



RECORDS OF *TRUNCATELLINA CYLINDRICA* (FÉRUSSAC, 1807) (GASTROPODA, PULMONATA, VERTIGINIDAE) IN THE BIAŁOWIEŻA REGION IN POLAND

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ABSTRACT: Twelve specimens of *Truncatellina* Lowe were found in May 2009 and April 2010 in the environs of Siemianówka and Białowieża (NE. Poland); five of them could be recognised as *Truncatellina cylindrica* (Férussac). In total 13 species co-occurred with *T. cylindrica*. Because of this recent finding, now 114 mollusc species are known from the Białowieża region.

KEY WORDS: terrestrial snails, Vertiginidae, *Truncatellina*, new record, Białowieża, Poland

INTRODUCTION

Three species of *Truncatellina* Lowe, 1852 are mentioned in the check-list of species-group taxa of continental Mollusca living in Poland (FALKNER et al. 2001). In the systematic monograph on the Vertiginidae POKRYSZKO (1990) gives detailed data on habitat preferences of these *Truncatellina* species. None of them are known to have been found in the Białowieża Primeval Forest (GUTOWSKI & JAROSZEWICZ 2001) or the north-eastern part of Poland (KERNEY et al. 1983; WIKTOR 2004). Neither did CAMERON & POKRYSZKO (2004) found this genus in their analysis of the Biało-

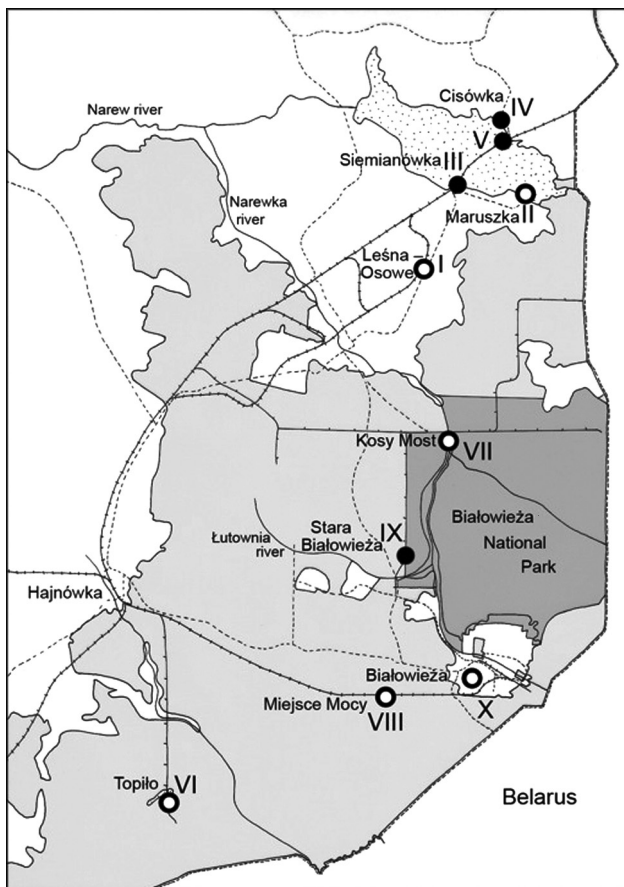
wieża Forest, but their analysis included only forest habitats. According to POKRYSZKO (1998) finding *Truncatellina cylindrica* (Férussac, 1807) in the vicinity of Białowieża was highly probable.

During a visit to the Siemianówka water basin at the northern border of the Białowieża Forest, one complete and one broken specimen of *Truncatellina* were found on May 14th, 2009. In April 2010, more data were collected in order to find information on the presence of *Truncatellina* in the Białowieża region.

MATERIAL AND METHODS

From April 13th until the 23rd, 2010, 19 plots in dry open habitats at 10 different locations in the Białowieża region were examined. The sampling sites and plots were chosen at random (Fig. 1, Table 1). For this purpose, a Plexiglas frame with an opening of 25 × 25 cm was stuck to the ground with pins. At every plot all parts of plants inside the frame were carefully removed. While doing so, all molluscs were

collected from the plants and the soil surface. No snails were collected from the upper layer of the soil. The fieldwork in these square plots was performed using special focussed spectacles. To avoid molluscs becoming stuck on wet plants the sampling was not done during or shortly after rainfall. Plant species were not identified.



RESULTS

Molluscs recorded in every plot are listed in Table 2. In four out of the 19 plots, no molluscs could be found at all. In the other plots a total of 339 specimens was collected. In most cases they were empty and/or broken shells (84%) indicated with "d". Live molluscs (16%) are indicated with "a". Sixteen species were identified among a total of 256 specimens; 79 specimens could only be assigned to genera, and four badly damaged specimens could not be identified at all. About 36% of the 339 specimens were *Vallonia*.

Ten shells of *Truncatellina* (2.9% of the 339 specimens) were found in four of the plots in three different locations (Siemianówka, Cisówka and Stara Białowieża). Both plots at Stara Białowieża were on the border of the Protective Sub-District of the Białowieża National Park (forest sector 313), not far from the

Fig. 1. Location of the studied plots in the Białowieża area: light grey – forested area; darker grey – the Białowieża National Park and protective (sub)district; stippled areas – water reservoirs (Siemianówka and Topiło); solid lines – rivers and streams; dashed lines – roads and tracks; combined dashed and solid lines – border with Belarus; lines with crossed stripes – railways; lines with stripes on one side – narrow-gauge railways; open circles – localities without *Truncatellina*; solid circles – localities with *Truncatellina cylindrica*

Table 1. Description of the plots

Locality	Plot	Coordinates	Description	
I. Leśna – Osowe	1	52°52'25.9"–023°48'46.5"	open vegetation on dry sandy verge	
	II. Maruszka	2	52°54'00.5"–023°52'55.2"	rather open vegetation on N. slope of dike
		3	52°54'00.3"–023°52'55.5"	rather open vegetation on S. slope of dike
		4	52°53'59.9"–023°52'54.2"	only moss and open low vegetation
III. Siemianówka	5	52°54'19.2"–023°49'52.6"	dense vegetation on border of ditch along S. slope of dike	
	IV. Cisówka	6	52°56'11.0"–023°51'45.3"	only moss and open low vegetation
		7	52°56'10.6"–023°51'47.1"	rather open vegetation close to ponds
V. Cisówka	8	52°56'11.0"–023°51'46.9"	dense vegetation on small sandy hill in large pond	
	9	52°55'32.7"–023°52'15.9"	only moss and gravel on railway bank	
	10	52°55'32.3"–023°52'13.5"	only moss and gravel on railway bank	
	11	52°55'31.1"–023°52'11.3"	only moss and gravel on railway bank	
VI. Topiło	12	52°55'32.7"–023°52'15.0"	dense vegetation between railway and lake	
	13	52°38'27.2"–023°37'23.7"	dense vegetation S of lake	
VII. Kosy Most	14	52°47'38.9"–023°49'37.0"	dense vegetation among young birch	
	VIII. Miejsce Mocy	15	52°41'04.4"–023°47'14.3"	dense vegetation on southern slope of railway bank
16		52°41'04.6"–023°47'14.8"	moss between railway tracks	
IX. Stara Białowieża	17	52°44'28.0"–023°47'40.9"	dense vegetation in open spot in forest	
	18	52°44'33.6"–023°47'45.3"	dense vegetation in open spot in forest	
X. Białowieża	19	52°41'16.5"–023°50'24.3"	dense vegetation in agricultural area	



Table 2. Species found in April 2010 on the plots examined: a – live specimens, d – dead specimens (empty or broken shells). For *Truncatellina* sp. the total number is given for every plot. The number of specimens determined as *T. cylindrica* is given in brackets.

Locality	I	II	III	IV	V	VI	VII	VIII	IX	X	Total number of specimens									
Plot 25 × 25 cm	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	33
<i>Succinea oblonga</i>								7d												7
<i>Succinea putris</i>								1d											3a	4
<i>Succinea</i> sp.					14d															14
<i>Cochlicopa lubricella</i>								5d			1d				1d		1a			9
<i>Cochlicopa</i> sp.	1d	1d		1d	5d	1a		1d		1d	1d	1d				1d	4d	7d	4a	30
<i>Truncatellina (cylindrica)</i>					3d	(2)		1d	(1)							5d	1d	(0)	(1)	10
<i>Vertigo pygmaea</i>													3d		1d				1d	5
<i>Pupilla muscorum</i>		2d	2d		1d							3d	17d			3d	1d			42
			1a								2a	9a				1a				
<i>Vallonia costata</i>		5d	2d		9d	1a		1d			1d	1d	1d	2d	7d		9d	5d	1a	45
<i>Vallonia excentrica</i>		1d			3d	2a							16d		4d		1a		2d	38
													5a						4a	
<i>Vallonia pulchella</i>					4d															4
<i>Vallonia</i> sp.				1d	10d			5d				1d	6d		7d		3d	2d		35
<i>Vitrima pellucida</i>					5d			9d					3d	1d	4d		5d	2d	3d	32
<i>Vitrea crystallina</i>					1d															1
<i>Nesovitrea hammonis</i>		1d						1d						3d	2d		4d	1a		12
<i>Nesovitrea petromella</i>														6d	2d		1a	1d	2d	17
																		5a	1a	
<i>Zonitoides nitidus</i>					8d	1a		4d												14
<i>Euconulus fulvulus</i>								5d							2a	1d		1a	3d	14
																		2a		
<i>Helicella obvia</i>									1d	1d										2
Indet												1d		2d					1a	4
Total number of specimens	1	10	5	2	68			40	1	1		9	60	18	30	32	29	33		339

Łutownia river, about 1 km north-east of Stara Białowieża. This is one of the open and drier areas at the

narrow-gauge railway, now abandoned and formerly used for transporting timber.

DISCUSSION

Including the 2009 collection, five *Truncatellina* specimens, with shell width of 0.84–0.96 mm (mean 0.88 mm), were full-grown and could be identified as *T. cylindrica* (Fig. 2), based on descriptions and illustrations in KERNEY et al. (1983), WIKTOR (2004) and KANTOR & SYSOEV (2005). Two specimens came from Cisówka (2009 and plot 8), two from Siemianówka (plot 5) and one from Stara Białowieża (plot 18). Because the remaining shells were either juvenile or badly damaged, it could not be excluded that another species of *Truncatellina* was involved. In total 13 species co-occurred with *T. cylindrica*.

The plots with dense vegetation, where grasses and other plants formed a thick carpet with well developed roots, were the richest in species. No molluscs (four plots) or very few molluscs were found on plots with only moss and gravel and places that were sometimes used as roads. Most of the sixteen species that were found are typical of dry and open habitats (KERNEY et al. 1983). The xerophile species *Helicella obvia* (Menke, 1828), *Cochlicopa lubricella* (Porro, 1838) and *Vallonia excentrica* Sterki, 1893 confirm the aridity. *Pupilla muscorum* (Linnaeus, 1758), previously

only known from ruins in the Palace Park (CAMERON & POKRYSZKO, 2004), *Vallonia costata* (O. F. Müller, 1774) and *Vertigo pygmaea* (Draparnaud, 1801) are typical of open areas. Of those six species *Cochlicopa lubricella* and *Vallonia costata* were also sampled by CAMERON & POKRYSZKO (2004) who did their research in three wetter plant associations in the forest. They found those species, however in far lower numbers.

Truncatellina from the open area close to Stara Białowieża (plot 17 and 18) could not have been washed ashore with debris because the location is too far from the rivers Łutownia and Narewka. On the rather dry plot at the border of the ditch in Siemianówka (plot 5) various freshwater molluscs were found in debris as well: *Radix labiata* (Rossmässler, 1835), *R. balthica* (Linnaeus, 1758), *Planorbis planorbis* (Linnaeus, 1758), *Gyraulus crista* (Linnaeus, 1758) and *Pisidium* sp. C. Pfeiffer, 1821. In 2009, *Vertigo antivertigo* (Draparnaud, 1801) was found in this location as well. *Truncatellina* at this location could have been transported by water during high water levels in the ditch. Also plot 8 on one of the small sandy hills on a large pond seems to have been subject to alternate arid periods with xerophile species and wetter periods during higher water level, with the hygrophile species like *Succinea putris* (Linnaeus, 1758) and *Zonitoides nitidus* (O. F. Müller, 1774). None of the studied localities was natural. *Truncatellina* was found on dykes, close to a water reservoir and along railways. The species may have been transported by water from a distance (plots 5 and 8) or may have been spread by human activity along the railways (specimen of 2009, plots 17 and 18).

The method of sampling was adequate, since *Truncatellina* could easily be recognised in the field. The reason why no live *Truncatellina* were found might be that they were still hiding in the soil after the recent heavy winter.

T. cylindrica is also known from Latvia, Lithuania and Kaliningrad (Russian Federation) but has not been recorded from Belarus (FALKNER et al. 2001). The new record confirms the presence of the genus in the north-eastern part of Poland and the region of Białowieża in particular. More samples are needed in order to establish to which area and habitats the taxon is confined. The list of species of the region included a total of 113 species: GUTOWSKI & JAROSZEWICZ (2001) listed 109 species and CAMERON & POKRYSZKO (2004) added another four. OKOŁÓW et al. (2009) mentioned the same total number (96 species



Fig. 2. *Truncatellina cylindrica* (Férussac, 1807) (no. 20100413.4) from plot 5 in Siemianówka



of snails and slugs and 17 bivalves). In the year of Countdown 2010 (the 2010 Biodiversity Target of the European Parliament) this record of *T. cylindrica* increases the number to a total of 114 mollusc species that were found in the last precious remnants of the European lowland forest.

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