

similar to those of the Bohemium with the exception of much higher contents of REE in the Moldanubian amphibolites probably due to contamination of neighbouring gneisses in which they build only thin layers. In contrast, the majority of amphibolites from the Strážov Varied Group have alkaline basaltic composition.

Ultramafites along the CBF have character of cumulative komatiites. Amphibolites from the Rittsteig borehole drilled through the CBF correspond along the whole profile (around 550 m) to those of the Bohemium.

Ultramafic pyroxenite at Brtí from the Moldanubian Strážov Varied Group is likely to have originated from the lower

crust and could document the very beginning of the differentiation series of the basic intrusive rocks such as the Všeruby Massif belonging to Bohemian Neukirchen-Kdyně Complex. The differentiation processes in the lower crust could be thus similar both in Bohemium and in Moldanubicum.

References

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Evolution of Miocene Depositional Systems in the Northern Vienna Basin

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A depositional system is defined as an assemblage of process-related facies. Examples of marine depositional systems are divided into regressive and transgressive classes, thus reflecting the temporal relative sea-level changes.

Regressive classes include delta mouth bar systems, in which a generally upward-coarsening facies succession reflects progradation of levee, back bar, bar crest and bar front facies over prodelta muds. Another example is provided by the strandplain-shelf system which also generates an upward-coarsening succession, but with rather different facies, reflecting the greater dominance of waves. The prodelta plume is a third type.

Transgressive depositional systems include barrier-lagoon-estuary depositional systems and transgressive shelf sand ridge depositional systems, each of which generate their own distinctive suite of facies.

Recognition of individual depositional systems in the northern Slovakian part of the Vienna Basin helps to reconstruct the basin history within the Miocene time framework (Fig. 1).

The Eggenburgian depositional systems in the Vienna Basin show a distinct transgressive pattern. They are represented mostly by shelf sand ridge depositional systems. In the NE part of the basin the sedimentation started by shelf, shoreface, rocky-coast transgressive depositional system, passing upwards/landwards into a barrier-lagoon-estuary system. At the end of Eggenburgian a relative sea-level fall caused a rapid progradation of the Štefanov regressive deltaic mouth bar depositional system on the south.

In Ottnangian the Štefanov deltaic sediments were flooded and covered by shelf sands transgressive depositional system, finishing by basinal clays. Below the Ottnangian/Karpatian boundary a progradation of fluvial-deltaic Bockfless sandy mouth bars indicate a new regression.

The Karpatian stage comprises two major transgressive/regressive cycles, being divided by widespread Šaštín event, when

the north-prograding regressive mouth bar depositional system reached almost the present northern margin of the basin. The second Karpatian cycle finished by rapid progradation of gravelly Aderklaa and Jablonica regressive mouth bars northwards, and by large-scale erosion in the Vienna Basin.

The Lower Badenian backstepping of the Suchohrad deltaic and Zohor alluvial-deltaic bodies and their gradual replacement by shelf sand ridges mirror the new transgression. At the Lower/Middle Badenian boundary a major regression caused the origin of alluvial, deltaic and lagoonal Žižkov Fm., representing the strandplain-shelf regressive depositional system. At the eastern margin of the basin the Láb sand sheet with algal bioherms documents a new transgression in the late Middle Badenian. The Upper Badenian sedimentation at the eastern and northern margins of the basin started by minor regressive progradation of small mouth bars, which were rapidly replaced by transgressive Sandberg shelf sands depositional system with algal biostromes.

During the late Badenian a decrease of salinity starts to be visible and a rapid progradation of the Lower Sarmatian Holíč strandplain-shelf depositional system marks a large-scale regression. The new Sarmatian transgression is represented by wide flooding of the northern basin margins by brackish Skalica Fm., comprising beach sand bars and bryozoan-serpulid limestones transgressive system.

At the end of Sarmatian the prograding deltaic mouth bars of the peleo-Danube river represent a regression in the southwestern part of the basin, continuing up to the early Pannonian time. The next Pannonian brackish transgressive/regressive cycle is represented by the Lower Pannonian Záhorie Fm. From the Upper Pannonian time, the sedimentary environments start to be coal-bearing limnic and alluvial in the whole Vienna Basin.

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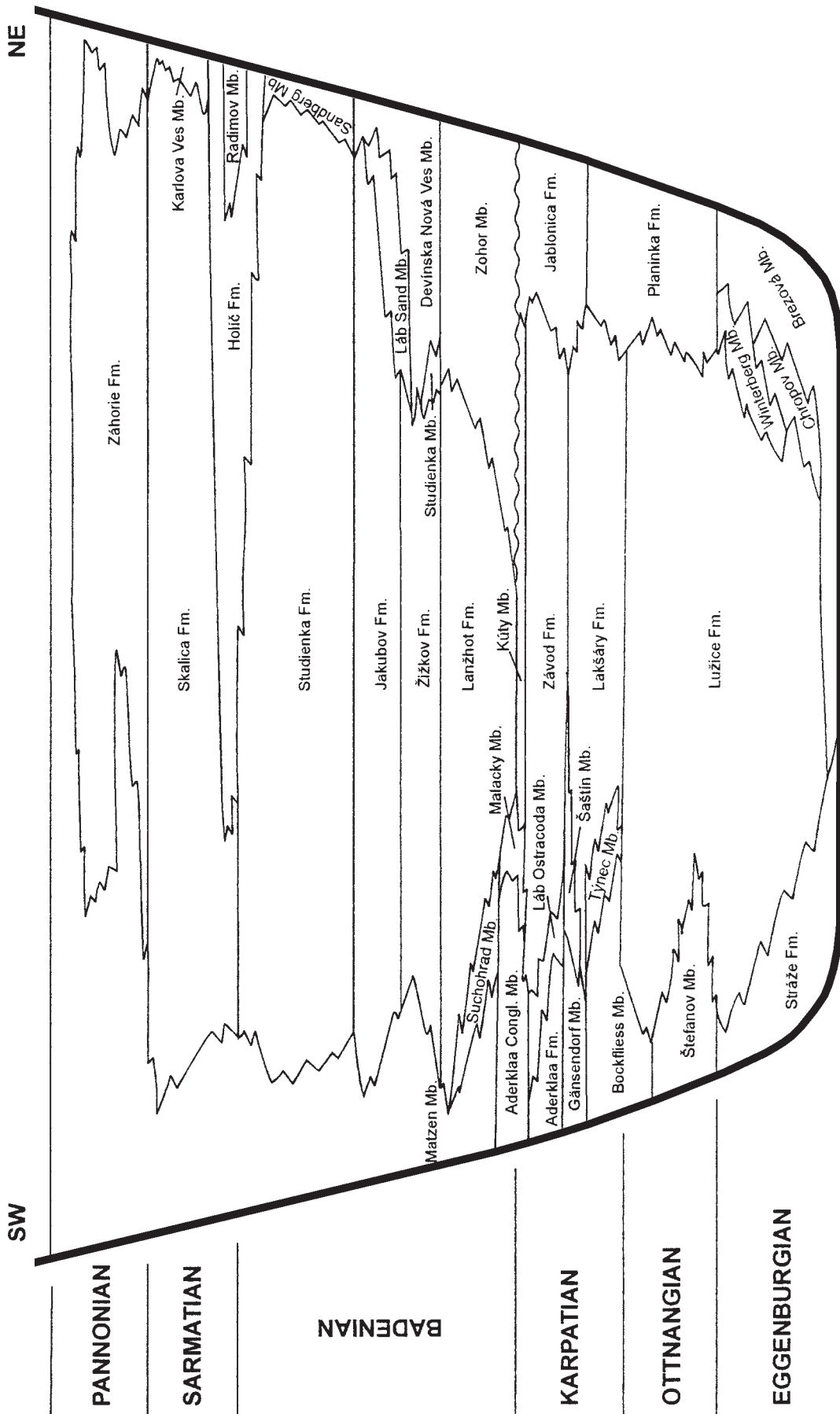


Fig. 1. Tub model of depositional systems in the northern Vienna Basin.