

DATA TO THE AMPHIPODA- AND ISOPODA FAUNA OF TŐSERDŐ AND ITS ENVIRONS IN THE TISZA VALLEY

I. AMPHIPODA, ASELLOTA (CRUSTACEA, PERACARIDA)

G. LANTOS

Tisza—Research Committee, Szeged

(Received September 10, 1984)

Abstract

The studied areas are located in the district of Lakitelek, Tiszaalpár and Bokros. 2 Amphipoda- and 1 Asellota species were found at the study areas of five biocenoses in the Summer aspect of 1983 and 1984: *Synurella ambulans* FR. MÜLLER, *Niphargus mediodanubialis* DUDICH; *Asellus aquaticus* (L.) RACOV. All three species occur together and rather frequently in Hungary. The *N. mediodanubialis* is somewhat rarer than the other two. In differing ratio according to species, polyphagy is characteristic of all three species. At the same time, they are also significant as the aliment of organisms of higher order.

Introduction

The systematic exploration of the Crustacea-fauna at Tőserdő and its environs has not been accomplished as yet. Therefore, it is of basic significance to study the Crustacea- and within this the Amphipoda- and Isopoda-fauna. The significance of these studies is even greater due to the followings: a large part of the studied area is joint to the unit of the Kiskunság National Park called Tőserdő; the species of the two orders have important role in the decomposing processes of organic matters both in the water and overland (self-cleaning of waters, humification); the representatives of both orders simultaneously form the important nutriment-base for certain aquatic (e.g. fish, newts, insect larvae...) and terrestrial (e.g. frogs, spiders...) animal groups, resp.

The present study is the first part of a projected research series dealing with the Amphipoda- and Isopoda-fauna of the Tisza and its environs, the fauna's ecologic, population-biological and trophobiological relations.

At the studied area — similarly to other areas of the Lowland — relatively low individual- and species-number is characteristic to the Amphipoda- and aquatic Isopoda- (Asellota-) fauna, particularly in relation to the Entomostraca-orders.

The site

The studied area is found in the district of the villages Lakitelek, Tiszaalpár (County Bács-Kiskun) and Bokros (County Csongrád). The collecting sites were: 1. Dead-Tisza at Lakitelek, 2. Lake Sulymos, 3. Dead-Tisza at Alpár, 4. Dead-Tisza at Bokros, 5. Spring at Tőserdő (Fig. 1.: the numbers appearing on the map correspond to the serial numbers given here). The collecting sites Nrs. 1., 2. and 5. belong to the

unit of the Kiskunság National Park called Tőserdő, the rest are located South to this area.

The collections were performed during the Summers of 1983 and 1984. The collected material are in the possession of author's own collection.

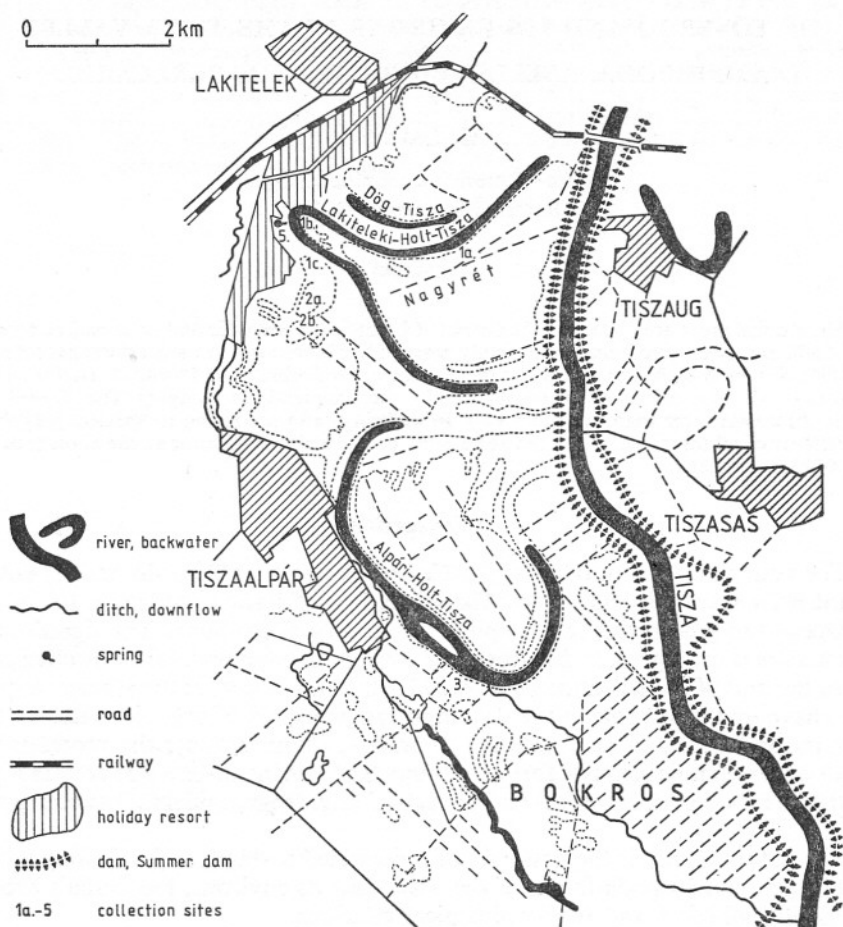


Fig. 1

1. Dead-Tisza at Lakitelek

Soft-stalked vegetation (few amount of *Utricularia* and *Trapa natans*) was not, or only hardly found in the littoral zone of the collecting sites (1a., b. on the map). The ground was covered by fallen leaves from trees alongshore (*Salix*, *Populus*, *Alnus*). Constant water. Occurring species: *Niphargus mediodanubialis*, *Synurella ambulans*, *Asellus aquaticus*.

2. Lake Sulymos.

This is found between Lakitelek and Tiszaalpár, at the meadow at Alpár (2a. on the map). Its border is covered by *Salicetum albae-fragilis* with many *Amorpha fruticosa*, farther in *Caricetum gracilis*, then *Nymphaeetum albo-luteae* are found. Lake Sulymos is of marsh character, however, its marsh origin is not completely proved as yet. The water level strongly fluctuates, it may even completely dry out. Occurring species: *Niphargus mediodanubialis*, *Synurella ambulans*, *Asellus aquaticus*.

In March, at the time of the Spring high water level, *Niphargus mediodanubialis* and *Synurella ambulans* were also collected from some of the puddles in the wheel tracks of the earth road near the Lake (2b. on the map). These puddles are strongly of seasonal character, being dry most of the year. They cannot serve as the constant living place of the *N. mediodanubialis* and the *S. ambulans*. In County Baranya, at the border of the village Romonya, *Niphargus* sp. (its identification has not been performed yet), *Synurella ambulans* and *Asellus aquaticus* have also been found in water-ditches regularly drying out for longer periods during the Summer, nevertheless, the water here is almost completely covered by the *Caricetum gracilis*, and its bottom is muddy, thus the conditions are suitable for standing the dry periods. The puddles near Lake Sulymos are, however, devoid (free) of vegetation and mud, their bottoms are of sand. The most probable explanation to the occurrence of these two species here seems to be that during the time of high water level the larger passages in the soil suitable for the communication of the two species became covered by water and thus both species could travel (migrate) without restriction between Lake Sulymos and the puddles. Both species could not be found together in the various puddles, at most always one of them was present. However, the *Asellus aquaticus* which was also frequent in Lake Sulymos, was not observable in neither of the puddles.

3. Dead-Tisza at Alpár.

This is similar to the Dead-Tisza at Lakitelek, at the most sparse *Trapaetum natantis* was found at the collecting sites. The occurring species were: the *Niphargus mediodanubialis*, *Synurella ambulans*, *Asellus aquaticus*.

4. Dead-Tisza at Bokros.

In contrast to the previous two backwaters, mostly continuous *Phragmitetum* borders are found along the bank. (*Phragmitetum* also occurs at the other two backwaters, but it is of essentially smaller expansion compared to the water surface). The leading species of the *Phragmitetum* here is alternately the *Typha* or *Phragmites*. Constant water. Occurring species: *Niphargus mediodanubialis*, *Synurella ambulans*, *Asellus aquaticus*.

5. Spring at Tőserdő.

This is an occupied spring, thus its direct examination is difficult. Shell-fish could not be demonstrated from the water-pipe, even after poking. However, large amounts of *Synurella ambulans* and *Asellus aquaticus* were found in the brook section directly below the spring.

With the exception of the Spring at Tőserdő and the puddles near Lake Sulymos, the *Niphargus mediodanubialis*, the *Synurella ambulans* and the *Asellus aquaticus* were

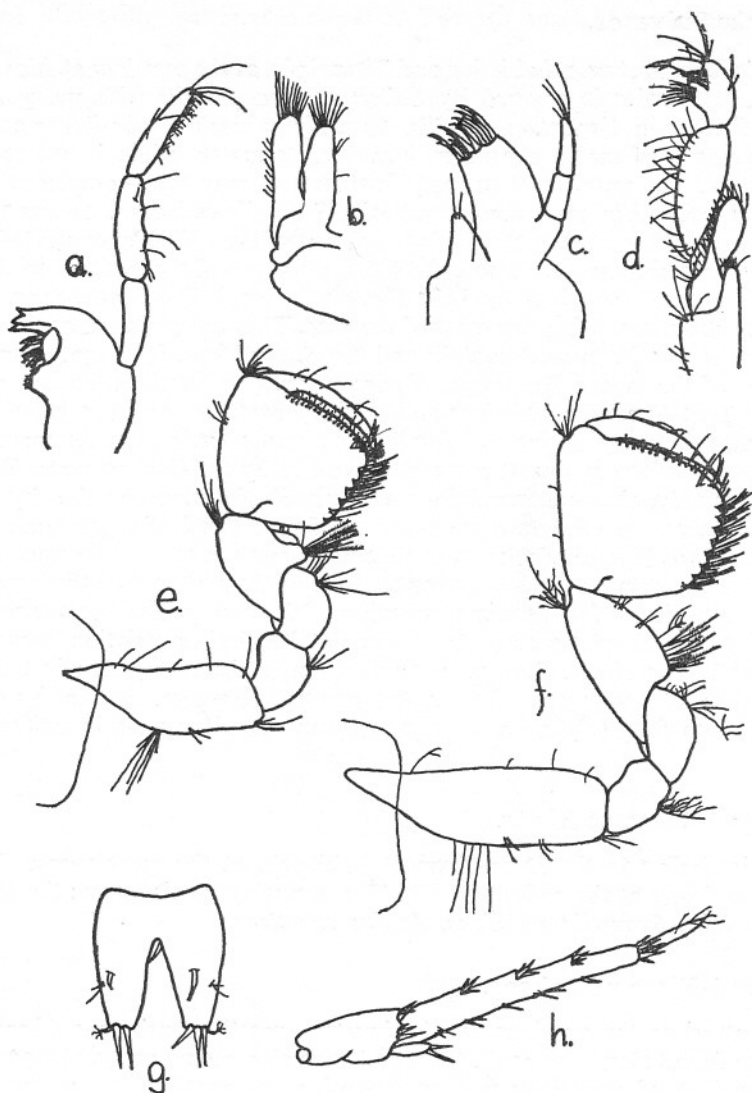


Fig. 2

demonstrable at every collection site. The *Niphargus mediodanubialis* was missing from the Spring at Töserdő and the *Asellus aquaticus* could not be found in the puddles near Lake Sulymos (Fig. 2).

The demonstrated species

From the studied areas two Amphipoda- and one Asellotaspecies could be demonstrated: *Niphargus mediodanubialis*, *Synurella ambulans*, *Asellus aquaticus*. This species number and these species are characteristic to most of the areas of the

Lowlands. The occurrence of the *Niphargus mediodanubialis* is rarer than the other two species.

At the same time, a further Amphipoda species can also be found at certain areas of similar nature (e.g. Zsombó, County Csongrád); the *Orchestia cavimana* HELLER, which has partly taken up terrestrial habits. The occurrence of this species is theoretically expectable at the studied area, however, it has not been demonstrated so far.

The demonstrated three species occur together at most of the Hungarian flat- and hill-country sites, respectively, the *Niphargus mediodanubialis* is missing more frequently.

1. *Synurella ambulans* FR. MÜLLER.

This mainly flat- and hill-country species is general in Hungary, and is also not rare in highlands in case of adequate environment. It is found almost everywhere in permanent and rarely drying out waters. In general, it is missing from scant vegetational or vegetation-free highland springs and brooks, and from other waters of stronger current, resp.

It is polyphage, but mainly lives on detritus and algae. It can be found on the bottom of the waters in, or on the surface of the detritus, but its more characteristic habitation is on the vegetation. It often even swims. It was found at every collection site discussed here.

2. *Niphargus mediodanubialis* DUDICH.

Mainly a species of the lowlands, described in Hungary. It is less wide-spread than the other two species and is fond of the waters more rich in detritus. It is polyphage, being essentially more carnivorous than the other two species (e.g. it attacks the *Tubifex*, the *Chironomus*-larvae). Ordinarily it does not leave the bottom, dwelling in the detritus or on its surface. It was found at every collection site, except the Spring at Töserdő.

DUDICH reported on the species in 1941 on the basis of his many site material from Hungary. Since as the supplement to the original description only the various variants were sketched, it seems expedient to give a figure of the important limbs also of importance (significance) in identification, on the basis of the samples collected at the discussed areas (Fig. 3). By the way, the species is in need of revision, which will be accomplished by author after further collection of samples.

3. *Asellus aquaticus* (L.) RACOV.

Its spread throughout Hungary is similar to that of the *Synurella ambulans*, but is more frequent in highland waters. Its environmental demand is also similar to that of the *Synurella*. It is polyphage, but like the *Synurella ambulans*, it mainly feeds on detritus and algae. It mostly lives on the vegetation, but is also frequent on the bottom. It is unable to swim, occasionally (mostly only during flight) it changes its place from higher spots by sinking with "gliding swim". It was found at every discussed collection site, with the exception of the puddles at Lake Sulymos.

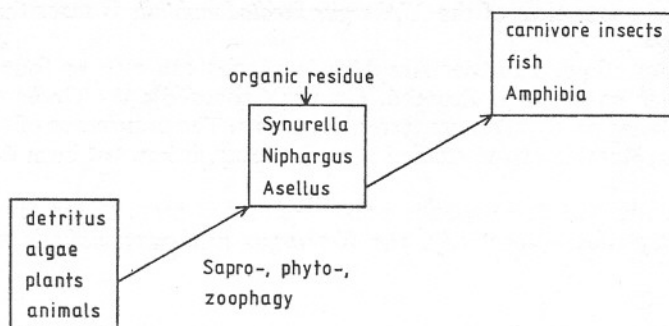


Fig. 3

Trophic regards

In respect to the energy level represented in the trophic system all three species are close to similar in value, due to its greater carnivorous feeding habits the *N. mediodanubialis* slightly rises above the rest. At first approach polyphagy characterizes their nutrition. However, the various feeding habits play role with different emphasis in the case of the various species. The *Synurella ambulans* and the *Asellus aquaticus* mainly live on detritus and algae, while in the case of the *Niphargus mediodanubialis* — as already mentioned — the carnivorous feeding habit has rather significant role. At the same time all three species serve as the aliment of higher trophic levels, too. Accordingly, they are firstly captured by Amphibia (newts), fish and certain carnivore insects and their larvae.

Table 1

Species	collection site	1	2a	2b	3	4	5
<i>Niphargus mediodanubialis</i>		+	+	+	+	+	
<i>Synurella ambulans</i>		+	+	+	+	+	+
<i>Asellus aquaticus</i>		+	+		+	+	+

References

- CĂRĂUȘU, S., DOBREANU, E., MANOLACHE, C. (1955) Amphipoda forme salmastre si de apă dulce. Fauna R.P.R. IV. 4.
- DUDICH E. (1941) *Niphargus mediodanubialis* sp. nov., die am weitesten verbreitete *Niphargus*-Art des mittleren Donaubecken. — Fragm. Faun. Hung. 4, 61—73.
- WÄCHTLER, W. (1937) Isopoda. Die Tierwelt Mitteleuropas II. 2b. 1—317. Leipzig
- WAGLER, E. (1932) Crustacea. Die Tierwelt Mitteleuropas II. 2.a. 198—213. Amphipoda, Leipzig

Adatok a Tőserdő és környéke rákfaunájához 1. Amphipoda, Asellota (Crustacea, Peracarida)

LANTOS G.

Tiszakutató Munkacsoport Szeged

Kivonat

A vizsgált terület Lakitelek, Tiszaalpár és Bokros községek körzetébe esik. Öt vizsgálati helyről 2 Amphipoda- és 1 Asellota-faj került elő: *Synurella ambulans*, *Niphargus mediodanubialis*, *Asellus aquaticus*. Magyarországon mindhárom faj együtt és elég elterjedten fordul elő. A *Niphargus m.* valamivel ritkább a másik kettőnél. Fajonként eltérő arányban mindhárom fajra a polyphagia jellemző. Ugyanakkor a magasabbrendű szervezetek táplálékként is jelentősek.

Сведения фауны раков из «Тőserdő» и его края 1 Amphipoda, Asellota (Crustacea, Peracarida)

Лантош Г.

Резюме

Исследовательская территория находится в окрестности «деревни «Lakitelek», «Tiszaalpár» и «Bokros». Среди исследовательских мест нашли две расы Amphipoda и одна раса Asellota: *Synurella ambulans*, *Niphargus mediodanubialis*, *Asellus aquaticus*. В Венгрии все три расы находятся вместе и довольно распространены. Раса *Niphargus m.* немного реже, чем другие две расы. Полифагия характерна для всех трёх рас, но в разном соотношении. В то же время они значительны и для пищи вышестоящих организмов.

Podaci o fauni rakova iz „Tőserdő” i iz njegove okoline 1. Amphipoda, Asellota (Crustacea, Peracarida)

G. LANTOS

Izvod

Istraživana teritorija spada u rajon sela „Lakitelek”, „Tiszaalpár” i „Bokros”. Sa pet istraženih mesta pronađeno je dve pasmine Amphipoda i jedna pasmina Asellota: *Synurella ambulans*, *Niphargus mediodanubialis*, *Asellus aquaticus*. Sve tri vrste žive zajedno i dosta su rasprostranjene li Maotarskoj. *Niphargus m.* je ređi od ostale dve. Karakteristično je kod ovih vrsta poligfaija, a razmer kod svake pasmine je drugačiji. Istodobno su važne kao hrana za razvijenije organizme.