

Kiscellian sediments in deep oil wells of the Danube Basin

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We present the results of microfauna reevaluation of Tertiary sediments in Želiezovce depression of Danube Basin in terms of presence of chrono and lithostratigraphic units in problematic sections of two selected deep oil wells excavated in the 60s of 20th century by former company ČND Hodonín.

In the past, the oil boreholes were realized with intention to determine the stratigraphy and lithology of Neogene sediments, to verify their oil and gas carrying capacity. Altogether, 22 samples have been analyzed from boreholes Modrany 1 (M 1) and Nová Vieska 1 (NV 1).

Borehole Nová Vieska 1 (according to our results terminated at a depth of 3 171 m by Kiscellian, originally by Priabonian) did not reach pre-Neogene, respectively pre-Tertiary subsoil, not even after deepening the projected footage.

In the Neogene we found sediments of two stratigraphic stages: Badenian and Sarmatian. The Sarmatian sediments as Vráble Formation, foraminiferal biozone with *Elphidium reginum* (Grill, 1941), have been ascertained in the well Modrany 1, in depth 1 050–1 056 m. Middle Badenian as Pozba Formation, microfaunistically appertaining to biozone of *Spiroplecatmmina carinata* (Grill, 1941), in the well Modrany 1/ 1 098–1 303 m. Lower Badenian as Bajtava Formation, microfaunistically appertaining to lagenida biozone (Grill, 1943), is represented in the well Modrany 1/ 1 402–1 760 m and Nová Vieska 1/ 1 797–2 562 m.

In the Paleogene, there were in chronostratigraphy the most striking differences in comparison to previous evaluation. Upon foraminifera we reclassified sediments formerly classed with Priabonian and Latorf to Oligocene (Kiscellian and Egerian) (Fig. 1) and those with Rupelian to Lower Badenian.

An important step was that in the Danube basin been for the first time applied the lithostratigraphic units of Buda Paleogene (Budai & Konrád, 2011). Acquired microfauna gave and furnished proof of the age of Kiscellian Formation to Kiscellian up to lower Egerian. In the well Nová Vieska 1 (from about 3 148 m), under Kiscellian Formation there is Hárshegyí sandstone.

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References:

- Budai, T. & Konrád, G. 2011. Magyarország földtana. Pécs University of Sciences, Pécs. 102 pp.
Grill, R. 1941. Stratigraphische Untersuchungen mit Hilfe von Mikrofaunen im Wiener Becken und den benachbarten Molasse-Anteilen. *Oel und Kohle*, 37, 595–602.

Grill, R. 1943. Über mikropaläontologische Gliederungsmöglichkeiten im Miozän des Wiener Becken. *Mitt. Reichsanst., Bodenforsch.*, 6, Wien, 33–44.

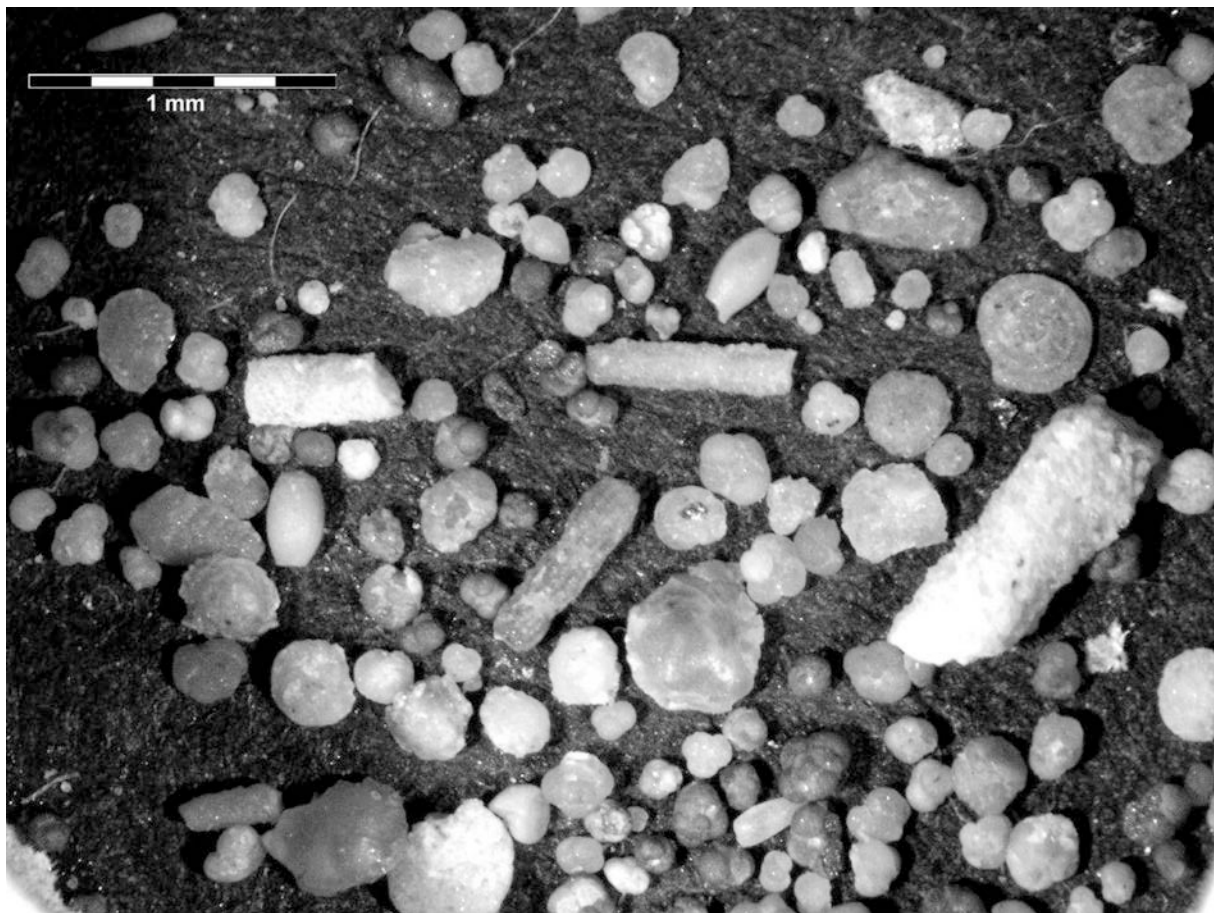


Figure 1: Intercommunity of foraminifera from borehole
Modrany 1 in depth 1 990 –1 995 m.