BEUCLER Marc, GUILLOT François et HERNANDEZ Jean

Les granophyres du Mont Pourri (Vanoise septentrionale - Savoie): lithostratigraphie et pétrologie

Granophyric rocks of the Mont Pourri area (northern Vanoise, Savoie, France): lithostratigraphy and petrology

The Mont Pourri massif, in the northern Vanoise area of the Alpine chain, is situated at the boundary of two main paleozoic domains: the "Zone Houillère Briançonnaise" and the "Zone Vanoise-Ambin". We performed a lithostratigraphic, mineralogical and geochemical study of the magmatic rocks included in the Vanoise Ambin part of the massif. These series are composed in stratigraphic order of: i) granophyric rocks with biotitites (interpreted as meta-lamprophyres); ii) a bimodal complex with greenstones (prasinites, ovardites and one ferro-gabbro) and quartz-albite acidic rocks; iii) black schists with cinerites and mafic sills. Above these series, discordant Permian layers are composed of metamorphic limestones and quartzites getting progressively through blue schists. The "Zone Houillère" outcrops in the western part of the studied area and is composed of sandstones (Westphalian D)coated by Stephano-Permian conglomerates and the "Sapey gneisses". Permo-Triassic rocks and Infra-Triassic quartzites form rare and dispersed outcrops.

The mineralogical study of the granophyric rocks in cathodoluminescence and with the electron microprobe shows complex relationships between a magmatic stage, a late magmatic stage characterized by fluid circulation and the late alpine metamorphism. Greenstones of the bimodal complex have a N-MORB or slightly enriched MORB. Nb and P anomalies of some basaltic rocks suggest a back-arc affinity. Basic rocks in the black-schists are clearly N-MORB. Acid rocks and granophyres have characteristics of A-type granites. Finally, this study confirms the monometamorphic character of the rocks in the Vanoise area. If we expect a Cambro-Ordovician age for at least the basal part of the stratigraphic column, this implies a supra-crustal position during all the variscan orogeny or more certainly a southern position in the Variscan orogen.

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