METAMORPHIC RECORD OF BURIAL AND EXHUMATION OF OROGENIC LOWER AND MIDDLE CRUST: NEW TECTONOTHERMAL MODEL FOR THE DROSENDORF WINDOW

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A continuous, but attenuated section through orogenic lower and middle crust overthrust by a second lower-crustal complex was distinguished at the eastern margin of the Bohemian Massif. This indicates the existence of two lower-crustal "autochthonous" extrusions into middle crust that is not compatible with the model of "allochthonous" lower crustal klippen remaining after flat thrusting of the Gföhl nappe from large distances. The base of the lower crust is represented by a granulite exhumed from ca. 15 kbar and 800 °C. A hangingwall complex of layered amphibolites gradually passes into amphibolite bearing paragneisses (the Monotonous unit) and micaschists intercalated with marbles at the top (the Varied unit). The metamorphic grade and anatexis decreases upwards and the micaschists preserve a prograde path to ca. 8 kbar and 700 °C. This sequence is overthrust by a second lower crustal strongly migmatitized Raabs complex marked by an eclogite-bearing belt at the base. The garnet zoning of eclogite indicates burial from 10 kbar to min. 15 kbar. In all units were identified relics of a steep metamorphic fabrics reworked by folding and a moderately west-dipping foliation. The conditions of 7 - 10 kbar and ca. 750 °C for the flat foliation were obtained in all units indicating that exhumation of the lower crust into middle crustal depth occurred earlier, probably during the development of steep fabrics. The intense flat reworking is interpreted as a result of thrusting of the whole assembly over the middle crustal Brunian indentor.