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**PRELIMINARY DATA ON PETROGRAPHY OF
NEW OCCURRENCE OF BASALTOIDS IN THE „JERZY” QUARRY IN
KROBICA (STARA KAMIENICA RANGE), THE IZERA MTS**

The Stara Kamienica Range is formed of various mica-chlorite schists with intercalations of gneisses, quartzites, amphibolites, leptinites and calc-silicate rocks. The rock complex belongs to the northern metamorphic cover of the Karkonosze granitoid massif.

Occurrences of volcanic rocks in Pogórze Izerskie have been known for a long time (Traube 1888, Berg 1926, Nowakowski 1956). Usually they can be observed only as isolated blocks. The volcanic rocks occur also in the neighbourhood of Krobica (Orłowice), Czerniawa and Przecznicza but can be observed in situ only in the “Jerzy” quarry. The “Jerzy” quarry is located in Krobica village in the NW part of the Stara Kamienica Range. The rocks which are excavated there are mica schists of variable mineralogical composition.

The vein of volcanic rock that may be classified as basaltoid, is exposed at the bottom level of the quarry in its E wall (fig.1). The vein is approximately 0.4 m thick and its strike and dip are concordant with the strike and dip of the schists (W-E and 50-70°N, respectively). The schists near the vein are strongly crushed and altered by weathering processes.



Fig. 1. The volcanic vein in bottom level of the “Jerzy” quarry in Krobica (E wall).

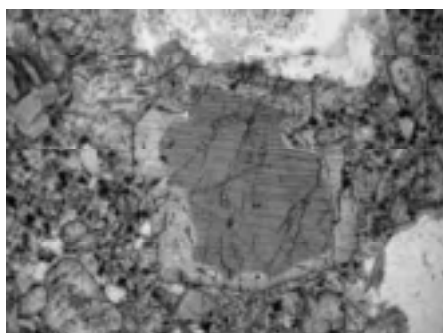
The greenish-black basaltoids are also strongly weathered. They are fine-grained, with amygdale texture that manifests in the presence of little (0.5 cm) irregular cavities completely or partially filled with yellowish, greenish or reddish secondary material.

Microscopic investigations reveal porphyritic or glomeroporphyritic texture of the rock. The main rock-forming mineral is prismatic or tabular titanite that is present as phenocrysts

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and tiny microlites in the groundmass. The groundmass of the rock exhibits holocrystalline texture with titanaugite microlites as the only recognizable phases. Additionally, opaque minerals are present in considerable amounts. Locally small accumulation of brown hornblende can be observed in the groundmass. These “microenclaves” are sharply contrasted with their surroundings. Vesicles and irregular cavities are filled with mosaic quartz, chalcedony, carbonate, zeolites (probably analcime and natrolite), clay minerals and various other alteration products.

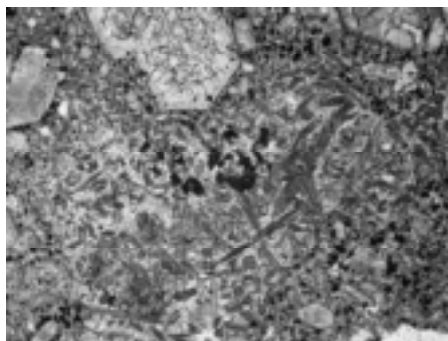
Titanaugite present in the basaltoids is of two types. The first type can be identified only due to its distinctive crystal habit as it is extremely altered (probably by chloritization). Even the relicts are undistinguishable. The second type remains unchanged or is altered only in the central parts of grains. It shows high birefringence (from 0,021 to 0,033) and interference colours (strong yellow, blue, green, red) corresponding to the top of the first order and bottom of the second order. Sometimes also a subnormalous “ultra blue” interference colour may be observed, usually a deep inky blue colour, but also deep brown or rich violet. These colours are, of course, connected with strong axial dispersion. Distinct pleochroism from lilac to light brown may be seen in thin section. Frequently, the mineral shows zonation with the colourless central parts of the crystal built of normal augite and the light brown rims composed of titanaugite. The core of many



crystals is light green most probably due to the enrichment in aegirine (fig. 2). Locally, the hour-glass structure (sector zoning), sometimes coupled by concentric zoning is observed. Twinning, either simple or repeated, is common and the twin plane is (100).

Fig. 2. The core of titanaugite enriched in aegirine (reflected light).

The aggregates of brown hornblende (fig.3) are built of minute, strongly elongated rod-like crystals showing strong fair brown to dark reddish brown pleochroism. The extinction angle z/γ is small, 7-12°. This “microenclave” contains



also numerous needle-like and dendritic crystals of opaque minerals and rare microlites of titanaugite that seem to be formed through dehydration and oxidation of brown hornblende (Shelley, 1995). The brown hornblende was formed through local enrichment in alkaline elements and volatile components.

Fig. 3. The “microenclave” of brown hornblende (reflected light). In contrast to the rocks described

by Berg (1926) and by Nowakowski (1956) zerniawa, Przecznicza, Miłoszów villages, the dike-rocks from the Krobica quarry do not contain phenocrysts of olivines and their pseudomorphs. Therefore the rock from the “Jerzy” quarry should be referred to as non-olivine basaltoids. They are probably connected with Tertiary volcanism in the Sudetes.

Tertiary basalts in SW Poland belong to the eastern margin of the Central European Volcanic Province extending from France to Czech Republic and Poland. These rocks were petrographical (Nowakowski 1956, Białowolska 1980), geochemical and isotopic (Alibert et al. 1987, Blusztajn et al. 1989, Vaněčková et al. 1993, Wilson et al. 1991) elaborated. Basis on these data were determined their genesis and geotectonic position. Above-mentioned petrographical information should be completed by comparison with similar rocks of this volcanic province.

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