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**LIMNOMYSIS BENEDENI (CZERNIAVSKI, 1882) (CRUSTACEA:  
PERACARIDA: MYSIDACEA) IN THE TAIȚA DAM LAKE  
(DOBROGEA, ROMANIA)**

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Abstract. The mysid species *Limnomysis benedeni* is recorded from Taița dam lake, well outside of its previously known range and in an anthropogenic habitat. The possibility of its accidental introduction is considered.

Résumé. L'espèce de mysidacé *Limnomysis benedeni* est identifiée dans le lac Taița, une nouvelle localité bien apart de l'areal antérieurement connu pour cette espèce, et en plus dans un habitat anthropogène. On avance l'hypothèse de l'introduction accidentelle de cette espèce dans le lac.

Key words: *Limnomysis benedeni*, Taița, dam lake, introduction.

INTRODUCTION

Mysidacea are benthic or benthopelagic inhabitants of fresh, brackish and marine waters that are important in the food chain as prey for various species of fish, including economically valuable ones (Băcescu, 1954). They are also sensitive species, most of them requiring well-oxygenated water and possible indicators to this respect.

The Romanian mysid fauna was thoroughly investigated by Băcescu (1940, 1954) but afterwards mysids were generally only approached among other groups in wide-range hydrobiological and ecological studies (e.g. Popescu-Gorj and Costea, 1961; Enăceanu, 1967; Popescu-Marinescu, 1992; Bănărescu and Nalbant, 1994 etc.). In some instances, an altering of relative abundance patterns of different mysid species was recorded following human-induced modifications of water quality, such as a decrease of salinity in lagoons (Băcescu, unpublished data, in Manoleli, 1976, ap. Nalbant and Manoleli, 1978). Some of the more recent papers quoted make mention of the scarcity of the Mysidacea in the Danube (Popescu-Marinescu, 1992) as compared to former abundance (Enăceanu, 1967). In the last years mysids have been mostly absent, or at best extremely rare, in hydrobiological samples taken in the Danube (V. Tatole, personal observation). Their decrease may be linked with anthropic alteration of water quality or with changes in the nature of the benthic substratum. However, they may still be locally abundant if site conditions are favourable, e.g. in some lakes in the Danube Delta and sporadically in the Razim lagoon (Bănărescu and Nalbant, 1994).

*Limnomysis benedeni* (Figs 1, 2) is a small species (up to 15 mm), restricted to freshwater and slightly saline water; it only tolerates minimal salinity (up to 6,5‰, ap. Witmann, 1995, in Bij de Waate et al., 2002) it is thus found in the northern Razim lagoon, the sea at the Danube mouths, some seaside lakes, the Danube Delta, the Danube up to Bratislava (Băcescu, 1954) and recently, in a rapid range expansion, up to the Danube-Main-Rhine canal and thence down the Rhine towards the North Sea (Bij de Waate et al., 2002). The proliferation of *Limnomysis* in these

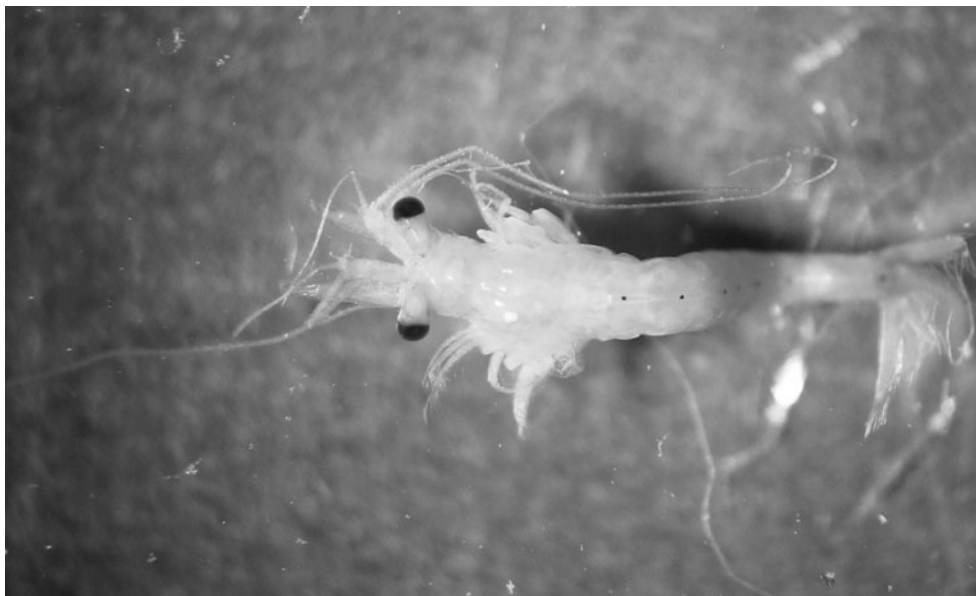


Fig. 1 – *Limnomysis benedeni*, male, Taița lake (photo by A. Tatole).



Fig. 2 – *Limnomysis benedeni*, male, Taița lake, head detail, showing characteristic A1 male lobule and digitiform process (photo by A. Iftime).

waters is in contrast with its apparent scarcity in its native range along the Romanian lower Danube (Popescu-Marinescu, 1992). Our record gives a new locality and a few data on the biology of this species.

#### MATERIALS AND METHODS

The material was collected on the 26<sup>th</sup> of May 2005 in daylight (15.00 PM) in Taița dam lake, on the eastern shore (leg. V. Tatole). It was collected by hand-net off the shore at a depth of 0-0.5 m, in a biotope of muddy water margin with young reed shoots and massive *Cladophora* mats. Samples were fixed in 70% alcohol. Mysid material was identified using Băcescu's (1954) key.

#### RESULTS

*Limnomysis benedeni* was identified in all samples from Taița. It was numerically dominant and well represented by age classes ranging from larval stage to sexually mature adults including a large number of ovigerous females; we can deduce (cf. Băcescu, 1954) that the first spring generation was still alive and reproducing while their progeny was starting to grow. *Limnomysis benedeni* individuals were associated with *Cladophora* mats; many of them were embedded among the filaments as the mats were taken out of the water. Once again this species' periphytic association is highlighted (cf. Băcescu, 1954).

Other invertebrate species found in the same samples include numerous insects, among which Heteroptera and chironomid diptera larvae are the most abundant (Fig. 3) and are the only taxa more numerous than *Limnomysis* itself.

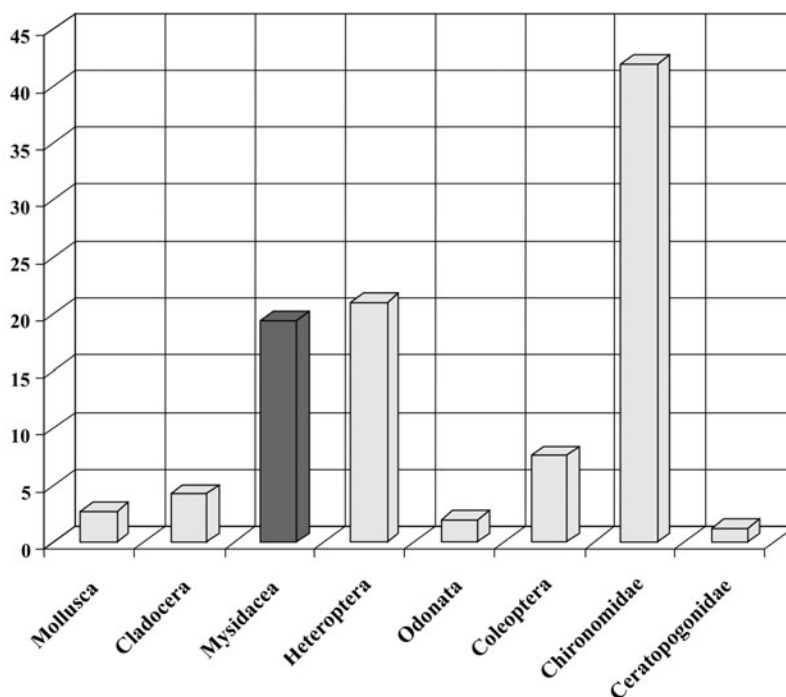


Fig. 3 – Relative abundance of aquatic invertebrates, Taița lake.

Mollusks, dragonfly larvae, coleopteran and ceratopogonid diptera larvae are less represented. The scarcity of Cladocera may be due to a sampling bias as they may escape through the net due to their size.

#### DISCUSSIONS

*Limnomysis benedeni* seems to maintain a healthy population in lake Taița for the moment. This, however, raises further questions, as this record is not only way outside its previously known area of distribution, but in a watershed where this species was not known and which it had no natural means of propagating towards. Moreover, its current habitat is entirely anthropogenic, as previous to the damming of Taița river the present-day lakebed was a ploughed field. The presence of *Limnomysis benedeni* in Taița river before the damming cannot be excluded totally (records are lacking), but we consider it rather unlikely. Introduction by human agency seems therefore the most likely explanation of the presence of this mysid species in Taița lake. *Limnomysis* is known to have been deliberately introduced in some basins as food for fish, e.g. in lake Balaton, but apparently such introductions were not undertaken (or were not specifically recorded) in Romania (Manea, 1985). We have knowledge that the lake has been stocked with commercially valuable fish by private entrepreneurs for exploitation in commercial and recreational fishing; having this in mind, as well as its propension for clinging to algal growth on underwater objects, we can infer that *Limnomysis benedeni* was most probably involuntarily brought from the Danube Delta along with fish fry or utensiles used in pisciculture, as it may have clung to algal mats adhering to some of these items. Its acclimatation and subsequent proliferation is most likely beneficial to the fish bred in the lake, as a good food source for both juveniles and adults.

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#### LIMNOMYSIS BENEDENI (CZERNIAVSKI, 1882) (CRUSTACEA: PERACARIDA: MYSIDACEA) ÎN LACUL DE BARAJ TAIȚA (DOBROGEA, ROMÂNIA)

#### REZUMAT

Specia de mysidaceu *Limnomysis benedeni* este repertoriată în lacul de baraj Taița, mult în afara arealului cunoscut până la această dată și într-un habitat de origine antropică. Este avansată ipoteza introducerii antropice accidentale a acestei specii în lacul de baraj.

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