



## MALACOFAUNA OF SELECTED WATER BODIES OF THE CITY OF SZCZECIN

DARIUSZ JANICKI

Chair of Invertebrate Zoology and Limnology, University of Szczecin, Wąska 13, 71-415 Szczecin, Poland  
(e-mail: janicki@sus.univ.szczecin.pl)

**ABSTRACT:** Studies on molluscs of selected water bodies of the city of Szczecin (NW Poland), carried out in 1997, revealed the occurrence of 11 snail and 5 bivalve species. Two groups of water bodies were distinguished, of different species composition: Głębokie lake on one hand and the ponds with the Osówka stream on the other. Overall dominants were *Potamopyrgus antipodarum* (Gray), an expanding species, and *Sphaerium corneum* (L.).

**KEY WORDS:** freshwater molluscs, Poland, *Potamopyrgus antipodarum*

### INTRODUCTION

The malacofauna of north-western Poland, and especially the Szczecin voivodeship, is still insufficiently studied, with only few literature data pertaining mainly to larger reservoirs, such as the Gulf of Szczecin or Dąbie lake. The malacofauna of the city of Szczecin is virtually unknown. Some information is

contained in the paper of WŁOSIK-BIEŃCZAK (1992). On the other hand, molluscs of suburban areas are constantly exposed to harmful effect of human activities. Because of this I have started a long-term study on molluscs of Szczecin water bodies. This note contains its preliminary results.

### STUDY AREA

Field studies were carried out from June till September 1997. The material was collected from 4 reservoirs and the connecting stream:

1. Głębokie lake, postglacial, maximum depth 5.7 m (own data), strongly polluted, mostly devoid of shore macrophyte belt;
2. Uroczysko pond, located next to the Głębokie lake, depth ca. 2 m; bottom dredged in 1996;
3. Ustronie pond, a mid-forest, flow pond of 30 m length; a narrow macrophyte belt, eutrophic, with
4. Zacisze pond, a mid-forest pond, length ca. 40 m, a belt of macrophytes and bottom vegetation present;
5. Osówka stream, narrow, ca. 1 m wide, with a sandy bottom.

a high suspension content in summer; muddy bottom of considerable thickness, devoid of bottom vegetation;

## MATERIAL AND METHODS

Molluscs were collected with various methods: catches with a round and a triangular net, mesh 1 mm, triangular drag net, mesh 0.5 mm, diving, collecting empty shells etc. Collecting localities (UTM grid coordinates of all the localities: VV 61) are shown in Figure 1.

## RESULTS

A total of 737 mollusc specimens have been collected. Of these 486 were snails, 251 – bivalves. Eleven snail species and 6 bivalve species have been identified. The total of 17 aquatic mollusc species found in the studied area constitute ca. 12% freshwater malacofauna of Poland.

In spite of the fact that all the studied reservoirs are connected by the stream Osówka, two groups of localities of different species composition could be distinguished (Table 1): 1. the lake Głębokie, 2. the ponds with the stream.

### GŁĘBOKIE LAKE

In that lake the most numerous specimens were collected. Snails dominated clearly (99.7%), pelophilous species prevailing. The snails were represented by species that are common to the whole study

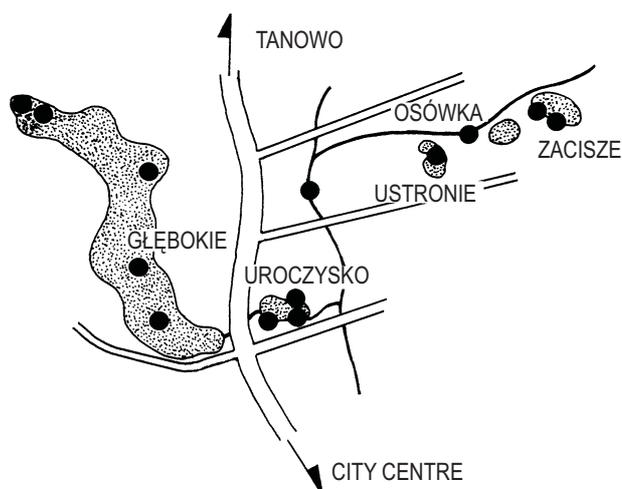


Fig. 1. Study area. Sampling sites indicated with solid circles

area: *Lymnaea stagnalis* (L.), *Stagnicola corvus* (Gmel.), and by species specific to the lake: *Bithynia tentaculata* (L.), *Valvata piscinalis* (O. F. Müll.), *V. pulchella* Studer and *Potamopyrgus antipodarum* (Gray). The differences in species composition are associated with the history of this water body. The lake is post-glacial, practically devoid of affluents and surrounded by a forest. There is a canal connecting it with the pond Uroczysko, but the flow is small and often inhibited. In 1996 the pond was dredged which increased its depth but de-

Table 1. List of mollusc species recorded

Species	Głębokie	Uroczysko	Ustronie	Zacisze	Osówka	Status*
1. <i>Anodonta anatina</i> (Linnaeus, 1758)	+	-	-	-	-	
2. <i>Sphaerium corneum</i> (Linnaeus, 1758)	-	+	+	+	+	
3. <i>Pisidium casertanum</i> (Poli, 1791)	-	+	+	-	-	
4. <i>Pisidium subtruncatum</i> Malm, 1855	-	+	+	-	-	
5. <i>Musculium lacustre</i> (O. F. Müller, 1774)	-	-	-	+	-	V
6. <i>Valvata piscinalis</i> (O. F. Müller, 1774)	+	-	-	-	-	
7. <i>Valvata pulchella</i> Studer, 1820	+	-	-	-	-	R
8. <i>Bithynia tentaculata</i> (Linnaeus, 1758)	+	-	-	-	-	
9. <i>Potamopyrgus antipodarum</i> (Gray, 1843)	+	-	-	-	-	
10. <i>Acroloxus lacustris</i> (Linnaeus, 1758)	+	-	-	-	-	
11. <i>Lymnaea stagnalis</i> (Linnaeus, 1758)	+	+	+	+	-	
12. <i>Stagnicola corvus</i> (Gmelin, 1791)	+	-	+	-	-	
13. <i>Radix peregra</i> (O. F. Müller, 1774)	-	-	+	+	-	
14. <i>Radix auricularia</i> (Linnaeus, 1758)	-	-	+	+	-	
15. <i>Planorbium corneum</i> (Linnaeus, 1758)	-	+	+	+	-	
16. <i>Gyraulus albus</i> (O. F. Müller, 1774)	-	+	+	+	-	
17. <i>Armiger crista</i> (Linnaeus, 1758)	-	-	-	+	-	

\* – category according to the Red List of Polish Animals (GŁOWACIŃSKI 1992), + - present, - - absent.



stroyed the macrobenthos biocenosis and broke the natural way of migration of molluscs into the lake.

The record of expanding *Potamopyrgus antipodarum* (Gray) is noteworthy. Besides the typical form, f. *aculeata* was also found. The way by which it got to the lake is mysterious, especially that it is absent from the remaining water bodies. Probably it was transported to the lake by aquatic birds, resting on the lake, from the Gulf of Szczecin; it was found there by WOLNOMIEJSKI & GRYKIEL (1994).

The absence of bivalves in the lake is surprising. One specimen of *Anodonta anatina* (L.) was found, but it is unknown if it was a remnant of an extinct population or an introduced individual. No members of the genera *Sphaerium* or *Pisidium* were found which is in agreement with the data of WŁOSIK-BIEŃCZAK (1992).

## CONCLUDING REMARKS

Eleven snail and five bivalve species were found in the studied area. With respect to their species composition, the studied water bodies can be divided in two groups: Głębokie lake on one hand and the ponds with the stream Osówka on the other. The absence of bivalves in the lake Głębokie is noteworthy. An expanding snail species *Potamopyrgus antipodarum* (Gray) was found in the lake Głębokie. Some of the

## OTHER WATER BODIES

The malacofauna of the remaining reservoirs is similar. The most frequent species are: *Sphaerium corneum* (L.), *Lymnaea stagnalis* (L.), *Planorbarius corneus* (L.) and *Gyraulus albus* (O. F. Müll.), found in all the ponds, *S. corneum* (L.) being recorded also from the stream Osówka. Rare species are: *Musculium lacustre* (O. F. Müll.), *Stagnicola corvus* (Gmel.) and *Armiger crista* (L.), found at one locality each (Table 1). *S. corneum* (L.) was dominant, being the most abundant in each pond. The most numerous species were found in the pond Ustronie. The total of 190 specimens collected there included 77 snails and 113 bivalves, representing six and three species, respectively. Only six species were found in the pond Uroczysko, 96.8% specimens being bivalves. The low number of species results probably from dredging. The stream Osówka which connects the ponds harbours only one species – *S. corneum* (L.).

recorded species are on the Red List of Polish Animals (GŁOWACIŃSKI 1992).

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