

ALPINE METAMORPHISM IN THE WESTERN CARPATHIANS

Faryad, S.W. Department of Geology and Mineralogy, Technical University, Kosice Slovakia

High-pressure metamorphic rocks occurring along two suture zones were formed by Jurassic subduction of the Meliata-Hallstatt and Pieniny oceanic basins. These subduction occurred between Apulian plate that was detached from Africa and southern margin of Europe. In the Meliata zone, high-pressure rocks are represented by continental basement with transition to oceanic related lithologies. Some metabasites have composition of alkaline rocks with relic igneous richterite and titanium paragonite. Metamorphic minerals in blueschist are glaucophane, albite, phengite, paragonite, epidote, garnet, Na-pyroxene or aegirine, jadeite and omphacite. Peak metamorphic conditions were 1.3 GPa and 460 °C. The presence of two contrasting mineral assemblages the former containing zoisite and muscovite indicate a prograde P-T path from greenschist to blueschist facies conditions. In the Pieniny Klippen Belt zone, typical mid-oceanic ridge basalts were metamorphosed in pumpellyite-lawsonite-omphacite zone of blueschist facies conditions.

Compressional tectonic activities of Cretaceous time resulted in converging thrust tectonic and collisional metamorphism that affected south and central basement units of the Western Carpathians.