

## GEODYNAMIC PHASES OF THE ARAÇ MASSIF, WESTERN PONTIDS, KASTAMONU, TURKEY

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**ABSTRACT-** This paper is concerned with the geological, mineralogical and geochemical properties of Araç massif. The Araç massif is mainly composed of ophiolites and metamorphic rocks. The age of the metamorphic rocks, which are dominant rock group in the study area, are ranging from Pre-Malm to Upper Cretaceous. K-Ar age determination were performed in hornblendes derived from amphibolites, which are previously thought to be Precambrian age in the study area. According to the K-Ar age results, which gives 130-146 ma, suggests that the amphibolites were affected by retrograde metamorphism, which took place in Berriasian (Lower Cretaceous). These ages are believed to represent the metamorphism age, not the occurrence age of the formation. Because of this, the occurrence of the Bekirçay formation should have taken place before this retrograde metamorphism. Some very intensely altered metaophiolitic blocks were found as xenoliths in Bekirçay metamorphic units. Therefore the age of the metaophiolites should have been older than the Bekirçay formation. Mercimekdere metaophiolites were overlain, not only by Bekirçay formation, but also by Kavacık formation, which is represented by graphite-garnet micaschist in the study area. The Bekirçay formation and the other above mentioned formation is overlain discordantly by Palaeozoic metasediments, namely the Dumantepe formation, which consists of various low grade schists and phyllites. The Mesozoic is represented by Yongalıdağ formation, Pelitveren ophiolitic melange and serpentized, carbonatized and silicified rocks, so called listwaenites of the Gemiköy formation. Finally, this Mesozoic formations were transgressively superseded by biosparite and biomicrite units of the Araç formation. The area and surroundings were then affected by post Eocene faulting. According to the geochemical investigations, it can easily be said that ultramafic rocks occurred as mantle fractionates and all mafic rocks were originated from sub-alkaline tholeiitic magma. Amphibolites are found as metaluminous, while garnet-micaschist are peraluminous and epidote-amphibolites show both character in different places. Carbonaceous rocks in the study area are found to be rich in calcite rather than dolomite and other minerals.