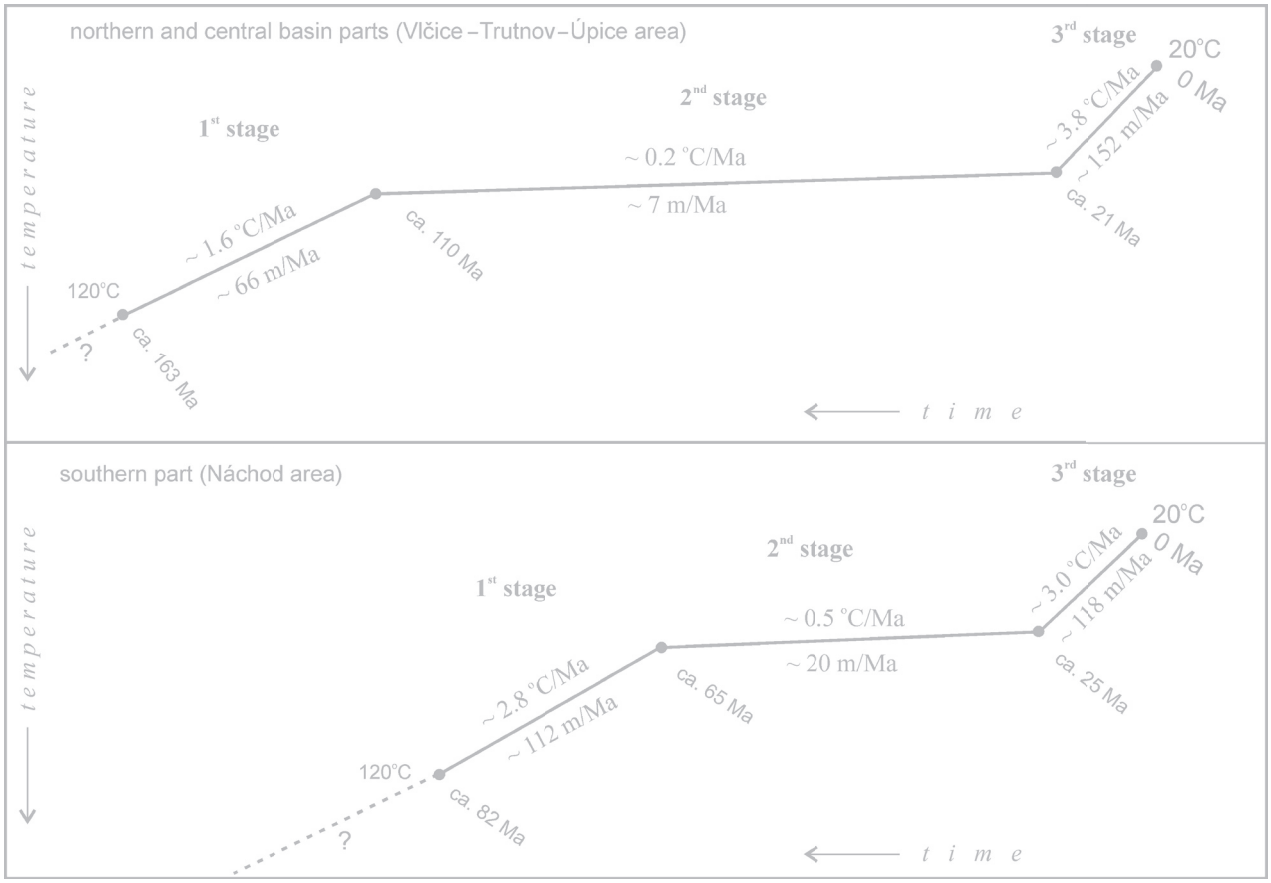

■ **Fig. 1.** Sketch diagram of thermal modelling with AFTSolve program (Ketcham et al. 2000) illustrating differencies in timing of cooling and erosional events in northern and southern areas of the Trutnov-Náchod sub-basin. Erosional rates were calculated using thermal gradient of 25 °C/km. Horizontal and vertical axes are approximately in scale.

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Post-Badenian Horizontal Movements in the Pannonian Basin as Indicated by Paleomagnetic Data

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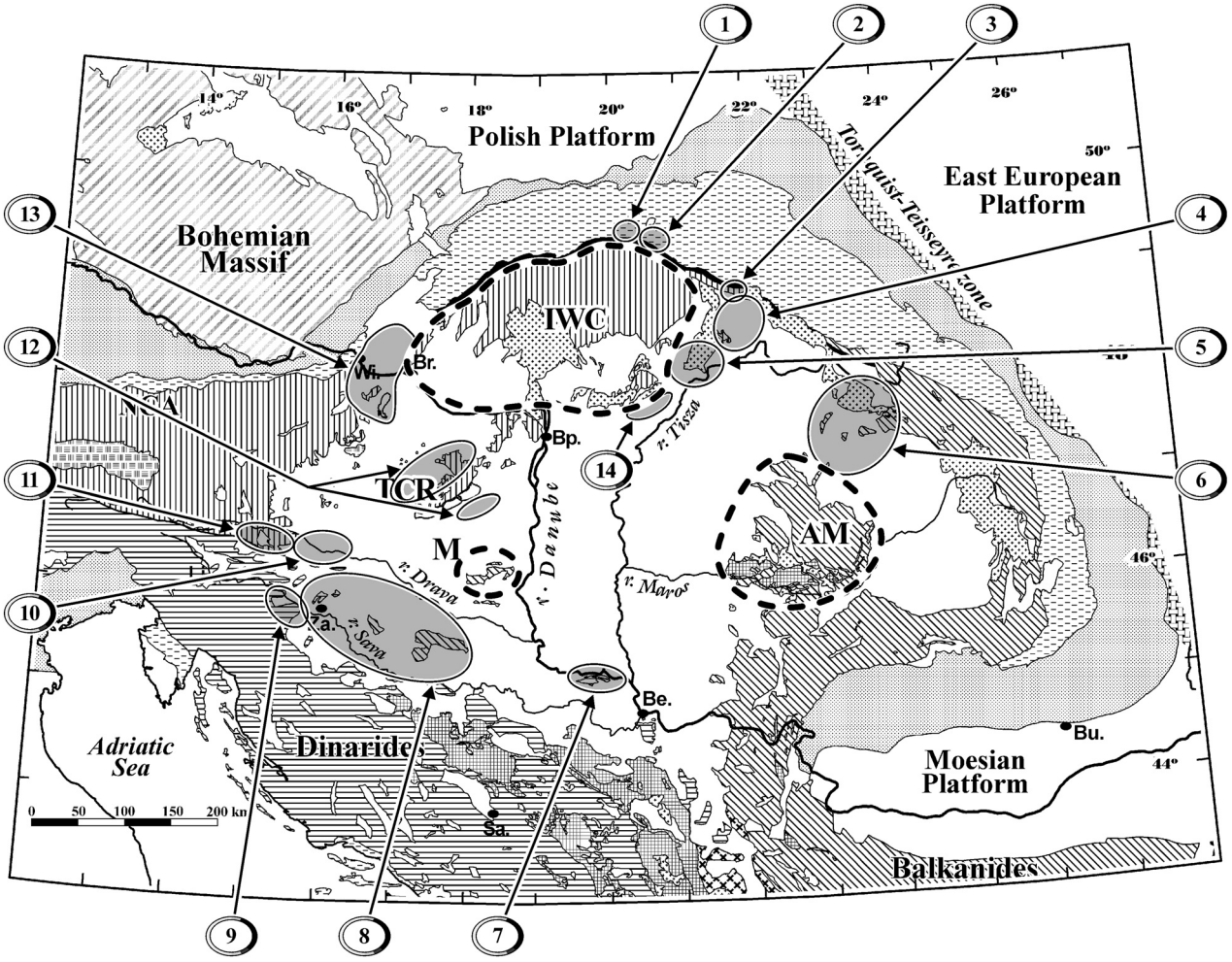
Although the Pannonian Basin is mostly covered by Quaternary sediments, Miocene and Pliocene rocks are accessible for paleomagnetic sampling at several points, mainly at the margins of sub-basins and around inselbergs. Owing to financial support by T034364 OTKA (Hungarian Scientific Research Found) and several bilateral projects (exchange program between Hungarian Academy of Sciences and those of Poland, Slovakia, Croatia, Serbia and Hungarian-Slovenian Intergovernmental Scientific and Technological Cooperation Project) a large number of data are available today, which are relevant to the post-Badenian



■ **Fig. 1.** Paleomagnetic sampling areas (numbered 1–14) for possible Post-Badenian horizontal displacements. 3, 5, 6, 9, 11 and 14: unpublished results; 1: Baumgart-Kotarba et al. (2002, 2004); 2: Márton et al., (2004); 4: Márton et al., (2000); 7: Lesić et al., (2004); 8: Márton et al., (2002a); 10: Márton et al., (2002b); 12: Márton and Fodor, (2003); 13: Scholger and Stingl (2004), Benkő et al., (2005). Inner West Carpathian paleomagnetic unit (IWC: Márton and Márton 1968, 1969, Ando et al. 1977, Karátson et al. 2000, Póka et al. 2004), Mecsek Mts. (M: Márton and Márton 1999) and Apuseni Mts. (AM: Panaiotu 1998) are studied areas without Post-Badenian CCW rotation.

tectonic history of the Pannonian Basin. Moderate CCW (25 to 40°) rotation is indicated by most of them (Fig. 1) with respect to North. Notable exceptions are the "Inner West Carpathian paleomagnetic unit", the Mecsek and possibly the Apuseni Mts (Fig. 1). The first two seem not to have rotated since the Badenian, while the third did, but in the CW sense. The whole outer margin of the Outer West Carpathians is also characterized by CCW rotations, which were observed on molasse sediments of Karpatian (in the West) through Sarmatian (in the east) age (Márton et al. 2003). One is tempted, therefore, to jump to the conclusion that a huge block, containing the Western Carpathians together with the Foredeep and also the Intra Carpathian area rotated counterclockwise, in post-Badenian times. The rotation could have been triggered by rotating Adriatic microplate. In such case, the areas earlier mentioned exceptions are seen as rotating clockwise with respect to the block.

However, there is a serious objection to the above model, namely, that the model did requires simultaneous CCW rotation within the block, which does not seem to be the case. Although constraints for the precise age of the rotations are generally lacking, the age of the rocks showing rotation provides a lower time limit to the event. The existing constraints suggest that the rotations must have take place in the NE part of the Pannonian Basin around 12 Ma, while they are considerably younger (5–6 Ma) in the Southern and Western part of the basin. The latters were probably induced by rotating Adriatic microplate, while the formers are most likely subduction related.

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Coupling between Foreland and Backarc Basins Post-Orogenic Vertical Movements: Neotectonic Deformations in the SE Carpathians – Transylvania Basin Corridor

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The Carpathians represent a key site for studying processes linked to lateral variations in continental collision mode, development of unusual foredeeps and relationship with opening and evolution of backarc basins, large scale post-collisional deformations and differential vertical motions along the orogen. The SE part of this highly arcuate orogen presents an adequate opportunity to study large scale Pliocene-Quaternary (neo)tectonic patterns associated mainly with significant differential vertical movements along, and across the orogen. In this context, intra-plate folding due to the Pliocene to Quaternary inversion of the locked Carpathians foreland and Transylvania basin system appears to play a more important role than hitherto assumed. Deformation is asymmetric, with larger wavelengths in the Carpathains foreland, the amplitude gradually decreasing towards the Apuseni Mountains.