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ABSTRACTS BOOK



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ABSTRACTS BOOK

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THE EARLIEST SYN-RIFT SEDIMENTS OF THE EASTERN PART OF THE CROATIAN PART OF THE PANNONIAN BASIN SYSTEM (CPBS)

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Early Miocene sediments of Vukovar, Moslavačka gora and Prečec formations in Slavonko – srijemska, Dravska and Savska depressions could be subdivided into several facies that are so far rarely recognized and described using well data. These sediments are interpreted as deposited in alluvial and lacustrine environments during Otnangian and Karpatian.

DEEP-MARINE MOLLUSK ASSEMBLAGES IN MIDDLE MIOCENE (BADENIAN) DEPOSITS OF THE MEDVEDNICA MT., NORTHERN CROATIA – TODAY'S POINT OF VIEW

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Middle Miocene (Badenian) deposits of the Medvednica Mt., northern Croatia, have been studied since the beginning of the 20th century, and numerous mollusks were collected during the previous researches (e.g., GORJANOVIĆ-KRAMBERGER, 1908, KOCHANSKY, 1944). Collected malacofauna is housed at the Croatian Natural History Museum in Zagreb. Recent research of Badenian deposits in the central part of the Medvednica Mt., wider Čučerje area, yielded new deep-marine mollusks findings, and fulfilled the list of the previously recorded fauna (GORJANOVIĆ-KRAMBERGER, 1908, KOCHANSKY, 1944; KOCHANSKY-DEVIDÉ, 1957; BOŠNJAK et al., submitted).

The authors here describe two types of mollusk fauna: 1) benthic, represented by chemosymbiotic benthic bivalves: *Solemya doderleini* MAYER, 1861 and family Lucinidae J. FLEMING, 1828, and 2) planktic, comprising pteropods: *Limacina valvatina* (REUSS, 1867), *L. gramen-sis* (RASMUSSEN, 1968), *Clio fallauxi* (KITTL, 1886), *C. pedemontana* (MAYER, 1868) and *Vaginella austriaca* KITTL, 1886.

Few bivalve genera recorded from the investigated area: *Solemya* LAMARCK, 1818, *Lucinoma* DALL, 1901 and *Myrtea* TURTON, 1822, today may indicate seep sites. This chemosymbiotic bivalves are known as hosts of sulfur-oxidizing bacteria, and methane-oxidizing bacteria in lesser extent (TAYLOR & GLOVER, 2006; KIEL & PECKMANN, 2007). These fauna today live in chemosynthetic environments distributed from shallow waters to bathyal depths, and include habitats of hydrothermal vents, submarine caves with sulphur springs, cold seeps and



oxygen-deprived environments (e.g., marine seagrass beds) (TAVIANI, 2014). Recent bivalves of the genus *Solemya* live in reduced environments, cold and vent seeps, and their fossil record indicates deep-sea reducing niches (TAVIANI et al., 2011; SATO et al., 2013). Family Lucinidae today represents the most species-rich and the most widespread bivalve family considering marine sulphide-rich habitats in cold seeps and marine sea grasses with chemosymbiots (TAYLOR & GLOVER, 2006 and references therein). Paleoenvironmental studies of specialized benthic mollusks from today's point of view give new insight on the possible habitats and specificities of environmental conditions in the investigated area.

Mollusk fauna from the central Mt. Medvednica Badenian deposits also comprises planktic gastropods belonging to five taxa: *Limacina valvatina*, *L. gramensis*, *Clio fallauxi*, *C. pedemontana* and *Vaginella austriaca* (GORJANOVIĆ-KRAMBERGER, 1908, KOCHANSKY, 1944; BOŠNJAK et al., submitted). Pteropods live today in worldwide oceans of tropic, temperate, cold and polar waters (e.g., JANSSEN & PEIJNENBURG, 2014). During the Badenian of the Central Paratethys, two pteropod horizons coinciding with marine transgressions can be recognized: Early-Middle Badenian marked by abundant *Vaginella austriaca* and sporadic *Clio* occurrences, and the Upper Badenian, *Limacina* horizon (RÖGL, 1998; BOHN-HAVAS & ZORN, 2002). Badenian pteropod assemblages provide correlation with other contemporaneous Central Paratethys records, and can contribute to the reconstruction of the possible fauna migration during Badenian marine transgressions.

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THE EARLY PANNONIAN (LATE MIOCENE) STRATIGRAPHIC RESEARCH OF THE TRANSYLVANIAN BASIN (ROMANIA): NEW BIOSTRATIGRAPHIC AND AUTHIGENIC $^{10}\text{Be}/^9\text{Be}$ ISOTOPIC DATA

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During the Late Miocene, an enormous and long-lived lake – Lake Pannon – with rich endemic fauna covered most of the intra-Carpathian realm. For a while, the water mass of the Transylvanian Basin was connected to Lake Pannon through the Sălaj area and/or the Mureş Valley (MAGYAR et al., 1999; NEUBAUER et al., 2016).

Today, the Pannonian sediments occur in a more or less contiguous area in the central, south-western and eastern part of the basin. After their deposition, exhumation and erosion started due to tectonic inversion, therefore the average thickness of the Pannonian sequence is only 300 m. The estimated age of these sediments is between 11.6 and 9.5 Ma (KRÉZSEK et al., 2010).

In the lack of a detailed and comprehensive treatise on the Pannonian fossils of the area, the accurate biostratigraphic resolution of this ca. 2 million years has not been developed so far (LUBENESCU, 1981). The widely outcropping Early Pannonian deposits offer an excellent opportunity for a modern investigation of the fauna and for exploring the changes that occurred at the beginning of the Pannonian. The rocks of similar age and their fauna are deeply buried in the Pannonian Basin and are mostly known from boreholes (e.g. SZÉLES, 1962).

Taxonomic determination and revision of Pannonian brackish-water gastropods and bivalves were carried out from 72 localities. The material came from our own collection (12 localities) and from collections of the Geological and Geophysical Institute of Hungary (59 localities), the Hungarian Natural History Museum, Budapest (6 localities), and the Palaeontological Collection of the Department of Palaeontology of the Eötvös Loránd University (2 localities). Altogether 3124 specimens were determined so far, representing 17 genera and 56 species. There are 75 mollusc taxa in the material, including 3 probably new species.

Based on faunal composition and sedimentological characteristics of the localities, shallow-water (littoral) and deep-water (sublittoral and profundal) associations were separated. The