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Paleogene micro- and nannofossil assemblages from the Obleševo site in Kočani valley, Republic of North Macedonia

Палеогенска микро- и нанофосилна асоциация от района на Облешево в Кочанската долина, Република Северна Македония

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Keywords: foraminifera, nannofossils, Paleogene, drill hole, Obleševo.

Introduction

The Obleševo site belongs to the Ovče Pole Basin, which is a large Paleogene sedimentary mass with NW-SE trend that is superimposed on varied rocks from the eastern part of the Vardar Zone in the territory of the Republic of North Macedonia. The age of the sediments (Late Eocene–Early Oligocene), as well as their lithology, thickness and spatial relationships, were discussed in several works (Stojanova et al., 2012; Valchev et al., 2013; Stojanova, Petrov, 2014, 2016, 2018).

The present paper aims to represent the micro- and nannofossil research in Paleogene sediments of P-5 drill hole. Exploration drilling was performed in the period 1980–1983 in the area of Kočani valley in order to evaluate the possibility of utilization of thermal water at the locality Obleševo. The drill hole P-5 is located approximately 2 km SW of the village of Obleševo, NE of the town of Štip (Rakičević et al., 1976) (Fig. 1a).

The drilling penetrated the following units (Fig. 1b): the Quaternary (0–79 m), Neogene (79–277 m), and Paleogene (277–710 m) sedimentary complexes, as well as Paleozoic crystalline rocks (710–789 m). The Quaternary includes large-scale gravel, sand and silt. The Neogene complex comprises clay, gravel and sand in the interval between 79 to 189 m, and in the interval from 189 to 277 m crystalloclastic biotite trachyte tuff and andesite breccia were recorded. The Paleogene complex comprises greenish calcareous clay layers alternating with sandstone beds and marly clays with thickness up to several meters. The Paleozoic rocks are represented by mica shists and gneisses (Verbovšek et al., 1983).

Seven samples, picked up from the interval from 350 m to 650 m, were analyzed for foraminiferal fauna and calcareous nannofossils in the laboratory of the Institute of Paleontology at the University of Ljubljana.

Results and discussion

The study of the foraminiferal remains revealed that the samples in the interval from 452 m to 593 m contain well preserved specimens of 19 species including: *Spiroplectammina carinata* (d’Orbigny), *Cibicidoides ungerianus* (d’Orbigny), *Glandulina laevigata* d’Orbigny, *Bathysiphon cf. taurinensis* Sacco, *Lenticulina cf. limbosa* (Reuss), *Anomalinoides granusosus* (Hantken), *Sphaeroidina bulloides* d’Orbigny, *Vaginulinopsis pseudodecortata* Hagn, *Glomospira charoides* (Parker et Jones), *Quinqueloculina sp.*, *Spiroloculina sp.*, *Pyrgo sp.*, *Gyroidina sp.*, *Biloculina sp.*, *Melonis sp.*, *Chiloostomella sp.*, *Planulina sp.*, *Uvigerina sp., Globigerina sp.*

The data, obtained from the nannofossil research revealed rich and diverse assemblages containing well preserved specimens of 27 species including: *Cyclicardolithus floridanus* (Roth et Hay), *Helicopontosphaera obliqua* (Bramlette et Wilcoxon), *Helicopontosphaera euphratis* (Haq), *Dictyococcites scrippsae* Bukry et Percival, *Zygrablithus bijugatus* (Deflande), *Helicopontosphaera truncata*

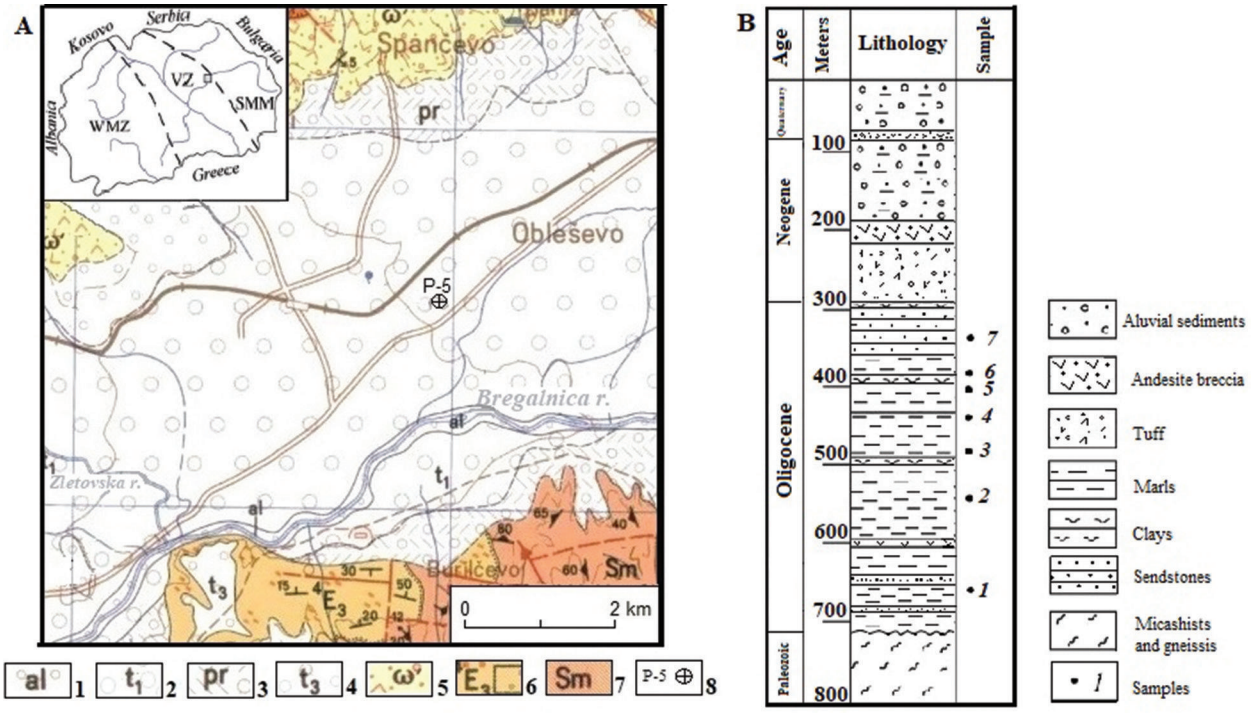

Fig. 1. *A*, geological map of the locality of Obleševo: *1*, alluvium; *2*, lower river terrace; *3*, proluvium; *4*, old river terrace; *5*, andesite breccia; *6*, upper flysch lithozone (Upper Eocene); *7* mica schists; *8*, drill hole; *B*, lithological column of the P-5 drill hole: *1*, alluvial sediments; *2*, andesite breccia; *3*, tuff; *4*, marls; *5*, clays; *6*, sandstones; *7*, mica shists and gneisses; *8*, samples

(Bramlette et Wilcoxon), *Reticulofenestra abisecta* Müller, *Reticulofenestra bisecta* (Hay, Mohler et Wade), *Reticulofenestra umbilica* (Levin), *Reticulofenestra lockeri* Müller, *Reticulofenestra sp.*, *Micrantholithus articulatus* Bukry et Percival, *Sphenolithus moriformis* (Brönniman et Stradner), *Pontosphaera multipora* (Kamtner), *Orthozygus aureus* (Stradner), *Reticulofenestra bisecta* (Hay, Mohler et Wade), *Reticulofenestra lockeri* Müller, *Coccolithus pelagicus* (Wallich), *Coccolithus eopelagicus* (Bramlette et Riedal), *Pontosphera multipora* (Kamptner), *Pontosphaera latelliptica* (Baldi-Beke), *Braarudosphaera bigelowi* (Graan et Braarud), *Ericsonia muiri* (Black), *Cycloplacolithella formosa* (Kamptner), *Lanternithus minutus* Stradner, *Zigrablithus bijugatus* (Deflandre), *Cribrosphaerella ehrenbergi* (Archangelsky).

This nannofossil assemblage is characteristic for NP22 to NP23 zones (upper part of the Lower Oligocene) (Martini, 1971). Among the foraminiferal species *Vaginulinopsis pseudodecortata* Hagn, *Anomalinoides granusosus* (Hantken), *Glomospira charoides* (Parker et Jones) have been found in Upper Eocene and Lower Oligocene deposits. The microfossil association found in the P-5 drill hole indicates a sublittoral water environment of sedimentation.

References

Martini, E. 1971. Standard Tertiary and Quaternary calcareous nanoplankton zonation. – In: *Proceedings II Plankt. Conf.*, *2*. Roma, 739–785.

Rakičević, T., N. Dumurdžanov, P. Petkovski. 1976. *Tolkuvač za Osnovna Geološka Karta na SFRJ. Scale 1:100 000. List Štip*. Skopje, Geološki Zavod, 1–70.

Stojanova, V., G. Petrov. 2014. Biostratigraphic correlation of the Paleogene sections in the Ovče Pole Basin, Repubic of Macedonia. – In: *National Conference with International Participation "GEOSCIENCES 2014"*. Sofia, Bulg. Geol. Soc., 67–68.

Stojanova, V., G. Petrov. 2016. Nannofossil assemblages from the Paleogene Nemanjici section, Republic of Macedonia. – In: *National Conference with International Participation "GEOSCIENCES 2016"*. Sofia, Bulg. Geol. Soc., 129–130.

Stojanova, V., G. Petrov. 2018. Paleogene nannofossil assemblages from the Krupište site in Kočani valley, Repubic of Macedonia. – *Rev. Bulg. Geol. Soc.*, *79*, 3, 101–102.

Stojanova, V., G. Petrov, V. Stefanova. 2012. Biostratigraphy of the Ovce Pole Paleogene basin, R. Makedonija. – *Geologica Macedonica*, *26*, 2, 53–63.

Valchev, B., V. Stojanova, S. Juranov. 2013. Paleogene hyaline benthic foraminifera (LAGENINA and ROTALIINA) from the Republic of Macedonia. – *Rev. Bulg. Geol. Soc.*, *74*, 1–3, 81–110.

Verbovšek, R., D. Ravnik, J. Sadnikov. 1983. *Izveštaj o Istražnim Bušotina P-5 kod Obleševo* (*Kočani*). Ljubljana, Geološki Zavod, 41 p. (in Serbo-Croatian).