tectonometamorphic belt. This implies that the tectonic vergence has not changed throughout the deformation history, but basically the tectonic level of deformation.

RB-SR WHOLE ROCK GEOCHRONOLOGY OF GNEISSES FROM OLYMPIAS, CHALKIDIKI

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Two series of biotite-gneiss samples from the Olympias district, Halkidiki (N. Greece), have yielded Rb-Sr whole rock apparent ages of 337 ± 5Ma (lower Carboniferous) and 113 ± 11Ma (lower Cretaceous), respectively.

The older age relates to the culmination of the oldest metamorphic event – emphibolite facies regional metamorphism – that affected the deeper parts of the Servomacedonian massif (where Olympias district belongs to) and led to large scale Sr redistribution and Sr isotope homogenization with the aid of metamorphic fluids and anatectic melts. The 337 ± 5Ma date is coupled with a low, upper mantle type $^{87}Sr/^{86}Sr$ initial ratio (IR) of 0.70451 which resembles the equally low amphibolite and amphibolitic gneiss $^{87}Sr/^{86}Sr$ ratios determined in the context of the present study. It follows that: (i) the source regions of the clastic sedimentary precursors of the biotite-gneisses likely comprised felsic igneous rocks of short residence time in the crust; (ii) Sr isotope equilibration between the protoliths of the gneisses and of the amphibolites might had been accomplished at about 337Ma; and (iii) a mafic igneous parentage and upper mantle derivation for the amphibolitic matter is supported.

The 113 ± 11Ma date – a reset age – corresponds to the most intensive (greenschist facies) retrograde metamorphism of the Olympias district. At that time, parts of the metamorphic sequence, were subjected to open-system behaviour with respect to Sr which was once more redestributed and rehomogenized. The open-system beheviour was poesibly promoted by the affected parts lying proximal to leucosomes which (constituting geochemical inhomogeneities and structural discontinuities within the local lithostratigraphy) facilitated Rb and Sr exchange as well as metamorphic fluid circulation.

The uncertainties regarding the accuracy of the isotopic ages determined, are probably related to postmetamorphic geological disturbances of the isotopic systems established during the course of the successive metamorphisms. With respect to the younger event, they may also be linked with the patchy manner that Sr reequilibration and rehomogenization was likely effected.

On account of the pressure conditions prevailing during the regional metamorphism and theoritical considerations regarding potential sedimentation rates, it may be speculated that sedimentation and sulphide ore formation at Olympias had been accomplished in the Ordovician or, more likely, in the Silurian.