ing Buckyprep analytical column 4.6mmI.D.x250mm (method tested and confirmed by Jehlička et al., 2000).

Retention spectra of toluene extracts of the natural samples were compared to spectra of C_{60} standard (Fig. 1a) with a clear peak at 7.980 minutes. No such fullerene C_{60} peak has been observed in moldavite samples in concentration higher than 0.01 ppm. Signs of peaks with retention times 7.910 and 13.562 (approximately C_{70}) can be observed in retention spectrum of the Otting suevite (Fig. 1b), nevertheless, with such a weak signal it is impossible to confirm the presence of fullerenes from these results.

Fullerene C_{60} has not been identified in the toluene extract of moldavite from Habří, Czech Republic. The presence of fullerenes C_{60} and C_{70} in the extract of suevite from Otting locality in the Ries impact crater, Germany, could not be confirmed or disproved. Further analyses of suevites sampled in the Ries crater will be carried out with higher amounts of material used for demineralization and extraction. The absence of fullerenes in toluene extracts of moldavites reflects small amount of insoluble residuum after demineralization.

References

BECKER L., BADA J.L., WINANS R.E., HUNT J.E., BUNCH T.E. and FRENCH B.M., 1994. Fullerenes in the 1.85-billion-year-old Sudbury impact structure. *Science,* 265: 642-644.

BECKER L., POREDA R.J., HUNT J.E., BUNCH T.E. and RAMPINO M., 2001. Impact event at the Permian-Triassic boundary: Evidence from extraterrestrial noble gases in fullerenes. *Science,* 291: 1530-1533.

HEYMANN D., CHIBANTE L.P.F., BROOKS R.R., WOLBACH W.S. and SMALLEY R.E., 1994. Fullerenes in the Cretaceous-Tertiary boundary layer. *Science,* 265: 645.

JEHLIČKA J., OZAWA M., SLANINA Z. and OSAWA E. 2000. Fullerenes in solid bitumens from pillow lavas of Precambrian age (Mítov, Bohemian Massif). *Fullerene Sci. Technol*., 18: 449-452.

VONENGELHARDT W., ARNDT J., FECKER B. and PANKAU H.G., 1995. Suevite breccia from the Ries crater, Germany – origin, cooling history and devitrification of impact glasses. *Meteoritics,* 30: 279-293.

Some Aspects of the Barrandian Tectonics – Preliminary Results

Petr FERBAR, Jiří JANEČKA and Rostislav MELICHAR

Institute of Geological Sciences, Faculty of Science, Masaryk University, Kotlářská 2, 611 37 Brno, Czech Republic

The Prague Basin (Ordovician to Devonian of the Barrandian area) is a large post-sedimentary syncline, well-known due to numerous localities of fossil finds and precisely documented stratigraphy (i.e., Chlupáč et al., 1998, etc.). This very good state of paleontological, stratigraphic and sedimentological knowledge of the area contrasts with a scarcity of exact tectonic data. The new systematic tectonic study is supported by grant project FRVŠ 0599/2003.

In the first stage of the investigation, attention is paid both to major tectonic faults in the central part of the Prague Basin, e.g. Tachlovice, Koda and Očkov Faults, and to tectonic blocks/slices of Silurian rocks incorporated in Ordovician sediments (so-called "Barrande's colonies"). Detailed structural observations are carried out in close conjunction with precise stratigraphic assignment.

Based on the new field data and previous documentation, the Tachlovice Fault and other faults limiting the "Barrande's colonies" were identified as significant bedding-parallel faults. They can be therefore interpreted as major, partly reorientated thrusts. These large-scale detachments are documented by:

- facies differences in rocks of the same age occurring on both sides of the bedding-parallel faults (compare Beroun – Lištice cross-section in Horný 1965),
- stratigraphic gaps or stratigraphic twinnings associated with bedding-parallel faults and
- stable "stratigraphic level" of the regional bedding-parallel faults (compare stratigraphic ranges of "Barrande's colonies" in Přibyl, 1940, for instance).

The detachments preferably follow a specific stratigraphic horizon on regional scale (e.g., the Bohdalec, Želkovice and Motol Fms) as well as in detail (e.g., *convolutus*, *crispus*, *spiralis* zones).

In the close surroundings of these large-scale detachments, small-scale detachments are abundant. These are well visible in the outcrops, being marked by:

- small-scale duplexes,
- small-scale ramps (upper or lower; see Fig. 1),

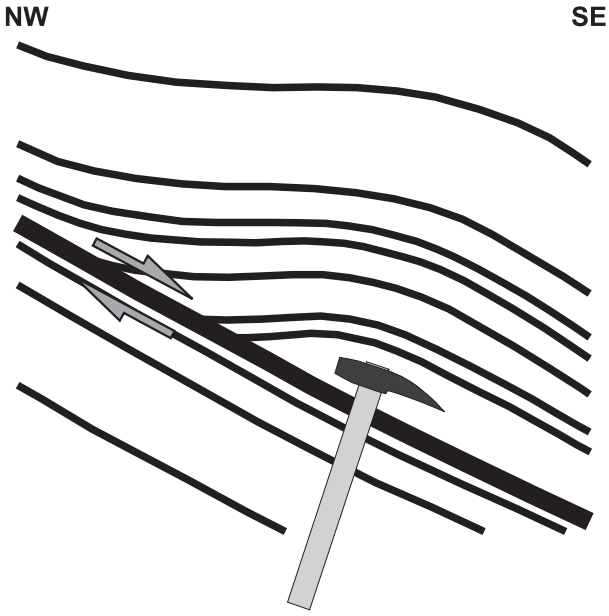

Fig. 1. A small ramp indicating south-vergent tectonic movement in the Silurian rocks, footwall of the Tachlovice Fault, Lištice village near Beroun.

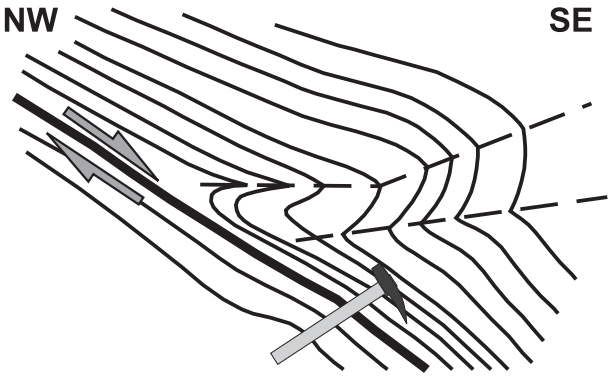

Fig. 2. Detached asymmetric south-vergent fold in Silurian rocks, footwall of the Tachlovice Fault, Lištice village near Beroun.

- detached asymmetric folds (see Fig. 2).

In general, all these small asymmetric structures indicate south-vergent tectonic movement, even though they could have been subsequently reactivated in different ways within younger tectonic phases. Our new data are in good agreement with the tectonic concept presented by Melichar and Hladil (1999).

References

HORNÝ R., 1965. Tektonická stavba a vývoj siluru mezi Berounem a Tachlovicemi. *Časopis pro mineralogii a geologii*, 10, 2: 147-155. Praha.

CHLUPÁČ I., HAVLÍČEK V., KŘÍŽ J., KUKAL Z. and ŠTORCH P., 1998. Paleozoic of the Barrandian (Cambrian to Devonian). Czech Geological Survey. Prague.

PŘIBYL A., 1940. Stratigrafické rozčlenění graptolitových zón z tak zv. „Barrandeových kolonií". *Věstník Královské české společnosti nauk, Třída mathematicko-přírodovědná*, 1940, 10: 1-12. Praha.

MELICHAR R. and HLADIL J., 1999. Resurrection of the Barrandian nappe structures (Central Bohemia). *Geolines*, 8: 48-50. Praha.

Early Palaeozoic Clastic Sediments Found in Boreholes from the SE Surroundings of Brno (Czech Republic)

Helena GILÍKOVÁ[1], Jaromír LEICHMANN[2] and František PATOČKA[3]

[1] *Czech Geological Survey, Leitnerova 22, 658 69 Brno, Czech Republic*
[2] *Department of Geology and Paleontology, Faculty of Science, Masaryk University, Kotlářská 2, 611 37 Brno, Czech Republic*
[3] *Institute of Geology, Academy of Sciences, Rozvojová 135, 165 02 Praha 6, Czech Republic*

Several boreholes situated in the SE surroundings of Brno penetrated the Early Palaeozoic basal clastics (so-called Old Red sandstone) overlying weathered granitoids of the Brno massif. The basal clastic sediments in the Měnín-1, Němčičky-3 and Němčičky-6 boreholes were palaeontologically dated to Early Cambrian by the presence of Acritarcha (Jachowicz and Přichystal, 1997; Fatka and Vavrdová, 1998). In other boreholes, the age of the clastics was determined according to their relations to the overlying palaeontologically dated Early to Middle Devonian limestones (Skoček, 1978; Zukalová, 1976).

Nine samples of basal clastic sediments were collected for a detailed study with the aim to characterize potential petrological and geochemical differences between the Cambrian and Devonian clastics. Therefore, samples of suspected Cambrian and Devonian ages were investigated separately. The Cambrian samples were collected from the Měnín-1 and Němčičky-6 boreholes (depth 1,370 m and 2,033 m, respectively). Devonian clastics were sampled from the Měnín-1 (depth 468 m), Ždánice-14, Milešovice-1, Nikolčice-4, Uhřice-6 and Těšany-1 boreholes.

Petrology

Two types of sandstones were distinguished in the studied set according to sample petrology: well sorted quartz sandstones (limited to the Měnín-1 – depth 468 m, and Ždánice-14 boreholes) and arkosic sandstones (other samples). The arkosic sandstones consist of subangular quartz grains, angular feldspar grains (K-feldspar predominates over plagioclase) and micas (muscovite prevails over biotite). Accessory (heavy) minerals are garnet, zircon, tourmaline, apatite, rutile, pyroxene and staurolite. Zircons were studied in detail: they show idiomorphic (either dipyramidal or long prismatic) as well as oval shapes, and the size of about 100 μm.

Geochemistry

Major element characteristics of the studied clastic sediments correspond to arkoses and subarkoses according to the correlation diagram of Herron (1988). The rocks show significantly fractionated LREE and flat HREE patterns, and small negative Eu anomaly relative to chondritic lanthanide composition. They are depleted in LIL (e.g., Sr, K, Rb) and HFS