

## CLADOCERA (CRUSTACEA: BRANCHIOPODA) OF ETHIOPIA

A.N. Neretina

*A.N. Severtsov Institute of Ecology and Evolution, Russian Academy of Sciences,  
Moscow, Russia, neretina-anna@yandex.ru*

Ethiopia is the most mountainous country of Africa, harboring the huge diversity of water bodies. Despite the recent progress in investigations of the Cladocera (Crustacea: Branchiopoda) in some tropical regions of the Earth, African cladocerans remain scarcely studied. Even for such progressive countries, as Ethiopia, there are no reliable keys for species identification. Therefore the aim of our work was to carry out the inventory of Ethiopian cladocerans and conduct a comprehensive morphological analysis of revealed taxa.

As the material for this work, we used numerous samples obtained during activity of the Joint Ethiopian-Russian Biological Expedition. Since 1987, more than 700 samples were collected from different water bodies: natural lakes, man-made reservoirs, rivers, temporary ponds and pools. Formaldehyde-fixed material was investigated under binocular stereoscopic microscope LOMO and light microscope Olympus BX41. Some interesting cladocerans were investigated under scanning electron microscope Jeol JSM-840 A.

In total, we found 48 species of the Cladocera in Ethiopia: 21 species of Chydoridae, 13 of Daphniidae, 5 of Sididae, 4 of Macrothricidae, 2 of Moinidae; 2 of Ilyocryptidae and 1 of Bosminidae. The highest diversity is characterized for the mountainous Lake Tana and different water bodies in its vicinities – there we found 35 taxa. Lakes, rivers and temporary water bodies located in the lowlands have a significantly less species diversity (13 taxa in total). Such patterns of species distribution, of course, may reflect a strong anthropogenic impact on lowlands in comparison with mountainous regions which are relatively difficult for access. But, in our opinion, most likely, that the aforementioned fact is related with peculiarities of the local climate. During the dry and wet seasons the water temperature in mountainous lakes varies significantly in contrast to the lowland water bodies. It enables boreal and tropical taxa to coexist in the same mountainous water body, but in different seasons. Non-tropical taxa in Ethiopian fauna of the Cladocera are exceptionally interesting, because due to long isolation from ancestral species new species for science may be hidden among them. For instance, a detailed morphological comparison for populations of *Acroperus* Baird, 1843 from the Lake Tana and Palearctic regions allowed us to reveal and describe a new species – *A. africanus* Neretina & Kotov, 2015. However, for some species, based on morphology of parthenogenetic females, we did not find any differences between Ethiopian and Palearctic populations (e.g. for *Graptoleberis testudinaria* (Fischer, 1851)). It means that in these cases we are on the border of resolution for classical morphological methods.

As a result of this work, the cladoceran fauna of Ethiopia was investigated in details for the first time. Undoubtedly, new expeditions to the Ethiopian water bodies may bring new findings and help us to estimate the real cladoceran diversity in the whole Africa.

*We are deeply grateful to coordinators of the Joint Ethiopian-Russian Biological Expedition and researchers from the Bahir-Dar Fishery and Other Aquatic Life Research Center for assistance in field works during 2014-2015. The study was supported by the Russian Science Foundation (grant 14-14-00778).*

## **DISTRIBUTION OF MOLLUSCA FROM BAFALAKE NEAR AEGEAN SEA (TURKEY) AND WATER QUALITY**

**H. Sasi, R. Akziypak**

*Fisheries Faculty Mugla Sıtkı Kocman University, Mugla, Turkey, hsasi@mu.edu.tr*

Bafalake is a shallow lagoon which located into southeastern part of the Mentese Mountains in the Buyuk Menderes River Basin and one of the largest coastal shores lake in Aegean region. Bafalake is a private wetland which is very important for the livelihood of the people around the area. This is because it offers many benefits for the economy of the region and the country (Turkey) at large. It is among the 76 most important international wetlands in Turkey. Bafalake has one of the country's most important birds paradise. In 1989 it was considered as a natural protected area and in 1994 was declared a Nature Park (Yarar and Magnin, 1997).

This study was carried on determination Mollusca fauna and Water Quality from Bafalake between April 2013 and March 2014. Within the study period 6 taxa were determined in Bafalake. *Cerastoderma edule*, *Mytilaster marioni*, *Bithynia tentaculata*, *Potamopyrgus antipodarum*, *Ecreobia ventrosa* and *Gyraulus albus* were found (Table 1).

**Table 1. Dominance of Mollusca in Bafalake**

Groups	I.St.	II.St.	III.St.	IV.St.	V.St.
<b>BIVALVIA</b>					
Veneroida					
<i>Cerastoderma edule</i>	3.66	8.40	0.82		
Mytilodia					
<i>Mytilaster marioni</i>	67.66	54.40	78.69		