

REGIONAL METAMORPHISM OF THE PELITIC ROCKS IN ORTAKÖY (AKSARAY) AREA, TURKEY

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The Central Anatolian Massif is one of the largest igneous and metamorphic complex in Turkey. Basement was formed by pelitic, psammitic and calcareous sediments, deposited on Gondwana platform, and minor basic sill of Silurian-Devonian age. The detrital rocks of Ortaköy area were undergone a regional metamorphism in upper amphibolite conditions during or after D1 deformation in relation with closure of Neo-Tethys between Late Mesozoic and Early Cenozoic, which caused development of the paragenesis of sillimanite, plagioclase (An 0.43), orthoclase, quartz, biotite (Ann 0.08, Phl 0.012), and garnet. Conditions of the regional metamorphism were determined as 3-3.5 kb pressure and 600°C temperature by application of the geothermobarometers of garnet-biotite and garnet-aluminosilicate-quartz-plagioclase to the pelite. Decreasing grossularite content of, towards its rim, the garnet that has inverse chemical zoning due to homogenisation or exchange reaction between garnet and matrix, indicates that initial pressure in which the garnet formed the first time was larger than 3.3-3.6 kb. The massif was then uplifted, and intrusion of the voluminous post-tectonic granitoids of active continental margin type into the shallow crustal level (10 km) caused development of andalusite in the detrital rocks in Upper Cretaceous-Paleocene.