

Lauterbornia 49: 73-76, D-86424 Dinkelscherben, 2004-05-20

The aquatic Amphipoda and Isopoda (Crustacea) of the Transdanubian Mountains in Northwest Hungary

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With 1 Figure and 1 Table

Keywords: Amphipoda, Isopoda, Crustacea, Transdanubian Mountains, Hungary, faunistics

Schlagwörter: Amphipoda, Isopoda, Crustacea, Transdanubische Gebirge, Ungarn, Faunistik

The examination of springs, streams and ponds in the Transdanubian Mountains yielded 4 Amphipoda species (*Gammarus roeselii*, *Gammarus fossarum*, *Synurella ambulans*, *Niphargus valachicus*) and the Isopoda species *Asellus aquaticus*. Most common was *Gammarus roeselii*; *Asellus aquaticus* was frequent in waters with high content of organic matter.

1 Introduction

The aquatic Peracarida fauna of Hungary consists of 27 Amphipoda (Muskó 1994), 6 Isopoda and 1 Mysidacea species. 13 Amphipoda species live in subterranean waters, 6 in surface waters (springs, streams, ponds), 6 in the large rivers Danube and Tisza and the lake Balaton, and 2 are terrestrial. About the Amphipoda and aquatic Isopoda of the Transdanubian Mountains is little known as well as in the most regions of Hungary (Muskó 1994). There are some data from the Pilis (Csörgits 2000), Gerecse, Vértes (Kontschán 2000a, 2001a) and the region of Bakony (Dudich 1927, Kontschán 2000b, Lukacsovics 1958, Pónyi & al. 2000, 2001, Stiller 1957).

2 Sampling sites and methods

The Gerecse and Vértes (west of Budapest) and the region of Bakony (north of the Balaton) constitute the main range of the Transdanubian Mountains (Fig. 1.); this area is dry and poor in streams and springs. Most of the springs are limnocrenes, the streams are usually silt-bedded and slowly flowing. We examined only smaller lakes and ponds, because the fauna of Lake Balaton is well-known (Muskó 1992, Pónyi & Zánkai 1996). The lakes and ponds examined are artificial, banked up waters with a surface of 100-300 m². Between 1997 and 2002 we collected Amphipoda and Isopoda at 79 sampling sites, which belong to 48 settlements (villages and towns) of the Transdanubian Mountains. The collected specimens were preserved in 75 % alcohol and deposited in the Crus-

tacean Collection of the Zoological Department of the Hungarian Natural History Museum in Budapest.



Fig. 1: Research area, the Transdanubian Mountains in Northwest Hungary

3 Results and discussion

Six Amphipoda and two Isopoda species were expected to occur in the Transdanubian Mountains: *Gammarus pulex* (Linnaeus, 1758), *G. fossarum* Koch, 1835, *G. roeselii* Gervais, 1835, *G. balcanicus* Schäferna, 1922, *Niphargus valachicus* Dobreanu & Manolache, 1933 *Synurella ambulans* Müller, 1846, *Asellus aquaticus* (Linnaeus, 1758) and *Proasellus pribenicensis* Flasarová, 1977; the latter was found in Cserehát (North Mountains) in 2001 (Kontschán 2001b).

In our research we found 4 Amphipoda (*Gammarus roeselii*, *Gammarus fossarum*, *Synurella ambulans*, *Niphargus valachicus*) and the Isopoda species *Asellus aquaticus*. We did not find *Gammarus pulex* and *G. balcanicus*. The occurrence of *G. pulex* in Hungary is doubtful, though there are some previous references (Muskó 1992, 1994) and a recent one (Forró & Meisch 1998). It is conceivable that this species does not occur in Hungary (Karaman & Pinkster 1977). *Gammarus balcanicus* has been only recorded for the North Mountains, there is one doubtful report from the Pilis (Transdanubian Mountains). *Proasellus pribenicensis* has been found only in Northeast Hungary (Cserehát; Kontschán 2001b).

In the Transdanubian Mountains *Gammarus roeselii* is the most frequent aquatic Peracarida species, besides the moor lands it occurs in most kinds of the

waters, primarily in streams, where it is usually the dominant species of the aquatic community. We found *G. roeselii* at 51 of the total of 78 sampling sites.

Gammarus fossarum prefers the upper stretches of streams; in the lakes it occurs only at the inflows and outflows; the species was found at 24 sites. In the Transdanubian Mountains *G. fossarum* and *G. roeselii* occur at similar habitats, primarily in streams.

Synurella ambulans was collected at 19 localities, primarily in springs, but it can also be found in shallow, periodically dry swamps. In Hungary the species was first mentioned by Dudich (1927) from the Bakony.

Niphargus valachicus is the rarest species in the surface waters of the Transdanubian Mountains, it was only found in a small stream at the foot of the mountains, richly covered by *Nasturtium officinale*. At this place it co-occurs with *Asellus aquaticus* and *Synurella ambulans*. The species is also known as *Niphargus mediodanubialis* Dudich, 1941 from the Aszóföi séd (Dudich 1941).

Asellus aquaticus has a wide ecological tolerance and is frequent in every kind of waters, it also can be found in streamlets overgrown by plants, in ponds and in swamps. In the Vértes this species also occurs in many springs. The euryecious *A. aquaticus* lives in waters where other, more sensitive Peracarida do not occur. In the area of the Transdanubian Mountains we found it at 36 localities.

The occurrence and constancy of the species recorded in the diverse habitats of the area examined can be seen in table 1.

Tab. 1: Constancy of the species found in the area examined (absolute number of finds and percentage of all 79 sample sites)

species	springs	streams	stagnant waters	total	% of 79 sites
<i>Gammarus roeselii</i>	5	43	3	51	64,6
<i>Gammarus fossarum</i>	4	19	1	24	30,4
<i>Synurella ambulans</i>	8	11	0	19	24,1
<i>Niphargus valachicus</i>	0	1		0	1,3
<i>Asellus aquaticus</i>	7	19	10	36	45,6

Acknowledgement

I am grateful to Dr. Ilona B. Muskó for helping to write and checking the manuscript.

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Zeitschrift/Journal: [Lauterbornia](#)

Jahr/Year: 2004

Band/Volume: [2004_49](#)

Autor(en)/Author(s): Kontschán Jeno

Artikel/Article: [The aquatic Amphipoda and Isopoda \(Crustacea\) of the Transdanubian Mountains in Northwest Hungary. 73-76](#)