

Paleogeography of the Central Paratethys particularly the Vienna Basin

Michael KOVÁČ

Department of Geology and Paleontology, Faculty of Sciences Comenius University, Mlynska dolina,
SK-84215 Bratislava, Slovakia

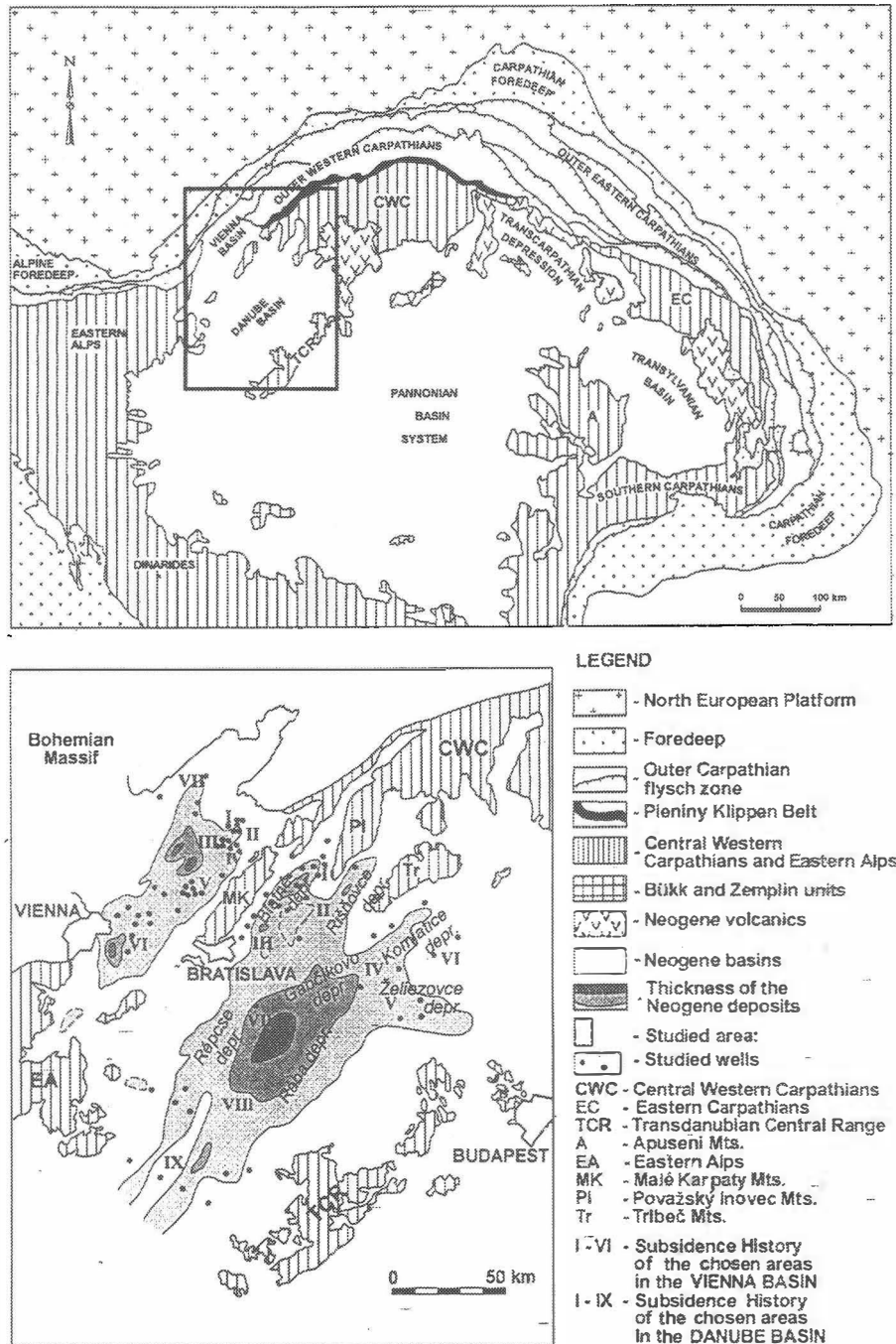


Fig. 1: Map of the studied area (after LANKREIJER et al. 1995).

The approach to reconstruct the basin evolution must be multidisciplinary. Many different results have to be connected: for example, paleogeography, lithostratigraphy, tectonics, relative sea level changes and immigration of new faunas. In detail, the northern (Slovak) part of the Vienna Basin was studied (Fig. 1). The evolution of the “present day” Vienna Basin started with a tectonically controlled subsidence in the Karpatian. In the northern part

of the basin a strong tectonic control existed during this time (Fig. 2). During the Middle and Late Miocene the Vienna Basin gained, more or less, a back-arc basin character. All parts of the basin show their individual evolution in time (Fig. 2).

SUBSIDENCE HISTORY OF THE VIENNA BASIN

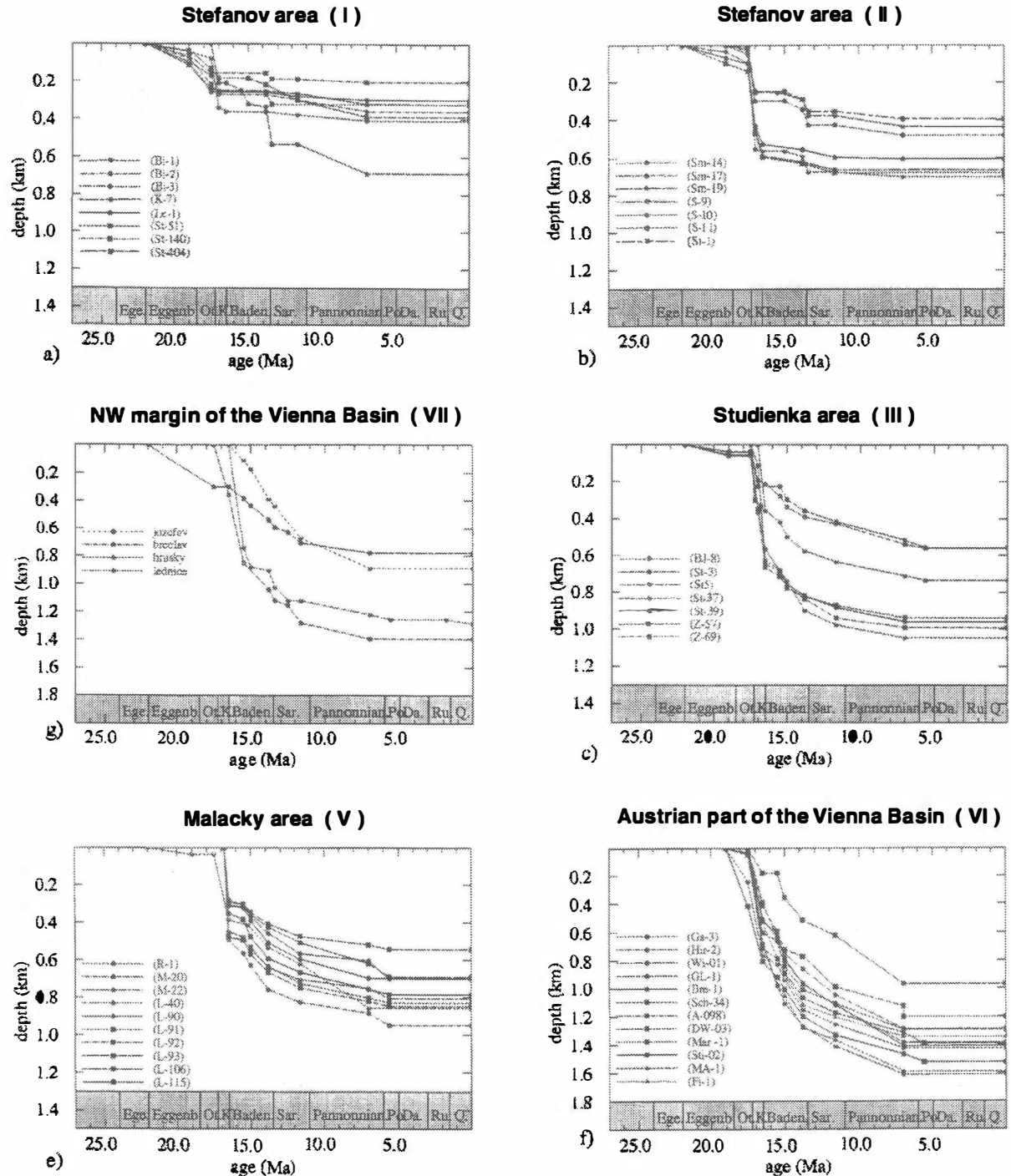


Fig. 2: Comparison of the subsidence history in various parts of the Vienna Basin (LANKREIJER et al. 1995).

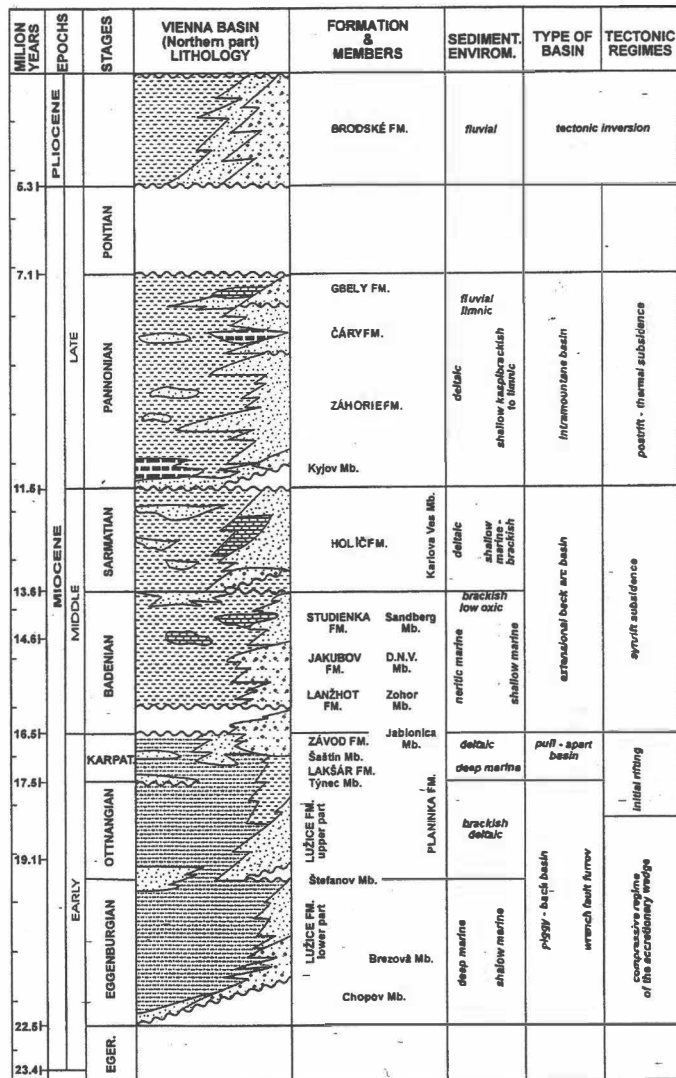


Fig. 3: Miocene lithostratigraphy of the Northern part of the Vienna basin (after KOVÁČ 2000).

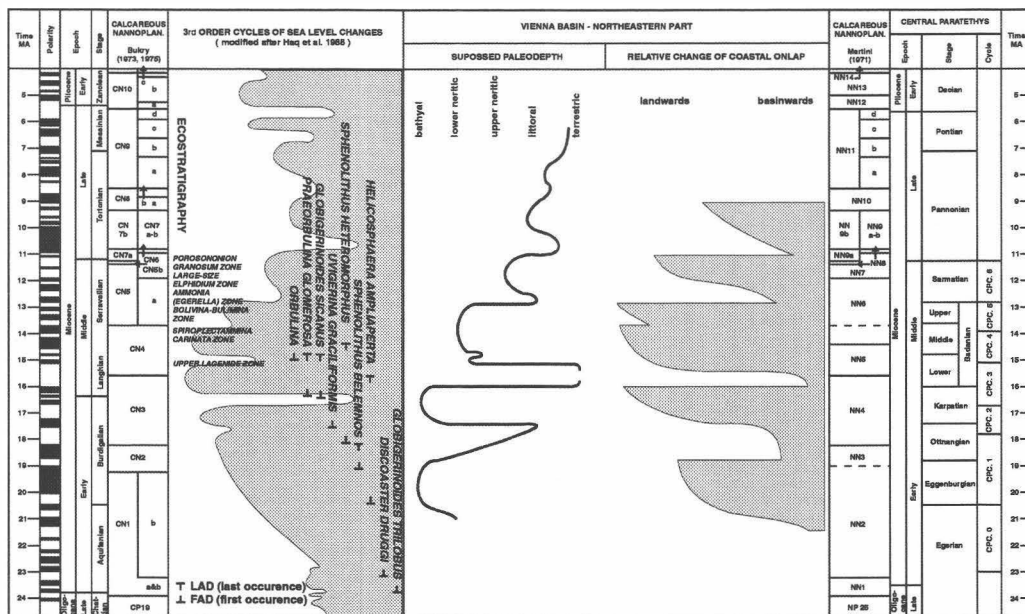


Fig. 4: Coastal onlap and relative sea level changes (paleodepth) in the northeastern part of the Vienna Basin (after HUDÁČKOVÁ 1995, KOVÁČ & HUDÁČKOVÁ 1997, HUDÁČKOVÁ & SLAMKOVA 2000, KOVÁČ et al. 2000).

Localities	MN-zones	Index fossils
Stokerav limestone pit (Neudorf-Spalte)	MN6 (a) (lower part)	<i>Dinosorex sansaniensis</i> <i>Lanthanotherium sansaniensis</i> <i>Plesiodimylus chantrei</i> <i>Talpa minuta</i> <i>Pliopithecus vindobonensis</i> <i>Amphicyon major</i> <i>Hemicyon sansaniensis</i> <i>Cricetodon sansaniensis</i> <i>Eomuscardinus sansaniensis</i> <i>Microdyromys miocenicus</i> <i>Bransatoglis astraracensis</i> <i>Chalicotherium grande</i> <i>Dicrocerus elegans</i> <i>Heteroprox larteti</i> <i>Taucanamo sansaniensis</i> <i>Zygodolophodon turicensis</i>
Sandberg	MN6 (b) (upper part)	<i>Griphopithecus suessi</i> <i>Pliopithecus antiquus</i> <i>Trocharion albanense</i> <i>Ursavus brevirohinus</i> <i>Dicrocerus elegans</i> <i>Heteroprox larteti</i> <i>Taucanamo sansaniensis</i> <i>Zygodolophodon turicensis</i>
Bonanza	MN6 (b) (upper part)	<i>Trocharion albanense</i> <i>Eumyarion sp.</i> <i>Zygodolophodon turicensis</i>
Wait quarry	MN6	<i>Pristiphoca vetusta</i>

Tab. 1: Mammal localities and Index fossils (after HOLEC & SABOL 1996, SABOL 2000).

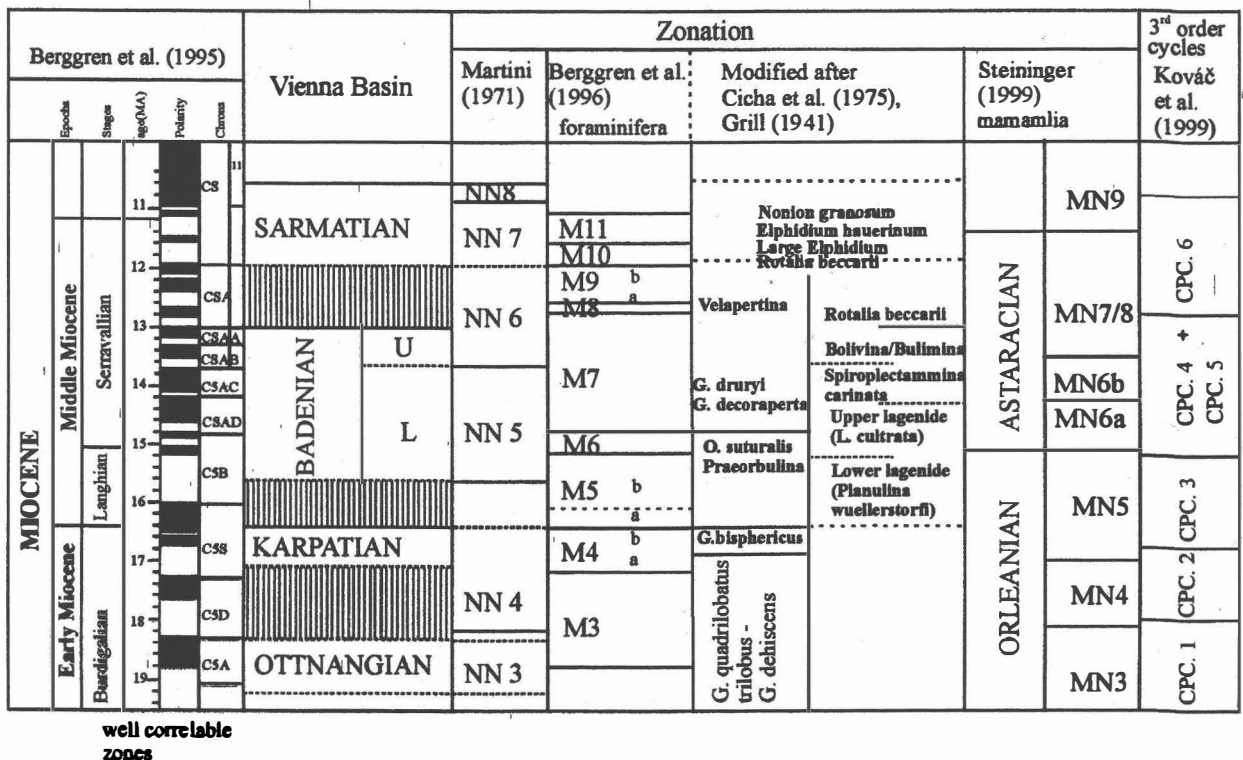


Fig. 5: Compilation of different fossil zonations of the Slovakian part of the Vienna Basin (after HUDÁČKOVÁ et al. 2000).

References

- BERGGREN, W.A., KENT, D.V., SWISHER, C.C. & AUBRY, M.-P., 1995: A revised Cenozoic Geochronology and Chronostratigraphy. - In: BERGGREN, W.A., KENT, D.V. & HARDENBOL, J., (eds.): Geochronology, Time Scales and Global Stratigraphic Correlations: A Unified Temporal Framework for a Historical Geology. - SEPM Special. Publ., 54, 129-212, Tulsa.
- CICHA, I. & KOVÁČ, M., 1990: Neogene climatic changes and geodynamics of the Central Paratethys. - In: MINAŘIKOVÁ, D. & LOBITZER, H., (eds.): Thirty years of geological cooperation between Austria and Czechoslovakia, 70-78, Praha.
- GRILL, R., 1941: Stratigraphische Untersuchungen mit Hilfe von Mikrofaunen im Wiener Becken und den benachbarten Molasse-Anteilen. - Oel u. Kohle, 37, 595-602, Berlin.
- HOLEC, P. & SABOL, M., 1996: Tertiary vertebrates of Devínska Kobyla. - Mineralia Slov., 28, 6, 519-522, Bratislava.
- HUDÁČKOVÁ, N., 1995: Ecotype variability of genus *Ammonia* Brunnich 1772 in Neogene of Paratethys and their paleoecological significance. - Mineralia Slov., 27, 133-144, Bratislava.
- HUDÁČKOVÁ, N., 1995: Dinoflagellata from the Pannonian sediments of the NW part of Vienna basin. - Rom. Journ. Stratigr., 76/7, vol 1, Bucharest.
- HUDÁČKOVÁ, N., KOVÁČ, M., ANDREYEVA-GRIGOROVIC, A., BARÁTH, I., HALÁSOVÁ, E., HOLEC, P., SABOL, M., SLAMKOVÁ, M. & HLAVATÝ, I., 2000: The Vienna Basin environment and ecosystem dynamics during the time interval 17-14 MA, results and problems. - EEDEN, Environments and Ecosystem Dynamics of the Eurasian Neogene, 24-26, Lyon.
- HUDÁČKOVÁ, N. & SLAMKOVA, M., 2000: Paleoecological reconstruction of the Pannonian sediments of the NW part of the Vienna Basin (slovak part). - Mineralia Slov., 4, 32, 439-441, Bratislava.
- KOVÁČ, M., HALÁSOVÁ, E., HOLCOVÁ, K., HUDÁČKOVÁ, N. & ZLINSKÁ, A., 1999: Relationships between eustatic sea-level fluctuations and sedimentary sequences of the Western Carpathian Neogene basins. - Geol. Carpathica, 50, spec. issue, 40-41, Bratislava.
- KOVÁČ, M., HUDÁČKOVÁ, N. & BARÁTH, I., 2000: Paleogeography, Geodynamics & Eustacy in the Carpathian – Pannonian region during the Miocene. - EEDEN, Environments and Ecosystem Dynamics of the Eurasian Neogene, 29-38, Lyon.
- KOVÁČ, M., 2000: Geodynamic, paleogeographic and structural development of the Carpathian – Pannonian region during the Miocene – New view on the Neogene Basins of Slovakia. - VEDA, 5-203 (in Slovak), Bratislava.
- KOVÁČ, M. & HUDÁČKOVÁ, N., 1997: Changes of paleoenvironment as a result of interaction of tectonic events with sea level changes in the northeastern margin of the Vienna Basin. - Zbl.Geol. Paläont., T.1, H5/6, 457-469, Stuttgart.
- LANKREIJER, A., KOVÁČ, M., CLOETINGH, S., PITTOŇÁK, P., HLÔŠKA, M. & BIERMANN, C., 1995: Quantitative subsidence analysis and forward modelling of the Vienna and Danube Basins. - Tectonophysics, 252, 433-451, Amsterdam.
- MARTINI, E., 1971: Standard Tertiary and Quaternary calcareous nannoplankton zonation. - In: Proceeding of 2nd planktonic conference, 1970, 739-785, Roma
- SABOL, M., 2000: Neogene Carnivores of Slovakia. - Slov. Geol. Mag., 6, 2-3, 124-126, Bratislava.
- STEININGER, F.F., 1999: Chronostratigraphy, Geochronology and Biochronology of the Miocene "European Land Mammal Mega-Zones" (ELMMZ) and the Miocene "Mammal -Zones (MN-Zones) - In: RÖSSNER, G.E., HEISSIG, K.(eds.) The Miocene Land Mammals of Europe, 9-24, Verlag Dr. Friedrich Pfeil, München.

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Autor(en)/Author(s): Kovac Michael

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