

EGU21-8630

<https://doi.org/10.5194/egusphere-egu21-8630>

EGU General Assembly 2021

© Author(s) 2021. This work is distributed under the Creative Commons Attribution 4.0 License.



Campanian biostratigraphy and paleoenvironments, a case study from the Central Srednogorie Zone, Central Bulgaria

Docho Dochev¹, Michael Wagreich², and Polina Pavlishina¹

¹Sofia University, Geology, Paleontology and Fossil Fuels, Bulgaria (dochev@gea.uni-sofia.bg; polina@gea.uni-sofia.bg)

²Department of Geology, University of Vienna, Austria (michael.wagreich@univie.ac.at)

The Central Srednogorie Zone of Bulgaria represents a chain of strike-slip and pull-apart basins, part of the of the peri-Tethyan arc/back-arc basin system. The Upper Cretaceous volcano-sedimentary sequence in the western part of the Central Srednogorie Zone, forms two strips, spanning the Turonian-Maastrichtian interval. This succession is represented by basal siliciclastic sediments, an interval with magmatic rocks followed by volcanoclastic and epiclastic deposits, covered by white, red, grey limestones, with fast transition to sandy low-density turbidites. One of the most representative and continuous sedimentary record in the Panagyurishte strip is exposed east of the Petrich village (Petrich section).

The base of the Petrich section is composed of the rocks from the so-called lower epiclastic unit (Coniacian-Santonian), followed by grey, pink to variegated limestones of the Mirkovo Formation (Santonian-Campanian). The middle and upper part of the section consists of muddy-sandy turbidites of the Chugovitsa Formation (Campanian-Maastrichtian). The lower part of this formation, the Voden Member, composed of grey thin bedded marls with rare sandstones beds, has yielded a comparatively rich macro- and microfossil record. Upwards, thin to medium bedded sandstones and marls are in alternation, with documented mudstone dominated intervals.

The present study of the Petrich section is focused on integrated biostratigraphical analysis, based on three important fossil groups for the Campanian – inoceramid bivalves, nannofossils and dinoflagellate cysts. The study in progress creates a comprehensive calibrated dataset, in which the nannofossil and dinoflagellate cyst ranges and inoceramid occurrences, provide valuable markers for age assessment and stratigraphic subdivision of the Campanian. The presence of the nannofossil *Ceratolithus aculeus* marks a middle to late Campanian age, followed by a typical late Campanian assemblage including *Broinsonia parca parca*, *Reinhardtites levis* and rare *Eiffellithus eximius*. A high diversity dinocyst association is identified and ranges of key Campanian species as *Corradinisphaeridium horridum*, *Raetiaedinium truncigerum*, *Palaeohystrichophora infusorioides* and *Cannosphaeropsis utinensis* provided valuable markers for the stratigraphic subdivision of the Campanian. Typical middle Campanian "*Inoceramus*" *ellipticus* and "*Inoceramus*" *agdjakensis* were documented from the Voden Member. The paleoenvironmental analysis, based on dinocyst assemblages and palynofacies data, suggests stable open-marine depositional environment and oligotrophic conditions, with normal

marine productivity and nutrient availability during the Campanian in the basin.

Acknowledgements. The study is part of the Bilateral Bulgarian-Austrian collaboration within project KP-06-Austria/9.