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**ACID META-VOLCANIC ROCKS FROM KONRADÓW AREA  
(STRONIE SERIES, ORLICA – ŚNIEŻNIK DOME): STRUCTURAL,  
PETROGRAPHIC AND GEOCHEMICAL CHARACTERISTICS**

INTRODUCTION

The Stronie Series in the area of Konradów is composed of variegated mica schists with subordinate interlayers of quartz-graphite schists, crystalline limestones, amphibolites and quartz - K-feldspar -plagioclase schists, also named as leptynites (Cwojdzński 1979, 1983, Smulikowski 1979, Wojciechowska 1972) The latter rocks form a horizon of several mega-boudins in the Krowiarki Mts between Romanowo – Odrzychowice (NW) and Stronie Śląskie (SE). These light-grey or yellowish, fine-grained rocks showing striped, gneissose fabric were interpreted as quartzites (Kuźniar, 1960), Gierałtów type gneisses (Don, 1964), or blastomylonitic, microcline paragneisses (Butkiewicz, 1968). Wojciechowska (1976), basing on mineralogy and  $\text{SiO}_2 / \text{Na}_2\text{O} + \text{K}_2\text{O}$  ratio characteristic for acid magmatic rocks, concluded that they may represent primary lavas, tuffs or tuffites.

Lithological boundaries in the investigated area are always concordant with the main penetrative foliation developed during the first deformation phase D1 which is also documented by isolated intrafolial folds and quartz secretions and mineral lineation. The D2 phase is expressed by new set of folds (superposed on older folds) and pencil structures developed along L2 intersection lineation. Next – D3 episode produced open folds F3 with steep axial planes S3 (average orientation: 50/10) which are locally underlined by recrystallization of mica flakes. The last D4 phase is represented by kink-folds F4 showing amplitudes not greater than 20 cm.

PETROGRAPHICAL FEATURES

A new investigation of 6 samples of leptynites from Konradów area documents their fine- to coarse-grained granoblastic fabric. The dominant matrix is built of interfingering quartz-feldspar mass which surrounds bigger feldspar porphyroclasts, most often with partly preserved tabular habits, indicating their primary, magmatic origin. A state of feldspar preservation is diversified. K-feldspars are weakly changed, while plagioclases (albite, oligoclase) are strongly altered, with ubiquitous inclusions of heavy minerals and tiny mica flakes. In all samples foliation is mainly defined by white micas, partly by chloritized biotites. Stripes of well recrystallised micas enclose K- feldspar porphyroclasts.

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Some of them are strongly deformed as evidenced by long, symmetric pressure shadows. Rare asymmetric shadows indicate limited effect of rotational, ductile deformation. Small amount of muscovites flakes positioned perpendicularly to the main foliation suggest their post-kinematic crystallization.

### GEOCHEMISTRY

For geochemical analyses two samples from environs of Konradów and one from Romanów were selected. The bulk rock chemistry of studied samples shows that most of alkaline components were not removed from the system during deformation or recrystallisation. All obtained chemistry results can reflect rhyolitic or rhyodacitic composition of primary protolith (Winchester et al. 1977). The contents of trace elements plotted on ORG normalized multielement diagram (Pearce et al. 1984) show similar distribution profiles for all studied samples. They are characterised of K,Rb,Ba,Th enrichment and Ti, Zr depletion typical of within plate environment. On the chondrite-normalized REE spider diagram (Sun et al. 1989) the relative enrichment of LRRE with slight positive anomaly of Ce and strong negative anomaly of Eu content can be observed.

### CONCLUDING REMARKS

Most probably these volcanic rocks originated by shallow level fractional crystallisation of variably enriched mantle source. Such process might be also associated with crustal contamination of primary melt, together with the removing of plagioclases from the primary felsic melt.

The above presented rocks show many similarities with other acid meta-volcanics known from other parts of the Orlica – Śnieżnik Dome (Wojciechowska et al. 2001a, b).

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