normal polarity. Ostracodes are abundant through all the section and they are typical for a lacustrine environment.

The testing samples for small mammals came from two horizons rich in organic material and yielded very promising content of small mammals. Both rodents and insectivores were recovered. The insectivores are not yet processed whereas here we present the first data about the rodents. The assemblage of rodents is characterized by the dominance of three species of *Eumyarion*. Very abundant is also *Democricetodon* aff. *franconicus*, whereas *Cricetodon* sp., and *Vallaris* sp. are not very common. Gliridae are represented by *Glirudinus* cf. *haramiensis*. The presence of three species of *Eumyarion* is very unusual. The only locality with so diversified genus *Eumyarion* is Sabuncubeli (lower part of MN3). During the MN4, in Anatolia, small forms of the genus *Eumyarion* were replaced by *Anomalomys*. The general composition of the fauna shows very close relationships with the Keseköy locality (lower part of MN3). Therefore, we conclude that the age of the Gökler assemblage best fits to the lower part of MN3. During the next field season we are planning to perform main sampling of the locality and we are expecting to recover more specimens and to get a more detailed frame of the Gökler assemblage.

Acknowledgements: We are grateful to Dr. Hans de Bruijn from University Utrecht (Netherlands) for the possibility to compare our material with findings from Anatolia. This study was supported by grants EUROCORE programme Topo-Europe VAMP ESF-EC-009-07 and VEGA 1/0483/10.

Evaluation of present day seismicity in the Aegean Region using Kaltek Method

Kalyoncuoglu U.Y.

Department of Geophysics, Engineering and Architecture Faculty, Süleyman Demirel University, 32260, Isparta, Turkey, yalcin@mmf.sdu.edu.tr

The relative size distribution of earthquakes is an essential input parameter needed to perform probabilistic seismicity analysis. In this analysis, the basic well-known equation of Gutenberg-Richter relation (LogN=a-bM), one of the well-fitted empirical relations in seismology, the frequency of occurrence of earthquakes as a function of magnitude is explained. Many researchers accepted that the b-value in this equation reflects the region seismicity. For the calculation of a and b parameters, many methods are used such as Maximum likelihood, least-square, weighted least-square, Kaltek method, etc. We used newly developed Kaltek method. This method is constituted one assumption and one hypothesis for the calculation of b-values. *Assumption*, The a-value in the Gutenberg–Richter relation demonstrated exponential distribution of the earthquakes that are zero magnitude. *Hypothesis*, Under this assumption; the a-value calculated from the whole region data set can be accepted as a constant value for the calculation of new b-value belonging to each subregion, which are included by the main region. On the other hand, the number of earthquakes that have zero magnitude is equal to the constant value for each subregion or every point of the whole region.

In this study, the spatial distributions of seismicity and seismic hazard were assessed for Aegean Sea and its surrounding area. For this purpose, earthquakes that occurred between 1964 and 2010 with magnitudes of $M \geq 4$ were used in the region (32–42°N and 20–30°E), selected from International Seismological Centre (ISC) catalogues. For the estimation of seismicity parameters and its mapping, the Aegean Sea and surrounding area are divided into (0.25^0Nx0.25^0E, r=0.25^0) 1,681 circular subregions. The a and b-value from the Gutenberg–Richter frequency magnitude distributions is calculated by the classic way using the least-squares technique. In this calculation, the minimum, maximum and average a-values are found to be equal to a_{min}=1.08, a_{max}=10.98 and a_{avr}=5.22, respectively, in the 1,681 subregions. Variance and standard deviation of the a-value are estimated to be v=2.0 and q=1.4. we calculated new b-values for every subregion taking a constant a-value which is equal to a_{avr}=5.22 according to Kaltek procedure.

Our results and the seismicity map obtained from the Kaltek method showed very good consistency with the tectonic and earthquake activity in the region. The minimum, maximum and average b-values are determined as b_{min}=0.65, b_{max}=1.30 and b_{avr}=1.05, respectively. From the map view of the b-value, we distinguished two aseismic zones of different sizes in the Aegean Sea. These zones are characterized by high b-values (b=1.15–1.25). First zone locates off the Crete Island between 23.4-25.6^{0}E and 35.4-36.4^{0}N. The second zone is placed between 23.4-26.6^{0}E and 37.0-38.4^{0}N on the Cycladic units in the Aegean Sea.

Bolkardağı bauxite deposits at Ayrancı, Karaman, Central Turkey. Part 2. Mineralogical and petrographical studies

Kansun G.[1], Yalcin M.G.[2] and Copuroglu I.[3]

[1]*Department of Geology Engineering, Selçuk University, 42075 Konya, Turkey, gkansun@selcuk.edu.tr*
[2]*Department of Geology Engineering, Niğde University, 51200 Niğde, Turkey, gurhan46@nigde.edu.tr*
[3]*Department of Geology Engineering, Niğde University, 51200 Niğde, Turkey, icopuroglu@nigde.edu.tr*

The studied area is located 15 km southeast of Ayrancı (Karaman) district, covering an area of about 300 km^2. The aim of this study is the petrographic definition of the bauxite. For this purpose thin and polished sections of over 30 samples from bauxite were examined that and X-ray Diffraction (XRD) analyses were carried out. In the area, there is a Permian - Cretaceous aged rock of the Bolkardağı unit which is one of the tectonic nappes, overburden by Miocene aged formations. The bauxite ore bodies are observed between dolostone and limestone which belong to the Upper Permian Dedeköy Formation. The bauxite is taught because of it became terrestrial emerging during Late Triassic-Early Jurassic (?) period. The bauxite consists of different amounts of diaspore, hematite, and clay minerals. Ore paragenesis is reported as diaspore, hematite, kaolinite, anatase, rutile, sphene, calcite, muscovite, magnetite, quartz, goethite, chlorite, amourphous iron- and aluminum-hydroxide, gibbsite, boehmite, illite, specularite, epidote, chalcedony, amphibole and psilomelane. Inside bauxite, different ore types which have different appearance can be defined. These different appearances emerge essentially depending on the prevalence of diaspore, hematite and clay minerals, and they pass into vertical and horizontal transitions to each other. These ore types are black bauxite, brown bauxite, oolitic bauxite and clayey bauxite.

Continuous extra-framework Na+ release from Greek analcime-rich volcaniclastic rocks on exchange with NH^+

Kantiranis N.[1], Sikalidis C.[2], Papastergios G.[1], Squires C.[1] and Filippidis A.[1]

[1]*Department of Mineralogy-Petrology-Economic Geology, Aristotle University, 54124 Thessaloniki, Greece, kantira@geo.auth.gr, gpapaste@geo.auth.gr,anestis@geo.auth.gr*
[2]*Department of Chemical Engineering, Aristotle University, 54124 Thessaloniki, Greece, sikalidi@auth.gr*

The continuous extra-framework cations release from Greek analcime-rich rock sample was studied, upon ammonium acetate exchange experiments (agitation time 0.25-720 hours), using atomic absorption spectrometry. The analcime-rich material was examined by X-ray powder diffraction, scanning electron microscopy equipped with energy dispersive micro-analytical system and atomic absorption spectrometry. Its sorption ability was measured using the Ammonium Acetate Saturation method. The monovalent cations K^+ and Na^+ after 720 hours, show only 7 and 10% of exchange, respectively. No steady state achieved for Na^+. The bivalent cations Ca^{2+} and Mg^{2+} show better exchange, 97% for Ca^{2+} and 62% for Mg^{2+}. The calculated rate of ion-exchange was 0.01 ppm/h for K^+ and Mg^{2+}, while 0.13 ppm/h for Na^+ and Ca^{2+}. The recorded behaviour on the multi-component ion-exchange system and the linear release of Na^+ over NH_4^+ observed at a slow rate of ion-exchange, can allow us to propose studied analcime-rich rock as a potential material for waste-water purification and pet litter.