Doctoral Thesis

Studio chimico-petrografico del gruppo vulcanico del Savalan (Azerbaijan iraniano)

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Publication Date:
1976

Permanent Link:
https://doi.org/10.3929/ethz-a-000184232

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STUDIO CHIMICO - PETROGRAFICO DEL GRUPPO VULCANICO DEL SAVALAN (AZERBEIJAN IRANIANO)

DISERTAZIONE
presentata alla

SCUOLA POLITECNICA FEDERALE DI ZURIGO
per il conseguimento del titolo di
Dottore in Scienze Naturali

da

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Laureato in Scienze Geologiche
nato il 22 Febbraio 1944
di Monfalcone (It.)

accettato su proposta di
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1976
ABSTRACT

The Savalan is a volcanic centre of Plio-Pleistocene age, situated in the Iranian Azerbaijan.

Two processes are considered at the origin of the actual volcanic structure:
- The generation of a stratovolcano (Paleo-Savalan) with latiandesitic lavas and a subsequent caldera phase which originated the depressive Savalan caldera (15 x 10 km) with andesitic and tuffaceous deposits.
- The subsequent extrusion of large cones inside the caldera, possibly from a linear fissure (Savalan a.s., Ha- rev and Dzark, considered as Keo-Savalan). A later explosive phase destroyed partially these volcanic cones, whose products are mainly dacitic lavas.

Both the Keo- and Paleo-Savalan products are of calcalkaline-type. The lavas are characterized by plagioclase with lesser pyroxene, amphibole and biotite.

The plagioclase was not possibly in equilibrium with the liquidus: field and microscope observations suggest a temperature raise (after their crystallization) which was originated by anatexis.

The tectonic situation of Azerbaijan is influenced by the relative motion of the Iranian, Arabian, Turkish and Caspian plates.

During the Eocene, the strains were probably tensional and accompanied by alcalic effusions, while in the Plio-Pleistocene, a reduction of the velocity of the Caspian plate drift northward caused compressional strains.

Such processes are possibly at the origin of the anatexis in the crust, and subsequently, of the Savalan generation.