

## Coniacian-Campanian epeiric carbonate platform system of the Haftoman Formation (northern Yazd Block, Central Iran)

***Wilmsen, M.<sup>1,\*</sup>, Berensmeier, M.<sup>1</sup>, Fürsich, F.T.<sup>2</sup>, Majidifard, M.R.<sup>3</sup>, Schlagintweit, F.<sup>4</sup>***

- 1) *Senckenberg Naturhistorische Sammlungen Dresden, Museum für Mineralogie und Geologie, Dresden, Germany, \*E-mail: markus.wilmsen@senckenberg.de*
- 2) *GeoZentrum Nordbayern, Erlangen, Germany*
- 3) *Geological Survey of Iran, Tehran, Iran*
- 4) *München, Germany*

The Central-East Iranian Microcontinent (CEIM) was an independent structural unit isolated from the southern margin of Eurasia (Turan Plate) during most of the Mesozoic Era. It consists of three structural blocks, i.e., the Yazd, Tabas and Lut blocks (from W to E). The Cretaceous succession of the Yazd Block has a thickness of up to >5 km and comprises two transgressive–regressive megacycles (TRMs), separated by a major upper Turonian/lower Coniacian tectonic unconformity (WILMSEN et al., 2015). In the northern part of the Yazd Block, the up to 1,000-m-thick Haftoman Fm rest on this pronounced unconformity clearly associated with tectonic movements and karstification. Above a basal transgression conglomerate, the Haftoman Fm commences with thick-bedded to massive shallow-water carbonates which biostratigraphically have been calibrated using inoceramid bivalves, ammonites and larger benthic foraminifera. Careful litho-, micro- and biofacies analyses led to the identification of several facies types that can be merged into four principal facies associations (FA). FA 1 groups fine-grained, micritic facies (wacke- to packstones) with open-marine biota (calcspheres, sponge spicules, small foraminifera) that accumulated in subtidal offshore settings. FA 2 consists of well-sorted bio- and intraclastic pack- and grainstones occasionally showing cross-bedding and large-scale clinofomed bedsets. FA 3 comprises coarse-grained, more poorly sorted bioclastic float- and rudstones. FAs 2 and 3 indicate high to moderately high water energy and may characterize wind- and leeward sub-environments of extensive submarine shoal complexes. FA 4 combines lagoonal facies types (e.g., fenestral mudstones, bindstones, foraminiferal mud-/wackestones, rudist bafflestones) that indicated reduced water energy and often have been subjected to meteoric diagenesis. An epeiric carbonate platform environment with open circulation integrates all observations derived from the integrated study of the Haftoman Formation. The widespread uniform facies development and nearly absent terrigenous input suggest a period of tectonic quiescence and even subsidence of the northern Yazd Block during Coniacian–Campanian times. Stacked depositional sequences separated by subaerial sedimentary unconformities (karstified and mineralized hardgrounds) indicate superimposed 3<sup>rd</sup>-order sea-level changes.

WILMSEN et al., 2015. *J. Asian Earth Sci.*, **102**, 73–91.