

Environmental synergy in the Romanian Plain (to the East of Olt river)

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The objective of the study is the detection of areas and the functioning mechanisms of the oropedo-hydro-geographic and hydrogeologic systems within the Romanian Plain. Geological conditions, especially the hydrogeological ones (groundwater depth and flow) largely influence superficial and underground drainage system. The influence of groundwater dynamics in the padding interfluvial microrelief in direct connection with the thick of loess deposits, is a conditional variable in the occurrence and development of microdepressions towards drainage systems. The analysis of data shows a discrepancy between the supply of the maximum piezometric levels and rainfall, so the groundwater level oscillations are influenced by overlapping rainfall in previous years. To highlight the close link that exists between the microforms of relief and soil covering there have been made correlations between reappearance of padding soils with the distribution of compaction microdepressions. The large arteries assert the direction drainage of the groundwater and the groundwater depth climbs as it bears away from the hydrographic arteries; it results that density relief's fragmentation is directly proportional with the increasing of the groundwater depth.

Tectonic deformation in the East European Craton (Baltica) and Malopolska Block (European Palaeozoic Platform) border zone (TESZ) – The structural evolution of Cambrian sediments in the exploration boreholes

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The boreholes Wola Obszańska-8, Książpol-12 and Dzików-17 are located in the NE marginal zone of the Małopolska Block. It is situated beside the Holy Cross dislocation, which probably continues in this region and divides the Małopolska Block from the Łysogóry Block. The Malopolska Block occurs at south western foreland of the East European Craton within the Central European part of the Palaeozoic Platform. They are components of a collage of crustal blocks of various age and origin (Trans-European Suture Zone).

The exploration boreholes Wola Obszańska-8, Książpol-12 and Dzików-17 were drilled of the Cambrian and were cored in part. The exploration borehole Wola Obszańska-8 was drilled to 1100m. Was cored examine in parts: 1100,0 – 1093,0, 1069,0 – 1060,0, 1012,0 – 1003,0 (The Upper Cambrian). The borehole Książpol 12 was drilled to 978m and was cored in part to -in interval 946,0 – 955,0 are measures The Upper Cambrian. The borehole Dzików-17 was drilled to 1108m and was cored in part: 1108-1099, 1040-1031 and 1031-1022 (The Middle Cambrian)

These sediments are poorly and strong involved tectonic. Sediment layers are mostly placed horizontally, vertical and sub vertical. These sediments in these boreholes display large variability of pitch of sedimentary surfaces. Angle of fall oscillates within bounds: 0-90 degrees. In the borehole Książpol-12 angle of fall oscillate within bounds: 5-65 degrees (layers are inclined high – pitched) and in the borehole Wola Obszańska 8, layers fall into in generally to angle 0-20 degrees (are display horizontal, subhorizontal fall). In the exploration borehole Dzików-17 angle of fall oscillate within bounds: 30-90 degrees.

The main part in sediments of the Cambrian is dark gray mudstones. In their area are situated into some centimeters interval alternate thin layer dark gray claystones and mudstones, light gray sandstones. Sediments of the Upper Cambrian in the borehole Wola

Obszańska-8 are represented by middle and thick granular quartzites and argillie and slime lithofacies. Quartzites have mild and mosaic texture. Their development point out to high-energy environment of sedimentation. In these sediments dominate cracks which angle of pitch oscillate between: 70°-90° (high-pitched, subvertical, vertical) -D₁. Younger, subhorizontal cracks (D₂) which displace older cracks rarely appear. On surfaces of cracks there are lots of minerals of iron and sometimes in places where sandstone contact with argillie beds there are horizontal cracks with slips. Dominant role in the Cambrian sediments perform argillie and slime sediments within which appear very thin laminas of light gray sandstones which course is very perturbed (disrupted and folded). Within these sediments dominate interlaminar, horizontal and subhorizontal cracks. In the exploration borehole Książpol-12 are dominate cracks younger, subhorizontal D₂. Subhorizontal cracks often displace vertical cracks. On surfaces of cracks there are lots of minerals of iron. Sometimes in place where sandstone contacts with argillie beds there are horizontal cracks with slips.

In works of the centre Cambrian the following structural result was stated (for example the exploration borehole – Dzików 17) : 1 - coming into existence of sedimentary areas of S₀ and diagenetic structures, 2 – being formed in conditions subhorizontal of countermove of the macrocrease, into which steep wing an analysed hole was carried out, 3 – activity of susceptible-brittle normal-slip faults, which transfers stole according to previously steeply adjusted lamellose areas, 4 – developing in reversed conditions occur of complementary teams of cutting, of chaps extraction and low-inclined reverse faults with tectonic breccias accompanying them, of which crumbs stayed locally combined through rust-coloured carbonate veins, 5 – being formed in conditions extraction mezofaults of normal or normal-slip and of breccias accompanying them of tectonic and rust-coloured and white carbonate veins, 6 – activity very steep or threshold downthrow mayofaults of rust-coloured carbonate veins causing wide-radiant bending earlier incurred.

The mudstone sediments generally characterize smudge structure and banded structure – of generate confluence. Locally in their area appear structures with buried all group current ripples marks, which were line of true dip.

However in interval, where thin layers claystone, mudstone and sandstone appear opposite is disturbance bearing of still characterize. Above into thin layers light gray sandstone there is older primeval structures of characterize cross lamination and isolation structures, drop structures and buried structures.

In thick beds sandstones appear initiator tension fissures generate of diagenesis and intracell of mudstones. In other place of sediments the Upper Cambrian are thin layers intraformation conglomerate – light gray sandstone with much intracell darkgray mudstones.

Chromites from Vourinos complex mines and their alteration

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Chromite ore deposits have been largely exploited in Greece and the presence of tens of abandoned mines witnesses the important role of the country in the chromite mining industry past scenario.

Numerous studies about the geochemical and textural features have been carried out so far of different ores. With this contribution we attempt to summarize the main geochemical and textural features of Vourinos ophiolite complex chromite deposits focusing our attention on new data on the later alteration processes occurring in almost all ores.

Vourinos complex covers 400 km² and in spite of predominating mantle outcrops it shows a full ophiolite sequence with a well exposed petrographic Moho. The crustal sequence comprises mafic and ultramafic cumulates, gabbro, dykes, some pillow lavas and a carbonatic sedimentary cover. All chromite bodies are set in dunite bodies or in dunite enveloped by harzburgite and are concentrated within the metalliferous zone. Geochemically, Vourinos chromite presents quite homogeneous features, among the different mines, with Mg# and Cr# ranging between 0.45 and 0.64 and between 0.75 and 0.83 respectively. Cr₂O₃ contents range between 57 and 60 wt%. No differences in primary chromite between the different mines