

Cenozoic Volcanism of Georgia

Bezhan Tutberidze

bejan.tutberidze@tsu.ge

Javakhsivili Tbilisi State university, 13 University str. 0186, Tbilisi, Georgia

The study area is located in the central part of the Caucasus-Asia Minor segment of the Alpine folded belt. The subduction geodynamic situation in the Caucasus segment changed to a collision 11 Ma ago in conditions of convergence of the Africa-Arabian and Eurasian continental lithospheric plates, followed by the closure of the Mesozoic ocean Tethys with its oceanic type crust.

The first powerful paroxysm of collision subareal volcanism in the central part of the Caucasus segment occurred in the volcanic area of South Georgia at the end of the Miocene.

The second cycle of volcanic paroxysm begins in the Late Pliocene. The volcanic processes in the South Georgian volcanic area end in the Middle Pleistocene. Volcanic activity in the folded system of the Lesser Caucasus started in the Late Pliocene; Late Miocene volcanism is manifested mainly in the Transcaucasian intermontane area.

Volcanism in the folded system of the Greater Caucasus is confined to two enormous regions including the Kazbegi and Keli plateau provinces. The magmatism occurred in 5 episodes at: Late Pliocene, Early Pleistocene, Middle Pleistocene, Late Pleistocene and Holocene.

The Post-Collisional volcanic history of the study area is characterized by major calc-alkaline to mildly subalkaline volcanism.

The volcanic rocks of the region under study is characterized by enrichment of LILE, LREE elements with pronounced depletion of HFSE, HREE elements.

The analysis of the isotopic compositions of strontium ($^{87}\text{Sr}/^{86}\text{Sr}=0.703-0.704$) has confirmed the leading role of the mantle material in the formation of the volcanites under study;