upwelling zones, knowing the past areas of upwelling and abundant phytoplankton productivity is vital for assessing the potential richness and extent of possible oil source beds.

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Facies, Environments, and Development of Tuxpan-Tecolutla Carbonate Platform, Gulf Coast, Mexico

In the Cretaceous Tuxpan-Tecolutla carbonate platform in the subsurface of the Gulf of Mexico, sedimentologic and stratigraphic data were obtained from the study of 35 wells drilled in the El Abra Formation both onshore (Golden Lane and central platform) and offshore.

Three main depositional complexes are recognized: lagoon, reefal environment, and oolitic banks. Each complex includes several microenvironments.

Dolomitization proceeded episodically in the lagoon. The last phase, showing a northern displacement of the central depression, was associated with the formation of evaporites. Several bentonitic beds are interlayered with the generally massive limestone of the El Abra Formation; some could be traced laterally and are used as marker beds for El Abra deposition.

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Ichnology of Labrador Group (Lower Cambrian) in Southern Labrador

Rocks assigned to the Labrador Group record deposition during initial phases of the lower Paleozoic transgression onto the eastern continental margin of North America during late Early Cambrian time. In Labrador the group comprises two formations; the lower one, the Bradore Formation, is a series of conglomerates, sandstones, and minor siltstones; the upper one, the Forteau Formation, is a series of siltstones, shales, fossiliferous limestones, and reefs.

The Bradore Formation, interpreted on the basis of physical sedimentary structures to be a series of tidal-dominated, nearshore, sand shoals, is almost devoid of body fossils. The presence of an abundant soft-bodied infauna is, however, demonstrated by prolific *Skolithos* as well as numerous *Monocraterion* and *Dolopichnus* and minor forms such as *Lingulichnus, Stipsellus*, and *Cruziana*.

The Forteau Formation comprises a series of patch reefs rich in archaeocyathids surrounded and buried by interreef skeletal limestones, siltstones, and shales. In contrast to the underlying Bradore, these rocks are extremely rich in body fossils. Correspondingly, the interreef beds are replete with ichnofossils including *Chondrites, Cylindrichnus, Monocraterion, Monomorphichnus, Paleophycus, Planolites, Rusophycus, Skolithos*, and *Teichichnus*. These forms suggest that the environment of deposition was relatively shallow and that sedimentation was slow and continuous.

We have also discovered numerous traces in the fine-grained sediments which floor growth cavities within the reefs, suggesting that mobile organisms either inhabited the cavities or at least were transient through them.

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Sediment Dispersal at Fort George Inlet, Florida

Fort George Inlet is located in northeastern Florida, 0.9 km north of the St. Johns River. The geomorphic history of Fort George Inlet is characterized by migration.

The pattern and rate of sediment dispersal were established through fluorescent sand tracing, tidal-current measurement, and bed-form mapping. Morphologic changes were determined utilizing nearshore and beach profiles established in 1923 and 1974, as well as air photos, hydrographic surveys, historical maps, and coastal climate data.

Fort George Inlet partially intercepts the southerly littoral drift (estimate of 190,000 m^3/year based on SSMO data) and deposits sediment along Little Talbot Island and Wards Bank, altering the hydrodynamic system in the study area. In the past, accretion at Little Talbot Island (average rate of 142,880 m^3/year) forced Fort George Inlet south at an average rate of 36 m/year. However, in 1961 the direction of inlet migration was reversed and is now northward at a rate of 21 m/year. Sediment intercepted by Fort George Inlet is producing a recurved spit extending north from Wards Bank. The expansion and encroachment of this spit into the inlet throat are believed to have initiated the reversal in migration direction. Analysis of aerial photographs indicates that inlet migration occurs sporadically during severe storms.

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Genesis, Occurrence, and Causes of Sediment Distribution in Inner Reefs of Mombasa, Kenya

Though quantitative statistical analysis of skeletal carbonate sediments is under a cloud of uncertainty, the results thereof, in conjunction with copious field observations, elucidate the causes of sediment distribution in and adjacent to the Mombasa, Kenya, reef/platform complex and aid definition of hydrodynamic and ecologic environments. The recent surface sediments have been analyzed to determine their textural and genetic composition. They are made up of two components: biogenic carbonate material (molluscan debris, coralgal, *Halimeda* and Foraminifera) and fluvio-terrigenous quartz (from the pre-Quaternary of the immediate hinterland).

The fringing reef is divisible into a northern and southern sector by the Ras Iwa Tine promontory. Four sediment populations are present which are distinct in skeletal origin, textural composition, and position on the reef. Sediment samples close to the berm abound in *Halimeda* fragments, whereas the carbonate fraction on the outer platform (1 km away) and the channel are dominated by molluscan fragments.