

## **New geochronologic constraints on the initiation of Cadomian subduction in the Bohemian Massif**

M. SVOJTKA<sup>1</sup>, J. ŽÁK<sup>2</sup>, J. HAJNÁ<sup>2</sup>

<sup>1</sup>Institute of Geology of the Czech Academy of Sciences, Rozvojová 269, CZ-16500 Prague 6, Czech Republic; [svojtka@gli.cas.cz](mailto:svojtka@gli.cas.cz)

<sup>2</sup>Faculty of Science, Charles University, Albertov 6, CZ-12843 Prague, Czech Republic; [jirizak@natur.cuni.cz](mailto:jirizak@natur.cuni.cz), [hajna@natur.cuni.cz](mailto:hajna@natur.cuni.cz)

The Variscan belt in Europe contains several fragments of the Avalonian–Cadomian belt that originally rimmed the northern margin of Gondwana in the Neoproterozoic and early Cambrian and were subsequently incorporated into a collisional zone between the Laurussia and Gondwana supercontinents during Late Paleozoic. One of these crustal fragments, the Blovice complex (BC), is superbly exposed in the center of the Bohemian Massif. The BC was recently interpreted as an accretionary wedge that directly records subduction of an oceanic plate beneath the active margin of Gondwana (Hajná et al., 2011). The BC comprises six fault-bounded belts, with three coherent domains of arc-derived and multiply recycled deep-marine siliciclastic rocks (belts I–III) alternating with belts of ophiolitic mélanges with numerous basalt blocks included in strongly deformed siliciclastic matrix. The coherent belts typically comprise a succession of siltstones, slates, and graywackes enclosing isolated smaller bodies of chert (Hajná et al., 2017).

New U–Pb laser ablation ICP-MS detrital zircon data from the BC graywackes (belts I–II) and associated rhyolite (volcanic arc sequence) are separated into several distinct groups: (1) Archean populations scattered in the range of ca. 1.6–3.0 Ga, and (2) a Neoproterozoic cluster of concordant ages with peaks at ~680 Ma, 600–640 Ma, and ~590–560 Ma. We interpret these dominant Ediacaran ages as maximum depositional ages (MDAs) of the greywackes. Given that in accretionary wedges the MDAs are typically close to true depositional ages, the latter group provides important new constraints on the temporal development of the Cadomian active margin. Especially the abundant ~680 Ma zircons indicate a significant Cryogenian crustal component within the accretionary complex and represent so far the oldest reported ages for the onset Cadomian subduction, arc volcanism, and sediment accretion in the Bohemian Massif.

[Hajná et al., 2011. *Gondwana Research* 19, 495–508; Hajná et al., 2017. *Gondwana Research* 42, 63–83]