Petrological-geodynamic development and evolution of Eocene volcanism of the Lesser Caucasus
Shakhdag trough (Azerbaijan)
T.G. AKHMEDOBA
Geology Institute of ANAS, G.Javid Ave29A, Baku, Azerbaijan, turgay48@rambler.ru
Eocene magmatism of the Lesser Caucasus Central part within Azerbaijan manifests more intensively in Shakhdag trough, the geological structure of which can be characterized accumulation of great thickness (more than 2000m) of terrigenous-sedimentary, volcanogenic-sedimentary and proper volcanogenic complexes broken by numerous granitoid intrusive massives.
Volcanic processes continued on two successive stages: in Middle and Late Eocene. The more intensive and areal was Middle Eocene volcanism, which was accompanied by system of northwest faults. In Upper Eocene volcanic processes migrated from northwest to southeast and simultaneously activized the zones of transverse faults. The latter was of local riftlike nature.
Products of volcanism being the component of trachybasalt-trachydacite-trachyrhyolite formation are represented by various rocks of successive series from basalt to rhyolite. Tectonic conditions of this formation can be defined by its location in conjuction of two various nature structural zones: in north - subductional and in south-collisional. (1)
Volcanic activity in Eocene covered all territory of Shakhdag trough. It stretches by narrow line along the Central Paleogene belt in southeast - to Kelbajar and in northwest - to Gekcha - Shirak troughs. As a result of paleotectonic reconstruction it has been defined there is much common in these three paleogene troughs tectonic-magmatic development, in magmatism nature, magmatic rocks age, serial and formational volcanites belonging. Probably these structures in Paleogene were represented as the whole Paleobasin which in early Eocene developed as flysch trough and then in Middle Eocene became arena of multiphase intensive volcanism with following transformation of territory into island arc. In Late Eocene in Central Paleogene belt back side (Shakhdag trough) longitudinal breaks were revealed as riftlike structures which provided permeability of alkaline magma derivatives such as pantellerites and comendites in it (2). Combination of Shakhdag trough rocks forms three volcanic series which differ in level of general alkalinity: normal (calcic-alkaline), subalkaline and alkaline. Along with these rocks associations have diversities with high and relatively lower potassium content among which the first are drawn towards axis area in space and the second - to northwest flank of Shakhdag block. In ratio Na_2O/K_2O volcanites of calcic-alkaline series refer to both natrium and potassium-natrium, volcanites of subalkaline and alkaline series define potassium - natrium and potassium nature. Initial magma of rocks for all series is defined by alkaline olivine-basalt melt, serial heterogeneity which is caused by peculiarities of magma evolution. According to magmatism nature, geotectonic development of region, peculiarities of erupted products, etc it has been determined Shakhdag trough refers to independently developed genetic group which has the properties of similarity for both island arcs and continental rifts.
Keywords: Shakhdag trough, evolution, island arc, subduction, volcanism
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A§agi Kafkaslar §ahdag havzasi Eosen volkanizmasimn petrolojik-jeodinamik geli§imi ve evrimi (Azerbaycan)
Azerbaycan iclerindeki Asagi Kafkaslar orta bolumunun Eosen magmatizmasi, jeolojik yapisi 90k sayidaki intrilzif granitoid masifleri ile parcalanmis olan ve buyilk (2000 metreden fazla) kalmhklara erisen karasal-sedimanter, volkanojenik-sedimanter yigisimi ve ozel volkanojenik karmasiklarla karakterize edilen Sahdag havzasmda daha yogun bicimde izlenir.

Volkanik siirecler birbirini izleyen iki evrede, Orta ve Gee Eosen'de surmustiir. Daha yogun olam ve genis alanlara yayilam Orta Eosen volkanizmasidrr ve buna kuzeybati faylari sistemi eslik etmistir. Gee Eosen'de volkanik siirecler kuzeybatidan giineydoguya gocetmis ve es-zamanli olarak enine (transvers) faylar zonunu aktiflestirmistir. Bu sonuncusu yerel rift-benzeri ozellik tasir.

Trakibazalt-trakidasit-trakiriyolit formasyonunun bileseni olan volkanizma uriinleri, bazalttan riyolite dek farkh ardil seri kayaclanyla temsil edilirler. Bu formasyonun tektonik kosullari, farkh iki dogal yapisal zonun kesisme alamndaki konumuyla aciklanabilir: kuzeydeki dalma-batma ve gilneydeki carpisma zonlari.[1]

Eosen'deki volkanik faaliyet turn Sahdag havzasim kapsamistir. Orta Paleojen kusagi boyunca gtineydoguda -Kelbajar- ve kuzeybatida -Gekcha-Shirak- havzalarma dar bir hat olarak uzanrr. Paleotektonik yeniden yapilandirma (rekonstrilksiyon) sonucunda, Paleojen yash bu tic havzada, tektonik-magmatik gelisimin, magmatizmanin dogasi, magmatik kayaclarrn yasi ve dizileri ve formasyonlan olusturan volkanitler acisindan daha yaygin oldugu aciklanabilmistir. Olasihkla, Erken Paleojen'de bu yapilar, Eosen'de flis havzasi olarak gelismis ve ardmdan Orta Eosen'de cok-evreli yogun volkanizmaya sahne olmus ve daha sonra da ada-yayma dontismtis olan, biltiln bir Paleohavza olarak temsil edilmistir. Gee Eosen'de, Orta Paleojen Kusagmdaki Sahdag havzasi (ard yan) boyuna krriklari rift-benzeri yapilar olarak aciga cikmis ve icindeki pantelleritler ve komenditler gibi alkali magma tilrevlerinin gecirimliligini/gecirgenligini/gecmesini saglamistir.[2]

Sahdag teknesi kayaclarmm kombinasyonu genel alkalilik dilzeyleri birbirinden farkli tic volkanik seriden olusur: normal (kalk-alkalin), sub-alkali ve alkali. Bu kayaclar yamnda, kayac birlikleri de yilksek ve goreli diisiik potasyum icerikleriyle farkhlik sergilerler: potasyum icerigi yilksek olanlar eksen alanrnda, goreli dilsilk olanlar ise Sahdag blogunun kuzeybati kanadmdadir. Na_2O/K_20 oramnda, kalk-alkali serisi volkanitleri hem sodyuma hem de potasyum-sodyuma karsilik gelir, sub-alkali ve alkali serisi volkanitleri ise potasyum-sodyum ve potasyum dogasim tammlar. Ttlm kayac serileri icin ilk magma alkali olivin-bazalt eriyigi ile tammlanir; bu eriyigin birbiri ardisira gelisen ve bir seri olusturan heterojenligine magma evriminin ozellikleri yolacar. Magmatizmanin dogasma, bolgenin jeotektonik gelisimine, ptlskilrtillen ilrilnlerin ozelliklerine vb cercevesinde, Sahdag havzasmm, ada-yaylari ve kitasal riftlerde benzer olan ozellikleri tasiyan bagrmsiz gelismis bir kokensel (jenetik) grubu ornekledigi saptanmistir. *Anahtar Kelimeler: Sahdag teknesi, evrim, ada-yayi, dalma-batma, volkanizma*