THE EISGARN GRANITE AND ITS SUCCESSORS IN THE SOUTH BOHEMIAN BATHOLITH

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The great majority of the South Bohemian Batholith is built by two mica granites with distinctly peraluminous (S-type) chemistry, that have been traditionally termed as »Eisgarn type«. This term was first introduced by WALDMANN (1950) for mostly porphyritic two-mica granite in surroundings of village Eisgarn. Generally, they have been interpreted as a simple, monotonous intrusive complex, the youngest of the main batholith´s constituents. New results of geophysics (mainly aero- and ground gamma spectrometry), geological mapping, geochemistry, and large dispersion in geochronological data suggest, that the granite, termed so far »Eisgarn type«, is a multiple and composite intrusion composed of rocks with different age, chemistry, and genetic relations:

1. Lásenice granite – relative older two-mica, fine grained granite, slightly deformed in vicinity of major shear zones,

2. Eisgarn granite s.l. – undeformed two-mica granite, building the central part of the batholith N. of Gmünd, the »Central massif« of Czech geologists:

a, relatively older part, mainly porphyritic medium- to coarse grained granite with Th>>U, termed Čímměř on the Czech side. This rock is the classic Waldman´s Eisgarn granite from the village of Eisgarn.

b, relatively younger, mainly coarse grained granite with Th=U, termed Landštejn in the Czech side. Until today, three isometric bodies of this type have been recognised.

The Eisgarn granite is cut by several types of younger granitoids, often accompanied by indications of mineralization, which were subjects of intensive exploration in the eighties. These rocks can be divided into two distinctly different suites:

1. **a peraluminous, F- and P-rich suite**, granites enriched in Rb, Cs, Li, Sn, Nb, Ta, and U, with high Sr_i and low magnetic susceptibility. The extreme example is the Homolka cassiterite and columbite bearing albite-muscovite-topaz granite, less specialised are granites at Pyhrabruck, Unter Lembach and Galthof. A specific variety is the dyke-shaped Šejby albite-muscovite granite with garnet, most enriched in columbite. A swarm of dominantly N-S trending dykes of granite porphyries and »Josefsthal« dyke granite between J. Hradec and Schrems also belong into this group.

2. **a metaaluminous, F-** and **P-poor** suite, granites with lower Sr_i and high magnetic susceptibility, often Mo-bearing. An example is the suite of biotite-two mica-muscovite

granites at Nebelstein, altered towards quartz-muscovite greisens with disseminated suplhidic-oxidic mineralization. Other granites of this type occured at Hirschenschlag and Kozí hora. Some intermediate dyke rock (porphyrites) at the eastern contact of the Central pluton (Kautzen area) show similar chemical features.

From the all age data in Tab.1 it is obvious that the intrusions of muscovite bearing granites become younger from NE to W-SW, a pattern that is followed by cooling ages of muscovites.

		Rb (ppm)	*Sr (ppm)*	*P2O5 (%)*	*U/Th*	*geochronol*	*logy*
						Rb/Sr wr	Ar/Ar musc.
Eisgarn granites	Čímeř granite	250-300	65	0,25	0,5	328+12	325-321
	Landštejn granite	350-400	40	0,27	0.4-1.0		
per-aluminous P, F- rich granites	granite porphyry	400-800	10-80	0.35-0.50	1		
	Josefsthal granite	600	5-10	0,35	1	314+3.5	
	Homolka granite	1000-1300	20-35	0.5-1.0	5-10	319+7	317-315
	Galthof granite	550-650	10	0.35-0.45	3-5	319+2.4	
	Pyhrabruck	700-800	10	0.35-0.45	3	316+3	313.7+2.1
	Šejby granite	300-700	10-80	0.4-0.7	1.5-3.0		308+2
metaalum. P,F- poor	Nebelstein granite	300-400	170-20	0.1-0.2	1	311.6+1.4	312.2
	Hirschenschlag	300	120	0,1	0,3		316+1.6

Rem.: § = Dallmeyer et. al.1995

Tab.1 Selected chemical and geochronological data

DALLMEYER, D., FALLICK, A. E., KOLLER, F., SLAPANSKY, P. (1995): The Nebelstein complex: a Variscan mineralized granite intrusion in the Bohemian Massif (Austria). - Europ. J. Mineral., Beiheft 1, p.52.

WALDMANN, L. (1950): Geol. Spezialkarte der Republik Osterreich, 1:75000, Blatt Litschau-Gmund (4454). - Geol. B-A., Wien.