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Aalenian foraminiferal fauna and microfacies analyses of the Tethys Ocean Basin from the Transdanubian Range (Hungary)

Gábor Zsiborás (1) and Ágnes Görög ()

(1) Department of Paleontology, Eötvös Loránd University, Budapest, Hungary (zsgabedavies@gmail.com), (2) Department of Paleontology, Eötvös Loránd University, Budapest, Hungary (gorog@ludens.elte.hu)

The early Middle Jurassic foraminiferal fauna of the Tethys Ocean Basin is hardly known. It is especially true for the Aalenian from when only MONACO et al. (1994) published some forms from Valdorbia Section, Central Italy and WERNLI (1988) from Domuz Dag, Turkey. Thus the aim of our study was to give a detailed systematic description of the foraminiferal fauna and microfacies analyses of Nagy-Pisznice Section of Lábatlan and Tűzköves Gorge of Bakonycsernye from the Transdanubian Range.

According to several studies of GÉCZY and others, the ammonite fauna indicate all Aalenian (Opalinum, Murchisonae, Concavum) biozones in both successions. 6 samples from Tűzköves Gorge, 13 samples from Nagy-Pisznice were collected. Both sequences are about 3 metres thick Ammonitico Rosso type reddish grey limestone with flaser beds and nodules (Tölgyhat Limestone Formation).

For the microfacies studies thin sections were made. The dominant microfacies is bioclastic wackestone predominated *Bositra* shells. To extract the microfossils, each sample was dissolved in glacial acetic acid. The microfauna consist of foraminifers, calcispheres, juvenile ammonites, ostracods, radiolarians, microgastropods and fragments of echinoderms.

Throughout the Nagy-Pisznice succession, the composition of the foraminiferal fauna is relatively uniform and moderately divers. Most specimens belong to Suborder Lagenina with 60-80% abundance. The Suborder Spirillinina are also frequent with 20-35% abundance. Agglutinants are subordinated and Suborder Miliolina is absent. The most abundant genus is *Lenticulina*, its amount is more than 50% in some samples. *Astacolus*, *Marginulina*, *Dentalina*, *Nodosaria*, *Paralingulina* and Epistominidae are also frequent. *Eoguttulina* and *Paalzowella* are scarce. Spirillinids are represented by *Spirillina*, *Turrispirillina*, and *Coronipora* genera.

The taxonomic composition of the foraminiferal fauna of Tűzköves Gorge is similar to the aforesaid assemblage, however, the dominance of spirillinids with 70-90% is a radical difference. Planktonic protoglobigerinds occurred only few beds. They are medium-sized, thin-walled and low trochospiral. However, the typical Aaleno-Bajocian large, thick-walled forms are absent. All these taxa have wide stratigraphical distribution, significant Aalenian species have not been found.

The presence of the aragonitic microfossils (juvenile ammonites, epistominids, protoglobigerinids) indicate that the depositional environment was above the ACD. The benthic foraminiferal association, the abundance of the *Globochaete alpina* and *Bositra* shells suggest outer neritic zone.

In the upper part of Opalinum Zone the foraminiferal fauna showed an impoverishment in diversity and quantity as well. It is well coincidence with the change of the ammonite fauna. It can be interpreted the influence of the so called Comptum Cooling Event.

The studied microfauna compared with the assemblages of Valdorbia Section, shows similarity in the *Bositra* - radiolarian microfacies and taxonomic composition of the foraminiferal fauna. The main differences were the dominance of the spirillinids and lack of the protoglobigerinids in the lower Aalenian layers of Valdorbia.

These successions served the first detailed record about the composition and ecological features of Aalenian foraminiferal fauna of the Tethyan basin.

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