Weinsberg pluton is overprinted by a solid-state deformation which formed synchronously with NW-SE extensional structures (D6) to the east of the pluton. These low angle normal faults largely affected the former thrust contacts. Another set of localized flat-lying semiductile shear zones (D7) with general top to the N displacement within southern Moldanubian units transsects granitic dykes. It is most likely independent from D6 and is interpreted to result from N-S stretching of the Moldanubian nappe pile, or is associated with final top to the NNE displacement along the Moldanubian front.

Sinistral shear along NE-trending fault zones like the Vitis and Diendorf fault zones (D8) are of late Carboniferous and Early Permian age because of the formation of step-over and transcurrent basins along the Diendorf fault. The NNE-trending unmetamorphic lamprophyric dykes which transsect Moldanubian units likely synchronously intruded within similar stress conditions.

General geometrical relationships of Moldanubian units to footwall tectonic units within the Bohemian Massif argue for a continental indenter within the present Alpine realm as the driving force which was responsible for the formation of transpressive structures as expressed from D1 to D8 within the southeastern Bohemian Massif. Available geochronological data of metamorphism and associated deformation as well as the formation of short-living, Visean foreland basin indicate (1) that continent-continent collision did not occur before Visean, and that this process was a relatively short process. This indenter resulted in NNE-directed nappe stacking of continental margin sequences and final emplacement of these nappes onto the Moravian foreland on which a transpressive foreland formed.

SYN- AND POST-OROGENIC LAMPROPHYRE DYKE SYSTEMS IN THE SOUTHEASTERN BOHEMIAN MASSIF

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The southeastern Bohemian Massif is transsected by two generations of lamprophyric dykes. Dykes from the first generation include internally foliated and metamorphic dykes which trend ESE. This generation is interpreted to result from synorogenic emplacement of thrust sheets during final WNW-ESE shortening of the Variscan nappe complex. The majority of second generation dykes with unfoliated and unmetamorphic dykes follows a major NNE-trending zone ("Waldviertel dykes"). Emplacement of these dykes postdates Variscan deformation of the Bohemian Massif and is related to ongoing extension in the Alpine-Carpathian belt because of

parallelism with the Alpine-Carpathian front or, alternatively, with post-collisional remelting of the subducted lithosphere.

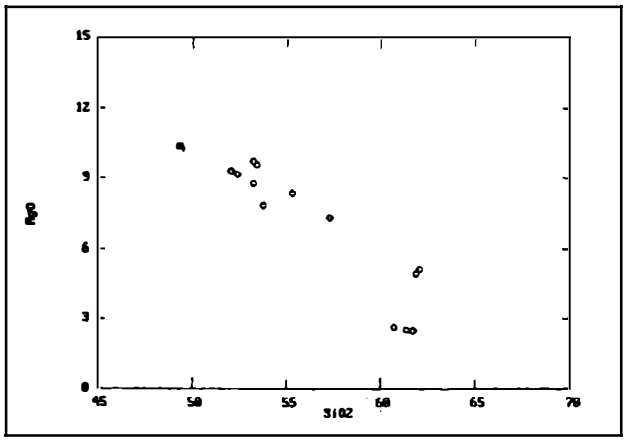

Fig. 1: Harker diagram displaying variations within dykes from the southeastern Bohemian Massif.

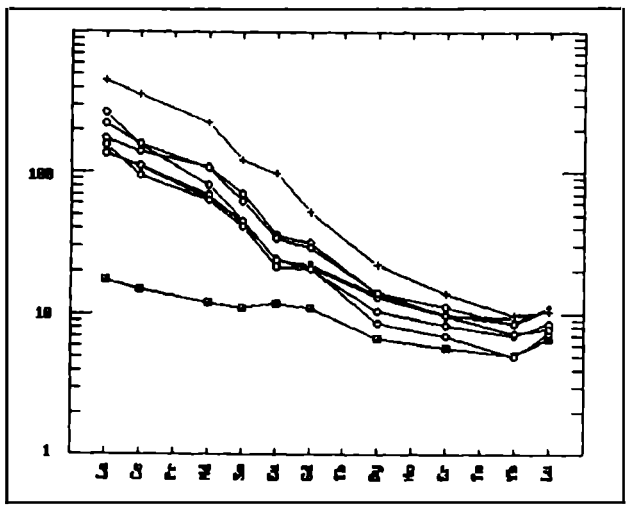

Fig. 2: REE patterns of lamprophyric dykes. Cross: Maissau sample; circles: second generation mafic potassic and trachyandesitic dykes; half-filled quadrangle: gabbro from the second generation dykes.

Chemical composition of fifteen samples of the second generation and one (unmetamorphic) sample (Maissau quarry) from the first generation has been examined in detail. The second generation shows a regionally controlled variation from gabbroic, potassic mafic to trachyandesitic compositions (Fig. 1).
Internal zoning of dykes with biotite-rich marginal zones, clinopyroxene-rich intermediate and rare felsic central sectors has been often observed. Both first and second generation dykes are enriched in Ba, K, Rb, Sr, Ni, Cr, P and LREE, and depleted in Nb. The degree of enrichment is higher, as examplified in REE patterns, within the Maissau sample (Fig. 2). According to Sr isotopic characteristics ($^{86}Sr/^{87}Sr$: c. 0.714) a major crustal component is included within these mafic potassic and trachyandesitic magmas (FRANK et al., 1990) of the second generation. Chemical characteristics argue for a largely crust-contaminated mantle source which we explain to result from post-collisional remelting of the subducted lithosphere. Supposing (1) low internal fluid pressure, respectively fluid pressure in equilibrium with hosts rocks within the lithosphere, and (2) open connection between the primary magma chamber at depth and present crustal level during magma emplacement the high density contrast between dykes and crustal country rocks argue for an origin deep within the lithospheric lid.

FRANK, W., SCHARBERT, S., THÖNI, M., POPP, F. & HAMMER, S., (1990): Isotopengeologische Neuergebnisse zur Entwicklungsgeschichte der Böhmischen Masse. - Österr. Beitr. Meteor. Geophysik, 3, 185 - 228.

CONDITIONS OF ECLOGITE FORMATION WITHIN THE MONOTONOUS UNIT, SOUTHEASTERN BOHEMIAN MASSIF

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Detailed studies in order to evaluate the P-T conditions of eclogite formation and subsequent retrogression have been carried out on the Gutenbrunn eclogite which is exposed within the Monotonous Unit near the southwestern margin of the Rastenberg Granodiorite (EXNER, 1970). The eclogitic mineralogies are well-preserved within patchy lenses which are variably overprinted by symplectite formation during retrogression. Garnet and jadeitic clinopyroxene occurs within completely annealed fabrics. Garnet displays some internal zoning within weigth percent range of FeO, MgO and CaO, with highest MgO values along margins. The garnet-clinopyroxene thermometer of ELLIS & GREEN (1979) in the modification proposed by CARSWELL & HARLEY (1990) was used to estimate T conditions, and the pressure-control on clinopyroxene composition for minimum P estimation (HOLLAND, 1983). Considering the jadeite content of ~0.35 within clinopyroxene, compositional variations within garnet rims and clinopyroxene the peak conditions of the Gutenbrunn eclogite are estimated to be within 760 ± 40 °C and >17 ± 2 kb.