# MODAL COMPOSITIONS AND TEXTURES OF ALKALI BASALT HOSTED UPPER MANTLE XENOLITHS FROM THE NORTHERN PART OF THE CARPATHIAN-PANNONIAN REGION (NÓGRÁD-GÖMÖR VOLCANIC FIELD, HUNGARY-SLOVAKIA)

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One possible way to understand upper mantle processes better is to study ultramafic xenoliths hosted in alkali basalt, kimberlite and lamprophyre. Upper mantle xenoliths from the five volcanic fields of Plio-Pleistocene alkali basalts in the Carpathian-Pannonian region (Styrian Basin, Little Hungarian Plain, Bakony-Balaton Highland, Nógrád-Gömör Volcanic Field, Perşani Mountains) have provided matter to petrologic and geochemical studies in the last few decades (e.g. EMBEY-ISZTIN *et al.,* 1989, 2001; DOWNES *et al.,* 1992; SZABÓ, 2004; DOBOSI *et al.,* 2010). In our work we concentrate on the Nógrád-Gömör Volcanic Field (NGVF), located at the northern part of the Carpathian-Pannonian region. We collected xenoliths from the central part of the area, including five quarries from Medves Plateau and Babi Hill that have barely been studied before.

From more than 200 collected xenoliths, over 80 samples were chosen for detailed petrographic examinations. The main aim was to determine texture types and modal compositions of the xenoliths regarding the rock-forming minerals, as well as describe fabrics of the mantle constituents (olivine, orthopyroxene, clinopyroxene and spinel). Based on the results, we present a detailed summary about the NGVF xenoliths, showing how they can be correlated with xenoliths originating from better researched marginal areas, introducing a texture type (poikilitic) (Fig. 1), as well as a rock type (wehrlite) (Fig. 2) that have not been reported before in earlier studies on the central part of the NGVF. It will also be presented that wehrlites show features of different texture types in the form of clinopyroxene-spinel aggregations sitting in the original texture, which indicates a possible mantle metasomatism that took place before the ascension of the host basaltic melt. Presence of amphibole in some of the xenoliths also confirms that this process enriched the upper mantle in incompatible elements.

**References**

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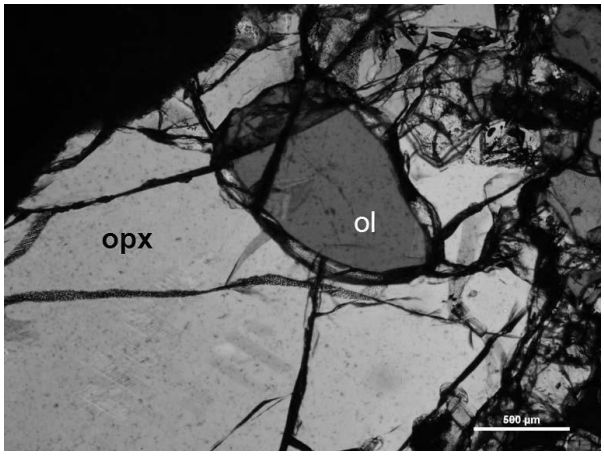


***Fig. 1.*** *Olivine (ol) inclusion in orthopyroxene (opx) as an indication of poikilitic textured lherzolite; transmitted light, N+*

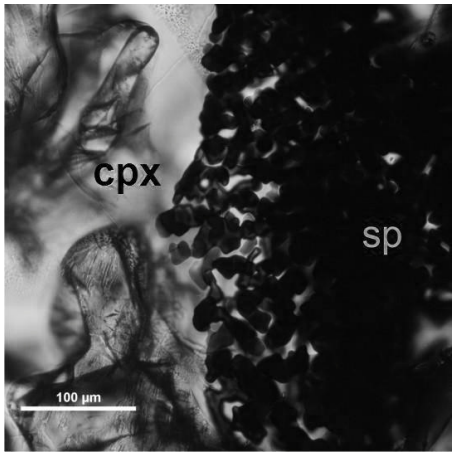


***Fig. 2.*** *Aggregation of clinopyroxene (cpx) and vermicular spinel (sp) in a wehrlite; transmitted light, 1N*