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PROGRAMME

Speakers	Title	Schedule
Popa, M. E., Lazăr, I., Csiki-Sava, Z.	Opening remarks	09.00 – 09.10
Babos, T., Melinte-Dobrinescu, M.	Modifications across the Eocene-Oligocene boundary interval in the Eastern Carpathians and correlation with the global events	09.10-09.25
Codreanu A., Grecu B., Tolea A., Țigănescu A., Macovei A., Cerbu B., Năstase E., Tătaru D.	Integrated geophysical and hydrogeological modeling of halite instability and urban vulnerability in Slănic (Prahova, Romania)	09.25-09.40
Dogaru, I.-G.	Applicability of GSI classification to weak rock masses case study: Poiana tunnel	09.40-09.55
Dragomir, G.M., Roca, M.	The role of carbonate in shaping the plasticity of marly clays from the Doftana area, Prahova County (Romania)	09.55-10.10
Dragoș, A. G., Iordache G., Anghel, S., Pop, I. C., Melinte-Dobrinescu, M.	Geophysical studies and photogrammetry conducted at Sacidava Roman castrum	10.10-10.25
Lăcătuș (Ene), A.D., Lazăr, I., Balini, M.	Triassic ammonoids from the Northern Dobrogea, housed by the Laboratory of Paleontology collections, University of Bucharest	10.25-10.40
Livanov, O.	2025 field campaign results	10.40-10.55
Mihalcea, C., Melinte-Dobrinescu, M., Munteanu, I.	Architecture of folds and thrust belt of the Eastern Carpathians: case study Moineşti area	10.55-11.10
Coffee & tea break		11.10-11.25
Pârlea, M., Ducea, M.	Chemical mohometry on zircons	11.25-11.40
Pitea, F.S., Lazăr, I.	Cenomanian lithistid demosponges from Cioclovina-Pui-Băniţa region (Southern Carpathians, Romania)	11.40-11.55
Stoica, A., Popescu, G.	Deep-Crustal Crystallization of Magmatic Garnet in South Apuseni Andesites and Dacites: Constraints from Phase-Equilibrium Modeling	11.55-12.10
Torcărescu, B.A.	Marine mammal remains from the Sarmatian deposits of Bulgaria: new records from Balchik and Kavarna	12.10-12.25
Ungureanu, D.	New sponges (Porifera) in the fossil record of Romania from the Oxfordian deposits of Central Dobrogea	12.25-12.35
Păunescu, C., Mihalcea, V.	Geological characterization of the Snagov community - case study	12.35-12.50
Răuță, V., Lazăr, I.	Microfacies analysis Oxfordian limestones from Cechirgea-Veriga area (Central Dobrogea), Moesian carbonate Platform, Romania	12.50-13.00
Popa, M. E., Lazăr, I., Csiki-Sava, Z.	Concluding remarks	13.00-13.10

ABSTRACTS

MODIFICATIONS ACROSS THE EOCENE-OLIGOCENE BOUNDARY INTERVAL IN THE EASTERN CARPATHIANS AND CORRELATION WITH THE GLOBAL EVENTS

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Keywords: Oxic-Anoxic Transition; uppermost Eocene-lowermost Oligocene; Paratethyan Realm;

The Eocene-Oligocene Transition (EOT), that occurred around 34.5 Ma, represents one of the most significant global climate shifts, marking the passage from a greenhouse to an icehouse world and a major turnover in both marine and terrestrial ecosystem. This climatic transformation is usually attributed to a decrease in atmospheric CO_2 concentrations and large-scale tectonic reorganization, which influenced the ocean circulation, sedimentation patterns and biotic evolution. Within this interval, the paleogeography of the European Tethys Real underwent profound changes, as the Paratethys Realm in Central and Eastern Europe became isolated from the Mediterranean domain to the south and west. In the Carpathian Bend area, sedimentation changed from oxic conditions in the Upper Eocene to anoxic ones during the Lower Oligocene. These transitions are clearly expressed in the Eastern Carpathians (Romania), where more continuous successions encompass the Eocene-Oligocene boundary. The uppermost Eocene interval is dominated by shaly turbidites, which are replaced by hemipelagic deposits in an anoxic facies in the lowermost Oligocene. This lithological evolution is accompanied by fluctuations in TOC and $CaCo_3$ content, along with notable shifts in $\delta^{13}C$ and $\delta^{18}O$ isotopes records. Even though the isotopic variations show global trends, they also display distinct regional patterns, reflecting the isolation of the Paratethys and the tectonic influence of the Alpine orogeny, which modulated the global signals in this sector.

INTEGRATED GEOPHYSICAL AND HYDROGEOLOGICAL MODELING OF HALITE INSTABILITY AND URBAN VULNERABILITY IN SLĂNIC (PRAHOVA, ROMANIA)

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Keywords: salt karst, ERT, MAM, MASW, hydrogeology.

This doctoral project investigates salt instability and urban vulnerability in Slănic, Romania. By analyzing the interaction between salt dissolution, groundwater circulation, and subsidence, the study builds a conceptual model to delineate unstable zones and constrain the geometry of subsurface voids. The methodology employs 2D/quasi-3D Electrical Rezistivity Tomography (ERT) and passive and active seismics (Microtremor Array Measurmenets – MAM and Multichannel Analysis of Surface Waves – MASW) for a detailed subsurface characterization of the investigated area. A collaboration

between the University of Bucharest and the National Institute for Earth Physics (INFP), this research integrates these geophysical methods with hydrogeological data to develop decision-support tools and a transferable workflow for assessing geohazards in salt-affected urban environments.

APPLICABILITY OF GSI CLASSIFICATION TO WEAK ROCK MASSES CASE STUDY: POIANA TUNNEL

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Keywords: GSI, rock mass, tunneling, marly clay

The case study focuses on the location of the Poiana tunnel, part of the Sibiu-Pitești highway, located on the Argeș-Vâlcea county border. With a length of approximately 1.7 km, the tunnel will cross formations belonging to the Pucioasa-type marls, also known as the Brăduleț Formation. Previous data from the geotechnical laboratory confirmed the presence of alternating marly clays and silty clays, with fine sandstone intercalations. Marly clays are sedimentary rocks, whose lithological classification ranges from hard soils to soft/weak rocks. As a consequence of the diverse mechanical behaviour of these formations, assessing their compressive strength is slightly delicate, as Geological Strength Index (GSI) is limited by aspects related to the size and continuity of the blocks, as well as the degree of fracturing, characteristics that are not evident in these formations, as they are finely stratified, fissile and friable, which is why their strength may be underestimated/overestimated. Due to the reduced outcrops on the surface in the studied area, an estimation of the GSI based on the evaluation of the general structure of the rock mass, the quality of the surface discontinuities, or the interaction of the cracks with the environment is not possible. In this regard, based on the cores sampled from the recently executed boreholes, an approximation of the GSI index was made, with observations targeting characteristics related to the small-scale rock structure (fractures, cracks, stratification, condition of the core surfaces). The purpose of this paper is to indicate the suitability of this geological tool in the weak rock masses, such as marly clays. According to the cores processing and the application of this classification, the results obtained indicated low compressive strength values of the rock mass. This processing will be compared later with the evaluation of the rock mass during the excavation of the tunnel gallery, in which case the values may be influenced by factors such as: larger scale, more representative in situ evaluations, accuracy regarding the quality of discontinuities.

THE ROLE OF CARBONATE IN SHAPING THE PLASTICITY OF MARLY CLAYS FROM THE DOFTANA AREA, PRAHOVA COUNTY (ROMANIA)

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Keywords: Marls, carbonates, plasticity, Doftana.

This study explores how carbonate ($CaCO_3$) affects the behavior of marly clays in the Doftana area of Prahova County, Romania. Sixty-two samples were analyzed to determine grain-size distribution and Atterberg limits, and a subset was used to examine how carbonate content relates to plasticity and consistency. Additional indices, such as Skempton's activity and the Liquidity Index, were calculated to better understand the state of the material. Most samples fall within the range of typical inorganic clays. Activity values indicate generally low to moderate clay reactivity, and Liquidity Index values suggest that the soils are stiff and often over-consolidated. Strong links appear between clay content and liquid limit, while carbonate shows mostly weak or negative relationships with the main plasticity parameters. This means that higher carbonate tends to reduce both the clay fraction and the plasticity of the material. 3D diagrams showing $CaCO_3$ content, depth and soil properties reveal clearer trends: intervals richer in carbonate usually display lower plasticity and a reduced proportion of fine particles. These observations are consistent with the known behavior of marls, where carbonate can reduces the clay minerals and slightly cement the soil, making it less plastic and somewhat stiffer. The approach used in this study offers a straightforward way to characterize marl units and can support geological and engineering evaluations in similar settings.

GEOPHYSICAL STUDIES AND PHOTOGRAMMETRY CONDUCTED AT SACIDAVA ROMAN CASTRUM

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Keywords: subsurface geo-archaeology; aerial photogrammetry; Southern Dobrogea.

This study presents the results of an integrated geophysical and photogrammetric investigation conducted at the Sacidava archaeological site, located south of Constanța, near the present-day village of Aliman. Sacidava was a Roman castrum strategically positioned on the Muzait Hill on the right bank of the Danube, which functioned from the 2nd century through to the early 7th century AD as part of the defensive system (limes) of the Roman frontier in the region. To enhance understanding of its subsurface archaeological features, we employed a combination of Ground-Penetrating Radar (GPR), geoelectric (electrical resistivity measurements), and aerial photogrammetry conducted with GPS Ground Control Points (GCPs). The geophysical survey identified a distinct semicircular anomaly, interpreted as a possible buried architectural structure of archaeological interest. GPR profiles revealed coherent reflections consistent with a curvilinear feature, while electrometric data provided possible complementary information on subsurface resistivity contrasts. These geophysical anomalies were precisely geolocated through high-resolution photogrammetric processing, which generated an orthomosaic and a detailed digital elevation model (DEM). Integration of the geophysical results into a GIS environment allowed an accurate spatial correlation between the detected subsurface feature and the visible surface remains of the Roman fortification. The combined methodology highlights the value of non-invasive survey techniques in archaeological prospection, as they are capable of detecting and characterizing buried architectural elements that would otherwise be impossible to investigate without resorting to excavation.

TRIASSIC AMMONOIDS FROM THE NORTHERN DOBROGEA, HOUSED BY THE LABORATORY OF PALEONTOLOGY COLLECTIONS, UNIVERSITY OF BUCHAREST

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Keywords: Paleontology collections, Triassic, Ammonoids, Northern Dobrogea.

In 1866 Professor Gregoriu Ştefănescu, established the first Geology and Paleontology collection within the former Faculty of Sciences at the University of Bucharest. The historical collections of Gregoriu Ştefănescu and Ioan Simionescu from the North Dobrogea territory are housed nowadays by the Laboratory of Paleontology, Faculty of Geology and Geophysics. The Triassic faunas from the North Dobrogea Orogen is famous in the classic geological literature for the richness in various groups of fossils. These collections contain also the impressive Triassic ammonoid collection of the former professor Eugen Grădinaru who dedicated most of his professional life, collecting and preparing ammonoids from different Triassic sections from Northern Dobrogea, especially from Deşli Caira section. The aim of this contribution is to present the currents status of the Triassic ammonoid collections housed by the University of Bucharest, especially the status of Eugen Grădinaru Collection from Deşli Caira section, GSSP candidate section for the base of the Anisian (Middle Triassic) stage. The collection from Deşli Caira section was recover in 2023 and registered by us in the official collection of the Laboratory of Paleontology, after several months of work, and contains a total of 833 specimens found with reference to bed/sample number. A new ammonoid collection from Deşli Caira was systematically collected (bed by bed) and prepared by us and contain until the present 126 registered specimens. The ammonoid collection of Gregoriu Ştefănescu from the Agighiol area contains 36 specimens represented by the next taxa: *Trachyceras* sp.; *Romanites simionescui* Kittl, 1908; *Monophylites* sp.; *Joannites sp.*; *Arcestes sp.*; *Ptychites sp.*, Ioan Simionescu collection contains only six taxa, all from Agighiol area: *Sturia sansovinii* Mojsisovics, 1869; *Protrachyceras furcatum* Münster, 1841*; Ptychites reductus* Mojsisovics, 1882; *Monophylites* sp.; *Japonites sp.*; *Anolcites sp.* Examination of the collection from Desli Caira left by Professor Eugen Grădinaru led to the indentification of 833 ammonoid specimens, whose stratigraphic position is known. The first systematic description of the ammonoids from Desli Caira section was published in 2024 and contain next Anisian taxa: *Paracrochordiceras denseplicatum* Fantini Sestini, 1981; *Stenopopanoceras transiens* Tozer, 1972; *Aegeiceras ugra* Diener, 1895; *Acrochordiceras* sp. ind.; *Leiophyllites pradyumna* Diener, 1895 and *L. pseudopradyumna* Welter, 1915 and two new described taxa: *Robinsonites simionescui* Balini and Lăcătuş, 2024 and *Gradinaruites aegeicus* Balini and Lăcătuş, 2024. These taxa are representative for the Olenekian/Anisian Ammonoid Faunal Turnover, an event which probably represents the largest turnover in the history of Triassic Ammonoidea and that has been indentified within the Desli Caira section, representing a powerfull marker for the defining the base of the Anisian (Middle Triassic) stage. Ongoing reseach includes high-resolution sampling of the Desli Caira section, in order to more precisely locate this faunal change and to identify an ammonoid taxa for use as a primary marker for the GSSP. Field work was performed in September 2024 and September - November 2025 and the systematic study of ammonoids is in progress and will be completed in 2025 and 2026. This work was carried out with the support of the Research Institute of the University of Bucharest (ICUB), project FDI 835/2023-2025 to Iuliana Lazăr and PNRR i8 64/2003 PACE project.

2025 FIELD CAMPAIGN RESULTS

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Keywords: Noviodunum, drillings, archaeology.

Noviodunum, an important Roman-Byzantine military, economic, and cultural centre, was first mentioned by Claudius Ptolemaeus in the 2nd century AD. Its strategic position, on an elevated promontory, near the last ford of the Danube before its discharge into the Pontus Euxinus, favoured the development of a durable community over several centuries. Following its abandonment in the 14th century, the site was rarely described by foreign travellers. During the Ottoman occupation, the stone material from the fortress walls was reused in the construction of their own fortifications. A new stage in the destruction of the ancient remains occurred during the communist period, when significant areas near the fortress were used for agricultural purposes. Nevertheless, the area began to be studied toward the end of the 19th century, when the first sketches of the fortress were drawn. Recent research has focused mainly on systematic archaeological excavations, geophysical surveys, and shallow drilling investigations. In the autumn of 2025, nineteen shallow boreholes were drilled using a manual auger as part of the present study, aiming to investigate important archaeological areas and geophysical anomalies identified in previous campaigns. The results were satisfactory, even though the planned depth was not always reached due to hard layers that the auger could not penetrate. However, these hard surfaces may indicate the presence of significant buried archaeological artefacts. During this campaign, numerous pottery, stone and bone fragments with archaeological significance were extracted from the boreholes.

ARCHITECTURE OF FOLDS AND THRUST BELT OF THE EASTERN CARPATHIANS: CASE STUDY MOINEŞTI AREA

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Key words: Outer Moldavides, tectonics, geophysical investigations.

From a geostructural perspective, several tectonic units with specific structural styles can be distinguished within the Eastern Carpathians, illustrating the structural evolution of this belt during Cretaceous-Pliocene tectonic transport in the current position. The tectonic units are aligned along the mountain range in nappes or systems of nappes, generally younger eastward, with a few notable exceptions. The Eastern Carpathian outer structures, containing a sedimentary cover, comprised the

thick-skinned nappes of the Outer Dacides and thin-skinned nappes of the Moldavides. The later ones are divided (from W to E) into the Inner Moldavides (Teleajen, Macla, and Audia) and the Outer Moldavides (Tarcău, Vrancea, and Subcarpathians). The investigated Moinești-Târgu Ocna region is enclosed in the Outer Moldavides, exposing the Tarcău and Subcarpathian nappes. The Vrancea Nappe occurs only in boreholes, cropping out to the S, in the Slănic-Oituz Halfindow. In the investigated area, the Târgu-Ocna Rabotage Slice is present, in front of the Tarcău Nappe. Using the modern geological and geophysical investigations, we have revealed the internal architecture of the studied area and constrained a new structural model using 3D seismic methods, tomography in boreholes, "walk away" and "walk above" seismic methods in boreholes, as up-to-date borehole geophysics tools such as: QuantaGeo, Formation Micro-Imager, Ultrasonic Borehole Imager (UBI), and Dipolsonic. Different from the classical interpretations, where the fault zones are presented as a characteristic feature of the Tarcău Nappe, developed N Moinești and Târgu Ocna areas, our interpretation reveals that the structure resembles a duplex stack of the Vrancea Nappe (=Marginal Fold Nappe). Seismic correlation with borehole data enabled a more precise structural interpretation, leading to the development of a new structural image of this region. Our interpretation revealed that the Moinești structure has typical characteristics of a complex duplex stack with refolded thrust faults and horses, which can explain the sharp changes from normal to high angle dipping strata. Such structures are well known worldwide in the fold and thrust belts where, due to the limited seismic quality, they might be constrain only based on wells data.

GEOLOGICAL CHARACTERIZATION OF THE SNAGOV COMMUNITY - CASE STUDY

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Keywords: geological study, geostratified unit, lower Pleistocene, upper Pleistocene, Holocene.

The analyzed area is part of the development sector of the large geostratigraphic unit called the Moesian Platform. Of the cover formations present in this sector, those belonging to the last four sedimentation cycles are known: Permian-Triassic, Middle Jurassic-Barremian, Albian-Senonian and (Tortonian) Sarmatian-Quaternary. From a hydrogeological point of view, for the study of the effects of a possible pollution of the formations that cantonate aquiferous strata, only those porous-permeable horizons deposited in the Romanian-Quaternary interval, within the last large sedimentation cycle (Tortonian) Sarmatian-Quaternary, are of importance. Romanian Upper - Lower Pleistocene: at the end of the Pliocene and the beginning of the Quaternary, a sedimentation regime characterized mainly by fluvial processes is established, during which the epiclastic formation of Romanian Upper - Lower Pleistocene age is deposited, known as the "Frățești strata". Middle Pleistocene: in the Middle Pleistocene, sedimentation conditions change, with processes characteristic of lacustrine sedimentation systems prevailing, which generate a lithological succession consisting of marls, clays and sands, this succession being known in the specialized literature as the "marly complex". Lithologically, the "marly complex" formation is made up of marls, clays and sands, with a pelitic - psamitic facies, characteristic of sedimentary formations deposited in lacustrine systems. Upper Pleistocene: starting from the upper part of the Pleistocene, a continuous uplift movement of this sector takes place, leading to the modification of the sedimentation conditions by the installation of a fluvial-deltaic sedimentation regime (specific to the final stage of the sedimentation basins), the sedimentary formations of Upper Pleistocene age being deposited in sedimentary continuity over the formation called the "marly complex". The predominantly sandy formation of the "Mostiștea Sands", attributed to the lower level of the Upper Pleistocene, is considered the last Quaternary formation with regional extension, present on most of the territory of the Romanian Plain. Holocene: the Holocene age formations are represented

in this sector by the alluvial deposits accumulated in the terrace and meadow areas of the watercourses existing in the area. It is noted that the studied territory falls within an active subsidence zone during the Quaternary period (taking into account the proximity to the Titu subsidence zone), which is why most of the streams are either devoid of terraces or have only terrace and meadow levels developed on small areas and with reduced thicknesses that do not exceed the lower limit of the loessoid deposits.

CHEMICAL MOHOMETRY ON ZIRCONS

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Keywords: zircon, mohometry, whole rock geochemistry

Quantifying variations in crustal thickness through time is essential for understanding the geodynamic evolution of continental lithosphere and the magmatic processes that shape convergent margins. Chemical paleomohometry, which exploits systematic correlations between whole-rock geochemistry and Moho depth, has recently emerged as a powerful method for reconstructing paleocrustal structure. This study focuses on evaluating and refining these mohometers, with an emphasis on establishing a foundation for subsequent zircon-based applications. In its current stage, the project investigates crustal thickness using whole-rock major and trace element data from magmatic rocks, calculated using the available mohometers calibration programs. The sampled rocks span a range of tectonic settings, from the intrusive bodies of the Andean arc, emplaced within thick crust, (>70 km), to andesitic rocks formed in thin crustal environments like the Aegean arc (~30 km), thus providing a robust basis for testing the behaviour and applicability of these chemical proxies. Preliminary results show that the derived crustal thickness values closely match those measured by geophysics methods, confirming the robustness of the applied methodology and the internal consistency of the dataset. These early findings provide a reliable reference framework for future integration of zircon geochemistry, which will enable paleomohometry to be applied to cases where whole-rock compositions are not preserved. By validating whole-rock chemical proxies and preparing the analytical basis for zircon-based chemical mohometry, this study contributes toward developing a versatile toolset for reconstructing crustal architecture and topographic evolution in old magmatic systems.

CENOMANIAN LITHISTID DEMOSPONGES FROM CIOCLOVINA-PUI-BĂNIŢA REGION (SOUTHERN CARPATHIANS, ROMANIA)

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Keywords: Upper Cretaceous, Cenomanian, sponges, Romania

During the Late Cretaceous, transgressional episodes shaped the European shelf, accommodating broad epeiric paleoecologies suitable for siliceous sponge populations. These episodes initiated in Late Albian - Early Cenomanian interval, and created favourable settings especially for the development of lithistid demosponges. Cenomanian mixed carbonate-siliciclastic deposits of Romania containing abundant benthic faunas (i.e. with corals and rudist bivalves) are well known and documented, yet the presence of Cenomanian lithistid demosponges in these assemblages was not mentioned until now. Located in the south-eastern part of the Hațeg basin, within the Getic Domain, Cioclovina - Pui – Băniţa area reveal an almost continuous marine sedimentary succession during the Late Cretaceous. The lithostratigraphy is characterized by a variety of marine depositional settings developed from the Cenomanian up to the lower Maastrichtian and was discussed in detail including biostratigraphy data, in previous works which documented the presence of abundant fossil-rich beds featuring benthic organisms such as corals, bivalves, and gastropods in the marine Cenomanian sequence. However, until recently, detailed systematic descriptions of the macrofossils was primarily concentrated only on the rudist bivalves. The aim of this contribution is to describe in detail the morphological features of a new occurrence of Cenomanian lithistid demosponges in Romania. 31 sponge specimens were collected from a single bed (0,8 to 1,2 meter thick) containing a rich assemblage of various benthic fossils. The 3D-preservation of the studied sponges is good and feature a globular to mace-like shape (20-100 mm height, 20-80 mm in diameter) with rough outer surface divided into twelve radial lobes separated by deep furrows. A false tuberculation can be observed around the lateral edges of the lobe, defined by numerous nodose projections of subdermal canals (1,5-2 mm diameter), arranged equidistantly. The observed morphological features show closest resemblance to the genus *Hallirhoa* Lamouroux, 1821, who's first description was based on the type species *Hallirhoa costata*, Lamouroux, 1821, however our samples exhibit distinctive characteristics which defines a possible new species. The paleoenvironmental context and the paleoecology of these sponges will be discussed using integrated analyses of palaeontology, microfacies and taphonomy.

MICROFACIES ANALYSIS OXFORDIAN LIMESTONES FROM CECHIRGEA-VERIGA AREA (CENTRAL DOBROGEA), MOESIAN CARBONATE PLATFORM, ROMANIA

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Keywords: Upper Jurassic; Carbonates; Central Dobrogea; Microfacies analysis; Depositional environments.

The Upper Jurassic (Oxfordian) carbonates successions of the Eastern Moesian Platform crop out on large surfaces in Central Dobrogea. These carbonates belong to the microbial-sponge megafacies developed during the Late Jurassic along the northern Neotethyan shelf. This study focuses on the Tichilești -Topalu area, where a nearly continuous 5 km–long carbonate succession crops out along the Cechirgea Valley and the Veriga Channel. These limestone successions belong to the Casimcea Formation and comprise the upper part of the Visterna Member (middle Oxfordian) and the Cechirgea Member (middle–upper Oxfordian), with a total thickness of about 160–170 m. The aim of the study is to provide a detailed description of the facies and microfacies of this carbonate succession, to document it is paleontological and sedimentological characteristics, and to infer their depositional paleoenvironments. Six sections were logged in detail and sampled at meter to centimeter scale. 80 thin sections were produced and analyzed for microfacies and micropaleontological data. Two main lithological units were recognized: (1) The upper Visterna Member (>10 m) consists of medium-

bedded biostromes dominated by hexactinellid and lithistid sponges of diverse morphologies, associated with microbial–sponge boundstone and bioclastic packstone–wackestone to floatstone microfacies; (2) The overlying Cechirgea Member (50–170 m) is an impressive succession of carbonates with complex genesis, including stromatolite bindstone, thrombolitic microbial carbonates, peloidal and bioclastic packstone–wackestone, intraclastic–peloidal floatstone, oncoidal facies, grainstone–packstone, and mudstone. The carbonates contain abundant sponges, bivalves, brachiopods, serpulids, bryozoans, small corals, and cephalopods. A particularly notable feature is the high abundance of the microencruster *Crescentiella morronensis*, comparable to Upper Jurassic sponge megafacies on the northern Neotethyan shelf. Another peculiar feature of these carbonates is represented by the laminated and thinly layered macrofabrics forming domal and cylindroid organosedimentary structures with nested conical laminae. We interpret these structures as having formed under low sedimentation rates and moderate water energy on a carbonate mid-ramp. This open-marine setting, of shallow to moderate depth, favored the development of benthic microbial communities and associated marine organisms, with the morphology of the buildups controlled by the interplay between microbial accretion, the density of sponge assamblages and water movement. This work was supported by project 7422/2023 funded by the Research Institute of the University of Bucharest.

DEEP-CRUSTAL CRYSTALLIZATION OF MAGMATIC GARNET IN SOUTH APUSENI ANDESITES AND DACITES: CONSTRAINTS FROM PHASE-EQUILIBRIUM MODELING

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Keywords: thermodynamic modeling, phase equilibria, magmatic garnet stability

In this study, we use thermodynamic modeling as a means of testing the stability of garnet in the intermediate, calc-alkaline magmas of the South Apuseni Mountains, Romania, where it sporadically occurs as an accessory phase. Even though thermodynamic modeling alone cannot uniquely determine the evolutionary path of the magmatic systems in question, it can provide valuable quantitative constraints on whether garnet can indeed be stabilized as a magmatic phase. Bulk compositions representative of garnet-bearing andesite and dacite lithologies were used to model equilibrium crystallization under lower crustal conditions. In both systems, garnet was produced as a stable liquidus and sub-liquidus phase across a well-defined P/T interval, coexisting with mineral assemblages that closely replicate those observed in natural samples. Model outputs indicate that garnets with compositions comparable to natural garnets - particularly in terms of major elements such as FeO, MgO, CaO - are stabilized at pressures of approximately 7-8 kbar and temperatures of ~750-820 °C**.** These conditions are consistent with deep crustal crystallization and align with independent petrological and geochemical constraints on the Neogene garnet-bearing magmas of the South Apuseni area. Taken together, the results demonstrate that magmatic garnet is a thermodynamically viable phase in these intermediate magmatic systems and that its stability has important implications for understanding deep-level fractionation processes, melt evolution, and possibly the development of high-Sr/Y magmatic suites in the region.

MARINE MAMMAL REMAINS FROM THE SARMATIAN DEPOSITS OF BULGARIA: NEW RECORDS FROM BALCHIK AND KAVARNA

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Characterized by endemic faunas (such as mysticete and odontocete cetaceans, pinnipeds, seabirds, and bony fish), the Paratethys constituted a complex and dynamic marine system. Throughout the Miocene, this system underwent significant paleogeographic changes, including the formation of distinct sub-basins (e.g., the Black Sea Basin). Its faunal composition and distribution were directly influenced by the varying interconnections among its multiple basins over geological time, making it a critical region for studying marine vertebrate evolution under fluctuating environmental stress. This work focuses on the study of marine mammal remains originating from the Miocene marine deposits of Bulgaria and housed in the collections of the Faculty of Geology and Geophysics, University of Bucharest. The material is composed of cranial and postcranial remains. The specimens were taxonomically ascribed based on morphological analysis, and detailed osteological comparisons, with similar specimens from published literature. As such, the studied specimens were assigned as belonging to Phocidae indet., Cetotheriidae indet., Kentriodontidae indet., and *Kentriodon fuchsii*. The Sarmatian aged deposits of Dobrudja provide excellent insight into the faunal composition of the Paratethys during this time. This work brings attention to new material from the site of Balchik, as well as material from a new site, Kavarna.

NEW SPONGES (PORIFERA) IN THE FOSSIL RECORD OF ROMANIA FROM THE OXFORDIAN DEPOSITS OF CENTRAL DOBROGEA

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Except for the new taxa identified in the Upper Jurassic deposits of Central Dobrogea, that were presented within the previous symposia, eight genera described from other European occurrences of the Upper Jurassic microbial sponge megafacies were added to the Romanian fossil record. *Kyphoclonella*, *Chonophyma* and *Cytoracia* genera belong to Class Demospongea, Subclass Lithistida. *Keuppiella*, *Verrucocoelia*, *Pachyascus*, *Polygonatium* and *Porocypellia* genera are members of Class Hexactinellida, Subclass Hexasterophora. Morphological features are noticed and described, such as dimensions and position of ostia, structural ridges and interconnections, ribs, nodules, remains of the dermal layer and the shape of its spicules, specific skeletal structure and shape of the spicules of the class, as well as the comparison with the description of the specimens found in other occurrences abroad. Based on microscopical features of the defined elements, the taxonomical assignment is

assessed for each studied specimen. The described taxa are already known from the European microbial-sponge megafacies occurrences in Germany, Poland and Switzerland and are for the first time described from Romania. These genera were recorded from the Oxfordian microbial-sponge carbonate succession which crops out in several locations in Central Dobrogea: Casimcea Syncline, Casian, Ghindărești and Cekirgea. The occurrences of these taxa are located along the northern realm of the peri-Tethyan basin only. Their occurrences in the Central Dobrogea (Eastern Moesian Platform) represent arguments for similar paleoenvironmental conditions in the central part of the northern peri-Tethyan realm during the Oxfordian time-interval. The specimens were collected and the identifications were made during the doctoral studies dealing with the sponge fauna in the Upper Jurassic of Central Dobrogea.