Petrology of granitoids in Pebbles from Ždánice and Račany Unit (West Carpathian flysch Zone)

(1 fig., 1 table)

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Although large amount of granitic rocks occur in so called exotic pebbles of the Cretaceous to Oligocene conglomerates in the West Carpathian flysch zone, the source region of both granitoids and flysch nappes is still controversal. About 60 collected samples from Račany and Ždánice unit, geographically from Chřiby, Hostýn and Ždánice hills had been reexamined and some new data were obtained.

The prevailing rocks are undoubtedly granites and granodiorites (see Tab. 1), including both leucocratic and melanocratic varieties, followed by tonalites and orthogneisses. Remaining types are subordinate but not less important. The most common mafic mineral occurring in samples is biotite, sometimes accompanied by primary white mica, somewhat less frequent is hornblende coexisting with biotite. The accessory minerals are represented especially by zircon, apatite, sphene, rutile, rarely by monazite and allanite. Garnet of almandine–spessartine composition was found in several samples of orthogneiis character. All of the samples are more or less affected by brittle to brittle – ductile deformation and low–T alteration. Grinding of feldspars and folding micas, dynamic recrystallization of quartz, sericitization, epidotization and sausseritization of feldspars, chloritization a baueritization of biotite, amphibole decomposition to Ti–Fe oxides and its replacement by biotite, chlorite, carbonates and epidote group minerals are common features of these rocks. Fine fissures, cutting the other structures in samples, could be related to synsedimentary – diagenetic conditions.

The chemical composition of studied rocks is very probably in many cases strongly influenced by later subsolidus alteration, chiefly contents of relatively mobile elements such as K, Rb, Sr and the other LILE can dif-

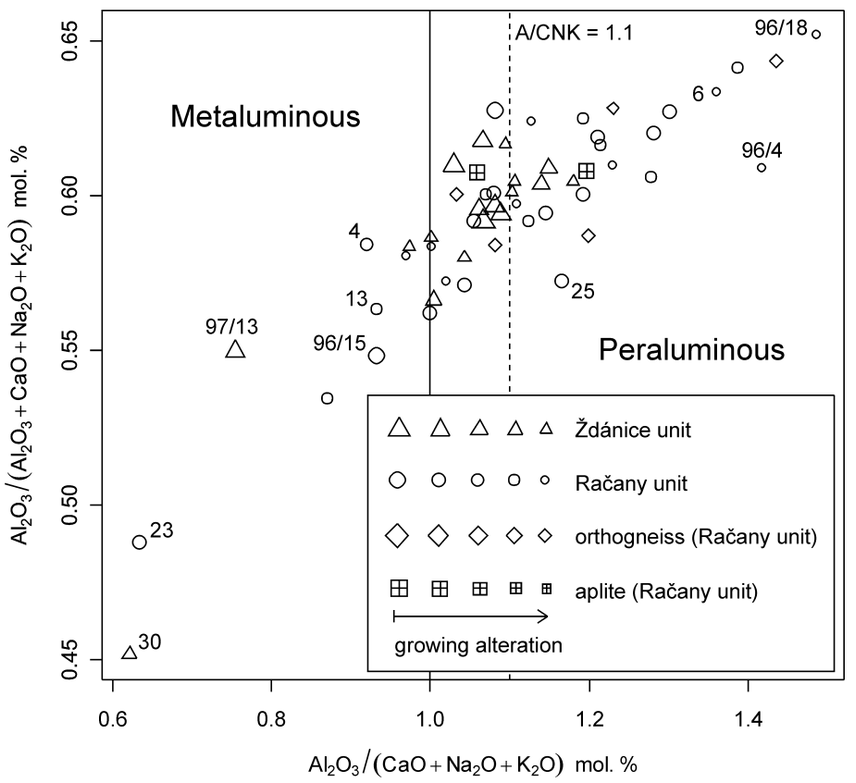

Fig. 1 Diagram showing ASI normalized with chemical index of alteration modified after Nesbitt and Young (1982, non vidi, fide Rollinson, 1993), using 5-grade size scale of symbols for expression of trustworthiness rate of ASI parameter for every plotted sample. Samples 96/18 and 6 in the upper right corner of the chart represent tonalites with decomposed amphibole and strongly sericitized plagioclases.

Table 1 Frequency table of rock types from studied samples from Ždánice and Račany Unit.

Unit / Rock	syenogranite	monzogranite	granodiorite	aplite	metagranodiorite	Total
Račany	6	8	10	2	1	27
Ždánice	5	4	6	0	0	15
total	11	12	16	2	1	42
Unit / Rock	ortogneiss	tonalite	quartzmonzonite	quartzmonzodiorite	diorite	Total
Račany	5	4	0	2	0	11
Ždánice	0	1	1	0	1	3
total	5	5	1	2	1	14

fer significantly from the primary geochemical composition. The rocks are calc-alkaline, their trace element distribution diagrams testify that they belong to several magmatic suites. Peraluminous types are more common than metaluminous ones. However, this feature could be influenced by secondary processes, particularly sericitization of feldspars (see Fig. 1). The samples from both flysch units show relatively higher enrichment of LREE related to HREE (both normalized by chondrite) with negative Eu anomaly except from one sample of biotite–bearing granodiorite.

Granitoids from West Carpathian flysch zone have Variscan ages (Hanžl et al., 1999) and mineralogy and deformation textures of some samples are very similar to I-types of the West Carpathian Veporic granitoids (Putiš, pers.com.). Moreover, the apatite FT data for Veporicum (89 ± 10 to 54 ± 7 Ma, Cambel et al., 1990) and also for Tríbeč core mountains rocks (43,3 ± 1,9 Ma, Danišík, 2002) correspond to the time period of sedimentation of conglomerates with granitoid pebbles occurring in the West Carpathian flysch belt.

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