

# DIAGENETIC PATTERNS IN SUBSURFACE BAHAMAN ROCK SAN SALVADOR ISLAND

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## A B S T R A C T

A 550 foot continuous core from San Salvador allows detailed study of depositional and diagenetic facies patterns with depth. From the surface to about 25 feet, the rocks are oolites and ooliticly coated intraclasts, cleanly washed and bedded. Below this, to about 80 feet, the rock is grain supported, but less well sorted, unbedded, and contains no coatings. The rock is vuggy, with drusy calcite lining vugs at certain horizons. Similar transitions from bedded oolite to vuggy lagoonal facies have been cited at roughly this depth from other islands. Allochems are intraclasts and skeletal material, mostly molluscs, miliolid and pncroplid forams, red algae, and *Halimeda* plates. Burrowing is evident below 55 feet. The rocks are sparites, but some mud matrix occurs sporadically. From 80 to 110 feet, the rock is micrite or pelmicrite, the few scattered fossils are forams and red algac. Pelmicrites predominate through the rest of the core, but below 110 feet extensive dolomitization has occurred.

Cementation, leaching of cryptocrystalline grains and infill by drusy calcite, neomorphism of cryptocrystalline grains to microspar, loss of aragonite, and concurrent loss of Sr all increase with depth. Stable isotope analyses show  $\delta O_{18}$  and  $\delta C_{13}$  becoming progressively more negative with depth. Fe concentration shows a peak at 90 feet and is probably indicative of major pedogenesis.

Thin sections show some of the difficulties associated with attempting to differentiate pore-precipitated calcite spar from neomorphic spar in grain-supported rocks which contain some mud matrix. This difficulty is heightened by the 'micritisation' of allochems, diffusing into the spar cement.