

Albian (Vraconian)-Cenomanian (SANDULESCU et al. 1972, BUCUR et al. 2009). In the northern area of the syncline (Poiana Zanoaga) these conglomerates include large limestone olistoliths. The olistoliths were assigned by POPESCU (1967) and SANDULESCU et al. (1972, map 1:50.000, sheet 110b Zarnesti) partly to the Tithonian and partly to the Barremian. Most of blocks consist of peritidal deposits with frequent fenestral limestones. They contain relatively rare microfossils, including cuneolinid foraminifers documenting the Barremian age. Nevertheless, some of the olistoliths proved to be very rich in fossils, with the dominance of large dasycladaleans easily noticeable on alteration surfaces (eg., the olistolith from the peak known as 'Silha lui Caita').

The following microfacies types dominate the fossil-rich olistoliths from Poiana Zanoaga: coarse bioclastic grainstone, ooidic grainstone, fine peloidal bioclastic fenestral grainstone, intraclastic grainstone/packstone, bindstone with bacinellid structures and various bioclasts, coral-microbial boundstone, intraclastic wackestone (microbreccia).

The microfacies types indicate various sectors of the carbonate platform: from the platform margin (bioconstructions), to the external platform/open internal platform with high hydrodynamics (coarse bioclastic shoals), and to peritidal environments (microbial mats and fenestral structures).

The foraminifers we have identified: *Pseudocyclamina lituus*, *Charentia evoluta*, *Coscinophragma cribrosa*, *Mohlerina basiliensis*, *Protopenneroplis ultragranulata*, *Nautiloculina bronnimanni*, *Andersenolina alpina*, *Andersenolina* cf. *sagittaria* and *Andersenolina perconigi* document an Upper Tithonian-Berriasian age (eg., ARNAUD-VANNEAU et al. 1988, BUCUR & SASARAN 2005) for these limestones.

The calcareous algae are represented by *Petrascula bursiformis* (Etallon) (very frequent), *Petrascula* sp., *Pseudocymopolia* cf. *jurassica* Dragastan), *Salpingoporella pygmaea* (Guembel), *Suppiluliumaella* sp., *Terquemella* sp., and rare specimens of *Clypeina sulcata* (Alth), *Nipponophycus* sp. *Diversicallis diana* Dragastan & Bucur as well as rivulariacean-type cyanobacteria. Among the problematic microorganisms, we have notices *Lithocodium aggregatum*, sometimes associated with the foraminifer *Troglotella incrustans*.

The above-mentioned calcareous algae are also typical for the Upper Tithonian-Berriasian interval (eg., BUCUR 1999).

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## Lower Cretaceous calcareous algae from the Khur area, Central Iran

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Cretaceous strata are very thickly developed, widely distributed and superbly exposed in the Khur area of Central Iran. They are part of the sedimentary succession of the so-called Yazd Block, the western structural element of the Central-East Iranian Microcontinent (CEIM), an independent microplate within the complex Mesozoic plate tectonic mosaic of the Middle East. During the Cretaceous, the CEIM was detached from Eurasia and surrounded by small oceanic basins which opened and closed in response to (inferred) counter-clockwise rotational movements of the microplate.

The Cretaceous succession starts with conglomerates and sandstones of the up to 1000-m-thick Chah Palang Formation (Upper Jurassic?-lowermost Cretaceous) covering Palaeozoic-Triassic basement rocks or weakly metamorphic rocks of the Shemshak Group (Upper Triassic-Liassic). The levelling of the palaeo-relief continued with the following, up to 500-m-thick Noqreh Formation (interbedded terrestrial to marginal marine sediments) and the carbonate platform deposits of the Shah Kuh Formation (WILMSEN et al. 2013).

The calcareous algae discussed herein have been found in sample from the Noqreh and the Shah Kuh formations. The age of the two formations range between Barremian and Late Aptian, as indicated by the foraminiferal association: *Balkhania balkhanica* Mamontova, *Dictyoconus pachymarginalis* Schroeder and *Mesorbitolina texana* (Roemer).

The calcareous algae association comprise several species of Dasycladales [?*Clypeina* sp., *Deloffrella quercifoliipora* Granier & Michaud, *Montiella? elitzae* (Bakalova), *Morelletpora turgida* (Radoicic), *Neomeris* cf. *cretacea* Steinmann, *Neomeris* cf. *srivastavai* Granier, Dias-Brito & Bucur, *Pseudoactinoporella? iranica* Bucur, Rashidi & Senowbari-Daryan, *Terquemella* spp., ?*Triploporella* sp.] and Bryopsidales (*Boueina* cf. *hochstetteri* Toulou, *Boueina* cf. *pygmaea* Pia, *Permocalculus minutus* Bucur, *Permocalculus* sp.).

This algal assemblage is generally similar to the one identified in the central-western part of the Yazd block (Aliabad area) by BUCUR et al. (2012) except for *Morelletpora turgida*. It is noteworthy that *Pseudoactinoporella? iranica* has now been identified for the first time outside Aliabad, its type locality.

The algae from Khur area provide new data for comparisons between different regions of Central Iran (Ardekan, Aliabad, Khur) as well as additional data concerning the paleogeographic position of the Yazd Block and geodynamic history of the CEIM during Barremian and Aptian times.

## **Zeapora - an endemic Devonian 'praecodiacean' of Graz or a common tropical cosmopolitan?**

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In his 1894 monograph on Devonian fossils of the Graz Palaeozoic Karl A. PENECKE (1858-1944) designated by monotypy the new genus *Zeapora*. He assigned it to cyclostomate bryozoans because the representative feature, 'a hollow central axis surrounded by only one row of prismatic cells', he thought to be unique for the bryozoan order. The history of *Zeapora* is one with many problems concerning the systematic assignment: RUKHIN (1938) included it in his new stromatoporoid family Amphiporidae, BASSLER (1953) assigned it to the Trepostomates, SOKOLOV (1955) to thamnoporid tabulate corals, FLUEGEL (1959) to dasycladacean and finally HUBMANN (2000) to halimedalean algae. The confusing story about *Zeapora*'s systematics and its little adequate taxonomic description was probably the reason why this genus was ignored by palaeo-phycologists. Thus, *Zeapora* had the sad fate to remain endemic over 100 years! However, in our opinion younger synonyms of *Zeapora* PENECKE 1894 are hidden among Devonian algal genera, i.e. *Botrys* SCHIRSCHOVA 1985 and *Litanaella* SHUYSKY & SCHIRSCHOVA 1987. Both genera were recorded from the Lower to Middle Devonian (Emsian and Eifelian). Occurrences of *Botrys* are known from the eastern slopes of Northern Urals (Karpinsky horizon), and from Bosnia (Klek). Findings of *Litanaella* are reported from the eastern slopes of Northern Urals (Parminsky lot, Ivdel' region), Dinant Syncline, Belgium (Couvin Lmst.), New South Wales, Australia (Sulcor Lmst.), and Southern Tien Shan, Usbekistan (Norbonak Beds). The compilation of these localities on a Devonian geographic base map results in a peculiar distribution within the equatorial belt comparable to present-day *Halimeda*. This distribution pattern can be well explained by circum-equatorial currents.