Na, K, Ba, Sr, Rb and LREE from the glass-rich pillow lavas, breccias and hyaloclastites at temperatures between 160 and 230^0 C were necessary, in order to achieve ideal montmorillonite compositions.

GEOLOGICAL MAP OF GREECE - AEGINA ISLAND 1:25 000

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The new **geological map of Aegina Island** in the Saronic gulf southwest of Athens, on a 1:25 000 scale, is designed as a prototype of a special map series of Greece. All legends and explanations are given in English and Greek. Two thirds of the surface of the island is covered by dacitic and andesitic lava flows, plugs and necks, and by large volcanoclastic dacitic flows. The remaining one third is covered by Noegene lacustrine and shallow marine sediments. The basement is mainly comprised of Permian to Upper Cretaceous limestones, covered by flysch and ophiolitic thrust sheets.

A colored inferred cross section to approx. 1000 m depth is shown below the map illustrating the polyphase deformation of the Sub-Pelogonian Paleozoic to Mesozoic platform carbonates, as well as the remnats of overthrust sheets including Upper Jurassic to Lower Cretaceous ophiolitic mélange, Upper Cretaceous to Tetriary flusch and Upper Cretaceous limestones.

The **reverse side of the map** shows the following explanation: the Neotectonic evolution in the northwestern Aegean island arc, including a tectonic map; the paleoenvironment during thw Early Pliocene; the volcanic and magmatic evolution.

The **volcanic islands of the South Aegean Sea** (Aegina, Methana, Poros, Milos, Santorini, Yali, Nisyros and Kos) are aligned along an volcanic island arc, which is regarded as a magmatic result of active subduction of the African plate beneath the Aegean plate. Subduction may have started in the Middle Miocene. The island of Aegina is dominated by tensional tectonics, which caused uplift and subsidence leading to horstgraben structures, as well as to the emplacement of magmas. Yellow to greenish marls are the dominant Pliocene sediments (nannoplankton zones: NN 14 to NN 17), with intercalations of sandy and fine grained conglomerates, rich in chlorite, epidote, serpentine minerals and Cr-spinel.

The **magmatic processes** which led to the production of dacites and andesites on

Aegina island took place over a long time span, starting at ~4.4 ma. and terminating approx. 1 million years ago. Both, the logn term volcanic activity, and the inverse occurence of eruptive products can be explained by a seriees of complex magmatic processes such as crystal fractionation, mingling, and mixing.

Volcanic activity started with minor eruptions of rhyodacitic ashes and pumice. A large basal volcanic edifice was built up consisting of andesitic-dacite flows and plugs. This **first volcanic phase** terminated with the eruption of numerous dacitic plugs and volcanoclastic flows at approx. 2 ma. The **second volcanic phase** started after a long time of restoration period, uplift and individualization from the *Oros and Lazarides fissures* producing minor amounts of pyroclastics and flows of basaltic andesites, high-alumina basalts, and hypersthene andesites.

A COMPARATIVE MINERALOGICAL STUDY OF THE ACHLA TARLA AND ST. PHILIPPOS MINERALIZATIONS IN THE KIRKI AREA, N.E. GREECE

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Two uncommon polymetallic mineralizations of vein type into tectonic zones, occur at St. Philippos and Ahla Tarla sites in the Kirki area.

At the site of St. Philippos the mineralization is considered to be very peculiar, since it includes rare sulphosalts which combine the presence of the Pb-As-Bi elements with the simultaneous absence of the Sb element in their lattice. The mineralization consist of pyrite, sphalerite (± Mn), galena, jordanite, Bijordanite, Kirkiite, levyclaudite, bismuthinite, cosalite, wurtzite, kosterite, tennantite chalcopyrite, enargite, lusonite, seligmannite. The mineral succession suggests an initial deposition of quartz-pyrite, followed by a second main stage of sphalerite - kirkiite - levyclaudite - Bi jordanite - kosterite - bismuthinite - cosalite. In turn a third stage follows with tennantite - galena and a last one with wurtzite-baryte. The formation of these sulfosalts requires specific conditions, such a mean formation temperature of 400^{0} C approx. high fS_2 and low fFe.

The mineralization at the Achla Tarla site is more simple with main metallic minerals pyrite, sphaletite, galena, wurtzite, jordanita, and tennantite. Tha element Bi is totally absent, while tha content of wurtzite and of the colloidal sulphide minerals (as pyrite-galena) is high, suggesting the existance of cooler solutions.

According to our approach, in both sites, the same type of mineralization occurs, directly connected to the magmatic activity (hydrothermal, telescopic type). A differentiation in the composition of the ore is observed from place to place and according to the depth (vertical - lataral differentiation). The last and more differentiated metalliferous solutions have deposited their metallic content at the Achla Tarla site.