

## STRUCTURES AND FUNCTIONS OF A PLAIN HYDROGRAPHIC BASIN SYSTEM AUTHOR OLIVIA CIOBOIU (REVIEW)

BREZEANU Gheorghe

**Abstract.** The work entitled **Structures and functions of a plain hydrographic basin system** is the result of a vast research program developed in the period 1996 – 2014. The research studies aimed at the following objectives: knowing the ecological features of the reservoirs, physical-geographical, morphological and hydrological structure of Preajba Valley reservoirs, chemical and biocoenotic structure of the reservoirs (water chemistry, planktonic and benthonic communities), emphasizing the present state of knowledge of gastropod biology (structure of freshwater gastropods, their distribution related to the zonality of the hydrographical network of Romania), establishing the structure of the gastropod populations from Preajba Valley reservoirs (taxonomic structure, spatial distribution, structure on age categories, structural biocoenotic indices and numerical variations of gastropod populations during different seasonal stages), evaluation of biomass variations as a reference factor for gastropod production.

**Keywords:** basin system, gastropod populations, Oltenia Plain.

**Rezumat. Structurile și funcțiile unui sistem bazinal de câmpie. Autor Olivia Cioboiu (Recenzie).** Lucrarea **Structurile și funcțiile unui sistem bazinal de câmpie** este rezultatul unui amplu program de cercetare efectuat în perioada 1996 – 2014. Cercetările au vizat următoarele obiective: cunoașterea particularităților ecologice ale lacurilor de baraj, structura fizico-geografică, morfologică și hidrologică a lacurilor de baraj Valea Preajba, structura chimică și biocenotică a lacurilor (chimismul apei, comunitățile planctonice și bentonice), evidențierea stadiului actual de cunoaștere a biologiei gastropodelor (structura gastropodelor din apele continentale, distribuția acestora în raport cu zonalitatea rețelei hidrografice de pe teritoriul României), stabilirea structurii populațiilor de gastropode din lacurile de baraj Valea Preajba (structura taxonomică, distribuția spațială, structura pe categorii de vârstă, indicii structurali biocenotici și variațiile numerice ale populațiilor de gastropode în diferite etape sezonale), evaluarea variațiilor biomasei, factor de referință a producției gastropodelor.

**Cuvinte cheie:** sistem bazinal, populații de gastropode, Câmpia Olteniei.

The author of the book, Dr. Olivia Cioboiu, has a long experience in the field of ecology and diversity of aquatic ecosystems research.

The work entitled **Structures and functions of a plain hydrographic basin system**, published in 2014 at Antheo Publishing House, Craiova, is the result of a research program regarding the ecology of continental aquatic ecosystems. As it presents the results of the research made in the period 1996 – 2014, the work has a monographic character, which means it brings an important contribution to defining the place and role of a plain hydrographic system, namely Preajba Valley small reservoirs from Oltenia Plain. Structured in two parts and six chapters, the book has 194 pages.

In chapter 1 – *Ecological features of the reservoirs* – it is mentioned that the reservoirs are built along streams or rivers for different purposes, such as hydroenergy, irrigations or water supply, as well as for the regulation of the flow of rivers. It is underlined the rapport between a lake and a reservoir. There are also rendered the structural-functional relations of a reservoir, mainly the geomorphologic, hydrologic and ecologic features of different reservoirs located along the Olt Valley.

In chapter 2 – *Physical-geographical, morphological and hydrological structure of Preajba Valley reservoirs* – it is emphasized that the area in question has not been adequately studied from the hydrobiological point of view; thus, the landscape elements are described in the present book for the first time. It is also underlined that, within a small area of no more than 30 km<sup>2</sup>, there is grouped a diversity of aquatic continental ecosystems: springs, streams, rivers, reservoirs and swamps.

In chapter 3 – *Chemical and biocoenotic structure of the reservoirs* – there are emphasized the physical-chemical characteristics of water, the structures of planktonic and benthonic populations. Referring to the chemical features of the springs, it is underlined that they contain very small concentrations of nitrates and phosphates due to the reduced influence of anthropogenic activities.

According to the content of anions and cations, the reservoirs located within the region of interest belong to the bicarbonate-sulphate-calcic-magnesium category. It is also underlined that, in terms of quality standards for surface waters, the small reservoirs located along the Preajba River belong to the 2<sup>nd</sup> quality category.

There are analysed and rendered the structural features of the phytoplankton and periphyton and, it is noticed that, besides the primary phytoplankton and periphytic producers, the aquatic macrophytes hold an important share in the biological production of the studied ecosystems.

With reference to the characteristics of the zooplankton, the author presents its taxonomic structure underlining that there were identified 65 species. It is evaluated the numerical and biomass density of the zooplankton components.

The evaluation of the zoobenthos structures ends chapter 3 where it is emphasized that, in the studied reservoirs, there are three main types of facies: sandy, silty and detritic. In the structure of the zoobenthos there were identified 13 groups of invertebrates.

The second part of the book, namely chapter 4 refers to the *present stage of the knowledge of gastropods – taxonomic, ecological and biogeographical considerations*. In the first part of the chapter it is rendered a short history of the research on gastropods from continental waters underlining the results obtained in Romania.

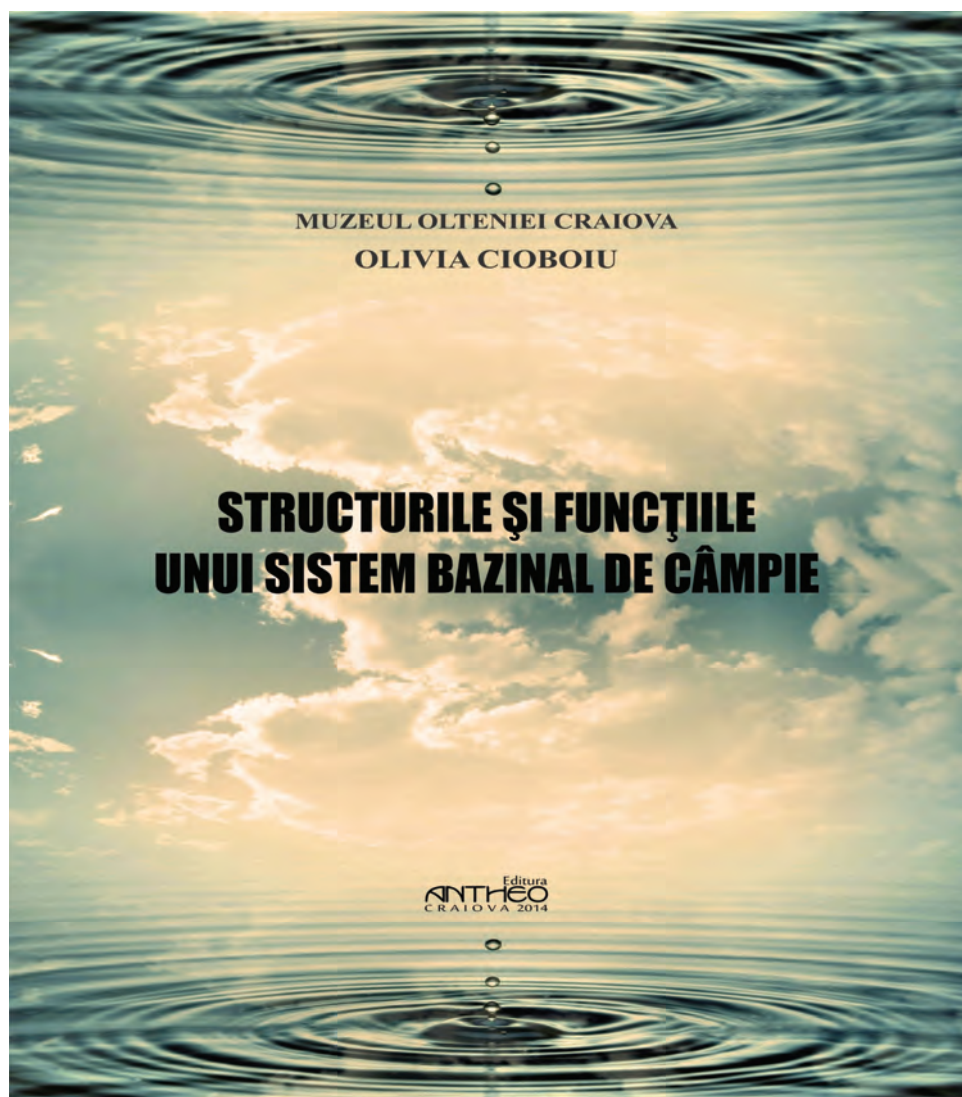
There are evaluated the gastropods from the continental waters of Romania, characterized by the presence of 107 species. It is analysed the distribution of gastropods according to the zonality of the hydrographical network, emphasized the structure of gastropods from the Romanian sector of the Danube and rendered certain biogeographical considerations.

Chapter 5 deals with *the gastropods from the small reservoirs Preajba Valley* – population structure and spatial distribution. There are established the structural biocoenotic indices and the numerical variations of the gastropod populations during different seasonal stages.

In chapter 6 there are rendered the *biomass variations as a reference factor for gastropod production*. There are analysed the seasonal variations and the biomass dynamics according to the numerical density and it is presented the spatial distribution of the biomass and numerical density.

The tables, figures and graphs complete the analyses referring to the structures and functions of a plain hydrographic system. The reference list contains 150 titles. The book also has an extended English abstract offering information about all the six chapters (pp. 130-150).

The analysis of this work led us to the conclusion that the Preajba Valley basin represents a unique geographical unit within the hydrographical network of Romania due to its structural-functional characteristics. It is emphasized that the gastropod populations play an important role in the functioning of the studied habitats.



**Brezeanu Gheorghe**  
The Romanian Academy, Institute of Biology,  
Str. Splaiul Independenței No. 296, 060031, Bucharest, Romania.  
E-mail: aurelia.brezeanu@ibiol.ro

Received: March 10, 2015  
Accepted: May 11, 2015