

**BIOSTRATIGRAPHY OF LOWER HANIFA
FORMATION (HAWTAH MEMBER), CENTRAL
SAUDI ARABIA**

BY

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Abstract

The Hanifa Formation of Saudi Arabia consists of carbonates of Late Jurassic age.

They are well exposed along the Tuwaiq escarpment. The macr- and micropaleontological analysis of samples from three outcrops has revealed the presence of benthonic foraminifera, gastropods, bivalves, brachiopods, echinoderm spicules, sponge spicules, rare calcareous algal debris, abundant corals and rare ostracodes.

The study of Hawtah Member fossil faunas has led to the identification of :-

-Foraminifera : cf. *Pseudocyclamina* sp. cf.

Pseudomarssonella sp.; *Kurnubia* sp.; *Lenticulina* sp.; *Oolina* sp.;

Valvulineria sp. *Nautiloculina oolithica*

-Bivalves: *Lopha solitaria*; *Mytilus*(*Musculus*) *somaliensis* ;

Pholadomya (*Homomya*); *Pseudocardia macfadyeni* .

-Gastropods: *Nerinea somaliensis*; *Nerinella* sp.; *Cylindrites* sp.

-Cephalopods: *Paracenoceras macrum*; *Paracenoceras* cf.

arduennense ; *Euaspidoceras* cf. *catena-perarmatum* .

-Echinoderms: *Paracidaris* sp.

-Brachiopods: *Somalirhynchia africana* *Somalirhynchia* sp. ;

Rhynchonella subtilis ; *Morrisithyris* cf. *latifrons* *Morrisithyris* cf.

uniformis; *Bihenthyris* cf. *barringtoni*; *Lobidothyris najdiensis* ;

Somalithyris macfadyeni ; *Zeilleria bucculenta*.

-Corals: *Allocoenia trochiformis*; *Coenastraea Arabica*
Microphyllia sommeringi ; *Latiastrea greppini*; cf. *Synastrea*
delemontana ; *Kobyastrea* sp.; *Isastrea* cf. *trigeri*; *Ovalastrea*
proeminens.

-Trace fossils: *Thalassinoides* sp.; *Chondrites* sp.

-Ostracodes: *Oligocytheris* sp.; *Cytherella* sp

The cephalopod fauna indicate an Early to Middle Oxfordian age for the Hawtah member.

The sediments that contain these faunas are limestone, calcareous shales and several beds of tightly cemented calcarenites, at the top of the member there is an oncolitic bed. The basal 5-8 meters of the Member are significantly more shaley.

All the above faunas and sediments are clear evidence of generally quite and shallow-water, but some possibly indicate higher energy shallow water. The perireefal sea-floor habitat is well developed in the lower Hawtah member; its faunas include the abundant rhynchonellid and the terebratulid . These two groups are the characteristic forms of this environment.