



Metamorphism in the Bitlis Massif, its geodynamic consequences

R. Oberhänsli (1), O.Candan (2), G. Rimmelé (3), R. Bousquet (1) and A. Okay (4)

(1) Institut für Geowissenschaften, Potsdam, Germany, (2) Jeoloji Mühendesi, Dokuz Eylül University, Izmir, Turkey, (3) Schlumberger, 75000 Paris, France, (4) Istanbul Technical University, Maslak-İstanbul, Turkey (roob@geo.uni-potsdam.de)

During Mesozoic and Tertiary the palaeogeographic position of the Bitlis Massif was to the N the Arabian Platform. It was by a southern branch of the Neo-Tethys Ocean. The massif is made up of Precambrian to Cretaceous rocks, which rest directly on top of Cretaceous to Eocene flysch and ophiolitic mélanges that are related to the suture between Arabia and Eurasia. Our investigations revealed that this massif forms a nappe complex.

The lower units are formed by crystalline basement comprising Pan-African gneisses, metasediments and eclogites. The sedimentary cover is made of Palaeozoic to Triassic platform sediments with pelitic intercalations. In these sediments we documented the occurrence of metamorphic index minerals. Glaucofanite, relics of carpholite in chloritoid-bearing schists and pseudomorphs after aragonite in marbles document a LT - HP metamorphic evolution along the tectonic contact to the Cretaceous ophiolitic melange.

Along the southern contact fresh carpholite occurring in Triassic marbles also indicates a LT - HP metamorphic event. In the lower units of the Bitlis (basement) no indications for this blueschist facies imprint were found. Our data document that the Bitlis massif underwent two different types of high-pressure events: one under eclogite facies conditions documented in the basement rocks and one at blueschist facies conditions in the early Mesozoic sedimentary cover. We interpret this as two different metamorphic histories, an older one (Pan-African ?) in the basement and a younger one (Cretaceous?) in the cover. This indicates that the Bitlis massif represents a promontory of the Arabian indenter that was stacked to form a nappe complex.

during the closure of the Neo-Tethys. Contacts north of the Bitlis complex, at Gevas, clearly dip southwards. Towards the south, the basal contact re-emerges with a northward dip, overriding Eocene melange sequences.