



Tectonic evolution of a continental magmatic arc from transpression in the upper crust to exhumation of mid-crustal orogenic root recorded by episodically emplaced plutons: the Central Bohemian Plutonic Complex (Bohemian Massif)

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The Central Bohemian Plutonic Complex (Bohemian Massif) consists of episodically emplaced plutons, the internal fabrics of which recorded tectonic evolution of a continental magmatic arc. The ~354-346 Ma calc-alkaline plutons were emplaced by multiple processes into the upper-crustal Teplá-Barrandian Zone, and their magmatic fabrics recorded increments of regional transpression. Multiple fabrics of the younger, ~346 Ma Blatná pluton recorded both regional transpression and the onset of exhumation of mid-crustal orogenic root (Moldanubian Zone). Continuous exhumation-related deformation during pluton cooling resulted in the development of a wide zone of sub-solidus deformation along the southeastern margin of the Central Bohemian Plutonic Complex. Finally, syn-exhumation tabular durbachitic pluton was emplaced atop the intrusive sequence at ~343 Ma, and the Tábora syenitoid pluton intruded after exhumation of the orogenic root (~337 Ma). We suggest that the emplacement of plutons during regional transpression in the upper crust produced thermally softened domain which then accommodated the exhumation of the mid-crustal orogenic root, and that the complex nature of the Teplá-Barrandian/Moldanubian boundary is a result of regional transpression in the upper crust, enhancement of regional deformation in overlapping structural aureoles, subsequent exhumation of orogenic root domain, and post-emplacement brittle faulting.