

amphibolites can be easily interpreted as former gabbros cutted by basaltic dikes. This texture, together with the occurrence of ultramafites and basaltic-andesitic-rhyolitic volcanics on top argues for an ophiolitic origin of the Rehberg amphibolite. The composition of the mafic rocks is characterized by a slight enrichment of elements such as K, Rb, Ba, Th, and a relative depletion of Ta, P, Zr, Y etc. This distribution suggests an island arc origin for the Rehberg amphibolite. But the internal relations are more complex. The dikes cutting the metagabbros show a tholeiitic chemistry, while the volcanic association with metabasalts and meta-andesites are of a calcalkaline composition. The geochemistry of the acidic (rhyolitic) layers is consistent with a volcanic arc environment.

The Buschhandlwand amphibolites show no clearcut relations but a tendency towards within-plate basalts. The amphibolites located in the Weitaltal and the Dunkelstein Forest show unequivocally within plate signatures. True MOR basalts (either T, E, P or N type) as described by STEYRER & FINGER (1993, 1994) or FRITZ (1994) from the Raabs-Meising unit (probably equivalents to the Rehberg amphibolites) could not be proved yet. The Rehberg amphibolite seems to be a relict of an ancient island arc or marginal basin above a subduction zone. It is clearly distinguishable from most of the other amphibolites and quite well comparable to the Letovice amphibolite situated north of the Moravian Svatka window (JELINEK et al., 1984).

However, it is important to note that the former "Rehberg amphibolite" consists of several units with a different texture, chemistry and origin. Unfortunately the protolithes of most amphibolites including the former ophiolites are not dated properly and could have developed sometime between the Upper Proterozoic and the Devonian. Keeping that in mind it seems to be premature using the Rehberg ophiolites as a basis of geotectonic hypothesis.

THE STRUCTURAL AND METAMORPHIC EVOLUTION OF DOBRA GNEISS AND RASTENBERGER GRANODIORITE, AT THE EASTERN MARGIN OF THE SOUTH-BOHEMIAN MASSIF

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Detailed mapping and tectonometamorphic studies across the Rastenberger granodiorite, Dobra gneiss and the Variegated Group within the Kamp Valley (Lower Austria, Waldviertel), reveal a polyphase history of this area.

The first observable event is the intrusion of the Dobra pluton and of the late aplites inside the Dobra pluton. Garnet-biotite thermometry on a specimen of Dobra gneiss indicates a granulite facies metamorphic event after the intrusion. The age of this

metamorphism is unknown. Formerly basaltic dykes, which are now amphibolites, point to an extensional regime, which brought the Dobra gneiss from the lower crust to higher crustal levels. It is not clear which crustal level is reached during the uplift. Some authors, (e.g. FUCHS and MATURA, 1980), argue for a sedimentary contact of Dobra gneiss and Variegated Group. Consequently the Dobra gneiss has been exposed. However, it is also possible that both units have been tectonically juxtaposed. In any case, the subsequent metamorphism and deformation history of Dobra gneiss and Variegated Group is the same. This metamorphism reached the higher amphibolite facies and is of Variscan age (PETRAKAKIS, 1986). The deformation during the later retrograde amphibolite- to greenschist facies metamorphism reactivated and overprinted the older fabrics. Isoclinal folds and boudinage developed within the Dobra gneiss and the overlaying Variegated Group. Subsequently, these structures are overprinted by an open folding.

This structural environment was intruded by the Rastenberger granodiorite at the border of the Ostrong Unit/Drosendorf Unit. In contrast to the concordant contact of the pluton to the Monotonous Group in the west, the contact to the Dobra gneiss/Variegated Group in the east is discordant. During the emplacement of the pluton the foliation of the gneisses was rotated about 60° into a subvertical position nearby the contact. Another contact effect was the growth of K-feldspar up to a distance of 30 m from the contact. Discordant intrusions of fine-grained granitic dykes into the rim of the Rastenberger granodiorite as well as in the wall rocks and the intrusion of discordant lamprophyric dykes into the Dobra gneiss are the final events.

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FUCHS, G., MATURA, A. (1980): Die Böhmsche Masse in Österreich. - In: OBERHAUSER, R. (Ed.): *Der Geologische Aufbau Österreichs*. - Springer: Berlin, Heidelberg, New York, 121 - 143.

GEODYNAMIC SIGNIFICANCE OF MOLDANUBIAN ORTHOGNEISSES WITHIN THE SOUTHEASTERN BOHEMIAN MASSIF, AUSTRIA

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Moldanubian orthogneisses within the southeastern Bohemian Massif differ largely in field relationships, petrography and geochemistry. The following orthogneiss bodies have been distinguished during this study: (1) The Spitz gneiss and the melanocratic Dobra gneiss include granodioritic to tonalitic compositions within bodies which are largely subparallel to country rocks. (2) The leucocratic Dobra-gneiss, here called Braunegg gneiss, forms discordant stocks within the melano-