

Mingling in the Paleoproterozoic Soukkio Complex, Mäntsälä, Southern Finland

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In Finland, mingling occur in syn and post-orogenic stages of the Svecofennian Orogeny (1.95-1.8 Ga) and in the Middle Proterozoic anorogenic rapakivi granite complexes.

The Soukkio Complex (1.87 Ga) in Mäntsälä, southern Finland, consist of layered gabbro and porphyritic monzonite which were mingled together. It belongs to a group of ten mafic-ultramafic intrusions of Mäntsälä, part of the E-W trending Hyvinkää-Mäntsälä Gabbroic Belt, representing tholeiitic island-arc magmatism.

Mingling features are the mafic magmatic enclaves and disrupted synplutonic mafic dikes with quartz-ocelli and K-feldspar ovoids with rapakivi or micrographic texture, acicular apatite and uralitized pyroxene phenocrysts. Felsic ameboidal dikes cutting the subvolcanic gabbro resemble to those of the mafic-silicic layered intrusions. These features occur in a 1 km wide zone surrounding the gabbro. There occur also a mafic-ultramafic body similar to appinite. The K-feldspar rich part of this body has a syenitic composition, probably achieved by mixing of two contrasting magmas.

Mingling occur also in other parts of the Hyvinkää-Mäntsälä Gabbroic Belt, revealing a widespread zone of bimodal plutonic magmatism in the Svecofennian Orogeny.