

THE Na-AMPHIBOLE BEARING METABASITES OF W SUDETES: DISMEMBERED VARISCAN SUTURE ZONE IN THE BOHEMIAN MASSIF?

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In the central W Sudetes, the East and South Krkonoše low-grade metavolcanic complexes fringe the Lusatian–Jizera–Krkonoše terrane. The Na-amphibole bearing metabasites, occurring in the complexes, display MORB- and OIB-like protolith geochemistry and are supposed to be remnants of an Ordovician oceanic-type crust.

The metabasite mineral assemblages indicate that both complexes experienced two metamorphic events. In the earlier event, PT conditions corresponded to blueschist facies metamorphism, whereas the second event was a greenschist facies overprint. In the East Krkonoše complex, the HP–LT metamorphic conditions were 0.7–1.0 GPa and 300–500 °C. The ^{40}Ar – ^{39}Ar geochronology of the mafic blueschists dated the end of the earlier phase to 360 Ma. The retrograde event followed at 340 Ma. The metabasites of the South Krkonoše complex usually display lower blueschist facies assemblages documenting an incipient HP–LT metamorphism. However, the jadeitic rocks, in the past reported from the SW exomorph zone of the Krkonoše–Jizera Pluton, may indicate higher-P conditions.

Metabasites of Early Palaeozoic protolith age, containing Variscan HP–LT mineral assemblages identical to those of the W Sudetes metavolcanic rocks, were described from the Lusatian Anticlinorium, Cadomian Lusatian Pluton and the Jáchymov Group in the Erzgebirge Mts. The Variscan UHP metamorphic rocks (fragments of continental crust subducted to mantle depths) are known both from the Saxothuringian Zone (Münchberg M. and Central Erzgebirge) and W Sudetes (Góry Sowie and Orlica–Snieżnik Dome). Apparently, rocks bearing subduction-related metamorphic assemblages seem to be distributed throughout the N Bohemian Massif. Provided that they indeed correspond to fragments of a dismembered suture zone, once widespread Early Variscan subduction may have been operative along the Saxothuringian zone of the Bohemian Massif.

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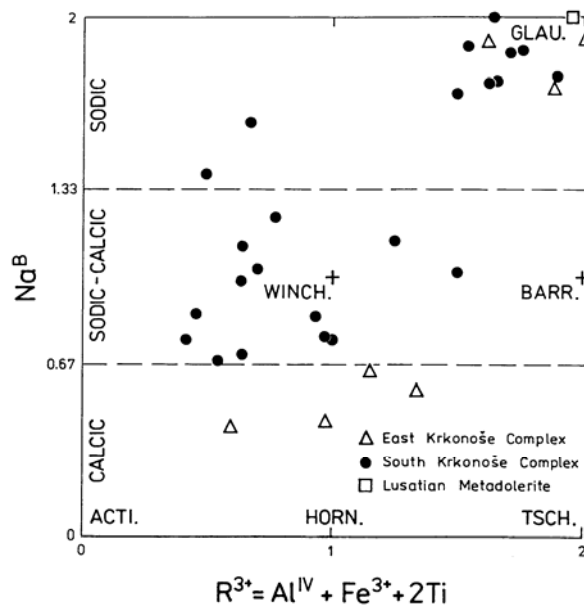


Fig. 1: Amphibole compositions of the central W Sudetes metabasic complexes.

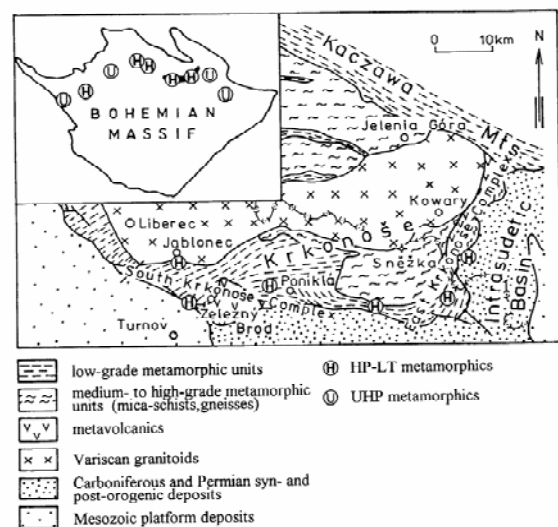


Fig. 2: Geological map of the central W Sudetes displaying the rock complexes comprising relics of HP–LT metamorphic assemblages. The inlet shows the studied region and the occurrences of the HP–LT and UHP metamorphic rocks in the Bohemian Massif.