

GEOLOGY AND PETROLOGY OF THE NEOGENE VOLCANICS IN THE VICINITY OF HINIS-VARTO-KARLIOVA REGION-TURKEY

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ABSTRACT— Neogene volcanic rocks start with the Bingöl Mountain Group of Middle Miocene age in the investigated and adjoining areas. Varto Group of Upper Miocene age rests unconformably on these volcanics. Both of these groups are mutually overlain by the horizontal strata of Middle/Upper Pliocene age and the Hamurpet lava of Lower Pliocene age. In the region, N-S compressional forces produced by a post Lower Miocene collision (or compression) causing crustal thickening, thrusting and slicing. All these events caused sinking of the continental crust into the mantle and formed detachment faults and zones of weakness leading to partial melting and volcanism. The volcanic sequence displays distributional and sectional variations of chemistry interpreted to have been caused by variations in lithologic character. The rocks are generally andesitic in composition with calc-alkaline to weak alkaline affinity. The volcanic rocks have been deformed by the dextral North Anatolian and sinistral East Anatolian faults.