Fig. 3b. Hipidiomorphic crystal of magnetite (Mg) and rutile (Rt), sample: PSk 1-99; EDS-images.

cal structures suggest slow deposition of material in the hemipelagic and pelagic environments (Passega 1957; Stanley and Swift 1976).

The material of the MS-samples is more sorted and the grains are more rounded (Fig. 3A) than in other (PSk, BW) samples (Fig. 3B). These are indicative of distant transport.

The irregular surfaces of grains (Fig. 3; mainly quartz) are the result of diagenetic solution (Stanley and Swift 1976).

Conclusions

Homogenous, clay fraction, lamination, burrowings, rounding of grains and lack of microfauna has been investigated in the shales of the Magierowa Member (MS). Therefore, they are deposited under pelagic condition, below CCD level.

Different fractions, idiomorphical heavy minerals, abundant foraminiferids (associations B, C and C_1) have been recognized in the samples collected from the Biała Woda (BW) and the Skalski Stream (PSk) sections.

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Geoelectrical Investigations in Slovakian Tatra Mountains

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The geophysical investigations were carried out in alpine zone of the high Tatra Mountains in Piargova Valley (Slovakia). The Piargova Valley is a part of Ciemnosmreczynska Valley. The Piargova Valley is situated parallel to the main ridge of the Tatra Mountains (Paryska and Paryski 1995). It is a pothole. Luknis (1973) distinguished three ledges within the Valley:

- the highest ledge, i.e., the “Snow pothole” situated between altitude 2080–1850 m a.s.l.,
- the intermediate ledge – the basin of Wyzni Ciemnosmreczynski Lake,
- the lowest ledge – the basin of Nizny Ciemnosmreczynski Lake.

The greater part of the Piargova Valley is covered by slope debris.

The resistivity soundings were carried out at six measurement points. The first point was situated in the shore of Ciemnosmreczynski Nizni Lake and the other five points were situated in the vicinity of Ciemnosmreczynski Wyzni Lake (Fig. 1). The measurements were executed in 1997 and repeated in 1998 at the same measurement points. Number of soundings was limited by the mountainous relief of the investigated area. The soundings were carried out with symmetric Schlumberger array using ABEM Terrameter SAS 300C equipment. Electrode spacing was fixed for

Sounding point	Resistivity [Ωm]	Thickness [m]	Sounding point	Resistivity [Ωm]	Thickness [m]
S1	1350	1.0	S2	3350	1.9
	24300	2.2		4720	7.1
	1100	10.1		52950	16.5
	350	–		9160	–
S3	3000	0.85	S5	2800	1.1
	37500	3.85		7200	9.2
	9050	–		3000	–
S4	8270	1.2	S6	5340	2.6
	22100	4.6		10120	–
	5000	1.1		–	–
	41400	17.3		–	–
	2150	–		–	–

Tab. 1. Results of interpretation of resistivity soundings.

the best efficiency of the survey. Maximum current electrodes spacing was 180 m. Resixp^{plus} software was supplied for geophysical interpretation. The results obtained in 1997 and 1998 are very similar. The same layer models were obtained at particular measurement points. Both thickness and resistivity are similar to each other. One obtained one 2-layer model, two 3-layer models two 4-layer models and one 5-layer model.

The depth of granitic subsoil was estimated at all resistivity measurement points. The depth varies from 2.6 m (S6) to 25.5 m (S2) (Tab. 1). The resistivity of bedrock ranges 2150 to 10,120 Ωm. One assumed that resistivity variation is a result of various water content and various fracturing.

The granitic subsoil is covered by the layer composed of stone debris, clay and gravel. The layer is more or less hydrated and compact. Atfour points we found out the high resistivity geophysical layer (resistivity exceeds tens kΩm). We assumed that high resistivity is a result of cavities existence in stone debris sediments.

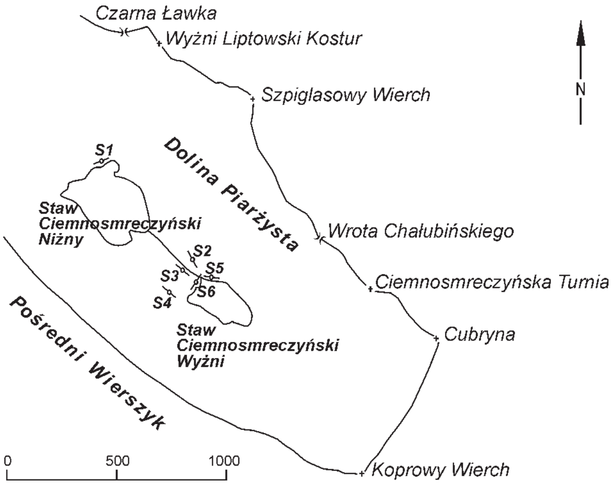

Fig. 1. Localization of resistivity soundings.

The surface layer containing clay, stone debris and gravel was observed at all measurement points. The thickness of the layer is about 1–2 m.

The obtained results show that vertical resistivity soundings are an appropriate method for research of geological structure in high mountains, where for technical reasons or because of environmental protection, it is not always possible to apply traditional methods.

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Unusual Mineral Assemblage Associated with the Fossil Fire of the Coal Seam at •elénky, North Bohemian Brown Coal Basin, Czech Republic

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Fossil pyrometamorphic processes associated with the natural combustion of Neogene coal measures in the North Bohemian Brown coal Basin produced a variety of caustically altered rocks called porcelanite, beside brick-like rocks and slags. A series of porcelanite occurrences exists in this extensive area. Many of them were exploited, the rock being used as building material or as a base coarse material for roads and railroads.

Highly unusual pyrometamorphic rocks were found in abandoned porcelanite deposit "Èervený vrch" at •elénky. The locality is situated about 3 km eastward of Duchcov in the Teplice District, northern Bohemia. The deposit was intensively exploited between 1965–1988 and subsequently re-exploited in years1992–1998.

Geological structure of the •elénky porcelanite deposit is unusual. Besides Neogene sediments (clays), a part of Quaternary cover, comprising sandy gravel and loess bed, was affected by pyrometamorphism. Whole sequence (up to 25 m thick) is locally crosscut by chimney structures running from the former coal bed to the surface. Chimneys are filled with baked sandy gravel rich in glass and crystalline calcic rocks composed predominantly of melilite. These rocks may have been derived from fusion of Ca-rich loess with residual coal ash. We interpret them to have been developed by gravitational collapse of loess bed into the cavities left by the combusted coal bed. Similar mineral assemblages were described from Powder River Basin and Buffalo, both Wyoming, USA (Franklin et al. 1987; Cosca