



Volcano-stratigraphy and Petrography of the Hasandağ Volcanites (Central Anatolia)

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The Hasandağ stratovolcano is one of the crucial volcanos within the Cappadocian Volcanic Complex, located in Central Anatolia, Turkey. In Quaternary, it produced various types of volcanic rocks including a variety of lava flows, domes and associated pyroclastic and volcanoclastic rocks. In this study, volcano-stratigraphy and petrography of the volcanic rocks which forms the SE flank of the Hasandağ stratovolcano will be presented.

The early pyroclastic products associated with plinian-subplinian eruptions cover large areas with different thickness in the region. Felsic pyroclastic rocks are dominant and represented by ash, pumice and pumice-block tuffs and accretionary lapilli tuffs/breccias. Pyroclastic deposits are present as thin layers of reworked tuffs intercalated with sedimentary rocks (mudstone and marl) at the bottom of the volcanic sequence. They interfinger with pyroclastic flow deposits dominated by welded tuff and ignimbrite succession towards the upper parts of the sequence. Andesite- basaltic andesite and basaltic trachy-andesite lavas form the most common lava phase in the region and overlie the pyroclastic succession. At the upper parts of the volcanic succession, basaltic dykes and associated pyroclastic rocks are observed. The youngest member of the volcanic association is represented by andesitic-basaltic andesitic dykes which were injected into basaltic lavas and associated proclastic rocks. The areal distribution of the volcanic rocks in the SE flank of the Hasandağ stratovolcano indicates that they were erupted from a number of vents which set parallel to the NW-SE trending major fault systems of Central Anatolia (eg. The Salt Lake Fault).

Petrographic investigations indicate that, all lava samples display several textures reflecting disequilibrium crystallization such as different stage of the plagioclase crystallization, sieve texture in plagioclases, clinopyroxene crystals mantled by hornblende (corona texture) and reaction textures in hornblend and biotite. These petrographic evidences suggest that mixing and/or mingling of magmas were dominant process(es) during the evolution of Hasandağ volcanites.