world's pioneer locality in studies of recently so popular lherzolite nodules (Farsky 1876). The average amount of these xenoliths sized over 1 cm is 35/m^2 which corresponds to 2% of the total volume of the basaltoid. The biggest nodule ever found here was 70 cm long.

The interest of countless mineral hunters has been focused exclusively on nice olivine crystals some of which are of a gemstone quality. Besides lherzolite nodules, however, there are xenoliths of another lithology present here, too. Of course, most of them are unattractive, substantially less frequent, less striking and therefore mostly ignored. Nevertheless, even these different lithologies provide and complete the information on the composition of the Earth's pile below the volcano in the section underneath the Moho and above it as well.

Following petrographic categories of xenoliths (comp. Fediuk 1973) have been distinguished here:

A) Ultramafic rocks
   a) peridotites (mainly spinel lherzolite, scarcely garnet lherzolite, but also dunite, wehrlite and harzburgite)
   b) pyroxenites and hornblendites (clinopyroxenite, less frequently websterite and orthopyroxenite, sporadic px-hornblendite)
B) Gabbroic rocks (cpx and cpx-hbl gabbro, gabbronorite, rarely anorthosite)
C) Granitoids:
   c) charnockitic rocks,
   d) biotite granite and granodiorite
D) Crystalline schists (usually metapelites)
E) Sedimentary rocks (sandstone and conglomerate)
F) Single xenocrysts (olivine, orthopyroxene, clinopyroxene, hornblende, feldspar, quartz).Based on the above listed set of xenoliths, supplemented by geobarothermometric calculations, geophysical data and some deep boreholes, following model of the vertical profile for the SW periphery of the Jizerské hory and Krkonoše Mts. is proposed:

0 - 1.5 km	Cretaceous and Carboniferous sediments
1.5 - 3.0 km	weakly metamorphosed Early-Palaeozoic sediments and volcanics
3.0 - 8.0 km	medium metamorphosed volcanosedimentary sequence of presumed age with intrusions of cataclastic granites and metagranites
8.0 - 17.0 km	undeformed granite perhaps of Variscan age
17 - 33 km	gabbroic and charnockitic layer
	Moho
33 - 50 km	ultramafic layered cumulate complex composed mostly of pyroxenite
50 - 250 km	spinel lherzolite
250 - 350 km	garnet peridotite

Source of alkali-basaltic "squash", ascending volcanic plume.

References

FARSKY F. 1876. Mineralien aus den Kosakover Basaltkugeln. *Verh. Geol. Reichsanst.*, Wien.

FEDIUK F. 1973. *Inclusions in basaltic rocks of the Podmoklice-Smrčí lava flows (in Czech).* MS Fac. Sci, Charles Univ., Prague.

Heavy Minerals in the Wałbrzych Formation and the Biały Kamień Member (Upper Carboniferous, Intra-Sudetic Basin, SW Poland)

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The Intra-Sudetic Basin, a Variscan intra montane trough in the central Sudetes, is filled with Carboniferous, Permian, Triassic and Upper Cretaceous deposits. The oldest sediments display considerable lateral and vertical facies variations which reflect intense tectonic and volcanic activity, largely influencing sedimentation in the basin in that time. The sedimentary material was transported from various sources, a good indicator of which, apart from the lithology of pebbles, may appear heavy minerals (Felicka, 1997 b).

The Wałbrzych Formation

The Upper Carboniferous sediments crop out in the NE part of the basin. The Wałbrzych Formation (Lower Namurian), up to 320 m thick, is represented by mudstone-sandstone deposits, with light-grey conglomerates containing mainly quartz and quartzite pebbles (quartz conglomerates) at the bottom, and by series of mudstones and claystones with coal seams at the top (Bossowski and Ihnatowicz, 1994). The Wałbrzych Formation cannot be correlated with any stratigraphic unit in the Czech part of the Intra-Sudetic Basin.

Two samples representing the Wałbrzych Formation were collected for heavy mineral analysis along a profile line in the eastern part of the basin (prolongation of the Lower Carboniferous profile, see Felicka 1997 a, b). In sample AKL, representing the lowermost part of the formation, white mica is the most abundant mineral (> 60 %); apart from that, biotite, epidote, sphen and occasionally zircon and amphibole are found. The heavy mineral spectrum of sample W1 representing the uppermost part of the formation is different and comprises white mica (flaky aggregates of muscovite and chlorite - 30 %), garnet (24 %), epidote (17 %), biotite (6 %) and minor turmaline, zircon, apatite and sphene.

The Biały Kamień Member

The Biały Kamień Member (Upper Namurian and Lower Westphalian) belongs to the Žacleř Formation. These deposits, up to 300 m thick, are represented in their bottom part by conglomerates and sandstones with few interlayers of mudstones and claystones containing two coal seams.

Four samples were collected for heavy mineral analysis, all from the eastern profile line. The heavy mineral spectra are represented mainly by opaque minerals, which form individual grains and intergrow transparent phases. The spectra display variations both stratigraphically and laterally and so far it is difficult to see any correlation between them. Generally, samples W7, W8, and W9 from the Wałbrzych area show rather