

THE LARGEST LATE JURASSIC REEF COMPLEX FROM THE LOWER SAXONY BASIN (KORALLENOLITH FORMATION, NORTHWESTERN GERMANY, OSTERWALD MTS.)

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Based on microfacies analysis, the sedimentary succession of the Korallenoolith Formation cropping out in the Hainholz limestone quarry in the Osterwald Mountains has been studied (Helm et al. 2003b). The 42 m thick deposits allow the subdivision into three lithological units: the section starts with (1) the Ahrensberg Member, a 26 m thick succession with an alternation of oolitic bioclastic limestones and marls at its base followed by a monotonous oolite sequence. It is separated from (2) the overlying Hainholz Member („Obere Korallenbank“) by a prominent erosional unconformity. The Hainholz Member (2) represents reefal deposits 12 m in thickness. It is overlain by (3) an unit of quartz-bearing calcarenite vertically grading into oolite, and cortoid limestone up-section, the Barenburg Member.

The Hainholz Member (2) is developed as a reef complex with abundant coral-thrombolite patch reefs imbedded in and interfingering with reef rubble facies (Reuter et al. 2001). Its exposed dimensions make it the largest known reef complex from the Late Jurassic coral bearing sedimentary succession (Korallenoolith Formation) in the Lower Saxony Basin.

The patch reefs are of pillar-like shape with their maximum thickness exceeding about 12 m. Moreover, the accompanying reef rubble facies (rudstone) is characterized by three intercalated beds with (par)autochthonous coral colonies. Compared with other Late Jurassic reefs from the Lower Saxony Basin, the coral fauna of the Hainholz reef complex is highly diverse (about 40 species). Platy coral growth prevails, whereas hemispherical, bulbous and branched colonies occur subordinately. Most abundant are specimens of *Fungiastrea arachnoides*, *Thamnasteria concinna*, *Isastrea crassa*, *Meandrarea parallela* and *Microsolena agarciformis* (Helm et al. 2003a).

Microbial crusts (thrombolite) play a significant role in strengthening the framework. Within these microbial crusts, crustose elements such as serpulids, bryozoans, small sponges, and foraminifers occur in great quantities. The high content of crinoid remains is of special interest. The crinoid remains have been derived from the patch reefs and are enriched in the adjacent reef rubble facies.

References

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