Tab. 1: zwei Beispiele von Meßergebnissen mit Internationalen Gesteinsstandards. Werte für "expected" aus P.J.POTTS, A.G.TINDLE & P.C.WEBB "Geochemical Reference Material Compositions" (1992). "± 2 sigma" bezieht sich auf die Zählstatistik des Detektors während einer Analyse; Hauptelemente in Oxidgewichtsprozent; Spurenelemente in ppm; Fe_{total} als Fe_2O_3: Proben bei 105° C getrocknet; Pulverpreßlinge (4g sample + 1g HöchstWachsC® als Binder)

ARE THE MORAVIAN WINDOWS PERMIAN LARGE-SCALE FOLDS?

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When F.E. SUESS postulated in 1912, his hypothesis about large-scale overthrusting of the Moldanubian plate over the Moravian one and based this hypothesis mainly on the existence of both Moravian windows (Thaya and Svratka), he had also tacitly assumed, that these large antiforms are of syntectonic (Variscan) origin. Several opponents (HINTERLECHNER, ZAPLETAL and DUDEK among others) completely denied the SUESS overthrust hypothesis but there is not much doubt today that the windows really exist (FRASL, FUCHS & MATURA, THIELE, SCHULMANN et al.). However, there is no much consensus between these authors about the sense and the direction of movement of the Moldanubicum over the Moravicum. The proponents of the older shool are convinced together with SUESS that the collision displayed W-E transport of the nappes whereas the more modern school favors S-N transpressive movements. Nobody however, is in doubt that both domes are of syntectonic origin. Our doubts and questions are more fundamental. Are really the Moravian windows syntectonic? Two important lines of evidence speak against this.

1) The western boundary of the Boskovice Stephanian - Autunain furrow structure is conform with the Svratka window and the furrow docs practically not exist outside the windows area. The foliation of Bittescher gneiss and other Moravian rocks and the bedding of the Stephanian-Rotliegend beds are parallel, mainly in the southern part. Two deep seismic lines 8HR and 3/85 support the hypothesis that the Svratka windows is a large-scale Permian fault-propagation fold. We have discovered a west dipping blind thrust fault responsible for the fold structure on the W-E trending 8HR seismic line. On the N-S line 3/85 we have found detachment zones of about 16 km above which thrusting occurred in N-S direction. So, the final shape of the fold is a Permian brachyanticline overturned to the E and slightly to the S.

2) The Thaya windows is according to our field evidence (Krhovice, Frauendorf) and borehole studies also a full dome like the Svratka one rimmed at its eastern side by the Permian Hollabrunn furrow and completely covered by Neogene Carpathian foredeep sediments. E of the Permian furrow again the Brunovistulian Massif exists. The Permian compressional origin of the Thaya window explains two crucial geological observation in this area:

   a) metamorphic isogrades passing obliquely though the windows structure

   b) the existence of the Culm wedge beneath the Moravicum only in the synform between both Moravian windows near Hosteradice (Hosterlitz).

It is difficult to assume the oblique metamorphic zonation of the Moravicum and the Thaya Batholith within the windows without later postthrust uplift and similarly there is no reason why Culm does not exist S of Hosteradice without later uplift.

To conclude: because of the above cited evidence we favor a post-Variscan-Permian origin of the Moravian windows. This however, does not change anything on the F.E. **SUESS** hypothesis concerning the Moldanubian thrusting over the Moravicum.

wie das ?

PHASENUMWANDLUNG UND ENTWÄSSERUNG VON WEINEBENEIT

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Weinebeneit, $CaBe_3(PO_4)_2(OH)_2.4H_2O$, wurde bisher nur von der Typuslokalität Weinebene, Koralpe, Kärnten beschrieben und tritt dort in Klüften des feinkörnigen Spodumenpegmatits vorwiegend in der Paragenese mit den seltenen Beryllophosphaten Uralolith und Roscherit auf (Zusammenfassung der Paragenese zuletzt bei TAUCHER et al., 1992).

Die Strukturbestimmung des Weinebeneites stellt dieses Mineral zu den bisher 5 bekannten natürlichen Beryllophosphaten mit Gerüststruktur: Babefphit, Beryllonit, Hurlbutit, Pahasapait und Tiptopit. Mit Ausnahme von Babefphit (nur 6-er Ringe) bilden 4-er Ringe aus P-Be-P-Be-Tetraedern ein grundlegendes Strukturelement in diesen Gerüststrukturen. Nur in der Weinebeneitstruktur treten zusätzlich 3-er Ringe aus Be-Be-P-Tetraedern auf, die zwei aus 4-er und 8-er Ringen aufgebaute Tetraederschichten (parallel (100)) zu einem zeolithähnlichen Gerüst verbinden. Calcium und die Wassermoleküle befinden sich in den großen Kanälen des Gerüsts parallel zu [001] (WALTER, 1992).
Um die Entwässerung des Minerals Weinebeneit zu untersuchen, wurden eine DTA/TG - Aufnahme und Röntgendiffraktom geheizter Proben hergestellt.