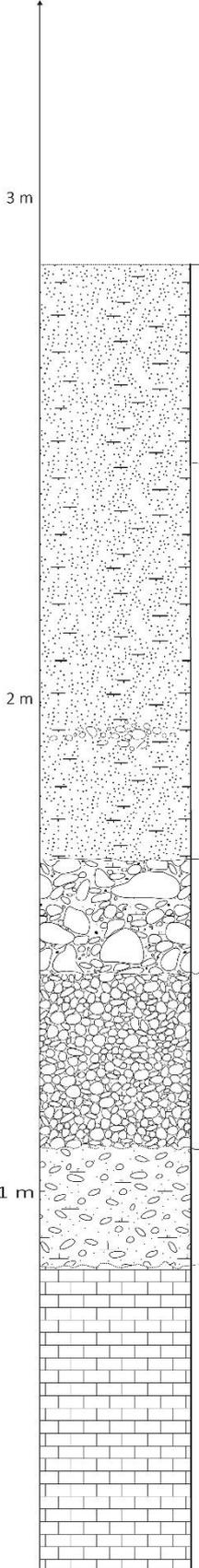


# Sedimentology, Ichnology and Petrology of beach rock deposits on Pleistocene marine terraces between Daghmar and Qalhat, Sultanate of Oman



## Aim of the Thesis

This study is intended to increase the understanding of beach rock deposits along the northeastern coastline of Oman, in terms of their formation, environmental setting of their deposition and sediment transport processes involved. Since the beach rocks are located on different levels of marine terraces, the results are expected to reveal insights into the general coastal development of the study area during the Quaternary.

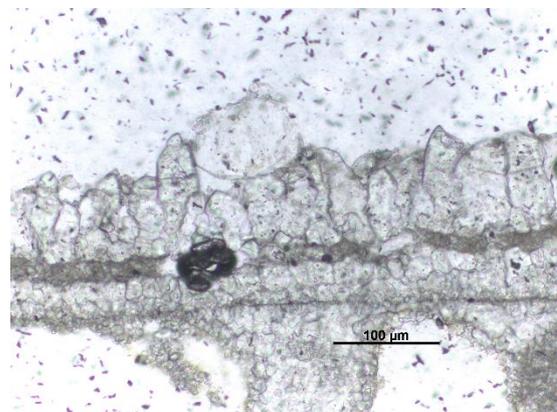
## Study Area

All investigated outcrops are located within a coastal lowland north of the Al Hajar Mountains. Due to crustal uplift in combination with changing eustatic sealevel during the Pleistocene a set of stair-cased marine terraces developed. These cut into Paleogene to Quaternary limestone formations between Daghmar and Qalhat. The climate of the area is arid and precipitation events are therefore rare. Several wadis intersect the coastal plain and terraces, transporting alluvial sediments during these events.

Almost no sedimentary deposits from the marine origin of the terrace platforms are left for examination. Small patches of beach rock, that exist as erosional remnants at the highest points of the lower terrace levels, are the only opportunity to study the depositional history of these platforms.

## Methods

The sedimentological investigation comprises of drawing graphic logs and field sketches of the beach rock outcrops, including examination of fossil content and lithology and the collection of photographic data. Most of the beach rocks show a high abundance of trace fossils which need to be analysed in regards to the ichnogenera and possible ichnofacies present. Additionally rock samples were taken and turned into sixteen thin sections. A detailed petrographic analysis of these samples will complete the sedimentological and ichnological reveals.



**LEFT** Example of log section from beach rock outcrop at shoreline angle of T2

**MIDDLE** High abundance of borings in a beach rock layer in Wadi Fins

**RIGHT** Blocky calcite cement in a sample from the log shown on the left (top layer)

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