

Orthodicranum tauricum (Sapeg.) Z. Smirn. (*Bryophyta*) in the Czech Republic - distribution and ecology

Vítězslav Plášek

Orthodicranum tauricum (Sapeg.) Z. Smirn. (*Bryophyta*) in the Czech Republic - distribution and ecology.- Čas. Slez. Muz. Opava (A), 50: 97-104, 2001.

Abstract: A revision of the Czech herbarium specimens of moss *Orthodicranum tauricum* together with the own field investigation were done by author during 1999 - 2001. The results are lined up in the table, which among others contains: a list of localities, description of habitats, grid location, presence/absence data of the gemmae and the sporogones, collector names and herbarium location.

Keywords: *Orthodicranum tauricum*, mosses, Bryophytes, distribution, Czech Republic.

Introduction

The moss *Orthodicranum tauricum* was firstly found in 1975 by Pilous (BRNM) in the Czech Republic. First list of the Czech localities of the species (17 known localities) was published by Franklová (1997). Until now, 60 specimens from 52 localities are known in the country. Actually, it is difficult to state how widely this species is spread in the Czech Republic, because of its evident expansion. As the numbers of localities suggest, we can see a general decline in number of the localities from the West (Bohemia - 46), to the East (Moravia - 4 and Silesia - 2).

Revised herbarium specimens are housed in BRNM, LIT, MJ, OP, PR, PRC, TC, VM and in the private collections of the Czech bryologists (B. Buryová, N. Gutzerová, P. Hájek, Z. Hradílek, J. Kučera, I. Marková and Z. Pilous). The literature data without existing specimens haven't been included into the list of localities.

All localities were drawn into the Central European square grid system for vegetation mapping (see the map).

Distribution and ecology

All presented data are lined up in the table. The columns No. 1 (Province) and No. 2 (Land Unit) are sorted in alphabetical order. Column No. 3 (No. of grid) is sorted in ascending order.

Next columns are dependent on the first column triad. The abbreviations used in the table are explained below.

The abbreviations used in the table:

Number of the columns:

1 Province	6 Altitude	11 Date of finding
2 Land Unit	7 Habitat	12 Collector
3 No. of grid	8 Specification of habitat	13 Herbarium
4 District	9 Presence/Absence of gemmae	
5 Locality	10 Presence/Absence of sporogones	

Province:

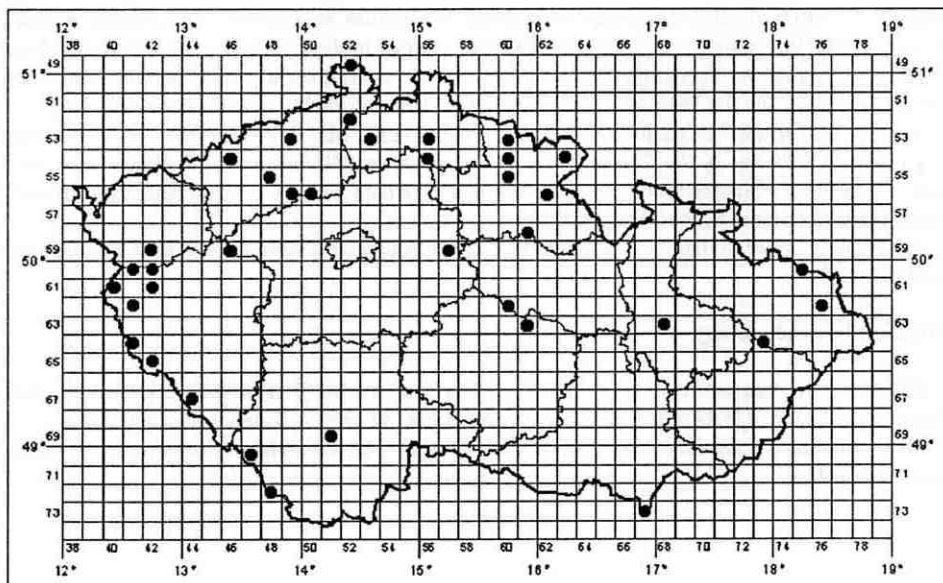
BOH Bohemia	MOR Moravia	SIL Silesia
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Habitat:

FT fallen tree	RW rotten wood	ST solitere tree
R rock		

Czech districts:

BV Břeclav	KO Kolín	OP Opava
CB České Budějovice	KT Klatovy	PS Plzeň-sever
CH Cheb	KV Karlovy Vary	PT Prachatice
CL Česká Lípa	LB Liberec	SM Semily
CR Chrudim	LN Louny	TC Tachov
DC Děčín	LT Litoměřice	TU Trutnov
DO Domažlice	MO Most	UL Ústí nad Labem
HK Hradec Králové	NA Náchod	VS Vsetín
KI Karviná	OC Olomouc	ZR Žďár nad Sázavou

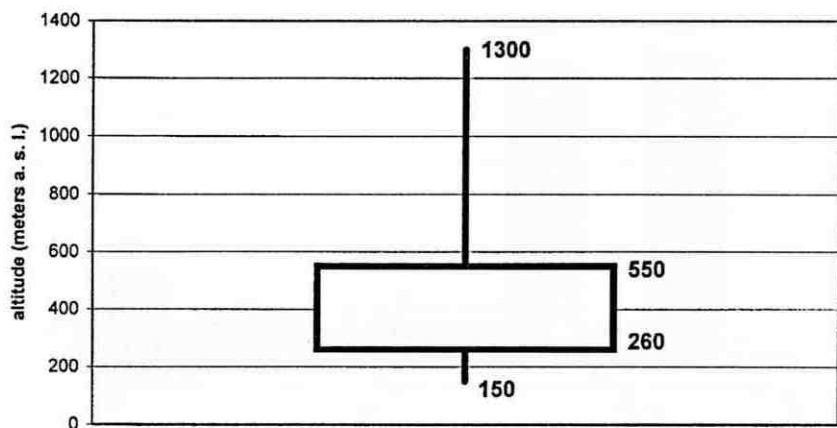


Map. Distribution of moss *Orthodicranum tauricum* (Sapeg.) Z. Smirn. in the Czech Republic

1	2	3	4	5	6	7	8	9	10	11	12	13
BOH	Broumovská vrchovina	5463 NA	Broumovské stěny rocks; between loc. Laudonovské vally and Hvězda cottage, near the touristic road	540 ST	<i>Acer pseudoplatanus</i>	NO	NO	20.5.1992	L. Pujmanová	LIT		
BOH	Broumovská vrchovina	5463 NA	Police nad Metují town; Hvězda - Hlavňov village, N from the village, near the brook	540 ST	<i>Fagus sylvatica</i>	NO	NO	19.5.1992	L. Pujmanová	LIT		
BOH	Broumovská vrchovina	5463 NA	Police nad Metují town; Ostaš hill, loc. Bludňátek	670 R	sandstone	YES	NO	29.9.1990	L. Pujmanová	LIT		
BOH	České středohoří	5252 DC	Starý Šachov village; Kamenec hill, N slope of the hill	390 RW	<i>Betula pendula</i>	NO	NO	2.6.1996	L. Němcová	LIT		
BOH	České středohoří	5349 UL	Habří village, Hradčité u Habří hř., Rač Reserve	313 ST	<i>Cerasus avium</i>	YES	NO	18.4.2000	I. Marková	I. Marková		
BOH	České středohoří	5548 MO	České středohoří Reserve; Korozluky village, Jánský vrch hill, forest on the N slope of the hill	290 RW		NO	NO	31.5.1995	J. Sládek	LIT		
BOH	Českokobudějovická pánev	6951 CB	Bezdravská Bašta village; 0.5 km S from Vondrov village and ca. 2.5 km from the Hluboká nad Vltavou castle	380 RW		YES	NO	23.8.1998	J. Kučera	J. Kučera		
BOH	Českokobudějovická pánev	6951 CB	Čejkovic village; 1.2 km S from Čejkovic village	380 RW	<i>Picea abies</i>	YES	NO	23.8.1998	V. Kučerová	J. Kučera		
BOH	Český les	6041 TC	Dyleň hill, top of the hill	930 RW		YES	NO	2.7.1998	Mudrová & Vondráček	TC		
BOH	Český les	6140 TC	Ostrůvek-Šalimberk village, 1 km WNW from the village, loc. "Na skalkách"	760 ST	<i>Salix caprea</i> , <i>Picea abies</i>	YES	NO	5.8.1999	R. Mudrová	TC		
BOH	Český les	6241 TC	Přímda Reserve, N slope of the hill	848 ST	<i>Acer pseudoplatanus</i>	YES	NO	15.9.1999	R. Mudrová	TC		
BOH	Český les	6441 DO	Pleš former village; 1 km NW from the Velký Zvon village, on the hill	730 ST	<i>Fagus sylvatica</i>	YES	NO	23.8.2000	P. Mudra	TC		
BOH	Český les	6441 DO	Václav - Malý Zvon former village; E slope of Zvonec hill	740 RW		YES	NO	20.10.2000	P. Mudra	TC		
BOH	Český les	6542 DO	Dily village; SW from the village, Sádková skála rocks, E slope of the rocks	845 RW		YES	NO	22.3.2000	R. Mudrová	TC		
BOH	Děčínská vrchovina	5252 DC	Labské pískovce Reserve; Jánská village, valley of Kamenice stream	300 ST	<i>Salix sp.</i>	YES	NO	28.6.2000	L. Němcová	LIT		
BOH	Dolnooharská tabule	5649 LN	valley of Ohře river; Obora village, 1.5 km SE from the village, Louček forest, part Druhý Louček	180		NO	NO	6.11.1991	N. Gutzerová	N. Gutzerová		
BOH	Dolnooharská tabule	5650 LT	Kostelec nad Ohří town; 0.5 km from the town, Myslivna Reserve	160		NO	NO	13.11.1991	N. Gutzerová	N. Gutzerová		
BOH	Jičínská pahorkatina	5456 SM	Český ráj Reserve; 0.5 km SE from Sedmihorky village, Bezedná aldenwood	258		YES	NO	1.5.1997	N. Gutzerová	N. Gutzerová		
BOH	Jičínská pahorkatina	5456 SM	Český ráj Reserve; 1 km SW from Sedmihorky village, Bažantník Reserve	260 ST	<i>Quercus sp.</i>	YES	NO	29.5.1999	N. Gutzerová	N. Gutzerová		
BOH	Krkonoše	5360 TU	Svoboda nad Úpou village, Antonínovo údolí valley, S slope of Černý vrch hill, near a chapel	665 ST	<i>Acer pseudoplatanus</i>	YES	NO	20.9.2000	J. Kučera & B. Buryová	J. Kučera		
BOH	Krkonošské podhůří	5460 TU	Hostinné town; Fořt village	450 RW		YES	NO	5.7.1977	Z. Pílois	BRNM		
BOH	Krkonošské podhůří	5460 TU	Hostinné town; Fořt village	450 RW		YES	NO	1.6.1987	Z. Pílois	Z. Pílois		
BOH	Krkonošské podhůří	5460 TU	Hostinné town; Fořt village	450 RW		YES	NO	1.6.1975	Z. Pílois	BRNM		
BOH	Krkonošské podhůří	5460 TU	Hostinné town; Fořt village	450 RW		YES	NO	5.7.1977	Z. Pílois	Z. Pílois		
BOH	Krkonošské podhůří	5460 TU	Hostinné town; Fořt village	450 RW		YES	NO	1.9.1981	Z. Pílois	Z. Pílois		
BOH	Krkonošské podhůří	5460 TU	Hostinné town; Fořt village	500 RW		YES	NO	1.6.1978	Z. Pílois	OP		
BOH	Krkonošské podhůří	5460 TU	Hostinné town; Fořt village	500 RW		YES	NO	1.6.1978	Z. Pílois	Z. Pílois		
BOH	Krkonošské podhůří	5460 TU	Trutnev; central part of the town, the park near Forestry high school	450 ST	<i>Tilia sp.</i>	YES	NO	5.4.1982	Z. Pílois	Z. Pílois		

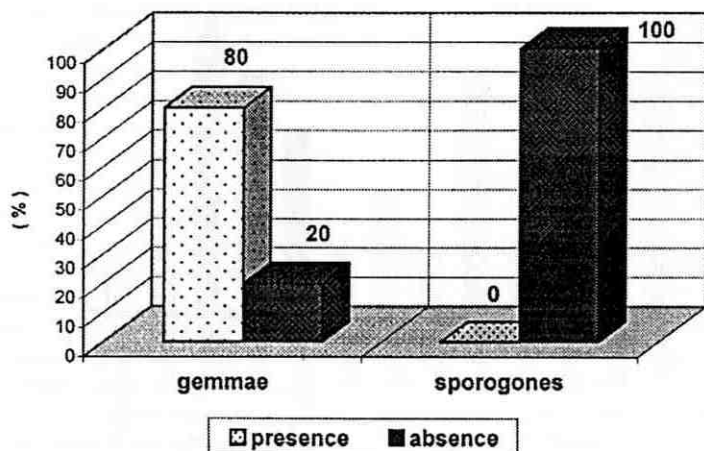
1	2	3	4	5	6	7	8	9	10	11	12	13
BOH	Krkonošské podhůří	5560 TU	Hostinné town, Nové Zámky village, near the castle		450 ST	<i>Tilia sp.</i>		YES	NO	30.3.1985 Z. Pílovs		Z. Pílovs
BOH	Krušné hory	5446 KV	Jezerka Reserve, ad bark of old lime tree called "Zeberská lípa"		400 ST	<i>Tilia sp.</i>		YES	NO	12.5.2000 I. Marková		I. Marková
BOH	Orlická tabule	5662 NA	Česká Skalice town; Dubno village		300 ST			YES	NO	1.10.1999 P. Hájek		P. Hájek
BOH	Orlická tabule	5662 NA	between Nové Město nad Metují town and Peklo village; valley of Metuje river		380 ST	<i>Alnus glutinosa</i>		YES	NO	21.4.2001 V. Plášek		OP
BOH	Orlická tabule	5861 HK	2 km NW from the town, loc. "Sítovka", along the public road (between Bělečko village and Hradec Králové town)		250 ST			YES	NO	1.10.1994 P. Hájek		P. Hájek
BOH	Orlická tabule	5961 HK	Nový Hradec Králové town, Břířka pond		230 ST			YES	NO	1.7.1994 P. Hájek		P. Hájek
BOH	Rakovnická pahorkatina	5946 PS	Kohoutov Reserve; near Ostrovec village		490			YES	NO	2.9.1997 H. Franklová		PR
BOH	Ralská pahorkatina	5353 CL	Zahrádký village; Novozámecký rybník pond, W bank of the pond, near Pošta pub		280 RW			YES	NO	3.9.1997 L. Němcová		LIT
BOH	Ralská pahorkatina	5353 CL	Záluží village, SE from railway station		280 RW			NO	NO	12.9.1996 L. Němcová		LIT
BOH	Středolabská tabule	5957 KO	Libický Luh riverine forest; Velký Osek town, 0.5 km W from the railway main station		190 RW			YES	NO	26.10.1991 N. Gutzerová		N. Gutzerová
BOH	Středolabská tabule	5957 KO	Libický Luh riverine forest; Velký Osek town, 1 km W from the town		190 RW	<i>Pinus sylvestris</i>		YES	NO	26.10.1991 N. Gutzerová		N. Gutzerová
BOH	Středolabská tabule	5957 KO	Velký Osek town; Libický Luh Reserve, Hadovkový les forest		190 RW			YES	NO	29.5.1995 L. Němcová		LIT
BOH	Středolabská tabule	5957 KO	Velký Osek town; Libický Luh Reserve, loc. Brůdek		190 RW			NO	NO	17.4.1993 L. Pujmanová		LIT
BOH	Středolabská tabule	5957 KO	Velký Osek town; Libický Luh Reserve, loc. Brůdek		190 RW			NO	NO	26.10.1989 L. Pujmanová		LIT
BOH	Středolabská tabule	5957 KO	Velký Osek town; Libický Luh Reserve, Prašněc forest		190 RW			NO	NO	26.10.1989 L. Pujmanová		LIT
BOH	Šluknovská pahorkatina	4952 DC	5 km W from Šluknov town, Lipová village, edge of pond (called "Zámecký rybník")		370 RW	<i>Tilia sp.</i>		YES	NO	4.7.2000 I. Marková		I. Marková
BOH	Šluknovská pahorkatina	4952 DC	Šluknov town; Lipová village, in the park near the castle		370 FT			YES	NO	4.7.2000 L. Němcová		LIT
BOH	Šumava	6744 KT	Glacier cirque of Černé Jezero lake, ca. 1 km NNW of the top of Jezerní hora hill, NE slope		1060			NO	NO	29.10.1999 L. Eklrt		J. Kučera
BOH	Šumava	7047 PT	N slope of Černá hora Mt., climate spruce forest		1300 R	<i>gneisseaceous rocks</i>		YES	NO	2.8.1993 J. Kučera		PRC
BOH	Šumava	7248 PT	Trojmezí hora Reserve, 1 km NNW of the top of Plechý Mt		1300			YES	NO	3.8.1993 J. Kučera		PRC
BOH	Tepelská vrchovina	5942 CH	Mariánské Lázně town; 1.5 km NNW from Podhorní vrch hill, wet meadow along Teplá stream		720 ST	<i>Salix sp.</i>		YES	NO	25.4.1997 B. Buryová		B. Buryová
BOH	Tepelská vrchovina	6042 CH	Mariánské Lázně town; 1 km E from Martínov village, near the mill on Jilmový potok brook		580 ST	<i>Salix sp.</i>		YES	NO	25.4.1997 B. Buryová		B. Buryová
BOH	Tepelská vrchovina	6142 TC	Planá town; valley of Kofeňský potok stream, between Kofen village and Otábramov village		500 ST	<i>Alnus sp.</i>		NO	NO	9.10.1999 B. Buryová		B. Buryová
BOH	Železné hory	6260 CR	2 km SE from Horní Bradlo village, Polom Reserve, part Malý Polom		600 ST	<i>Fagus sylvatica</i>		YES	NO	11.7.1999 N. Gutzerová		N. Gutzerová
BOH	Žitavská pánev	5356 LB	between Hanychov village and Planá village, touristic way (green sign)		500 ST	<i>Acer sp.</i>		YES	NO	12.7.1990 H. Franklová		PR
MOR	Dolnomoravský úval	7367 BV	Lanzhot town, SSW from the town, near the confluence of Morava and Dyje rivers, riverine forest		150 RW	<i>Quercus sp.</i>		YES	NO	8.4.1998 Z. Hradlíek		Z. Hradlíek
MOR	Homomoravský úval	6368 OC	Litovelské pomoraví Reserve; 100 m W from Střeň railway station		250 ST	<i>Quercus robur</i>		YES	NO	1.4.1998 I. Marková		I. Marková
MOR	Homomoravský úval	6368 OC	Litovelské pomoraví Reserve; 100 m W from Střeň railway station		250 ST	<i>Tilia cordata</i>		YES	NO	1.4.1998 I. Marková		I. Marková
MOR	Pobeskydská pahorkatina	6473 VS	Lešná village, 1 km SW from the village; Obora forest		280 RW			YES	NO	20.5.1996 M. Kašparová		VM
MOR	Žďárské vrchy	6361 ZR	0.4 km SW from Tří Studně village		730 ST	<i>Fagus sylvatica</i>		YES	NO	28.5.1978 R. Doležal		MJ
SIL	Opavská pahorkatina	6075 OP	Hlučín town, between Hať village and Vřeslna village, an old orchard		240 ST	<i>Malus sp.</i>		YES	NO	18.12.2000 V. Plášek		OP
SIL	Ostravská pánev	6276 KI	Havířov town; N from Horní Suchá village, near loc. "Amerika"		260 ST			YES	NO	31.5.1983 J. Duda		Z. Pílovs

Vertical distribution of *Orthodicranum tauricum*
in the Czech Republic (min., optim., max.)



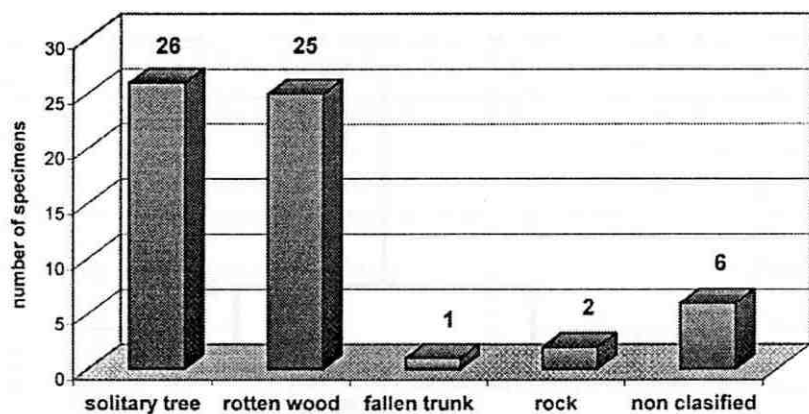
Graph No. 1

Percentage presence/absence of the gemmae and sporogones in
Czech specimens of *Orthodicranum tauricum*



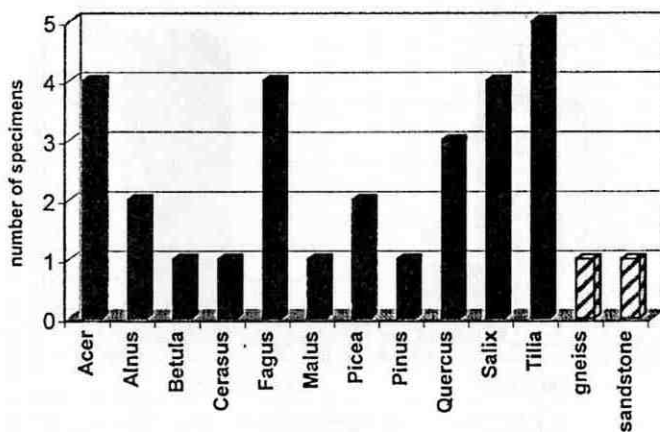
Graph No. 2

Occurrence of *Orthodicranum tauricum*
in the different habitats



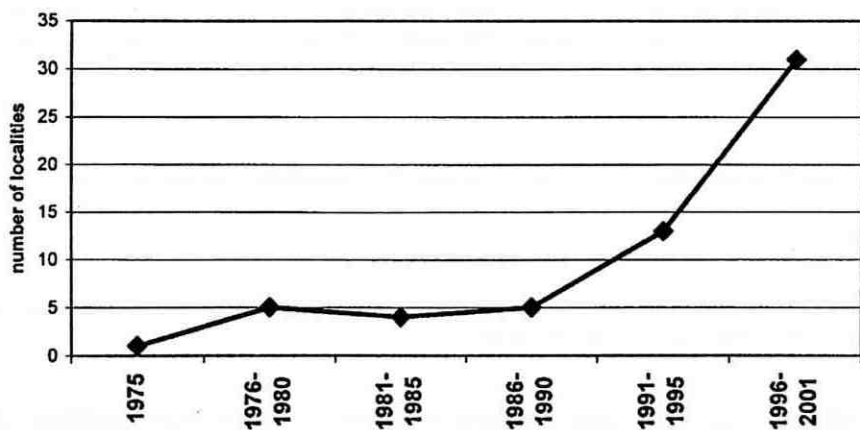
Graph No. 3

Detailed view of the occurrence of *Orthodicranum tauricum*
in the different kind of habitats (if it was quoted)



Graph No. 4

**Number of new discovered Czech localities with occurrence
of *Orthodicranum tauricum* in the past**



Graph No. 5

Discussion

Orthodicranum tauricum mostly grows on bark of solitary deciduous trees. Often it grows on rotten logs and stumps. An occurrence of the species on the rocks was recorded only sporadically.

There are some other bryophytes often associated with *Orthodicranum tauricum*: *Hypnum cupressiforme* Hedw., *Orthodicranum montanum* (Hedw.) Loeske and *Platygyrium repens* (Brid.) Schimp.

Cushions of *Orthodicranum tauricum* have mostly been found between tree bases and ca. 2 m above the ground.

The interquartile range of the vertical distribution of the species in the Czech Republic shows most specimens were recorded at altitudes ranging from 260 to 550 meters a. s. l. (see graph No. 1). The lowest known Czech locality lies at 150 m a. s. l. (near Lanžhot town). The highest localities are situated in Šumava Mts. at the altitude of ca. 1300 m a. s. l.

Graph No. 2 shows that the moss was always found without sporogones but often with gemmae (80%).

Regarding the occurrence of the species in the different habitats, 43% of the moss plants were found on the bark of solitary trees. Other recorded cushions of *Orthodicranum tauricum* grew in the epixylous habitats (42%) and rarely on the epilithic habitats (3.3%) - see graph No. 3.

Graph No. 4 shows the occurrence of *Orthodicranum tauricum* on the bark of different tree species and rock types. Among the most frequent epiphytic surfaces, the bark of *Tilia* sp. (mainly *Tilia cordata*), *Acer* (mainly *Acer pseudoplatanus*), *Salix* sp. and *Fagus sylvatica* may be mentioned. On contrary the occurrence of the species on the bark of genus *Cerasus* and *Malus* was rare. As for rocks, gneiss and sandstone were only recorded epilithic surfaces.

While the species was found more or less sporadically in the past, the highest growth of new localities number was noted in the course of the last ten years (see graph No. 5).

Concluding remarks

The survey shows that the species was found at 52 localities in the Czech Republic. Most localities are situated in the N, NW and SW part of the country but it is spreading undoubtedly to the East. Most Czech specimens of *Orthodicranum tauricum* were found at low or middle altitudes. The moss occurs rarely in the mountains. Although the species grows mainly on bark of deciduous trees and on epixylous habitats, its occurrence in epilithic surface was recorded too.

Acknowledgement

Author would like to thank every colleagues who extended him the herbarium specimens for study.

References

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Orthodicranum tauricum (Sapieg.) Z. Smirn. (*Bryophyta*) v České republice - rozšíření a ekologie

Revizí 60 herbářových položek deponovaných v akademických, muzejních i soukromých sbírkách a současně také terénním výzkumem bylo na území ČR dosud zjištěno celkem 52 známých lokalit s výskytem mechu *Orthodicranum tauricum*. Z analýzy výsledků vyplývá, že se tento druh nejčastěji vyskytoval jako epifyt (43 %), přičemž hojně byl jeho výskyt zaznamenán na lípě, javoru, vrbě a buku. Jako epixylický druh rostl ve 42 % případů. Pouze asi 3.3 % dokladů bylo nalezeno na skále.

Lodyžky *Orthodicranum tauricum* obsahovaly často značné množství gem (80 % revidovaných dokladů), zatímco tvorba sporogonů nebyla u tohoto mechu z našeho území dosud zaznamenána.

Data jsou uspořádána v tabulce. První dva sloupce jsou řazeny abecedně, třetí sloupec, který informuje o příslušnosti lokality ke čtverci středoevropského systému mapování, je řazen pro jednotlivé územní celky vzestupně.

Analýza dat je prezentována také graficky.

Pouhé literární údaje bez přítomnosti herbářových položek nebyly do seznamu zahrnuty.

Author's address: Vítězslav Plášek, bot. prac. Slezského zemského muzea, Masarykova tř. 35,
746 46 Opava, e-mail: szmoprir@opanet.cz