

THE LOWER MIOCENE DEPOSITS OVERLYING THE KRYNICA SUBUNIT OF THE MAGURA NAPPE NEAR HUMENNÉ (EAST SLOVAKIA)

M. MAŤAŠOVSKÝ¹, A. S. ANDREYEVA–GRIGOROVICH²

¹*Department of Geology and Paleontology, Faculty of Sciences, Comenius University, Mlynská Dolina G, 84215
Bratislava, Slovakia; mmatasovsky@hotmail.com*

²*Lviv University, Department of Historical Geology, Hrushevsky street 4, 290005 Lviv, Ukraine*

Key words: Early Miocene, Outer Western Carpathians, Kochanovce Member, lithostratigraphy, biostratigraphy

For this time there are known three occurrences of the Early Miocene deposits in space of Magura Nappe. First is known from Orava – Nowy Targ Basin (Cieszkowski 1992), second from basin near Nowy Sacz in Poland (Oszczypko et al. 1999) and third occurrence is known from Modrá nad Cirochou in eastern Slovakia (Karoli in Žec ed. 1997). The fourth, new occurrence near Kochanovce village in the broader area of the Pieniny Klippen Belt is described below.

The study area, situated in the Laborecká vrchovina Mts. (northern from Humenné) is built by Mesozoic limestones of the Smolegowa and Krupianka Fms. and by the Paleocene to Lower Eocene Proč Member (Poffaj 1997 advises the Proč Member to the Magura unit „s. I.“) of the Pieniny Klippen Belt. Moreover, in the region also Paleogene Mbs. of the Krynica, Bystrica and Rača Subunits appear. Based on stratigraphy, lithology, tectonic position and heavy mineral study, new lithostratigraphical unit – the Laborec Member has been described.

The Laborec Mb. is built of a sedimentary sequence which deposits are tectonically overthrust to north on the top of Krynica Subunit, a part of the thrust structure overlying also the Proč Mb.

The base of the Laborec Beds, up to 500 – 700 m thick, is characterised by thick bedded sandstone – conglomeratic flysch, with a transition to medium and thin bedded sandstone – claystone flysch. The thickness of claystone beds is 1 cm to 70 cm. The thickness of sandstones is ranging from 3 cm to more than 2 m, usually with a microconglomerate on the

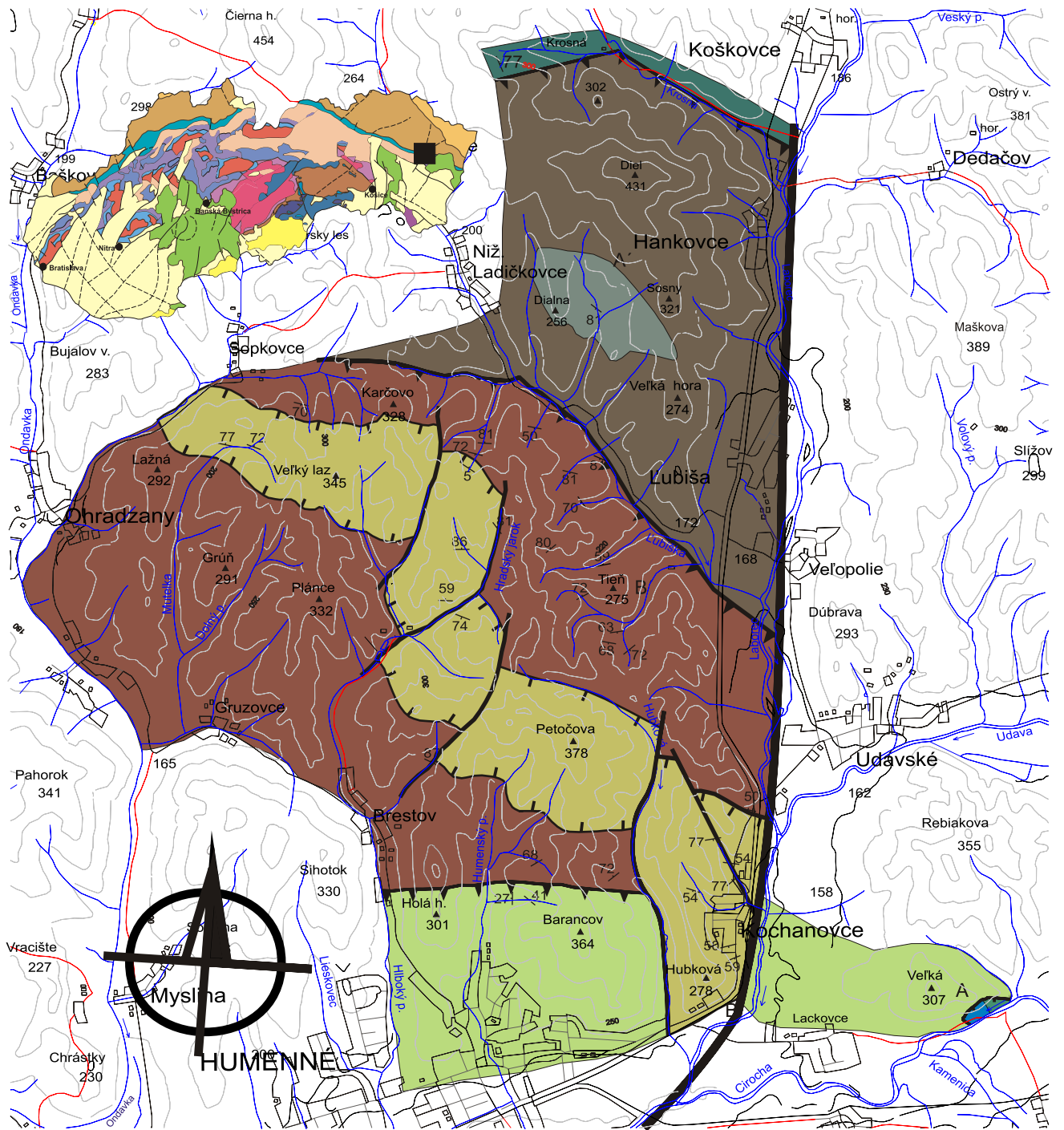
basis. Bedding of sandstones is equivalent with Ta – e of Bouma intervals. Occurrences of plant detritus and micas in laminas are common. No conglomeratic layers were found in studied profiles, but in an unnamed creek northern from Kochanovce village its occurrences were documented. Conglomerates have typical graded stratification. The size of pebbles is 2 cm or less, but larger pebbles were found there: vein quartz - 5 cm, quartzite - 20 cm, strongly K - altered rhyolite - 25 cm and limestones up to 60 cm. The orientation of flute casts indicates paleotransport direction from ESE to NWN.

Stratigraphical range of Laborec Mb. were defined on the base of following association of calcareous nannofossils : *Cyclicargolithus floridanus* (Roth et Hay), *Cyclicargolithus abisectus* Müller, *Sphenolithus moriformis* (Brönniman et Stradner), *Sphenolithus conicus* Bukry, *Sphenolithus dissimilis* Bukry et Percival, *Sphenolithus delphix* Bukry, *Sphenolithus disbelemnos* Fornaciari et Rio, *Reticulofenestra minuta* Roth, *Reticulofenestra* aff. *pseudoumbilicus* (Gartner), *Pontosphaera multipora* Kamptner, *Coronocyclus nitescens* Kamptner, *Braarudosphaera bigelowii* Grand et Braarud, *Triquetrorhabdus* cf. *carinatus* Martini, *Triquetrorhabdus challengerii* Perch-Nielsen, *Orthorhabdus* cf. *serratus* Bramlette et Wilcoxon (Kamptner) *Umbilicosphaera rotula* (Kamptner), *Discoaster* cf. *druggii* Bramlette et Wilcoxon, *Coccolithus pelagicus* (Wallich), *Helicosphaera perch-nielseniae* (Haq), *Helicosphaera euphratis* (Haq), *Coronocyclus nitescens* Kamptner, *Solidopons petrae* Theodoridis,

This association defined age from the Late Oligocene (NN 1 biozone) to Early Miocene (NN 3 biozone), with a possibility to extend this time interval from the Rupel - Chat boundary up to the Middle Miocene.

References

- Brown P., R., ed., 1998 : Calcareous nannofossil biostratigraphy, Chapman & Hall, London, 1 – 313.
- Karoli S., 1997: Molasové sedimenty. In: Žec, B., ed., Vysvetlivky ku geologickej mape Vihorlatských a Humenských Vrchov. GÚDŠ. Bratislava, 59 – 62.
- Cieszkowski M., 1992: Marine Miocene deposit near Nowy Targ, Magura Nappe, Flysch Carpathians (South Poland). Geol. Carpathica, 46, 6, 339 – 346.
- Molnár J., 1991: In: Kaličiak, M., ed. Vysvetlivky ku geologickej mape severnej časti Slanských vrchov a Košickej kotliny M 1 : 50 000. GÚDŠ, 6-231.
- Oszczypko N., Malata E., Oszczypko – Clowes M., Duńczyk L., 1999a: Budowa geologiczna Krynicy (płaznaczowina magurska), Przegląd Geologiczny, vol. 47, nr. 6, 549 – 559.
- Oszczypko N., Andrejeva – Grigorovich A., S., Malata E., Oszczypko – Clowes M., A., 1999b: The Lower Miocene deposits of the Rača Subunit near Now Sacz (Magura Nappe, Polish Outer Carpathians). 419 – 433.
- Potfaj M., 1997: Magurský paleogén a paleogén bradlového pásma. In: Žec, B., ed., Vysvetlivky ku geologickej mape Vihorlatských a Humenských Vrchov. GÚDŠ. Bratislava, 39 – 49.



Explanations :

Pieninyklippen belt

- durštyn member
- smolegowa member
- proč member

Magura nappe

- krynica subunit
- strihovec member
- bystrica subunit
- bystrica member
- beloveža member

rača subunit

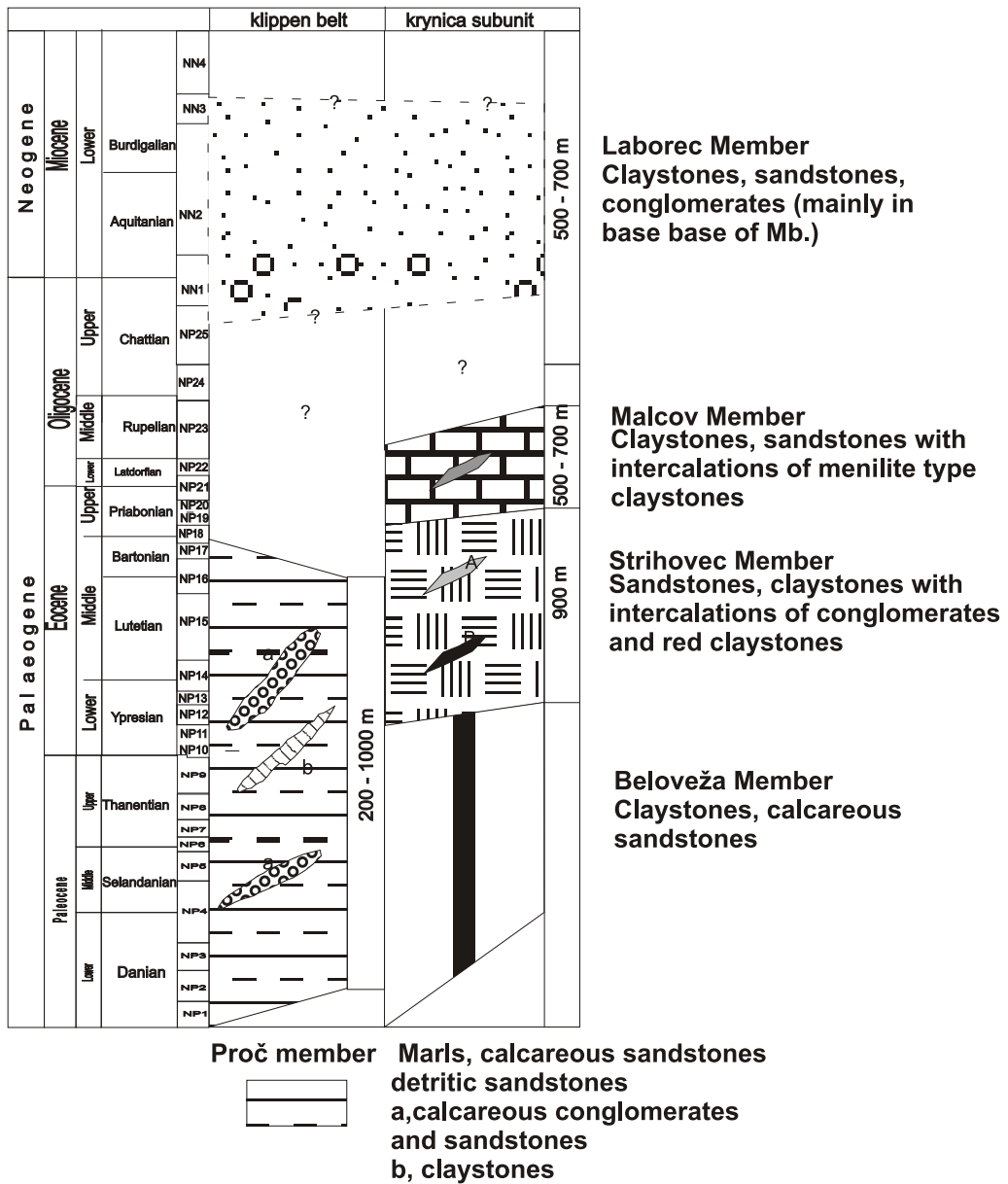
- zlín member
- kochanovské vrstvy

Overthrust lines

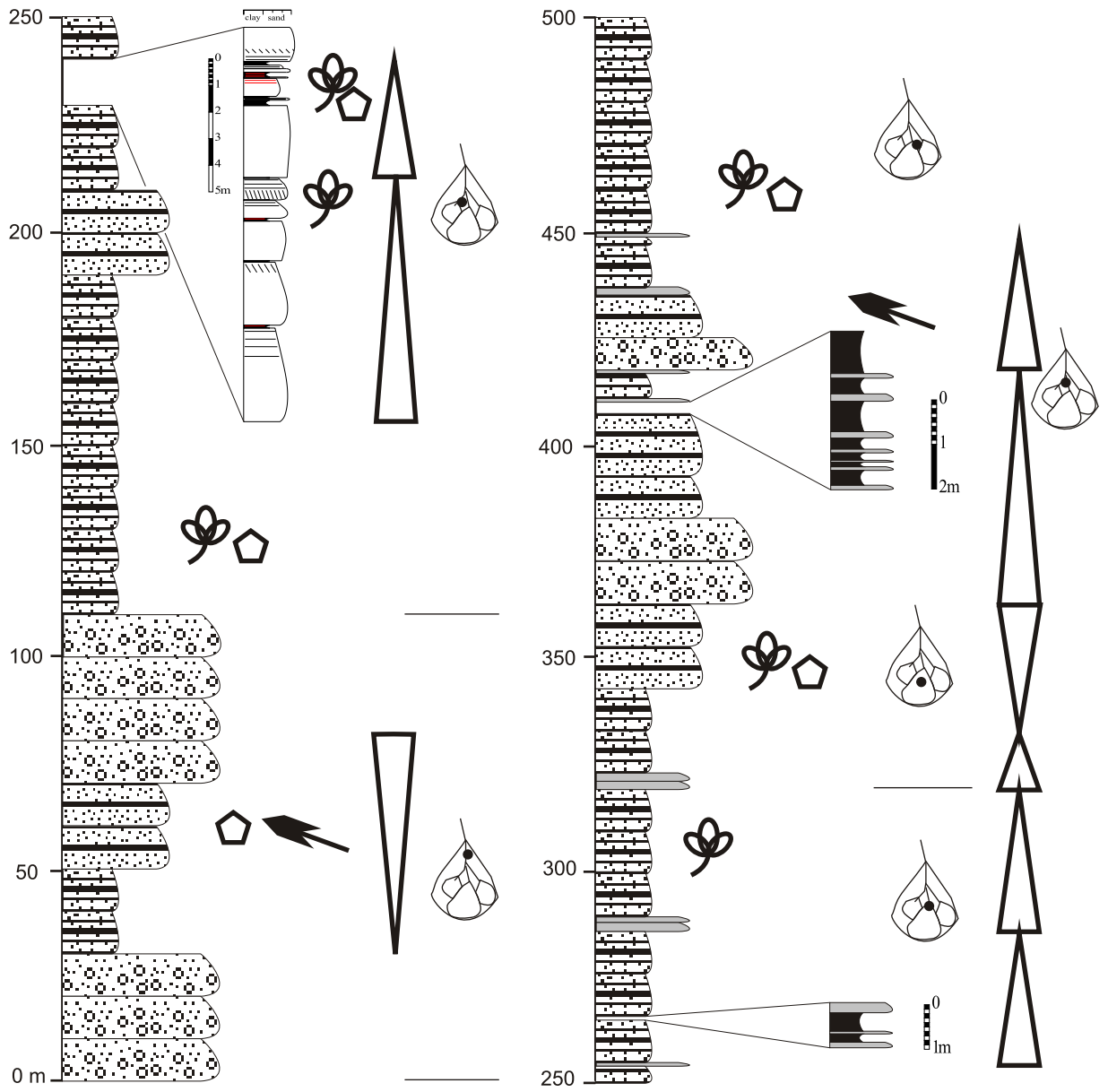


Faults















Lithostratigraphical column of the Eocene to Early Miocene of the Krynica Subunit based on Potfaj in Žec et al. 1997, Molnár in Kaličiak et al. 1991, Oszczypko et al. 1999a, Oszczypko et al. 1999b. and authors datas
Timescale based on Martini in Brown ed 1998.



Explanations :

- | | | | | | |
|---|--|---|--|---|--|
|  | Thick bedded turbidites
Mainly sandstones and conglomerates |  | Thin bedded turbidites
Mainly claystones and sandstones |  | Flute casts orientation |
|  | Medium bedded turbidites
Mainly sandstones and claystones |  | Claystones |  | Sedimentary trends |
|  | Sandstones |  | Micas an bedding planes |  | Position of sequences in deep marine sedimentary wedge |
| | |  | Plant detritus | | |