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Alveolinoid (Foraminifera) species from the Cenomanian of Oman: biostratigraphical markers for the Natih Formation

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An exhaustive sampling of the Cenomanian deposits corresponding to the Natih Formation in Oman Mountains (Northern Oman), including the reference stratigraphic section of Wadi Mi'Aidin, has been carried out in several field trips. The larger foraminifera representatives of the superfamily Alveolinoidea found in the collected material were very abundant but still poorly known. In fact, all previous biostratigraphic studies identified the majority of the large specimens found in Natih Fm as Praealveolina cretacea, which is a large-sized species belonging to one of the most prolific genus of Cenomanian alveolinoids in western Tethys. However, the preliminary results of a detailed study dealing with this group of larger foraminifera have revealed a higher diversity of alveolinoids than previously thought. Six morphotypes are potentially new taxa. Besides, the constraining of their stratigraphical distribution makes them good biostratigraphical markers for the Cenomanian of Oman and surrounding areas.
Four successive alveolinoid assemblages have been characterised for the first time. Alveocella wernliana, Myriastyla omanensis, M. gralaudae and Cisalveolina nakharensis can be found in assemblage I. Assemblage II is composed of Simplalveolina gr. simplex and Decastroia sp. 1. Assemblage III consists of Simplalveolina gr. simplex, D. razini, Decastroia sp. 2, Decastroia sp. 3 and "Decastroia" spp. Assemblage IV, the youngest of all alveolinoid assemblages, contains Praealveolina sp. 1, Praealveolina sp. 2 and Decastroia sp. 3. The stratigraphic distribution of the alveolinoid assemblages can be calibrated by means of recent data on ammonites together with the lithostratigraphy and the sequence stratigraphy boundaries defined for the Natih Fm by petroleum geologists. The age attributed to each assemblage ranges different intervals between the uppermost Early Cenomanian and the lowermost Late Cenomanian.