probably also causes the local magnetic anomaly. The Thaya batholite increases with regard to both horizontal and vertical dimensions from South to North. Its eastern part is covered by shallow Molasse sediments. The eastward extension into the Molasse zone increases from 2 - 4 km in the South to about 10 km in the North.

The South Bohemian granite intrusion causes the regional gravity low in the centre region of the investigated area. Assuming a density contrast corresponding to the results of surface rock density investigations the intrusion extends down to a depth of about 10 km which also agrees well with the results of density deconvolution. The upper crust west of the South Bohemian granite intrusion is characterized by nearly mean crustal density. The general gravity decrease from North to South observed in that area can be explained neither by the steeply sloping Moho discontinuity nor by increasing thickness of the Molasse sediments alone. It is probably caused by a large subsurface structure with high density contrast.

GEOCHEMISTRY OF MOLDANUBIAN AMPHIBOLITES FROM THE WALDVIERTEL (AUSTRIA)

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Three units can be distinguished in the Moldanubicum: the Ostrong unit including the "Monotone Serie" with its cordierite gneisses, a few orthogneisses and calcsilicate-schists. The Drosendorf unit, separated from the Ostrong unit by a narrow granulitic layer, consists of orthogneisses at the bottom and of the "Bunte Serie"- a succession of paragneisses, amphibolites, quarzites, calcsilicate-schists and graphite bearing marbles in its upper parts. The Gföhl unit finally is marked by the Gföhl Gneiss, granulites, ultramafitites, amphibolites and metamorphic anorthosites.

Only two, the Drosendorf unit and the Gföhl unit contain significant amounts of amphibolite. To which tectonic unit an individual amphibolite might be ascribed is disputable. However, all occurrences were summarized under the term "Rehberg amphibolite". In fact, apart from several smaller layers in the metasediments of the "Bunte Serie" three main amphibolite bodies can be recognized. The first, east of the Gföhl Gneiss is the only one which should be named Rehberg amphibolite s. str., the second west of it is named Buschandlwand layer. A third larger occurrence can be traced along the base of the Gföhl Gneiss north of the Danube as well as south in the Dunkelstein Forest.

Especially in the first unit careful fieldwork indicates that in many amphibolite bodies, despite their medium- to highgrade metamorphism, relicts of old magmatic textures are recognizable. An interlayering of coarse-grained and fine grained

amphibolites can be easily interpreted as former gabbros cutted by basaltic dikes. This texture, together with the occurrence of ultramafitites 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 Buschandlwand amphibolites show no clearcut relations but a tendency towards within-plate basalts. The amphibolites located in the Weitental 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-Meisling 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 Svratka 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