



Microfaunistical study of the Albian - Turonian deposits intercepted by the FH Seaca borehole (Moesian Platform, Romania)

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This study presents the biostratigraphic and paleoenvironmental settings of the uppermost Albian-Turonian deposits intercepted by the hydrogeological borehole FH Seaca. The borehole has 350 metres depth and is located in the Southern part of the Moesian Platform (Romanian Plain) on the left shore of the Danube River.

The considerations are based on more than 120 micropaleontological samples, collected at 2 metres depth interval mainly from pelitic sediments. The quantity of sediments analysed was of approximately 1 kilogram for each sample that has been later on processed using standard micropaleontological techniques. The drill revealed a lithological succession represented predominantly by pelitic series of strata with intercalations of glauconitic sandstones and microconglomerates, mainly to the basal part. Most of the samples contain abundant and well preserved planktonic and benthic foraminifera characteristic for the Late Albian-Cenomanian –Turonian time interval.

The identified microfauna is dominated by planktonic foraminifera represented by species of *Rotalipora* (*R. subticinensis*, *R. appeninica*, *R. brotzeni*, *R. reicheli*, *R. cushmani*), *Ticinella* (*T. raynaudi*, *T. preticinensis*), *Helvetotruncana* (*H. helvetica*), *Witeinella* (*W. archeocretacea*) and *Planomalina* (*P. buxtofi*). Among the agglutinated foraminifera that occur in the analyzed deposits we noticed the presence of *Gaudryna carinata*, *Verneuillina polystropha*, *Dorothia concina*, *D. conulus*, *D. oxicona*, and *Uvigerinamina jankoi*. We identified numerous calcareous benthic species represented mainly by *Dentalina legumen*, *Nodosaria oligosteia*, *N. limbata*, *N. obscura*, *Globulina prisca*, *Lenticulina comptoni*, *Ramulina* sp., *Globorotalites multisepta*, *Lingulogavelinella globosa*. Beside foraminifera, there were also found rare ostracods of *Citherella* and *Paracypris* genera, *Spumellaria* radiolarians as well as fish bones and teeth. Based on the foraminiferal assemblages we recognized the main planktonic foraminifera zones characteristic for the Late Albian-Turonian time interval: *Planomalina buxtofi* Zone, *Rotalipora appeninica* Zone, *Rotalipora brotzeni* Zone, *Rotalipora reicheli* Zone, *Rotalipora cushmani* Zone, *Witeinella archeocretacea* Zones and *Helvetotruncana helvetica* Zones.

Consequently, based on the studied microfauna, we proved that the deposits intercepted by the FH Seaca borehole are ranging in age from Upper Albian to Turonian. The microfaunistical assemblage is associated with an outer continental shelf environment of the Tethyan domain with Boreal influences.

Therefore, the data obtained in this study clearly demonstrates the presence of Upper Albian, Cenomanian and Turonian deposits in the Southern part of the Moesian Platform and also the effect of a major marine transgression that took place in this area at Lower Cretaceous to Upper Cretaceous boundary interval.