

**RELICS OF HIGH - PRESSURE METAMORPHISM IN THE BITLIS MASSIF  
(VAN REGION, E TURKEY)**

OBERHÄNSLI, R. <sup>1</sup>, RIMMELÉ G. <sup>2</sup>, CANDAN O. <sup>3</sup> & OKAY A. <sup>4</sup>

<sup>1</sup>Institut für Geowissenschaften, Karl Liebknecht Str. 24-25, 14476 Potsdam, Germany

<sup>2</sup>Ecole Normale Supérieure, 24 rue Lhomond, 75005 Paris, France

<sup>3</sup>Jeoloji Mühendesi, Dokuz Eylül University, 35100 Bornova-Izmir, Turkey

<sup>4</sup>Istanbul Technical University, Ayazağa Kampüsü, 80626 Maslak- Istanbul, Turkey  
e-mail: roob@geo.uni-potsdam.de

In south-eastern Anatolia, north of the Arabian Plate, part of the Anatolide-Tauride block constitutes the Bitlis Massif. During Mesozoic and Tertiary times, its palaeogeographic position was in the north, separated from the Arabian Platform by the southern branch of the Neo-Tethys Ocean. It forms an arcuate metamorphic belt, about 30 km wide and 500 km long. 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 has to be considered as a nappe complex.

Similarly to the Menderes massif, old eclogitic rocks, which suffered additionally a granulitic metamorphism, were found in the Kesandere section. These new findings fit well with the former findings by OKAY et al. (1985) and document the complex pre-Mesozoic metamorphic evolution of the Bitlis complex.

Below the Bitlis complex, Cretaceous ophiolitic mélanges occur. Contacts north of the complex, at Gevas, clearly dip southwards. Along this northern contact, glaucophane, relics of carpholite in chloritoid-bearing schists and pseudomorphs after aragonite in marbles document a low-temperature high-pressure (LT - HP) metamorphic evolution. Towards the south, the basal contact re-emerges, overriding Eocene melange sequences. There, contacts dip northwards and fresh carpholite occurring in Triassic marbles also indicates a LT - HP imprint. The lowermost metasediments of the Bitlis complex document a HP evolution. Similarly, some of the underlying Cretaceous and Tertiary meta-olistostromes and mélanges contain low-grade LT - HP metamorphic minerals. It is obvious that the area at the eastern termination of the Bitlis massif was involved in a subduction-related setting. A situation very similar to western Anatolia must be envisaged. The findings of carpholite and other HP minerals in the Bitlis complex add to the plate tectonic scenario of a continuous long-lived suture zone, extending from Western Anatolia (Lycian nappes, Afyon zone, Menderes Massif) to Eastern Anatolia. The present association of low-grade LT - HP continental rocks on top of ophiolitic rocks pleads for a complex bimodal setting. Basement and platform sediments of the promontory of the Arabian continental margin were involved in an accretionary wedge to suffer LT - HP metamorphism and then thrust over ophiolitic members of an oceanic suture.

**Reference**

OKAY, A., ARMAN, M.B. & GÖNCÜOĞLU, M.C. (1985): Petrology and phase relations of the kyanite-eclogites from Eastern Turkey. *Contrib. Mineral. Petrol.*, 91, 196-204.