

Petrographic and petrological characteristics of Dagbasi (Arakli-Trabzon) volcanites, NE Turkey

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Mineralogical, petrographical and geochemical characteristics of Liassic and Upper Cretaceous volcanic rocks in the Dagbasi area, which are situated in the northern zones of Eastern Pontides, are investigated.

Liassic volcanites are basalt, andesite and pyroclastics (volcanic breccia, vitric and crystal tuff) in composition. Basalts contain labrador, augite and hornblende, while andesites contain oligoclase, biotite and hornblende. These volcanics are calc-alkaline to tholeiitic transitional in character, and generally have low to high K₂O contents. Major and trace element variation plots show that plagioclase, pyroxene, hornblende and Fe-Ti oxides played an important role in fractionation during evolution. The volcanic rocks are enriched in LILE (Sr, Ba, Th) and LREE, depleted in HFSE (Nb and Ti). (La/Lu)_N values are between 4.6 and 9.8, show negative Eu anomalies (Eu/Eu*)=0.7-1.0. Based on trace element tectonic discriminations, all samples show volcanic arc signature.

Upper Cretaceous volcanites are dacite and rhyolite in composition. As phenocrysts, contain plagioclase, quartz, orthoclase, biotite and hornblende. This volcanics have calc-alkaline in character, and low-medium K₂O contents. Increasing in SiO₂ versus Fe₂O₃^{*}, Al₂O₃, P₂O₅, MgO, TiO₂, Y and Zr contents show negative correlation, suggesting significant plagioclase, hornblende, biotite and Fe-Ti oxide fractionation during the evolution of Upper Cretaceous volcanites. These volcanites enriched LIL elements and depleted HFS elements at the N-type MORB normalized trace element diagrams. Negative Nb and Ti anomalies indicate that subduction component and/or crustal contamination in their generation. (La/Lu)_N values are between 3.20 and 6.75, show negative Eu anomalies (Eu/Eu*)=0.59-0.66. The concave REE patterns show hornblende fractional crystallizations.

Disequilibrium textures showing magma mixing such as oscillatory zoning, sieve textured and resorbed plagioclase phenocrysts, embayed quartz, breakdown of hornblendes and biotites are commonly observed in these rocks. In addition, basic enclaves observing in Upper Cretaceous dacites shows significant role of magma mingling during the evolution of Dagbasi Volcanics.

The whole data indicate that the Dagbasi (Trabzon) volcanics evolved by the fractional crystallization and magma mixing±contamination of a parental magma derived from lower crust and/or upper mantle, and the sources of those volcanics are enriched-MORB mantle in Liassic, and metasomatized MORB mantle in Upper Cretaceous.

Palaeonutrition of Prehistoric sites of Ghaleh Khan and Valeran: A case study

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Palaeodietary study of the prehistoric sites has been done for the first time in Iran. This study has supplied information about the nutritional habits of Pre historic man.

Chemical composition of bones and teeth gave some information about the nutrition of prehistoric people. These two sites which from ecological condition situated in two different places gave not only through the light on two different dietary system but different geological conditions provide different environments for the buried dead bodies.

In this paper we discuss result of spectroscopy obtained from XRF instrument and compare the result between these two sites.