

Fluids related to remobilization of Mesozoic sulfide mineralization in the Eptadendro-Rachi region in Eastern Rhodope, Thrace, Greece

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The copper sulfide mineralization in the Eptadendro and Rachi areas is hosted in the Upper Tectonic Unit of eastern Rhodope in Thrace. The orebodies are found along the contacts between granitoid intrusions and meta-ultrabasic-basic rocks, as well as within meta-ultrabasic-basic rocks. Two stages of mineralization have been identified: an initial stratabound stage which is considered to be of submarine volcanosedimentary origin and a later vein-type stage formed during a hydrothermal episode, related to the intrusion of the granitoids (trochjemitites and pegmatites), during Upper Cretaceous-Early Tertiary. It consists of pyrite, chalcopyrite, sphalerite, galena, hessite, bismuthinite, emplectite, tetradymite, aikinite, wittichenite, siegenite, millerite, bornite, pyrrotite, covellite, magnetite, hematite and goethite, with chlorite, quartz, calcite and sericite being the main syn-ore gangue minerals. The mineralization has been affected at least by a greenschist facies metamorphic episode during Eocene-Oligocene. Although the sulfide mineralization is partly deformed and shows recrystallization textures, the data obtained from fluid inclusions demonstrate well the physical and chemical parameters of ore-forming environment during the latest hydrothermal event, caused by intrusion of the granitoids. Microthermometric studies showed three groups of fluid inclusions, corresponding to the distinct fluids involved in the mineral deposition and the pegmatite formation. The first group of fluid inclusions hosted in syn-ore quartz is characterized by relatively high homogenization temperatures (300° to 380° C, with a peak at 330° C) and low salinities (1.6 to 7.2 wt% NaCl equiv) and corresponds to the fluids of the main ore stage. The second group is distinguished by a drop in T_h (210° to 260°C) corresponding to the late ore stage associated with calcite formation, and salinities (3.2 to 6.3 wt% NaCl equiv) similar to the first group. The third group of fluid inclusions in the pegmatite is characterized by temperatures ranging from 300° to 390°C, and variable salinities (6.9 to 8.9 wt% NaCl equiv and 34.7 to 58.5 wt% NaCl equiv) suggesting a magmatic origin. The composition of these fluids is dominated by NaCl+KCl. Most probably these fluids were not related to the ore mineralization process.

Palaeoavian remains from the Late Miocene localities of Pikermi, Chomateri and Kerassiá; palaeoecological implications

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The Late Miocene avian record of Greece is rather poor. Three Late Miocene Greek localities have yielded palaeoavian remains until now: Pikermi, Samos and Perivolaki. In the present paper we describe some additional specimens from Pikermi (Attica), as well as some from the Late Miocene localities of Chomateri (Attica) and Kerassiá-4 (Euboea).

Among the aforementioned localities, the classical Pikermi locality is the most diverse taxonomically and has yielded the greatest number of specimens. However, the precise systematic position of some Pikermi avian taxa needs to be further explored. For example, Mlíkovský in 1996 reported seven different genera, while in 2002 he recognized five species belonging to five genera. Boev and Koufos recognized six species distributed in five genera. *Struthio karatheodoris* and *Ciconia gaudryi* are generally accepted to be present in Pikermi, even if the Pikermi struthioniform is sometimes assigned to the oospecies *Struthio*