det. Tulis, **12** – Čifáre, 23.5.2002, leg. Sárossy, **15** – Plavé Vozokany, 5.9.2000, leg. Sárossy + 6.5.2010, leg., det. Tulis + Obuch (2014), **4** – Bíňa, Vondráček & Hošek (1984), **18** – Farná, 10.3.2005, leg. Lengyel, Muránsky, **16** – Žemliare, 6.2.2002, leg. Sárossy, **20** – Tehla, 19.6.2004, leg. Sárossy, **1** – Ivanovo, 29.7.1995, leg. Korňan, **10** – Beša, 1.8.2001, leg. Sárossy, **13** – Kálnica, 1.8.2001, leg. Sárossy, **11** – Čechy, 5.9.2000, leg. Sárossy, **5** – Čata, Vondráček & Hošek (1984), **7** – Veľký Dvor, 27.8.2010, leg., det. Tulis.

Other species (locality–number) / ostatné druhy (lokalita–počet): *Neomys fodiens* (3–3), *Myotis myotis* (6–1; 3–1; 4–1),

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15	4	18	16	20	1	10	13	11	5	7	∑	%
3						1					16	0.08
1870	384	1- 169	139	1- 183	260	229	383	195	89	26	13,220	69.92
60.42	74.42	43.90	84.24	50.00	74.07	59.64	72.54	70.65	87.25	83.87		
1- 3				1		5					48	0.25
1- 1		2		5							60	0.32
6		2		1			1	1			37	0.20
1- 52	3- 0	14	2	1.3	2- 1	10	1- 8	6			605	3.20
31	5	1	2	7	2	6	1	2			172	0.91
35	5	3	1	1+ 13	3	3	8	1		2	185	0.98
50	5	10	1	8	4	3	10	1- 0		3	333	1.76
1+ 90	2- 0	6		4	2	8	5	5			309	1.63
1+ 313	36	26	1- 4	31	1- 8	30	1- 22	21	4		1192	6.30
1+ 140	2- 0	8	3	8	3	11	1- 3	2+ 24			347	1.84
1+ 20		1		4		1	1				37	0.20
1+ 7											15	0.08
1+ 10		1									27	0.14
1+ 83	1- 1	5	1	2+ 22	1- 0	9	1+ 17	1- 0			293	1.55
1+ 78	2+ 36	2+ 46		6	3	2	5	1- 0			312	1.65
2		1+ 8		1							27	0.14
4- 0	2- 0	2+ 28	1+ 8	1+ 22	1- 0	1- 0	2- 0	1- 0			327	1.73
1+ 93	15	1+ 16	1	1+ 16	2+ 51	1+ 24	1+ 27	1- 0	2		421	2.23
1+ 188	1- 7	1+ 35	3	1+ 24	14	1+ 36	1+ 35	1+ 21	1		744	3.93
2		3									10	0.05
1	2								4		9	0.05
2				1			1				8	0.04
3						1					6	0.03
											6	0.03
1						1					5	0.03
2											5	0.03
2989	**478**	**328**	**165**	**347**	**348**	**380**	**522**	**276**	**98**	**31**	**18,390**	**97.26**
1+ 101	**1+ 38**	**2+ 57**	**1- 0**	**15**	**1- 3**	**1- 3**	**1- 6**	**1- 0**	**4**	**0**	**491**	**2.60**
1	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**0.03**
4	**0**	**0**	**0**	**4**	**0**	**1**	**0**	**0**	**0**	**0**	**21**	**0.11**
3095	**516**	**385**	**165**	**366**	**351**	**384**	**528**	**276**	**102**	**31**	**18,908**	**100.00**
1.62	1.5	2.3	0.76	1.98	0.97	1.61	1.19	1.8	0.57	0.55	1.41	

Eptesicus serotinus (13–1), *Nyctalus noctula* (6–1; 15–1), *Sicista subtilis* (6–3), *Apodemus agrarius* (15–1), *Apodemus* sp. (3–43; 4–19; 10–3; 5–2), *Microtus agrestis* (17–1), *Microtus oeconomus* (2–2), *Mustela nivalis* (18–1), *Coturnix coturnix* (6–2), *Streptopelia decaocto* (6–4), *Tyto alba* (6–4), *Athene noctua* (6–1), *Apus apus* (6–1), Alaudidae (6–1), *Delichon urbica* (6–2), *Motacilla alba* (9–1), *Hippolais icterina* (6–1), *Sylvia nisoria* (9–1), *Sylvia atricapilla* (12–1), *Erithacus rubecula* (2–1; 15–3), *Cyanistes caeruleus* (19–1; 15–1), *Emberiza citrinella* (20–1), *Fringilla coelebs* (20–1), *Carduelis carduelis* (6–1; 10–1), *Chloris chloris* (6–4), *Coccothraustes coccothraustes* (15–1), Passeriformes (6–1; 14–1; 9–1), *Pelobates fuscus* (6–1), *Pelophylax* cf. *esculentus* (6–1; 14–1; 2–1), *Rana* sp. (3–1), *Lacerta agilis* (15–1), Diptera (15–1), *Gryllotalpa gryllotalpa* (20–4).

Appendix 7.

Samples of *T. alba* diet from south of Central Slovakia. Numerical values in the table are presented in absolute value; positive and negative deviations (1+, 2+, and 1-, 2-) area marked differences from the mean (Obuch 2001) within a respective species, across locations. For more details see Methods. The diversity index H' is used, calculated according to the work of Shannon & Weaver (1949).

Vzorky potravy *T. alba* z juhu stredného Slovenska. Číselné hodnoty v tabuľke sú uvedené v absolútnych hodnodnotách, kladné a záporné odchýlky (1+, 2+ a 1-, 2-) sú významné odchýlky od priemeru (Obuch 2001) v rámci toho istého druhu, naprieč lokalitami. Pre viac informácii pozri Metodiku. Použitý je index diverzity H', vypočítaný podľa práce Shannon & Weaver (1949).

localities / lokality		**9**		**1**		**5**		**12**		**7**		**13**		**8**	
taxa / taxón															
Microtus arvalis	n	1-	415	1+	120	1+	198	1+	174		35		72		267
	%		31.68		51.50		69.23		48.20		51.47		34.29		36.73
Micromys minutus		1+	114	1-	5		10	1-	8			1-	3	1-	17
Neomys anomalus		1+	59		6		5	1-	5		2	1-	1	1-	12
Sorex minutus		1+	186		18	2-	4	2-	7		2	2-	1	1-	31
Sorex araneus		1+	230	1+	41	2-	4	1-	27	2-	0	1-	16		73
Apodemus sylvaticus		1-	15		11			2+	37			1-	0		15
Crocidura leucodon		1-	35	2-	0	1+	21	1+	35	1+	14		5	1-	20
Passer domesticus		1-	28	1-	2	1-	4	1-	8			1+	21	1+	64
Apodemus flavicollis		3-	1		3		4		8		6	3+	60	2-	4
Rattus norvegicus		1-	2						1					2+	21
Crocidura suaveolens		1-	42		10		17		21		5	1-	5	1+	58
Apodemus microps			39	1-	0	1-	0		6			1-	0	1+	36
Mus cf. *musculus*			116	1-	9	1-	9	1-	9		2		20	1+	80
Hirundo rustica			6		1		1		1						5
Phoenicurus ochruros			7		2				2				1		2
Hymenoptera		2-	0											1-	0
Arvicola amphibius			3				1		3		1				5
Terricola subterraneus			1		1				1				3		2
Clethrionomys glareolus			3				1		1				1		1
Apodemus agrarius															2
Pelobates fuscus			4						1						
Mammalia			**1264**		**227**		**280**		**347**		**68**		**187**		**645**
Aves		**1-**	**42**	**1-**	**6**	**1-**	**6**	**1-**	**12**		**0**	**1+**	**23**	**1+**	**78**
Amphibia			**4**		**0**		**0**		**1**		**0**		**0**		**4**
Invertebrata		**2-**	**0**		**0**		**0**		**1**		**0**		**0**	**1-**	**0**
∑			**1310**		**233**		**286**		**361**		**68**		**210**		**727**
H'			2.10		1.71		1.31		1.96		1.51		1.80		2.22

Locality / lokalita: 9 – Peťov, 10.8.2000, leg. Sárossy, **1** – Dobrá Niva, 27.7.1995, leg. Uhrin, **5** – Breznička, Obuch & Uhrin (1997), **12** – Hrabovo, Obuch & Uhrin (1997, 2001), **7** – Dolná Strehová, Obuch & Uhrin (1997), **13** – Senné, 9.7.2001, leg. Sárossy, **8** – Bušince, Obuch & Uhrin (1997) + 9.7.2000, leg Sárossy, **2** – Gemerský Jablonec, Darolová 1976, **6** – Dolné Záhorany, 18.5.2002, leg. Sárossy, **3** – Majša, 25.8.2006, leg. Benda, Uhrin, **4** – Malé Dálovce, 24.5.2006, **10** – Selešťany, 28.11.1998, **11** – Sklabiná, 28.11.1998.

Other species (locality–number) / ostatné druhy (lokalita–počet):

Talpa europaea (1–1), *Neomys fodiens* (1–1; 12–1), *Myotis mystacinus* (12–1), *Myotis myotis* (7–1), *Plecotus austriacus* (9–2), *Muscardinus avellanarius* (1–1; 12–2; 11–1), *Mustela nivalis* (9–1; 8–1), *Coturnix coturnix* (9–1), *Alauda arvensis* (12–1; 8–1), *Delichon urbica* (13–1), *Cyanistes caeruleus* (3–1), *Troglodytes troglodytes* (8–2), *Passer montanus* (8–4), Passeriformes (1–1), Aves sp. juv. (5–1), *Pelophylax* cf. *esculentus* (8–4), Coleoptera (12–1; 3–3), Orthoptera (3–1).

2	**6**	**3**	**4**	**10**	**11**	**∑**	**%**
2- 8	57	1- 16	3	8	11	1384	38.69
10.26	36.08	16.49	33.33	72.72	37.93		
1+ 14	12	9	1			193	5.40
6	1	4				101	2.82
4	11	1- 0	1		1	266	7.44
15	1- 12	1- 3	4	1	6	432	12.8
2	1				3	90	2.52
6	10	1- 0		1	2	149	4.17
3	9	1				140	3.91
	2	5		1		94	2.63
1	1					26	0.73
7	10	10			2	187	5.23
					2	83	2.32
1+ 12	17	4			1	279	7.80
	1+ 10	1				25	0.70
	1	1+ 5				20	0.56
		3+ 29				29	0.81
	1	1				15	0.42
		2				10	0.28
	1					8	0.22
	2	2				6	0.17
						5	0.14
75	**138**	**1- 56**	**9**	**11**	**29**	**3336**	**93.26**
3	**1+ 20**	**8**	**0**	**0**	**0**	**198**	**5.54**
0	**0**	**0**	**0**	**0**	**0**	**9**	**0.25**
0	**0**	**3+ 33**	**0**	**0**	**0**	**34**	**0.95**
78	**158**	**97**	**9**	**11**	**29**	**3577**	**100.00**
2.19	2.17	2.29	1.21	0.89	1.83	2.25	

Appendix 8.
Samples of *T. alba* diet of Rimavská kotlina Basin. Numerical values in the table are presented in absolute value; positive and negative deviations (1+, 2+, and 1-, 2-) area marked differences from the mean (Obuch 2001) within a respective species, across locations. For more details see Methods. The diversity index H' is used, calculated according to the work of Shannon & Weaver (1949).
Vzorky potravy *T. alba* z Rimavskej kotliny. Číselné hodnoty v tabuľke sú uvedené v absolútnych hodnodnotách, kladné a záporné odchýlky (1+, 2+ a 1-, 2-) sú významné odchýlky od priemeru (Obuch 2001) v rámci toho istého druhu, naprieč lokalitami. Pre viac informácii pozri Metodiku. Použitý je index diverzity H', vypočítaný podľa práce Shannon & Weaver (1949).

localities / lokality		**11**		**17**		**9**		**10**		**12**		**8**		**4**		**2**	
taxa / taxón																	
Neomys anomalus		1+	73		7		1	2-	3				14		3		9
Myotis myotis		1+	29														1
Apodemus sylvaticus		1+	95	2-	0				12			1-	2				7
Passer montanus		1+	22		3				2								2
Passer domesticus		1+	265	1+	55	1+	8	1-	28		2	2-	4	1-	1	1-	11
Crocidura leucodon			302	1+	151		7	1-	36	1-	2	1-	37		17	2-	11
Mus cf. *musculus*			222		61	1+	9	1+	97		9	1-	15		14		28
Apodemus agrarius		4-	7	3-	0			1+	72	1+	13	2+	72	1+	13		12
Rattus norvegicus		1-	21	1-	1		4	1+	33	1+	10		4			1+	14
Apodemus microps		1-	112	4-	0		1	1+	158		10	1+	122	1+	31	2+	100
Terricola subterraneus		2-	2	1-	0			1+	16				3		1	2+	18
Sorex minutus		1-	82	1-	7				24		6	1+	35	1+	12		12
Apodemus flavicollis			57	2-	0			1-	12		3	1+	27			1+	22
Sorex araneus		1-	270	1-	45		3		104		5	1+	94	1+	36	1+	91
Micromys minutus			185	1-	32		4		48		3		38	1+	19		21
Crocidura suaveolens		1-	99	1-	37	1+	11	1-	43	1+	13		51	2+	49	1-	18
Microtus arvalis	n		3344		699	1-	12		772		59	1-	436	2-	50	1-	324
	%		63.41		58.79		19.67		51.02		43.38		43.13		20.16		43.90
Arvicola amphibius			7						1				2				3
Hirundo rustica			7														1
Muscardinus avellanarius			2						1				4				1
Alauda arvensis			5										1				2
Eptesicus serotinus			3						1								1
Nyctalus noctula			3										3				1
Phoenicurus ochruros			1		1		1		1				2				1
Talpa europaea			2		1												
Neomys fodiens													4		1		1
Coleoptera			3														3
Delichon urbica			3										1				
Mammalia			**4947**		**1121**		**52**		**1477**		**133**		**991**		**246**		**715**
Aves		**1+**	**317**		**61**	**1+**	**9**	**1-**	**34**		**3**	**1-**	**19**	**1-**	**2**	**1-**	**18**
Amphibia			**6**	**1+**	**7**		**0**		**0**		**0**		**1**		**0**		**2**
Invertebrata			**4**		**0**		**0**		**2**		**0**		**0**		**0**		**3**
∑			**5274**		**1189**		**61**		**1513**		**136**		**1011**		**248**		**738**
H'			1.61		1.52		2.13		1.90		1.96		2.9		2.17		2.11

Locality / lokalita: 11 – Rinavské Janovce, Darolová (1976), Obuch (1995) + 7.2.2002, leg. Sárossy, **17** – Číž, Darolová (1977), **9** – Malé Teriakovce, 19.4.2002, leg. Sárossy, **10** – Radnovce, 3.7.2002 + 15.10.2004, leg. Sárossy, **12** – Rumince, 18.5.2010, leg. D. Obuch, **8** – Lenka, 19.7.2001 + 15.10.2004, leg. Sárossy, **4** – Chanava, 19.4.2002, leg. Sárossy, **2** – Behynce, 10.7.2001, leg. Uhrin & Benda + 15.10.2004, leg Sárossy, **3** – Bátka, 18.4.2002, leg. Sárossy, **7** – Levkuška, 11.7.2001, leg. Uhrin & Benda, **1** – Bottovo, 3.4.2004, leg. Sárossy, **13** – Rakytník, 28.6.2004, leg. Sárossy, **15** – Veľký Blh, 14.8.1997, leg Uhrin & Benda + 18.4.2002, leg. Sárossy, **6** – Gortva, 6.7.2002, leg. Sárossy, **14** – Uzovská Panica, 1.8.2001, leg. Uhrin & Benda, **16** – Gemerská Ves, 10.7.2001, leg. Uhrin & Benda, **5** – Dubovec, 3.12.2001, leg. Sárossy.
Other species (locality–number) / ostatné druhy (lokalita–počet):
Myotis mystacinus (2–1), *Myotis blythii* (11–1), *Pipistrellus nathusii* (10–1), *Plecotus austriacus* (17–1; 2–1), *Apodemus* sp. (11–28;

3	7	1	13	15	6	14	16	5	∑	%
	1			6	2				119	1.40
									30	0.26
	3		2	2	7	1	2	2	135	1.18
									29	0.25
1	1- 0	3	1- 0	2- 0	3	1- 0			381	3.33
	3	4	15	20	1+ 20	5	3	6	639	5.59
4	4	4	8	1- 2	13	1- 1		1	492	4.31
	1+ 10	1+ 9	2	3	6	6	3	1	229	2.00
	1+ 9		1			1	1		99	0.87
4	2	3	10	14	1- 5	8	1	3	584	5.11
			4	2	1				47	0.41
1	1	1	1+ 13	8	7	6	3	4	222	1.94
1+ 5		1	2	5	7	3	2	2	148	1.30
8	1- 4	5	1+ 39	1+ 32	2+ 46	15	6	3	806	7.50
	2+ 31	1+ 11	1+ 15	5	5	7	3	3	430	3.76
1	2+ 35	1+ 14	1+ 23	1+ 27	1+ 18	1+ 17	4	6	466	4.8
1- 18	2- 22	50	1- 97	115	1- 69	75	1- 17	59	6218.0	54.41
36.73	17.60	47.62	41.45	46.37	32.09	51.37	36.96	65.56		
				2	1				16	0.14
4				1					13	0.11
			1		1				10	0.09
									8	0.07
			2						7	0.06
									7	0.06
									7	0.06
2					1				6	0.05
									6	0.05
									6	0.05
				1					5	0.04
43	**125**	**102**	**234**	**243**	**211**	**145**	**45**	**90**	**10,920**	**95.55**
6	**1- 0**	**3**	**2- 0**	**1- 4**	**1- 4**	**1- 0**	**1**	**0**	**481**	**4.21**
0	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**17**	**0.15**
0	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**10**	**0.09**
49	**125**	**105**	**234**	**248**	**215**	**146**	**46**	**90**	**11,428**	**100.00**
1.96	1.94	1.75	1.93	1.91	2.17	1.73	2.8	1.39	1.92	

17–78; 10–42; 8–28; 2–17; 6–2), *Clethrionomys glareolus* (11–1; 17–1; 10–1), *Mustela nivalis* (2–1), *Columba livia dom.* (10–2), *Streptopelia decaocto* (11–1), *Tyto alba* (11–1; 2–1), *Apus apus* (11–1; 15–1), *Galerida cristata* (10–1), *Anthus trivialis* (11–1), *Acrocephalus palustris* (8–1; 15–1), *Erithacus rubecula* (11–1), *Luscinia megarhynchos* (8–3), *Turdus merula* (11–3), *Turdus* sp. (17–1), *Parus major* (11–1), *Sitta europaea* (12–1), *Troglodytes troglodytes* (11–1), *Emberiza citrinella* (16–1), *Carduelis carduelis* (11–1), *Linaria cannabina* (11–1), *Chloris chloris* (17–1; 4–1), Passeriformes (11–1; 8–7; 3–1; 6–1), Aves sp. juv. (11–1), *Pelobates fuscus* (11–3), *Rana temporaria* (2–1), *Pelophylax* cf. *esculentus* (11–2; 2–1; 15–1), *Rana* sp. (11–1; 17–7; 8–1), *Gryllotalpa gryllotalpa* (10–2; 14–1), Limacidae (11–1).

Appendix 9.

Samples of *T. alba* diet from Revúcka vrchovina Upland. Numerical values in the table are presented in absolute value; positive and negative deviations (1+, 2+, and 1-, 2-) are a marked differences from the mean (Obuch 2001) within a respective species, across locations. For more details see Methods. The diversity index H' is used, calculated according to the work of Shannon & Weaver (1949).

Vzorky potravy *T. alba* z Revúckej vrchoviny. Číselné hodnoty v tabuľke sú uvedené v absolútnych hodnodnotách, kladné a záporné odchýlky (1+, 2+ a 1-, 2-) sú významné odchýlky od priemeru (Obuch 2001) v rámci toho istého druhu, naprieč lokalitami. Pre viac informácii pozri Metodiku. Použitý je index diverzity H', vypočítaný podľa práce Shannon & Weaver (1949).

localities / lokality		**11**		**15**		**4**		**10**		**13**		**8**		**7**	
taxa / taxón															
Arvicola amphibius		1+	6					10							
Microtus arvalis	n	1+	119	1+	36	1+	106	1+	489	1+	78		64	1-	119
	%		77.27		63.16		54.64		63.42		55.71		35.36		30.67
Mus cf. *musculus*		1-	0				8	2-	4	1+	10	1+	12	2+	48
Apodemus agrarius					1		6	1+	48			1+	15	1+	17
Apodemus microps												1+	6	1+	7
Rattus norvegicus							1		2			1+	6		1
Hirundo rustica												1+	6		3
Phoenicurus ochruros							1		1			1+	5		1
Passer domesticus							3	2-	1		5		1	1+	12
Crocidura suaveolens			6		1		7	1-	20	1-	1		14	2+	75
Coleoptera															
Crocidura leucodon			7	1+	15		21	1-	33	1-	2		11	1-	20
Myotis myotis		3-	0	1-	0	3-	1	4-	5	2-	0	3-	0	4-	0
Myotis blythii															
Apus apus			1								1				
Sorex minutus			2				7	1-	5		6		2		9
Sorex araneus		1-	2				8	2-	14		9		15		28
Neomys fodiens											3		2		
Micromys minutus			1		2		3		18		5		4		11
Apodemus sylvaticus					2				11		5		5		8
Apodemus flavicollis		1-	5	1-	0		19		91		13	1-	7	1-	24
Clethrionomys glareolus									1						
Neomys anomalus			5				1		5		2		4		4
Muscardinus avellanarius									3				2		
Terricola subterraneus									2						
Nyctalus noctula									1						
Passer montanus															
Mammalia			**153**		**57**		**189**		**764**		**134**		**169**		**371**
Aves			**1**		**0**		**4**	**2-**	**6**		**6**	**1+**	**12**		**17**
Amphibia			**0**		**0**		**1**		**0**		**0**		**0**		**0**
Invertebrata			**0**		**0**		**0**		**1**		**0**		**0**		**0**
∑			**154**		**57**		**194**		**771**		**140**		**181**		**388**
H'			0.99		1.2		1.70		1.49		1.68		2.34		2.17

Locality / lokalita: 11 – Ratkovská Lehota, Obuch (2000), **15** – Hucín, 22.7.1995, **4** – Licince, 24.7.2001, **10** – Prihradzany, 30.8.1992, leg. Uhrin + 13.11.2002, **13** – Teplý Vrch, Obuch 2000, **8** – Nižná Pokoradz, 1.8.2001, **7** – Nižná Kaloša, 1.8.2001, **14** – Višňové, Obuch (2000), **2** – Budíkovany, Obuch (2000), **9** – Otročok, 11.7.2001, **3** – Gemerský Milhosť, 4.3.1997, **1** – Ratková, Obuch (2000) + 27.6.2000 + 1.3.2001, leg. Petrželková + 10.6.2002 + 27.7.2010, **12** – Šivetice, 30.8.1992, leg Uhrin, **5** – Lipovec, Obuch (2000), **6** – Nandraž, 14.7.1997.

Other species (locality–number) / ostatné druhy (lokalita–počet):

Rhinolophus hipposideros (1–1; 6–3), *Rhinolophus euryale* (5–1), *Myotis mystacinus* (1–1), *Myotis brandtii* (1–1), *Myotis*

14		**2**		**9**		**3**		**1**		**12**		**5**		**6**		**∑**	**%**
									13		3		2		4	38	0.73
	34		11		10		145	1-	437		291		152		52	2143	40.91
	47.22		40.74		41.67		37.76		24.91		45.97		48.10		36.36		
1+	9		1		2	1+	25	4-	0		18		7			144	2.75
			1				7	1-	16		17	1-	0			128	2.44
	3							1-	1							17	0.32
	1						1		2							14	0.27
			1								1					11	0.21
									1		3					12	0.23
1+	7	1+	6		4		8	2-	8	1+	18		9		2	84	1.60
	2		1	1+	6	2+	61	1-	55	1-	14	2-	3	1-	1	267	5.10
						1+	9		2		1				2	14	0.27
1-	0					2+	87	1+	172	2-	7	1-	9	1-	5	389	7.43
2-	0					4-	4- 0	2+	583	5-	0	4-	0	3-	0	589	11.24
								1+	26							26	0.50
								1+	15				1			18	0.34
						1-	2	1+	68	1+	27		5			133	2.54
1-	0				1	2-	5		122	2+	115		19	1-	3	341	6.51
								1-	0	1+	10		1			16	0.31
	4		4		1		14	1-	28	1+	22	1-	0		1	118	2.25
			1				10	2-	4	1+	24	1-	0			70	1.34
	3					4-	0		165	1-	40	2+	92	2+	54	513	9.79
								1-	3		2	1+	8	1+	9	23	0.44
	1						6	1-	6		7		1			42	0.80
									6		4		2		3	20	0.38
	1		1				1		1		3				1	10	0.19
									3		1		1			6	0.11
	2						2		1		1					6	0.11
	58		**20**		**20**		**364**		**1717**		**606**		**305**		**137**	**5064**	**96.68**
1+	**12**	**1+**	**7**		**4**		**11**	**1-**	**34**		**24**		**11**		**4**	**153**	**2.92**
	2		**0**		**0**		**0**		**0**		**2**		**0**		**0**	**5**	**0.10**
	0		**0**		**0**	**1+**	**9**		**3**		**1**		**0**		**2**	**16**	**0.31**
	72		**27**		**24**		**384**		**1754**		**633**		**316**		**143**	**5238**	**100.00**
	1.92		1.72		1.48		1.85		2.3		1.97		1.58		1.70	2.21	

emarginatus (1–1; 5–1), *Eptesicus serotinus* (5–1), *Pipistrellus pipistrellus* (4–1; 1–1), *Barbastella barbastellus* (6–1), Chiroptera (12–1), *Microtus agrestis* (10–2; 1–1), *Coturnix coturnix* (10–1), *Columba livia dom.* (1–2), *Athene noctua* (14–1), *Alauda arvensis* (14–1; 1–1), *Delichon urbica* (14–1; 1–1), *Riparia riparia* (1–1; 6–1), *Motacilla alba* (6–1), *Muscicapa striata* (1–1), *Parus major* (7–1; 1–2), *Sitta europaea* (3–1; 1–1), *Emberiza citrinella* (12–1), *Coccothraustes coccothraustes* (10–1), Passeriformes (10–2; 5–1), *Rana temporaria* (14–2), *Pelophylax* cf. *esculentus* (4–1; 12–2), *Gryllotalpa gryllotalpa* (1–1), Orthoptera (10–1).

Appendix 10.
For Appendix 10 see page 40.
Appendix 10 je na strane 40.

Appendix 11.
Samples of *T. alba* diet from Košická kotlina Basin. Numerical values in the table are presented in absolute value; positive and negative deviations (1+, 2+, and 1-, 2-) are a marked differences from the mean (Obuch 2001) within a respective species, across locations. For more details see Methods. The diversity index H' is used, calculated according to the work of Shannon & Weaver (1949).
Vzorky potravy *T. alba* z Košickej kotliny. Číselné hodnoty v tabuľke sú uvedené v absolútnych hodnodnotách, kladné a záporné odchýlky (1+, 2+ a 1-, 2-) sú významné odchýlky od priemeru (Obuch 2001) v rámci toho istého druhu, naprieč lokalitami. Pre viac informácii pozri Metodiku. Použitý je index diverzity H', vypočítaný podľa práce Shannon & Weaver (1949).

localities / lokality		**1**	**3**	**15**	**18**	**13**	**14**	**6**	**20**	**2**
taxa / taxón										
Microtus arvalis	n	1+ 246	1+ 57	1+ 44	1+ 133	1+ 244	1+ 137	42	66	127
	%	77.12	91.94	80.00	68.56	74.85	75.69	70.00	60.00	61.06
Crocidura leucodon		2- 1	2	2	9	15	4	1+ 8	1+ 12	8
Sorex minutus		5			3	1- 1	3		3	1+ 13
Sorex araneus		1- 6			9	1- 6	1- 3	1	6	10
Terricola subterraneus									1	1
Talpa europaea										
Apodemus microps		4			1- 0	1- 0	1- 0		3	7
Passer domesticus		15			9	2- 0	1- 0	2		10
Pelobates fuscus					1					
Gryllotalpa gryllotalpa										
Mus cf. *musculus*		1- 8	1	3	1- 9	1- 10	17	2	1- 4	2- 2
Apodemus sylvaticus		2				1- 0			2	7
Apodemus flavicollis		1- 2			1- 0	2- 0	1- 0	1	1	2
Apodemus agrarius		7		3	4	1- 3	1		1	8
Micromys minutus		14	1		3	1- 5	3	1	5	6
Crocidura suaveolens		1- 1	1		4	5	3		4	5
Neomys anomalus		1		1		1				
Neomys fodiens		1		1						
Passer montanus					1			1		
Coleoptera		3								
Rattus norvegicus		1								
Clethrionomys glareolus		1								1
Arvicola amphibius									1	
Alauda arvensis										
Hirundo rustica									1	
Mammalia		**300**	**62**	**55**	**183**	**326**	**181**	**55**	**109**	**198**
Aves		**16**	**0**	**0**	**10**	**2- 0**	**2- 0**	**5**	**1**	**10**
Amphibia		**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**
Invertebrata		**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
∑		**319**	**62**	**55**	**194**	**326**	**181**	**60**	**110**	**208**
H'		1.9	0.39	0.83	1.31	0.99	0.98	1.15	1.57	1.60

Locality / lokalita: 1 – Budulov, Obuch & Matis (1998), **3** – Cestice, Obuch & Matis (1998), **15** – Vyšná Myšľa, Danko & Štollmann (1977), **18** – Trstené pri Hornáde, Danko & Štollmann (1977) + Obuch & Matis (1998), **13** – Kechnec, Danko & Štollmann (1977), **14** – Gyňov, Danko & Štollmann (1977), **6** – Vyšný Čaj, Obuch & Matis (1998), **20** – Nižný Lánec, Obuch & Matis (1998), **2** – Janík, Obuch & Matis (1998), **11** – Košická Polianka, 5.1.2004, leg. Sárossy, **19** – Košické Olšany, Obuch & Matis (1998), **16** – Seňa, Danko & Štollmann (1977) + Obuch & Matis (1998), **7** – Sady nad Torysou, Obuch & Matis (1998), **12** – Milhošť, Danko & Štollmann (1977), **9** – Kráľovce, Obuch & Matis (1998), **10** – Brestov, Obuch & Matis (1998), **4** – Paňovce, Obuch & Matis (1998), **8** – Bidovce, Obuch & Matis (1998), **17** – Belža, Danko & Štollmann (1977) + Obuch & Matis (1998), **5** – Valaliky, Obuch & Matis (1998).

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11	19	16	7	12	9	10	4	8	17	5	Σ	%
1- 13	1- 24	1- 352	1- 19	11	115	164	1- 108	22	49	3	1976	54.65
19.12	26.67	42.46	29.69	42.31	51.80	46.46	38.99	42.31	45.37	25.00		
2	1	40	1		9	20	12		1- 0		146	4.4
1+ 9	5	19	1		2	6	12	4	1	1	88	2.43
1+ 14	2+ 33	1+ 68	4		8	17	1- 9	4	11		209	5.78
3	1+ 6	1- 0	1		1	3	1	3	4		24	0.66
		1+ 8			1						9	0.25
3		1+ 50	1		10	1- 1	1- 2	1	2	2	86	2.38
1		1+ 64	1+ 9		1- 3	1- 2	12			1	128	3.54
		1+ 9	1+ 5								15	0.41
			1+ 5			2					7	0.19
10	3	1+ 87	9	1+ 12	1+ 36	1+ 57	1- 12	1	7		290	8.2
	5	1.6			2	1+ 16	5	1	3		49	1.36
		3.1			5	1+ 23	3+ 57		3	1	96	2.65
2	3	16			9	7	1+ 15	3	2	2	86	2.38
	3	36		3	9	18	1- 5	1+ 9	1+ 17		138	3.82
5	1	13	3		6	8	6	2	6		73	2.2
	2	3				5			1		14	0.39
1	1				3	2		1			10	0.28
		6					1				9	0.25
		6									9	0.25
2		2	1				2				8	0.22
	1					1	3		1		8	0.22
		5					1				7	0.19
		2			1	1	2				6	0.17
2							2				5	0.14
64	**90**	**730**	**1- 45**	**26**	**216**	**348**	**252**	**52**	**108**	**10**	**3410**	**94.30**
4	**1- 0**	**1+ 78**	**1+ 9**	**0**	**6**	**2- 3**	**1+ 25**	**0**	**1- 0**	**2**	**169**	**4.67**
0	**0**	**1+ 15**	**1+ 5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**21**	**0.58**
0	**0**	**6**	**1+ 5**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**16**	**0.44**
68	**90**	**829**	**64**	**26**	**222**	**353**	**277**	**52**	**108**	**12**	**3616**	**100.00**
2.26	1.95	2.17	2.26	0.97	1.79	1.90	2.17	1.90	1.86	1.98	1.95	

Other species (locality–number) / ostatné druhy (lokalita–počet):
Myotis myotis (16–1; 7–2), *Myotis blythii* (7–1), *Eptesicus serotinus* (19–1; 7–1; 5–1), *Plecotus austriacus* (4–1), *Muscardinus avellanarius* (2–1; 19–1; 4–1), *Apodemus* sp. (15–1; 18–9; 13–36; 14–10; 16–22; 17–1), *Cricetus cricetus* (16–1; 7–1; 8–1), *Columba livia dom.* (4–1), *Riparia riparia* (16–1), *Anthus trivialis* (6–1; 9–1), *Acrocephalus palustris* (16–3), *Saxicola torquata* (4–1), *Saxicola rubetra* (9–1), *Phoenicurus ochruros* (6–1; 11–1; 4–2), *Parus major* (4–2), *Emberiza citrinella* (16–1; 4–2), *Carduelis carduelis* (1–1), Aves sp. juv. (16–1; 5–1), *Rana temporaria* (16–2), *Rana arvalis* (16–1), *Pelophylax* cf. *esculentus* (16–2), *Pelophylax ridibundus* (16–1).

Appendix 12.

Samples of *T. alba* diet from Východoslovenská pahorkatina Hills. Numerical values in the table are presented in absolute value; positive and negative deviations (1+, 2+, and 1-, 2-) are a marked differences from the mean (Obuch 2001) within a respective species, across locations. For more details see Methods. The diversity index H' is used, calculated according to the work of Shannon & Weaver (1949).

Vzorky potravy *T. alba* z Východoslovenskej pahorkatiny. Číselné hodnoty v tabuľke sú uvedené v absolútnych hodnodnotách, kladné a záporné odchýlky (1+, 2+ a 1-, 2-) sú významné odchýlky od priemeru (Obuch 2001) v rámci toho istého druhu, naprieč lokalitami. Pre viac informácii pozri Metodiku. Použitý je index diverzity H', vypočítaný podľa práce Shannon & Weaver (1949).

localities / lokality		**8**		**4**		**1**		**5**		**2**		**9**		**3**	
taxa / taxón															
Parus major		1+	5									1			
Microtus arvalis	n	1+	150	1+	234	1+	184	1+	746		84		146	1-	40
	%		66.08		65.18		75.41		83.26		48.84		44.24		27.78
Apodemus microps							3	1+	10	1+	8		3		
Arvicola amphibius								1+	6				1		
Micromys minutus		1-	1	1-	2	1+	20	1-	9	1+	10	1+	14	2+	26
Mus cf. *musculus*		1-	11	1-	9	2-	1	2-	15		9	1+	44		14
Sorex araneus			8	1-	13	1-	6	1-	34		9	2-	2	2+	28
Sorex minutus				1-	0		6	1-	5		4		3	1+	9
Myotis myotis															
Crocidura suaveolens			2	2-	0		4	2-	3		6		13	1+	9
Apodemus flavicollis								2-	0		4	2+	22		
Apodemus sylvaticus											2		3		
Apodemus agrarius			4	1-	2		7	1-	18		10	1-	6		9
Terricola subterraneus					1		4						3		2
Neomys anomalus									5		1		3		
Rattus norvegicus									8				2		1
Crocidura leucodon			26	1+	74	1-	7	4-	2		16		35	2-	0
Passer domesticus		2-	0	1-	6	2-	0	1-	15	1-	0		17	1-	0
Passer montanus									5						
Neomys fodiens			2						2		1				
Clethrionomys glareolus			1		1										
Myotis blythii													4		
Mammalia			**220**		**351**		**244**		**876**		**172**		**311**		**144**
Aves		**1-**	**6**	**1-**	**8**	**2-**	**0**	**1-**	**20**	**2-**	**0**		**19**	**2-**	**0**
Amphibia			**1**		**0**		**0**		**0**		**0**		**0**		**0**
Invertebrata			**0**		**0**		**0**		**0**		**0**		**0**		**0**
∑			**227**		**359**		**244**		**896**		**172**		**330**		**144**
H'			1.30		1.14		1.5		0.86		1.92		2.1		1.96

Locality / lokalita: 8 – Suché, 28.12.1979, leg. Riník, **4** – Lesné, 28.12.1979, leg. Riník, **1** – Baškovce, 3.8.1994, **5** – Nacina Ves, 21.1.1986, **2** – Brezina, 27.6.2000, **9** – Vinné, 16.6.1976, **3** – Hencovce, 10.3.1991, leg. Pjenčák, **6** – Petrovce, 4.8.2000, **16** – Vyšná Rybnica, 11.8.1994 + 28.6.2007, leg. Uhrin, Benda, **10** – Voľa, 1.6.1984, leg. Riník, **11** – Vybuchanec, 7.9.1978, **13** – Choňkovce, Anděra et al. (1982), **14** – Jasenov, Anděra et al. (1982), **12** – Zalužice, 5.8.1986, **7** – Pusté Čemerné, 28.12.1979, leg. Riník, **15** – Podhoroď, Anděra et al. (1982).

Other species (locality–number) / ostatné druhy (lokalita–počet):

Talpa europaea (14–3; 12–1), *Myotis emarginatus* (14–1), *Eptesicus serotinus* (6–1; 16–1), *Nyctalus noctula* (9–2; 12–1), *Plecotus*

	6		**16**		**10**		**11**		**13**		**14**		**12**		**7**	**15**	**∑**	**%**
																	6	0.08
6-	0	1-	36		632		58		67		566		989	1-	6	24	3962	52.57
	0.00		25.71		60.42		45.67		54.92		44.01		47.19		26.9	52.17		
	2		2		2		1				6	1-	3				40	0.53
					5								1				13	0.17
	10			1-	18		2		3	1-	1.20		48		2		185	2.45
2-	5	1-	1.2	1-	41	1-	2		8	1+	244		189				594	7.88
1+	33	2+	43		53		8	1-	0	1-	49		138		1		425	5.64
2+	23	2+	15		11		1			1-	6		36		1		120	1.59
		2+	14									1-	0			1	15	0.20
1+	18		5		21		2		2		25		61			1	172	2.28
3+	42		1	1-	1					2-	0	2-	1				71	0.94
1+	9																14	0.19
3+	89		5		42	1+	14		1	2-	9	1-	45		3	2	266	3.53
1+	9				3		1				3	1-	0				26	0.35
1+	12		4	1+	28	1+	9		2		14	2-	2		2		82	1.9
	2			2+	34					2-	0	1-	3				50	0.66
1-	15	1-	4		83	1+	21	1+	25	1+	159		182		1	7	657	8.72
2-	0		4		42		7	1-	0	4-	0	2+	233		2		326	4.33
					2							1+	14				21	0.28
					1						2		7				15	0.20
	4										1		3		1		11	0.15
			1														5	0.07
	278		**133**		**998**		**120**		**118**		**1216**		**1824**		**18**	**42**	**7065**	**93.75**
3-	**0**		**6**	**1-**	**47**		**7**		**4**		**61**	**1+**	**263**		**4**	**4**	**449**	**5.96**
	0		**1**		**1**		**0**		**0**	**1+**	**9**		**8**		**1**	**0**	**21**	**0.28**
	0		**0**		**0**		**0**		**0**		**0**		**1**		**0**	**0**	**1**	**0.01**
	278		**140**		**1046**		**127**		**122**		**1286**		**2096**		**23**	**46**	**7536**	**100.00**
	2.21		2.5		1.64		1.77		1.44		1.78		1.88		2.34	1.43	1.90	

auritus (13–1), *Plecotus austriacus* (2–1; 12–1), *Muscardinus avellanarius* (6–4), *Apodemus* sp. (8–15; 4–15; 1–2; 5–12; 2–7; 9–5; 3–6; 10–23; 11–1; 13–9; 14–106; 12–113; 7–1; 15–7), *Cricetus cricetus* (5–1), *Microtus agrestis* (14–2), *Coturnix coturnix* (4–1), *Apus apus* (10–1), *Alauda arvensis* (4–1; 9–1; 12–1; 7–1), *Hirundo rustica* (12–1), *Phoenicurus ochruros* (16–2; 7–1), Passeriformes (8–1; 10–2; 13–4; 14–61; 12–14; 15–4), *Rana temporaria* (16–1), Amphibia (8–1; 10–1; 14–9; 12–8; 7–1), *Gryllotalpa gryllotalpa* (12–1).

Appendix 13a.
Samples of *T. alba* diet from Východoslovenská rovina Plain, west. Numerical values in the table are presented in absolute value; positive and negative deviations (1+, 2+, and 1-, 2-) are a marked differences from the mean (Obuch 2001) within a respective species, across locations. For more details see Methods. The diversity index H' is used, calculated according to the work of Shannon & Weaver (1949).
Vzorky potravy *T. alba* z Východoslovenskej roviny, západnej časti. Číselné hodnoty v tabuľke sú uvedené v absolútnych hodnodnotách, kladné a záporné odchýlky (1+, 2+ a 1-, 2-) sú významné odchýlky od priemeru (Obuch 2001) v rámci toho istého druhu, naprieč lokalitami. Pre viac informácii pozri Metodiku. Použitý je index diverzity H', vypočítaný podľa práce Shannon & Weaver (1949).

localities / lokality		**16**		**7**		**3**		**2**		**11**		**12**		**10**	
taxa / taxón															
Microtus arvalis	n	1+	456	1+	515	1+	92	3-	0		75		192	1-	88
	%		75.00		81.88		73.02		0.00		65.79		60.00		42.51
Apodemus agrarius			22		19	1+	13	2+	16	1+	16	1+	23	1+	21
Crocidura suaveolens			5	1-	5		1				2	1+	12		8
Mus cf. *musculus*		2-	5	1-	9	1-	1		3		6	1-	8	2+	37
Apodemus microps			24	1-	12				2		4	1+	16	1+	22
Micromys minutus		1-	2		14		4		4		6	1+	13	1+	14
Terricola subterraneus			4		6								2		1
Crocidura leucodon		1-	16	1-	9	1-	0			1-	0	1-	6	1-	3
Neomys anomalus															1
Sorex minutus		1-	4	2-	2		3						8		2
Sorex araneus			41	2-	14		6		1	1-	2	1-	17	2-	4
Apodemus flavicollis			4	1-	0		1		3				3		1
Muscardinus avellanarius															
Clethrionomys glareolus															
Rattus norvegicus		1+	13		3				4			1+	13		5
Passer domesticus			3.2	1-	12	1-	0			1-	1	2-	1	2-	0
Passer montanus					1										
Pelobates fuscus															
Pelophylax cf.*esculentus*															
Arvicola amphibius			1										3		
Apodemus sylvaticus			1								2				
Neomys fodiens															
Alauda arvensis															
Talpa europaea					1								1		
Mammalia			**602**		**612**		**126**		**38**		**113**		**317**		**207**
Aves		**2-**	**6**	**1-**	**17**	**1-**	**0**		**0**	**1-**	**1**	**2-**	**3**	**2-**	**0**
Amphibia			**0**		**0**		**0**		**0**		**0**		**0**		**0**
∑			**608**		**629**		**126**		**38**		**114**		**320**		**207**
H'			1.13		0.92		1.5		1.76		1.23		1.63		1.80

Locality / lokalita: 16 – Bánovce nad Ondavou, 14.7.2005 + 25.8.2006, leg. Sárossy, **7** – Palín, 19.7.1984, **3** – Čeľovce, 19.10.2000, **2** – Čejkov, 19.6.2000, **11** – Veľký Ruskov, 19.10.2000, **12** – Vojčice, 30.8.2005, leg. Sárossy, **10** – Trhovište, 14.7.2005, leg. Sárossy, **4** – Falkušovce, 2003, leg. Vrábel, **1** – Drahňov, 9.4.1975, **8** – Sečovská Polianka, 1997, leg. Pjenčák, **15** – Žbince, 29.12.1979, leg. Riník, **5** – Horovce, 23.6.2003, leg. Krišovský, **9** – Trebišov, 5.2.1982, leg. Hrtan + 2003, leg Krišovský + 18.7.2003 + 15.9.2004 + 14.3.2005, leg Sárossy, **13** – Lomnica, 17.4.1992, leg. Pjenčák, **14** – Zemplínske Hradište, 4.2.1986, **6** – Michalovce, 17.5.1976.

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4		**1**		**8**		**15**		**5**		**9**		**13**		**14**		**6**		**∑**	**%**
1-	59	1-	176		665		312	2-	12		1240		36		1682	1-	25	5625	56.44
	36.88		35.77		58.49		53.89		10.10		49.74		55.38		59.52		43.10		
2+	34	1+	29		34	2-	4		3		111		3	3-	8		2	358	3.59
	2		6	1+	32		14		3	1-	28		1		42		2	163	1.64
1-	1		24	1+	110	2+	70		9	1-	47		1		99		2	432	4.33
	2		10	1-	20	3-	0		2	1+	188		1	5-	0		3	306	3.7
1+	11	1+	22		22	1-	6		1		53		1	1-	22		2	197	1.98
	1		4	1+	15	1-	0		1	1+	32	1+	5	2-	2			73	0.73
	10	1+	35	1+	65	1+	45		2	1-	64			1+	147	1+	9	411	4.12
				1+	11										1			13	0.13
1+	11	2+	43	1-	11	1-	2	1+	9	1+	106			2-	16		1	218	2.19
1+	26	1+	90	1-	55	2-	11	2+	50	1+	383	1+	14	1-	130		7	851	8.54
	2	1-	0		13	1-	0			2+	90			4-	0		1	118	1.18
										1+	7		2					9	0.09
	1		2		1				1	1+	8							13	0.13
			8	1-	3	1+	14	1+	10		36			2-	7			116	1.16
2-	0		34	2-	12	1+	54	1-	0	5-	2			2+	388		3	509	5.11
			2				2			1-	0			1+	12			17	0.17
			1											1+	7			8	0.08
														1+	15			15	0.15
			2				1			1-	0		1		9			17	0.17
					6						3			1-	0		4	16	0.16
			1		2				2		4				5			14	0.14
							1				2				2		1	6	0.06
											2				1			5	0.05
	160		**453**		**1125**		**519**		**107**		**2484**		**65**		**2385**		**58**	**9371**	**94.02**
2-	**0**	**1+**	**38**	**2-**	**12**	**1+**	**60**		**3**	**4-**	**9**		**0**	**2+**	**419**		**5**	**573**	**5.75**
	0		**1**		**0**		**0**		**0**	**1-**	**0**		**0**	**1+**	**22**		**0**	**23**	**0.23**
	160		**492**		**1137**		**579**		**110**		**2493**		**65**		**2826**		**63**	**9967**	**100.00**
	1.79		2.9		1.67		1.64		1.94		1.84		1.43		1.52		2.6	1.81	

Other species (locality–number) / ostatné druhy (lokalita–počet):
Myotis nattereri (1–1), *Myotis blythii* (9–1; 14–1), *Nyctalus noctula* (8–1; 15–1; 14–1), *Apodemus* sp. (16–4; 7–3; 3–5; 2–5; 8–59; 15–38; 5–2; 9–81; 14–208), *Cricetus cricetus* (15–1; 14–3), *Mustela nivalis* (14–1), *Coturnix coturnix* (1–1; 14–2), *Streptopelia decaocto* (7–1; 14–2), *Upupa epops* (14–1), *Galerida cristata* (14–1), *Hirundo rustica* (12–2; 15–1), *Delichon urbica* (9–1; 14–1), *Motacilla alba* (1–1), *Lanius minor* (14–2), *Lanius collurio* (14–1), *Acrocephalus palustris* (9–2), *Sylvia curruca* (14–1), *Saxicola rubetra* (9–1), *Phoenicurus ochruros* (5–3; 14–1), *Turdus philomelos* (6–1), *Parus major* (9–1; 14–1), *Emberiza citrinella* (14–1), *Carduelis carduelis* (14–1), *Chloris chloris* (15–1), *Sturnus vulgaris* (14–2), Passeriformes (16–4; 7–3; 15–1).

Appendix 13b.

Samples od *T. alba* diet from Východoslovenská rovina, east. Numerical values in the table are presented in absolute value; positive and negative deviations (1+, 2+, and 1-, 2-) are a marked differences from the mean (Obuch 2001) within a respective species, across locations. For more details see Methods. The diversity index H' is used, calculated according to the work of Shannon & Weaver (1949).

Vzorky potravy *T. alba* z Východoslovenskej roviny, východnej časti. Číselné hodnoty v tabuľke sú uvedené v absolútnych hodnodnotách, kladné a záporné odchýlky (1+, 2+ a 1-, 2-) sú významné odchýlky od priemeru (Obuch 2001) v rámci toho istého druhu, naprieč lokalitami. Pre viac informácii pozri Metodiku. Použitý je index diverzity H', vypočítaný podľa práce Shannon & Weaver (1949).

localities / lokality		**15**		**11**		**2**		**7**		**9**		**10**		**1**		**8**	
taxa / taxón																	
Clethrionomys glareolus		1+	9						4				4		1		
Microtus arvalis	n	1+	1195	1+	601	1+	65	1+	561	1-	34	1-	100	1-	32		605
	%		74.32		68.84		73.86		69.34		31.19		37.74		32.00		48.63
Parus major								1+	8								
Apodemus agrarius			84	1-	25		5	1+	57	1+	13	2+	63		9	1-	41
Terricola subterraneus			17	1-	1				7		2	2+	21		1	1+	18
Micromys minutus		3-	10	1-	15		3	1-	18	2+	23	1-	5		1	2+	248
Mus cf. *musculus*		3-	8		56		3	1-	20	1+	17	2-	3	1+	13	2+	211
Mus spicilegus																	
Sorex minutus		1-	37	1-	18		1	2-	8		6	1-	4		2	1-	19
Sorex araneus			144	1-	36	1-	1	2-	23	1-	2		25		9	1-	49
Rattus norvegicus			9		8		1		12				2	1+	10	1-	3
Crocidura suaveolens		2-	5		16		2		10		4		2		2		25
Apodemus flavicollis			8		2			1-	1							2-	0
Nyctalus noctula																	
Apodemus sylvaticus			1		5				1				1		1		
Apodemus microps			40		26		6		24		6	2-	0			4-	0
Crocidura leucodon		2-	19		46			1-	20		1	1-	3		2	1-	21
Passer domesticus		2-	4		14			1-	24			2+	24	2+	13	3-	0
Melolontha melolontha																	
Coleoptera									1								
Pelobates fuscus		1-	0													1-	0
Rana arvalis																	
Pelophylax kl. *esculentus*			1		1												
Passer montanus			3						1				1				
Arvicola amphibius			4		2										2		1
Hirundo rustica			1		1												
Neomys fodiens			2						3						1		
Phoenicurus ochruros							1										
Mammalia			**1594**		**857**		**87**		**773**		**109**		**239**		**87**		**1244**
Aves		**2-**	**13**	**1-**	**15**		**1**	**1+**	**35**		**0**	**2+**	**26**	**1+**	**13**	**4-**	**0**
Amphibia		**1-**	**1**	**1-**	**1**		**0**	**1-**	**0**		**0**		**0**		**0**	**1-**	**0**
Invertebrata		**1-**	**0**		**0**		**0**		**1**		**0**		**0**		**0**		**0**
∑			**1608**		**873**		**88**		**809**		**109**		**265**		**100**		**1244**
H'			1.13		1.34		1.9		1.39		1.91		1.88		2.15		1.52

Locality / lokalita: 15 – Ižkovce, 16.4.1983, leg. Hrtan + 21.12.2004, leg. Sárossy, **11** – Ostrov, 23.7.1975 + 21.7.2005, leg Sárossy, **2** – Závadka, 15.7.2005, leg. Sárossy, **7** – Senné, 23.4.1962, leg. Weisz + 19.7.1984 + 19.7.1984 + 13.7.2005, leg. Sárossy + 25.4.2015, leg. Dzurjašková, **9** – Príbeník, 20.9.2000, **10** – Pavlovce nad Uhom, 19.7.1984, **1** – Zemplín, 9.5.1983, leg. Hrtan, **8** – Ruská, 27.11.2000, **6** – Strážne, 3.8.2005, leg. Sárossy, **3** –Vojka, 27.11.2000 + 14.11.2003, **16** – Boťany, 20.8.1997 + 27.3.2001, **18** – Blatné Revištia, 10.4.1980, leg. Riník, **5** – Tašuľa, 18.7.2005, leg. Sárossy, **14** – Jenkovce, 4.8.2000 + 21.7.2005, leg. Sárossy, **17** – Biel, 21.5.1999 + 27.10.1999 + 18.5.2000 + 27.3.2001, **12** –Nižná Rybnica, 10.4.1980, leg. Riník, **13** – Malý Horeš, 20.9.2000, **4** – Veľký Horeš, 2.8.1995, leg. Uhrin.

Other species (locality–number) / ostatné druhy (lokalita–počet):

Talpa europaea (14–2), *Neomys anomalus* (1–1; 14–3), *Myotis nattereri* (14–1), *Myotis myotis* (17–4), *Pipistrellus pipistrellus* (17–1),

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6	**3**	**16**	**18**	**5**	**14**	**17**	**12**	**13**	**4**	**Σ**	**%**
2										20	0.20
1- 120	327	2- 21	68	423	615	1- 592	1- 80	97	5	5541	55.23
40.96	50.15	18.75	59.13	61.75	55.51	37.42	43.48	50.00	45.45		
				2			1			11	0.11
8	1+ 45	1- 0	1- 0	1- 12	40	1- 31	1- 1	14		448	4.47
	5			2	8	2- 1	1	2		86	0.86
1+ 29	27	1- 1	6	1- 12	1- 21	1- 61	13	9		502	5.00
13	1- 16	1- 2	6	1- 27	53	1+ 126	13	1+ 22		609	6.7
1+ 6	1									7	0.07
1+ 23	1+ 55	2+ 19	1+ 10	30	51	62	12	6	2	365	3.64
1+ 54	1+ 95	3+ 64	11	1+ 86	82	149	12	19	1	862	8.59
2	1- 1			1+ 12	1+ 21	1- 5	1			87	0.87
7	1- 3		6	15	1+ 30	1+ 47	5	5		184	1.83
1	2			5	2+ 31	1+ 21		1		72	0.72
					1+ 5					5	0.05
	2			1	3	1+ 12			1	28	0.28
11	29			1+ 32	45	1+ 99	1- 0	5		323	3.22
8	21	3	1	2- 9	57	2+ 203	1+ 21	4	2	441	4.40
1- 1	8	1	2	1- 5	19	1+ 65	1+ 15			195	1.94
						1+ 9				9	0.09
						2+ 20				21	0.21
	1	1			1- 0	2+ 40	2			44	0.44
						1+ 7				7	0.07
						1+ 7				9	0.09
	1			2	1	5	1			15	0.15
	1				2	2				14	0.14
2				3	4					11	0.11
					1	1				8	0.08
2				3	1					7	0.07
287	**642**	**110**	**113**	**666**	**1071**	**1420**	**165**	**194**	**11**	**9669**	**96.38**
6	**1- 9**	**1**	**2**	**19**	**37**	**1+ 77**	**1+ 17**	**1- 0**	**0**	**271**	**2.70**
0	**1**	**1**	**0**	**1- 0**	**1- 0**	**2+ 54**	**2**	**0**	**0**	**60**	**0.60**
0	**0**	**0**	**0**	**0**	**0**	**2+ 31**	**0**	**0**	**0**	**32**	**0.32**
293	**652**	**112**	**115**	**685**	**1108**	**1582**	**184**	**194**	**11**	**10,032**	**100.00**
1.97	**1.77**	**1.23**	**1.46**	**1.53**	**1.86**	**2.24**	**1.95**	**1.76**	**1.41**	**1.84**	

Muscardinus avellanarius (17–1), *Apodemus* sp. (7–4; 9–1; 10–6; 6–3; 3–12; 18–5; 12–6; 13–10), *Cricetus cricetus* (15–2; 8–1; 17–1), *Microtus agrestis* (8–2), *Mustela nivalis* (17–1), *Coturnix coturnix* (5–1; 17–1), *Columba livia dom.* (15–1), *Streptopelia decaocto* (5–3; 17–1), *Streptopelia turtur* (7–1), *Tyto alba* (15–1), *Upupa epops* (17–1), *Alauda arvensis* (15–1), *Delichon urbica* (17–1), *Anthus trivialis* (17–1), *Acrocephalus palustris* (6–1), *Hippolais icterina* (17–1), *Phylloscopus collybita* (14–2), *Erithacus rubecula* (15–1; 14–1), *Turdus merula* (14–2), *Turdus philomelos* (14–1), *Cyanistes caeruleus* (7–1; 14–1), *Poecile palustris* (14–1), *Fringilla coelebs* (10–1; 14–2), *Carduelis carduelis* (15–1), *Chloris chloris* (14–1), *Sturnus vulgaris* (17–1), Passeriformes (14–1), *Gryllotalpa gryllotalpa* (17–2).

Appendix 10.
Samples of *T. alba* diet from Slovenský kras Mts. Numerical values in the table are presented in absolute value; positive and negative deviations (1+, 2+, and 1-, 2-) are a marked differences from the mean (Obuch 2001) within a respective species, across locations. For more details see Methods. The diversity index H' is used, calculated according to the work of Shannon & Weaver (1949).
Vzorky potravy *T. alba* zo Slovenského krasu. Číselné hodnoty v tabuľke sú uvedené v absolútnych hodnodnotách, kladné a záporné odchýlky (1+, 2+ a 1-, 2-) súvýznamné odchýlky od priemeru (Obuch 2001) v rámci toho istého druhu, naprieč lokalitami. Pre viac informácii pozri Metodiku. Použitý je index diverzity H', vypočítaný podľa práce Shannon & Weaver (1949).

localities / lokality		**5**	**6**	**8**	**1**	**3**	**2**	**4**	**7**	**∑**	**%**
taxa / taxón											
Microtus arvalis	n	1+ 80	1+ 393	1- 20	275	2- 24	1- 220	1- 33	596	1641	45.80
	%	82.06	81.03	19.80	53.40	15.38	32.93	29.46	41.02		
Sorex araneus		1	2- 6	2+ 23	1+ 42	11	1- 11	3	72	169	4.72
Sorex minutus		2	2- 2	2+ 29	1- 8	1+ 10	2- 4		54	109	3.4
Apodemus flavicollis		2- 0	3- 3	7	1+ 73	1+ 26	1+ 110	15	147	381	10.63
Micromys minutus		1	16		9	1+ 13	24		39	102	2.85
Crocidura suaveolens			20	5	15	1+ 17	32	1	51	141	3.94
Crocidura leucodon		1- 3	2- 10	14	37	1+ 29	1+ 141	1- 4	1- 83	321	8.96
Apodemus agrarius			1- 11	1	3- 1	11	1+ 55	2	73	154	4.30
Hirundo rustica							1+ 15	1+ 5	1- 5	25	0.70
Phoenicurus ochruros					2		2	1+ 5	14	23	0.64
Passer domesticus			2- 0		13	5	1- 10	2+ 22	38	88	2.46
Myotis myotis									1+ 8	8	0.22
Mus cf. *musculus*			1- 4		1- 9	3	15	2	1+ 74	107	2.99
Apodemus sylvaticus		2	2- 0		1- 5	1	10	3	1+ 61	82	2.29
Apodemus microps		2	1- 1		2		2- 0	1	1+ 37	43	1.20
Neomys anomalus			6		7	2	11	1	19	46	1.28
Muscardinus avellanarius			4		3		3	1	4	15	0.42
Terricola subterraneus			2		1	2			8	13	0.36
Arvicola amphibius			1				1	1	9	12	0.33
Coleoptera		1						3	4	8	0.22
Neomys fodiens					3				4	7	0.20
Rattus norvegicus		1	1		1				4	7	0.20
Clethrionomys glareolus					3	1			3	7	0.20
Microtus agrestis						1	1		4	6	0.17
Mammalia		**92**	**485**	**99**	**496**	**151**	**640**	**1- 70**	**1383**	**3416**	**95.34**
Aves		**1- 0**	**3- 0**	**1**	**18**	**5**	**28**	**2+ 39**	**64**	**155**	**4.33**
Amphibia		**0**	**0**	**1**	**1**	**0**	**0**	**0**	**2**	**4**	**0.11**
Invertebrata		**1**	**0**	**0**	**0**	**0**	**0**	**3**	**4**	**8**	**0.22**
∑		**93**	**485**	**101**	**515**	**156**	**668**	**112**	**1453**	**3583**	**100.00**
H'		0.68	0.94	1.76	1.75	2.29	2.1	2.40	2.31	2.14	

Locality / lokalita: 5 – Drienovec – vinica, 1991, **6** – Krásnohorská Dlhá Lúka, 1.7.2000, leg. Matis, **8** – Tornaľa, Činča, 1.2.2001, **1** – Dlhá Ves, Obuch (1998), **3** – Rozložná, Obuch (1998), **2** – Gemerská Hôrka, Obuch (1998), **4** – Silická Jablonica, Obuch (1998), **7** – Jablonov nad Turňou, 16.9.1992 + 17.2.1998 (Obuch 1998) + 2007, leg. Olekšák.

Other species (locality–number) / ostatné druhy (lokalita–počet):
Talpa europaea (1–1), *Myotis emarginatus* (6–1; 4–1), *Myotis blythii* (1–1; 4–1), *Eptesicus serotinus* (7–1), *Pipistrellus pipistrellus* (4–1), *Plecotus auritus* (2–1), *Glis glis* (2–1), *Apodemus* sp. (6–4; 7–32), *Columba livia dom.* (7–1), *Apus apus* (2–1; 4–1), *Picus canus* (1–1), *Delichon urbica* (4–1; 7–2), *Motacilla alba* (8–1), *Muscicapa striata* (4–1), *Turdus* sp. (4–1), *Parus major* (7–1), *Poecile montanus* (7–1), *Fringilla coelebs* (7–1), *Linaria cannabina* (7–1), *Chloris chloris* (1–1), *Coccothraustes coccothr.* (4–1), *Passer montanus* (4–2), Passeriformes (1–1), *Pelobates fuscus* (1–1), *Rana temporaria* (7–1), *Pelophylax* cf. *esculentus* (8–1; 7–1).

Appendix 14.

Samples of *T. alba* diet from northeast Slovakia. Numerical values in the table are presented in absolute value; positive and negative deviations (1+, 2+, and 1-, 2-) are a marked differences from the mean (Obuch 2001) within a respective species, across locations. For more details see Methods. The diversity index H' is used, calculated according to the work of Shannon & Weaver (1949).

Vzorky potravy *T. alba* zo Severovýchodného Slovenska. Číselné hodnoty v tabuľke sú uvedené v absolútnych hodnodnotách, kladné a záporné odchýlky (1+, 2+ a 1-, 2-) sú významné odchýlky od priemeru (Obuch 2001) v rámci toho istého druhu, naprieč lokalitami. Pre viac informácii pozri Metodiku. Použitý je index diverzity H', vypočítaný podľa práce Shannon & Weaver (1949).

localities / lokality		**2**	**4**	**7**	**1**	**3**	**9**	**10**	**8**	**5**	**6**	**∑**	**%**
taxa / taxón													
Microtus arvalis	n	1+ 57	1+ 58	1+ 113	1- 17	100	4- 0	15	47	19	1- 40	466	35.25
	%	68.67	49.15	54.33	17.89	32.05	0.00	35.40	36.72	42.22	20.30		
Sorex araneus		1	6	1- 7	2+ 33	19	6		5	1	2- 1	79	5.98
Crocidura leucodon		1- 1	12	1- 10	12	1+ 66	5		7		2- 1	114	8.62
Gryllotalpa gryllotalpa				1		1+ 10						11	0.83
Neomys anomalus		1	2	2	1	4	1+ 6	1	2			19	1.44
Apodemus flavicollis		6	9	1- 6	7	1- 8	2+ 25	1+ 8	6		1- 4	79	5.98
Clethrionomys glareolus				4	1		1	1	1+ 8			15	1.13
Mus cf. *musculus*		1- 9	2- 5	2- 11	2- 4	57	1- 6	5	2- 4	1+ 19	2+ 133	253	19.14
Crocidura suaveolens		2	2	4	5	11	6	3	5	1	1- 1	40	3.3
Apodemus agrarius		2	4	16	3	22	8	1	4		5	65	4.92
Apodemus sylvaticus		1	2	1	3	6	4				4	21	1.59
Neomys fodiens				1	1	3	1	1	2			9	0.68
Sorex minutus					4	1	1					6	0.45
Micromys minutus			2	1		1					2	6	0.45
Terricola subterraneus			1	2	1	1						5	0.38
Mammalia		**83**	**115**	**207**	**95**	**302**	**96**	**40**	**128**	**45**	**197**	**1308**	**98.94**
Aves		**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0.15**
Amphibia		**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0.08**
Invertebrata		**0**	**0**	**1**	**0**	**1+ 10**	**0**	**0**	**0**	**0**	**0**	**11**	**0.83**
∑		**83**	**118**	**208**	**95**	**312**	**96**	**40**	**128**	**45**	**197**	**1322**	**100.00**
H'		1.20	1.97	1.83	2.9	1.97	2.20	1.77	1.84	1.20	1.7	2.14	

Locality / lokalita: 2 – Kučín, 25.7.2000, **4** – Nová Kelča, 24.7.2003, leg. Pjenčák, **7** – Ondavské Matiašovce, 1.7.2000, **1** – Chotča, 10.6.2000, **3** – Vyškovce, 10.6.2000, **9** – Rokytov pri Humennom, 9.6.2000, **10** – Zbojné, 9.6.2000, 8 – Radvaň nad Laborcom, 10.6.2000, **5** – Dúbrava, 14.8.2000, **6** – Merník, 16.3.1991.

Other species (locality–number) / ostatné druhy (lokalita–počet):

Talpa europaea (7–1), *Myotis emarginatus* (4–1), *Myotis myotis* (7–1; 9–1), *Eptesicus serotinus* (4–1; 7–1; 3–1; 5–1), *Nyctalus noctula* (4–1; 7–1), *Muscardinus avellanarius* (7–1; 8–1), *Apodemus microps* (4–1; 3–2), *Apodemus* sp. (2–3; 4–7; 7–20; 1–2; 9–23; 10–5; 8–37; 5–4; 6–6), *Rattus norvegicus* (4–1; 7–3), *Arvicola amphibius* (9–2), *Microtus agrestis* (7–1; 1–1; 9–1), *Passer domesticus* (4–2), Amphibia (4–1).

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Appendix 15.

Samples of *T. alba* diet from basins in north Slovakia. Numerical values in the table are presented in absolute value; positive and negative deviations (1+, 2+, and 1-, 2-) are a marked differences from the mean (Obuch 2001) within a respective species, across locations. For more details see Methods. The diversity index H' is used, calculated according to the work of Shannon & Weaver (1949).

Vzorky potravy *T. alba* z kotlín severného Slovenska. Číselné hodnoty v tabuľke sú uvedené v absolútnych hodnodnotách, kladné a záporné odchýlky (1+, 2+ a 1-, 2-) sú významné odchýlky od priemeru (Obuch 2001) v rámci toho istého druhu, naprieč lokalitami. Pre viac informácii pozri Metodiku. Použitý je index diverzity H', vypočítaný podľa práce Shannon & Weaver (1949).

localities / lokality		**6**		**2**		**3**		**4**		**1**		**5**	**∑**	**%**
taxa / taxón														
Neomys anomalus		2+	27	1-	11			1-	1		5		44	3.43
Sorex araneus		1+	13		9		1				2		25	1.95
Arvicola amphibius		1+	7		4				1		1	1	14	1.9
Hirundo rustica		1+	8	1-	0								8	0.62
Mus cf. *musculus*			18	1+	141	1-	0	3-	2	1-	14	1	176	13.71
Myotis myotis					1	1+	6						7	0.55
Coleoptera				1-	0			1+	10				10	0.78
Microtus arvalis	n	1-	90		441		25		153		119	22	850	66.20
	%		52.33		63.27		69.44		79.27		76.28	76.86		
Apodemus sylvaticus		1-	0		20				10		4	1	35	2.73
Apodemus microps					16				8		5		29	2.26
Neomys fodiens			1		4		1		1		3	1	11	0.86
Crocidura suaveolens			2		6				1			1	10	0.78
Crocidura leucodon					6						2		8	0.62
Apodemus flavicollis					4						1		5	0.39
Mammalia			**163**		**697**		**34**		**179**		**156**	**29**	**1258**	**97.98**
Aves		**1+**	**9**	**2-**	**0**		**2**		**4**		**1**	**0**	**16**	**1.25**
Invertebrata			**0**	**1-**	**0**		**0**	**1+**	**10**		**0**	**0**	**10**	**0.78**
∑			**172**		**697**		**36**		**193**		**157**	**29**	**1284**	**100.00**
H'			1.58		1.28		1.1		0.94		1.2	0.97	1.40	

Locality / lokalita: 6 – Párnica, **2** – Švábovce, 15.8.2000, **3** – Partizánska Ľubča, 23.7.1999, **4** – Ludrová, 2.8.1999, leg. Šmoldas, **1** – Hôrka, 20.9.2001, leg. Repel, **5** – Tvrdošín, 15.8.1998, leg. Hapl.

Other species (locality–number) / ostatné druhy (lokalita–počet):

Talpa europaea (2–1; 4–1), *Sorex minutus* (6–2; 2–1), *Plecotus auritus* (3–1), *Micromys minutus* (6–2; 4–1), *Apodemus agrarius* (6–1; 5–2), *Apodemus* sp. (2–29), *Rattus norvegicus* (2–1), *Terricola subterraneus* (2–2), *Alauda arvensis* (4–1), *Phoenicurus ochruros* (6–1), *Erithacus rubecula* (4–1), *Sitta europaea* (4–2), *Passer domesticus* (3–2; 1–1).

Appendix 16.

Samples of *T. alba* diet from Turiec Basin. Numerical values in the table are presented in absolute value; positive and negative deviations (1+, 2+, and 1-, 2-) area marked differences from the mean (Obuch 2001) within a respective species, across locations. For more details see Methods. The diversity index H' is used, calculated according to the work of Shannon & Weaver (1949).

Vzorky potravy *T. alba* z Turčianskej kotliny. Číselné hodnoty v tabuľke sú uvedené v absolútnych hodnodnotách, kladné a záporné odchýlky (1+, 2+ a 1-, 2-) sú významné odchýlky od priemeru (Obuch 2001) v rámci toho istého druhu, naprieč lokalitami. Pre viac informácii pozri Metodiku. Použitý je index diverzity H', vypočítaný podľa práce Shannon & Weaver (1949).

localities / lokality		**8**		**9**		**3**		**6**		**2**		**5**		**7**		**4**		**1**	**∑**	**%**
taxa / taxón																				
Passer domesticus		1+	8		19			2+	30		9	1-	17	1-	17		37	1	138	2.18
Micromys minutus			1	1+	43	1+	9	3+	40	1-	0	3-	1	2-	1	3-	1	2	98	1.55
Mus cf. *musculus*			6	2-	23		2	2+	78	2+	54	1-	71	1-	49		103	6	392	6.19
Sorex araneus			1		14				7	1+	14	1-	23		28		23	3	113	1.78
Neomys anomalus					33				8	1+	24		65		31	1-	15		176	2.78
Arvicola amphibius					1				1	1+	6		4		1		4	3	20	0.32
Apodemus sylvaticus			3	2-	8		1	1+	15	1-	0	1+	99		28	1-	28		182	2.87
Neomys fodiens				1-	6				1		8	1+	35		17	1-	11	2	80	1.26
Apodemus flavicollis				1-	7		2		1	1-	0	1+	59	1+	32	2-	4		105	1.66
Sorex minutus				1-	3				4		6		17	1+	18	1-	4	2	54	0.85
Myotis myotis				2-	0								13		10	1+	39		62	0.98
Apus apus				1-	0				2			1-	0		4	1+	18		24	0.38
Hirundo rustica															1	1+	8	2	11	0.17
Phoenicurus ochruros					7		1					2-	0		7		11	3	29	0.46
Microtus arvalis	n	1-	8		961		27	2-	68	1-	122		1405		859		1145	110	4705	74.31
	%		28.57		84.89		64.29		25.76		45.86		76.61		74.89		77.36	79.14		
Crocidura suaveolens			1		5				5		4		13		10		7	4	49	0.77
Delichon urbica													2		3		1		6	0.09
Talpa europaea													2		1		1	1	5	0.08
Mammalia			**20**		**1104**		**41**		**230**		**253**		**1810**		**1107**		**1393**	**133**	**6091**	**96.19**
Aves		**1+**	**8**	**1-**	**28**		**1**	**2+**	**34**		**11**	**2-**	**23**		**39**	**1+**	**85**	**6**	**235**	**3.71**
Amphibia			**0**		**0**		**0**		**0**		**2**		**0**		**1**		**1**	**0**	**4**	**0.06**
Invertebrata			**0**		**0**		**0**		**0**		**0**		**1**		**0**		**1**	**0**	**2**	**0.03**
∑			**28**		**1132**		**42**		**264**		**266**		**1834**		**1147**		**1480**	**139**	**6332**	**100.00**
H'			1.64		0.75		1.8		1.93		1.74		1.7		1.25		1.9	0.99	1.24	

Locality / lokalita: 8 – Turčiansky Ďur, 12.8.2005, **9** – Veľký Čepčín, Obuch 1982 + 25.7.2005, **3** – Dvorec, 25.7.2005, **6** – Socovce, Obuch 1982 + 12.8.2005, **2** – Dražkovce, Schmidt & Štollmann (1972), **5** – Pribovce, Schmidt & Štollmann 1972 + Obuch 1991 + 2.8.1996, **7** – Turany Schmidt & Štollmann 1972 + 14.8.1996, **4** – Necpaly, Obuch 1991 + 27.8.1996 + 1.7.2000, **1** – Borcová, 9.6.2010, leg. D. Obuch, Šípoš.

Other species (locality–number) / ostatné druhy (lokalita–počet):

Neomys sp. (7–2), *Crocidura leucodon* (6–1), *Myotis brandtii* (5–1), *Myotis blythii* (5–2; 7–1; 4–1), *Vespertilio murinus* (7–1; 4–1), *Eptesicus serotinus* (7–1), *Nyctalus* noctula (4–1), *Plecotus auritus* (7–1; 4–1), *Plecotus austriacus* (4–3), *Lepus europaeus* (7–1), *Muscardinus avellanarius* (7–1), *Apodemus agrarius* (7–1), *Apodemus* sp. (2–15; 7–10), *Rattus norvegicus* (6–1), *Clethrionomys glareolus* (7–2), *Terricola subterraneus* (7–1), *Microtus agrestis* (4–1), *Tyto alba* (5–2), *Alauda arvensis* (5–2; 7–1), *Lullula arborea* (7–2), *Motacilla alba* (6–2; 7–1), *Lanius collurio* (4–1), *Regulus* sp. (4–1), *Saxicola rubetra* (7–2; 4–1), *Turdus philomelos* (4–1), *Parus major* (4–1), *Troglodytes troglodytes* (7–1), *Chloris chloris* (2–2), *Passer montanus* (9–1; 4–2), *Sturnus vulgaris* (4–3), Passeriformes (9–1), *Rana temporaria* (2–2; 7–1; 4–1), *Coleoptera* (5–1; 4–1).

Appendix 17.

Samples of *T. alba* diet from Ondavská vrchovina Upland, 1945–1963, leg. T Weisz. Numerical values in the table are presented in absolute value; positive and negative deviations (1+, 2+, and 1-, 2-) are a marked differences from the mean (Obuch 2001) within a respective species, across locations. For more details see Methods. The diversity index H' is used, calculated according to the work of Shannon & Weaver (1949).

Vzorky potravy *T. alba* z Ondavskej vrchoviny, zberov T. Weisza z rokov 1945 – 1963. Číselné hodnoty v tabuľke sú uvedené v absolútnych hodnodnotách, kladné a záporné odchýlky (1+, 2+ a 1-, 2-) sú významné odchýlky od priemeru (Obuch 2001) v rámci toho istého druhu, naprieč lokalitami. Pre viac informácii pozri Metodiku. Použitý je index diverzity H', vypočítaný podľa práce Shannon & Weaver (1949).

localities / lokality		**15**		**11**		**13**		**2**		**14**		**9**		**16**	
taxa / taxón															
Microtus arvalis	n	1+	1554	4-	0	1-	165	1-	157	1-	3		138	1-	314
	%		72.35		0.00		40.54		36.34		16.67		59.48		24.19
Sorex minutus		1-	13	2+	16		8		8		1		1		19
Sorex araneus		1-	62	3+	47	1+	45	1+	45		2	1-	4		72
Crocidura suaveolens		1-	28	2+	24		10		12				5		41
Myotis myotis		1-	2			2+	22		1				1		8
Terricola subterraneus			1			1+	5		2						1
Micromys minutus		1-	2				4	1+	6						
Mus cf. *musculus*		1-	191	2-	0	1-	40	1+	83	1+	8	1+	43	1+	283
Neomys anomalus		2-	14		1		12		12			1+	11	2+	76
Crocidura leucodon			67			1-	5	1-	6			1-	2	2+	160
Apodemus flavicollis		2-	31			1-	5		14				6		65
Apodemus microps		1-	12				1		1		2		2		15
Arvicola amphibius		1-	6				2		3				4	1+	25
Apodemus sylvaticus			41				4		13				4		24
Apodemus agrarius		1-	59	1-	0	1+	44		17			1-	3	1-	41
Passer domesticus			5								1				3
Neomys fodiens		1-	4				6		7		1		4		12
Clethrionomys glareolus		1-	3						4						7
Nyctalus noctula			8		1										1
Talpa europaea			3				1								1
Muscardinus avellanarius			1		1										2
Eptesicus serotinus					2				2				1		1
Plecotus auritus							2		2						1
Mammalia			**2130**		**92**		**407**		**432**		**17**		**232**		**1294**
Aves			**12**		**0**		**0**		**0**		**1**		**0**		**4**
Amphibia			**6**		**0**		**0**		**0**		**0**		**0**		**0**
∑			**2148**		**92**		**407**		**432**		**18**		**232**		**1298**
H'			1.24		1.23		2.9		2.12		1.63		1.50		2.29

Locality / lokalita: 15 – Bardejov, 1945 + 5.1946 + 5.1952 + 5.1963, **11** – Vyšná Voľa, 2.7.1960, **13** – Šašová, 25.6.1963, **2** – Ortuťová, 25.6.1963, **14** – Richvald, 4.1961, **9** – Lenartov, 20.5.1962, **16** – Nižný Tvarožec, 10.9.1960 + 8.5.1962, **10** – Nižná Voľa, 5.1962, **3** – Cernina, 28.5.1962, **4** – Dubinné, 11.5.1962, **6** – Hankovce, 11.5.1962, **12** – Šarišské Čierne, 28.5.1962, **7** – Kučín, 11.5.1962, **8** – Kurima, 11.5.1962, **1** – Zlaté, 8.5.1962, **5** – Gaboltov, 12.5.1960 + 1.5.1963.

Other species (locality–number) / ostatné druhy (lokalita–počet):

Rhinolophus hipposideros (16–4), *Myotis nattereri* (16–1), *Vespertilio murinus* (15–1), *Apodemus* sp. (15–27; 13–25; 2–36; 9–2; 16–120; 10–13; 4–38; 6–25; 12–17; 7–10; 8–70; 1–3; 5–5), *Microtus agrestis* (13–1; 2–1; 9–1; 12–1), *Apus apus* (15–1), *Hirundo rustica* (16–1), *Phoenicurus ochruros* (15–2; 1–1), Passeriformes (15–4; 8–2), Amphibia (15–6; 8–3; 1–1).

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10		**3**		**6**		**4**		**12**		**7**		**8**		**1**	**5**	**Σ**	**%**
1-	50	1-	67		150		173		230		199		582	30	85	3897	51.02
	39.68		33.33		48.39		47.79		49.89		61.80		57.34	55.56	53.13		
	3		5		2		3		6		1	1-	7	1	3	97	1.27
	10		17	1-	10		22		24		12	1-	40		7	419	5.49
	2	1+	10		4		5		12		8		21		4	186	2.44
			1		2		1					1-	0			38	0.50
			1						1		1			1		13	0.17
			1		4		1				1		4			23	0.30
	11		26		50		42	1-	42	1-	27		124	8	21	999	13.8
			3	1-	0		3		11	1-	0	1-	9	1	2	155	2.3
1+	11		4		8	2-	2	3-	0	1-	6	2-	9		4	284	3.72
1+	11	1+	14	1+	23	1+	26	1+	49		17		33	2	9	305	3.99
	1	2+	14		3		4		3		7	1-	4	1	1	71	0.93
		1+	11						2			1-	1	1	2	57	0.75
	3		8	1+	12		6		7		5		13	1	6	147	1.92
	4		13		13	1+	26	1+	47	1+	25		49	1	8	350	4.58
												2+	24	2		35	0.46
	2		3		2		2		4		1		5		1	54	0.71
			2				5		4		1		6			32	0.42
					1		1						2			14	0.18
	1				1						1		3		1	12	0.16
	3		1				2		1							11	0.14
	1												2			9	0.12
													2		1	8	0.10
	126		**201**		**310**		**362**		**461**		**322**		**986**	**50**	**160**	**7582**	**99.27**
	0		**0**		**0**		**0**		**0**		**0**	**2+**	**26**	**3**	**0**	**46**	**0.60**
	0		**0**		**0**		**0**		**0**		**0**		**3**	**1**	**0**	**10**	**0.13**
	126		**201**		**310**		**362**		**461**		**322**		**1015**	**54**	**160**	**7638**	**100.00**
	2.6		2.27		1.80		1.84		1.79		1.51		1.68	1.68	1.78	1.91	

Appendix 18.
Overview of the localities with *T. alba* samples in Slovakia. Explanations: DFS = number of the orographic unit acording to the Databank of Slovak Fauna. Sample's age: 1 – recent collection (1965–2015), 2 – subrecent collection 1945–1961, leg. Weisz, 3 – subrecent collection, other samples.
Prehľad zberových lokalít vzoriek potravy *Tyto alba* zo Slovenska. Vysvetlivky: DFS = čísla štvorcov podľa Databanky fauny Slovenska. Vek vzorky: 1 – recentný zber (1965 – 2015), 2 – subrecentný zber – zber T. Weisza z rokov 1945 – 1961, 3 – subrecentný zber – ostatné vzorky.

table/ locality / tabuľka/ lokalita		locality / lokalita	geomorfological unit / geomorfologická jednotka	DFS	m a.s.l. / m n. m.	E	N	sample's age / vek vzorky
App. 1/	1	Skalica	Chvojnická pahorkatina	7169	170	17.2175	48.8541	1
	2	Borský Peter		7369	190	17.2238	48.6403	1
	3	Štefanov		7369	180	17.2092	48.6683	1
	4	Smolinské		7368	200	17.1328	48.6831	1
	5	Brodské		7268	160	17.0142	48.6950	1
	6	Smrdáky		7269	250	17.3145	48.7223	1
	7	Cunín		7268	160	17.1016	48.7660	1
	8	Čáry		7368	170	17.0986	48.6591	1
	9	Oreské		7269	250	17.3108	78.7445	1
	10	Letničie		7269	210	17.1784	48.7175	1
	11	Senica		7370	200	17.3269	48.6768	1
	12	Petrova Ves		7269	200	17.1634	48.7250	1
	13	Chropov		7269	260	17.3206	48.7773	1
	14	Dubovce		7269	220	17.2376	48.7704	1
	15	Unín		7269	260	17.2059	48.7236	1
	16	Prietržka		7169	180	17.1960	48.8060	1
	17	Trnovec		7269	180	17.1888	48.7999	1
	18	Vrádište		7169	170	17.1976	48.8257	1
	19	Hlboké		7370	230	17.4003	48.6512	1
	20	Radošovce		7269	230	17.2835	48.7597	1
	21	Čáčov		7369	200	17.3272	48.6765	1
	22	Radimov		7269	250	17.1888	48.7542	1
	23	Gbely		7268	200	17.1313	48.7157	1
	24	Popudinské Močidlany		7269	200	17.2143	48.7812	1
	25	Kunov		7370	220	17.4036	48.6901	1
	26	Rovensko		7270	220	17.3781	48.7171	1
	27	Mokrý Háj		7169	270	17.2462	48.8074	1
	28	Koválov		7269	210	17.2853	78.7021	1
	29	Holíč		7168	160	17.1559	48.8018	1
	30	Dojč		7369	190	17.2628	48.6849	1
	31	Rybky		7270	220	17.3388	48.7078	1
	32	Kopčany		7268	160	17.1268	48.7888	1
	33	Horné Suroviny		7370	220	17.3817	48.6558	1
	34	Prietrž		7370	230	17.4444	48.6698	1
App. 2/	1	Dolečky	Borská nížina	7567	150	16.9339	48.4535	1
	2	Gajary		7567	150	16.9295	48.4722	1
	3	Jablonica		7370	210	17.4297	48.6070	1
	4	Jakubov		7567	150	16.9474	48.4108	1
	5	Karlov dvor		7567	150	16.8742	48.4121	1
	6	Láb		7667	150	16.9639	48.3695	1
	7	Malé Leváre, čerpačka		7467	150	16.9484	48.5197	1
	8	Marcheggské mosty		7767	140	16.9557	48.2406	1
	9	Nandin dvor		7667	140	16.9402	48.3164	1
	10	Plavecký Štvrtok		7667	150	16.9866	48.3800	1
	11	Suchohrad		7567	150	16.8571	48.4068	1
	12	Vysoká pri Morave		7667	140	16.9179	48.3205	1
	13	Záhorská Ves		7667	150	16.8556	48.3787	1
	14	Šaštín - Stráže		7368	170	17.1181	48.6514	1
App. 3/	1	Bokroš	Podunajská rovina	8275	110	18.2692	47.7603	1
	2	Bufa		7973	110	17.8898	48.0200	1
	3	Diakovce		7873	110	17.8230	48.1339	1
	4	Dropie		8072	110	17.7970	47.9213	1
	5	Dunajská Lužná		7969	130	17.2810	48.0768	1

Appendix 18.
Continuation.
Pokračovanie.

table/ locality / tabuľka/ lokalita	locality / lokalita	geomorfological unit / geomorfologická jednotka	DFS	m a.s.l. / m n. m.	E	N	sample's age / vek vzorky
6	Čalovec		8173	110	17.9826	47.8293	1
7	Gabčíkovo, Nad Mlynom		8171	110	17.5295	47.8661	1
8	Horná Potôň		7970	120	17.4991	48.0416	1
9	Ivanka pri Dunaji		7869	130	17.2668	48.1949	1
10	Zemianska Olča		8173	110	17.8493	47.8175	1
11	Lehnice		7970	120	17.4656	48.0545	1
12	Michal na Ostrove		7971	120	17.5158	48.0272	1
13	Nový Trh		7870	120	17.4470	48.1372	1
14	Palárikovo		7974	110	18.0467	48.0442	1
15	Rusovce		7968	130	17.1398	48.0513	1
16	Tešedíkovo		7873	110	17.8588	48.0961	1
17	Šaľa		7873	110	17.8631	48.1440	1
18	Tvrdošovce		7974	120	18.0536	48.1043	1
App. 4/ 1	Chorvátsky Grob	Trnavská pahorkatina	7769	150	17.3014	48.2282	1
2	Bernolákovo	Trnavská pahorkatina	7769	130	17.3194	48.2028	1
3	Močenok	Nitrianska pahorkatina	7773	120	17.9245	48.2125	1
4	Bojnice	Hornonitrianska kotlina	7277	330	18.5777	48.7795	1
5	Bystričany	Hornonitrianska kotlina	7377	290	18.5311	48.6552	1
6	Koš	Hornonitrianska kotlina	7277	300	18.6035	48.7316	1
7	Chynorany	Nitrianska pahorkatina	7375	170	18.2663	48.6054	1
8	Ostratice	Nitrianska pahorkatina	7375	190	18.2820	48.6428	1
9	Zemianske Kostoľany	Hornonitrianska kotlina	7377	230	18.5359	48.6793	1
10	Poľný Kešov	Nitrianska pahorkatina	7874	120	18.0655	48.1581	1
App. 5/ 1	Salka	Ipeľská pahorkatina	8176	110	18.7474	47.8969	1
2	Pastovce		8078	120	18.7529	47.9692	1
3	Bátovce		7778	240	18.7399	48.2944	1
4	Hrkovce		7979	130	18.9024	48.0883	1
5	Rybník		7777	180	18.5691	48.2906	1
6	Slatina		7879	150	18.9053	48.1490	1
7	Malé Kozmálovce		7777	170	18.5192	48.2734	1
App. 6/ 1	Ivanovo	Hronská pahorkatina	8076	180	18.4659	47.9011	1
2	Arad		8176	130	18.4736	47.8769	1
3	Kamenný Most		8177	110	18.6536	47.8537	1
4	Bíňa		8077	130	18.6335	47.9211	1
5	Čata		8077	130	18.6448	47.9536	1
6	Tekovské Lužany		7977	150	18.5394	48.0994	1
7	Veľký Dvor		7977	140	18.5975	48.0406	1
8	Maláš, Arma		7977	160	18.5017	48.0599	1
9	Čaka		7976	160	18.4637	48.0361	1
10	Beša		7876	160	18.4033	48.1468	1
11	Čechy		7976	170	18.3774	48.0321	1
12	Čifáre		7776	170	18.3971	48.2305	1
13	Kalnica		7777	160	18.5221	48.2056	1
14	Nýrovce		7977	150	18.5671	48.0191	1
15	Plavé Vozokany		7976	190	18.4617	48.0777	1
16	Žemliare		7877	150	18.603	48.1497	1
17	Bruty		8077	150	18.5764	47.9191	1
18	Farná		7977	170	18.5079	47.9994	1
19	Keť		8077	160	18.5744	47.9610	1
20	Tehla		7876	180	18.3816	48.1875	1
App. 7/ 1	Dobrá Niva	Pliešovská kotlina	7580	360	19.1025	48.4716	1
2	Gemerský Jablonec	Cerová vrchovina	7885	230	19.9761	48.1946	1
3	Majša	Cerová vrchovina	7685	230	19.9756	48.3571	1
4	Malé Dálovce	Lučenská kotlina	7783	170	19.5981	48.2420	1
5	Breznička	Lučenská kotlina	7584	220	19.7363	48.4193	1
6	Dolné Záhorany	Cerová vrchovina	7685	260	19.9027	48.3495	1
7	Dolná Strehová	Ipeľská kotlina	7782	180	19.4845	48.2470	1

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Pokračovanie.

table/ locality / tabuľka/ lokalita	locality / lokalita	geomorfological unit / geomorfologická jednotka	DFS	m a.s.l. / m n. m.	E	N	sample's age / vek vzorky
8	Bušince	Ipeľská kotlina	7882	160	19.5010	48.1735	1
9	Peťov	Ipeľská kotlina	7882	150	19.4810	48.1077	1
10	Selešťany	Ipeľská kotlina	7982	180	19.3458	48.0965	1
11	Sklabiná	Ipeľská kotlina	7882	160	19.3527	48.1620	1
12	Hrabovo	Lučenská kotlina	7684	210	19.7175	48.3902	1
13	Senné	Ostrôžky	7682	250	19.3963	48.3109	1
App. 8/ 1	Bottovo	Rimavská kotlina	7686	200	20.1455	48.3134	1
2	Behynce		7587	170	20.2945	48.4223	1
3	Bátka		7687	180	20.1718	48.3710	1
4	Chanava		7687	170	20.2963	48.3340	1
5	Dubovec		7786	180	20.1491	48.2950	1
6	Gortva		7786	190	20.0279	48.2963	1
7	Levkuška		7587	190	20.2646	48.4577	1
8	Lenka		7688	210	20.3464	48.3850	1
9	Malé Teriakovce		7585	230	19.9763	48.4367	1
10	Radnovce		7687	170	20.2070	48.3388	1
11	Rimavské Janovce		7686	200	20.0613	48.3420	1
12	Rumince		7687	180	20.2842	48.3692	1
13	Rakytník		7687	190	20.1724	48.3968	1
14	Uzovská Panica		7586	190	20.1498	48.4158	1
15	Veľký Blh		7686	210	20.1138	48.4504	1
16	Gemerská Ves		7587	190	20.2729	48.4749	1
17	Číž		7687	170	20.2799	48.3131	1
App. 9/ 1	Ratková	Revúcka vrchovina	7486	300	20.0943	48.5910	1
2	Budíkovany		7586	220	20.0954	48.4848	1
3	Gemerský Milhosť		7487	230	20.2873	48.5927	1
4	Licince		7487	210	20.2984	48.5387	1
5	Lipovec		7486	520	20.0649	48.5499	1
6	Nandraž		7387	290	20.1875	48.6081	1
7	Nižná Kaloša		7587	190	20.2247	48.4221	1
8	Nižná Pokoradz		7586	330	20.0239	48.4067	1
9	Otročok		7587	200	20.2797	48.4524	1
10	Prihradzany		7487	270	20.2391	48.5843	1
11	Ratkovská Lehota		7486	290	20.0996	48.5625	1
12	Šivetice		7487	230	20.2754	48.5814	1
13	Teplý Vrch		7586	220	20.1017	48.4703	1
14	Višňové		7487	280	20.1904	48.5165	1
15	Hucín		7487	230	20.2987	48.5659	1
App. 10/ 1	Dlhá Ves	Slovenský kras	7588	330	20.4379	48.4946	1
2	Gemerská Hôrka		7488	220	20.3778	48.5342	1
3	Rozložná		7388	280	20.3504	48.6146	1
4	Silická Jablonica		7489	240	20.6068	48.5582	1
5	Drienovec-vinica		7391	190	20.9227	48.6166	1
6	Krásnohorská Dlhá Lúka		7389	300	20.5802	48.6261	1
7	Jablonov nad Turňou		7490	260	20.6726	48.5958	1
8	Tornaľa-Činča	Bodvianska pahorkatina	7588	220	20.3803	48.4367	1
App. 11/ 1	Budulov	Košická kotlina	7491	190	20.9916	48.5858	1
2	Janík		7491	190	20.9723	48.5547	1
3	Cestice		7492	210	21.1008	48.5904	1
4	Paňovce		7392	240	21.0626	48.6474	1
5	Valaliky		7393	190	21.2984	48.6354	1
6	Vyšný Čaj		7394	240	21.3990	48.6839	1
7	Sady nad Torysou		7294	210	21.3489	48.7075	1
8	Bidovce		7294	240	21.4386	48.7368	1
9	Kráľovce		7193	210	21.3311	48.8030	1
10	Brestov		7194	300	21.3503	48.8701	1
11	Košická Polianka		7394	190	21.3436	48.6928	1

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Pokračovanie.

table/ locality / tabuľka/ lokalita	locality / lokalita	geomorfological unit / geomorfologická jednotka	DFS	m a.s.l. / m n. m.	E	N	sample's age / vek vzorky
12	Milhosť		7493	170	21.2685	48.5404	1
13	Kechnec		7493	170	21.2646	48.5475	1
14	Gyňov		7493	170	21.3043	48.5906	1
15	Vyšná Myšľa		7394	240	21.3081	48.6344	1
16	Seňa		7493	180	21.2594	48.5556	1
17	Belža		7493	180	21.274	48.5807	1
18	Trstené pri Hornáde		7494	170	21.3337	48.5731	1
19	Košické Olšany		7294	200	21.3452	48.7325	1
20	Nižný Lánec		7492	200	21.1095	48.5381	1
App. 12/ 1	Baškovce	Východoslovenská pahorkatina	7299	180	22.2066	48.7856	1
2	Brezina		7495	180	21.5542	48.5484	1
3	Hencovce		7196	120	21.7304	48.8729	1
4	Lesné		7296	140	21.8156	48.7993	1
5	Nacina Ves		7197	120	21.8537	48.8194	1
6	Petrovce		7299	300	22.3228	48.7068	1
7	Pusté Čemerné		7196	130	21.8175	48.8412	1
8	Suché		7296	130	21.8338	48.7686	1
9	Vinné		7197	160	21.9674	48.8117	1
10	Voľa		7197	130	21.8503	48.8443	1
11	Vybúchanec		7196	130	21.8164	48.8206	1
12	Zalužice		7297	130	21.9935	48.7616	1
13	Choňkovce		7299	190	22.2369	48.7782	1
14	Jasenov		7299	160	22.1649	48.7907	1
15	Podhoroď	Vihorlatské vrchy	7199	340	22.2300	48.8192	1
16	Vyšná Rybnica	Východoslovenská pahorkatina	7199	220	22.1765	48.8216	1
App. 13a/1	Drahňov	Východoslovenská rovina	7497	110	21.9687	48.5918	1
2	Cejkov		7596	170	21.7616	48.4689	1
3	Čeľovce		7395	140	21.6287	48.6003	1
4	Falkušovce		7396	100	21.8431	48.6274	1
5	Horovce		7296	100	21.771	48.7064	1
6	Michalovce		7297	110	21.9163	48.7543	1
7	Palín		7397	100	21.9881	48.6557	1
8	Sečovská Polianka		7296	130	21.6802	48.7865	1
9	Trebišov		7396	110	21.722	48.6188	1
10	Trhovište		7296	130	21.8073	48.6991	1
11	Veľký Ruskov		7396	130	21.6778	48.6507	1
12	Vojčice		7396	110	21.7103	48.6803	1
13	Vranov -Lomnica		7196	130	21.6727	48.8566	1
14	Zemplínske Hradište		7496	100	21.7358	48.5822	1
15	Žbince		7397	110	21.8752	48.6710	1
16	Bánovce nad Ondavou		7396	120	21.8148	48.6809	1
App. 13b/1	Zemplín	Východoslovenská rovina	7596	110	21.8079	48.4416	1
2	Závadka		7298	120	22.0719	48.7663	1
3	Vojka		7597	100	21.9125	48.4618	1
4	Veľký Horeš		7697	100	21.9114	48.3845	1
5	Tašuľa		7399	100	22.1686	48.6593	1
6	Strážne		7697	100	21.8628	48.3674	1
7	Senné		7398	100	22.0324	48.6663	1
8	Ruská		7498	100	22.1418	48.5288	1
9	Pribeník		7698	100	22.0064	48.3901	1
10	Pavlovce nad Uhom		7398	110	22.0675	48.6116	1
11	Ostrov		7298	110	22.1591	48.7156	1
12	Nižná Rybnica		7298	120	22.1515	48.7542	1
13	Malý Horeš		7697	100	21.9527	48.3960	1
14	Jenkovce		7399	110	22.2092	48.6547	1
15	Ižkovce		7497	100	21.9573	48.5579	1
16	Boťany		7598	100	22.0989	48.4616	1

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17	Biel		7598	110	22.0569	48.4033	1
18	Blatné Revištia		7298	110	22.0792	48.7329	1
App. 14/ 1	Chotča	Ondavská vrchovina	6796	210	21.6784	49.2422	1
2	Kučín		6794	220	21.4579	49.2067	1
3	Vyškovce		6796	230	21.6698	49.2508	1
4	Nová Kelča		6996	180	21.6944	49.0598	1
5	Dúbrava	Beskydské predhorie	7094	300	21.4934	48.9903	1
6	Merník		7095	170	21.6382	48.9476	1
7	Ondavské Matiašovce		7096	130	21.7464	48.9349	1
8	Radvaň nad Laborcom	Laborecká vrchovina	6897	230	21.9326	49.1296	1
9	Rokytov pri Humennom		6897	230	21.9894	49.1010	1
10	Zbojné		6897	270	21.9954	49.1375	1
App. 15/ 1	Hôrka	Popradská kotlina	6988	620	20.3970	49.0201	1
2	Švábovce		6988	640	20.3541	49.0294	1
3	Partizánska Ľupča	Liptovská kotlina	6982	570	19.4360	49.0646	1
4	Ludrová		6981	550	19.3295	49.0515	1
5	Tvrdošín	Oravská kotlina	6881	570	19.5536	49.3348	1
6	Párnica	Oravská vrchovina	6683	460	19.1865	49.1934	1
App. 16/ 1	Borcová	Turčianska kotlina	7079	450	18.8383	48.9252	1
2	Dražkovce		6979	430	18.9614	49.0489	1
3	Dvorec		7078	460	18.8124	48.9090	1
4	Necpaly		7079	510	18.9662	48.9911	1
5	Príbovce		6979	420	18.8813	49.0044	1
6	Socovce		7079	450	18.8683	48.9518	1
7	Turany		6880	400	19.0384	49.1180	1
8	Turčiansky Ďur		7079	460	18.8381	48.9501	1
9	Veľký Čepčín		7178	470	18.8042	48.8924	1
App. 17/ 1	Zlaté	Ondavská vrchovina	6693	390	21.2007	49.3396	2
2	Ortuťová		6794	230	21.4564	49.2698	2
3	Cernina		6794	320	21.4746	49.2972	2
4	Dubinné		6794	220	21.4402	49.2438	2
5	Gaboltov		6692	400	21.1424	49.3655	2
6	Hankovce		6794	250	21.4050	49.2025	2
7	Kučín		6794	220	21.4579	49.2067	2
8	Kurima		6794	210	21.4537	49.2259	2
9	Lenartov		6692	480	21.0212	49.3106	2
10	Nižná Voľa		6794	270	21.3708	49.2243	2
11	Vyšná Voľa		6794	340	21.3620	49.2493	2
12	Šarišské Čierne		6694	370	21.3865	49.3451	2
13	Šašová		6794	230	21.4482	49.2565	2
14	Richvald		6793	380	21.1859	49.2771	2
15	Bardejov		6793	280	21.2681	49.2947	2
16	Nižný Tvarožec		6693	420	21.1873	49.3638	2
Tab. 2/ 3	Šurice, Soví hrad	Cerová vrchovina	7785	250	19.9123	48.2261	3
4	Hatiny, jaskyňa	Slovenský kras	7392	260	21.0022	48.6522	3
5	Žilina, Rudiny	Žilinská kotlina	6778	340	18.7275	49.2162	3