ORIGIN AND PETROLOGY OF EKECİKDAĞ GRANITOID IN WESTERN CENTRAL ANATOLIAN CRYSTALLINE MASSIF

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ABSTRACT— A belt formed by a number of granitoid intrusions is situated at the western part of the Central Anatolian Crystalline Massif. One of the granitoid intrusion at the southwest of the belt cropsout between Aksaray and Ortaköy and is called Ekecikdağ. Ekecikdağ granitoid, which is composed of monzogranites and granodiorites. intruded both the metamorphic and ophiolitic host rocks. Ekecikdağ granitoid is differentiated into following subunits with respect to their petrographical and chemical composition: Borucu granodiorite-monzogranite, Sinandi mikrogranite, Hisarkaya porphyribc granite, Kalebalta teucogranite and aplite granite. All these subunits are genetically related to each other. Borucu granodiorite-monzogranite represents the main magmatic phase whereas aplite granite the latest. Ekecikdağ granitoid has a calcalkaline character and show aluminocafemic trend. It has features which favour both I and S types of granite. Enclaves observed in granitoid is thought to be xenoliths derived from pre-existing gabbroic rocks during the emplacement of the granitic magma. The geochemical data suggest a post collisional tectonic setting and a continental crustal source for Ekecikdağ granitoid. In regard to regional data, during Upper Cretaceous, the existence of an ensimatic arc to the north of the Central Anatolian Crystalline Massif is suggested. It is also proposed that collision and obduction of this ensimatic are on to the Central Anatolian continental crust caused crustal thickening and increase in the geothermal gradient in the region. This gave rise to the partial melting of the continental crust and to the formation of a granitic magma.