dip of the scarp face is shown to decrease with depth under the abyssal plain sediments. The basin is depicted as a modified oceanic region. A transition from oceanic to continental crust is assumed with a fault or flexure (indicating differential movement of the platform and basin) present near the base of the scarp.

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DEPOSITIONAL ANTICLINES, FLORIDA STRAITS

Recent high-resolution seismic-reflection profiles have revealed the presence of base-of-slope depositional anticlines in the Florida Straits. Depth profiles across Santaren and Nicholas Channels are deepest along the sides of the channels at the slope base. Channel axes are somewhat shoalier due to anticlinal deposits of sediment.

A large anticline of deposition in an area of approximately 3,100 sq km (900 sq naut. mi) has formed adjacent to the Miami Terrace escarpment. Presumably the high energies of the Florida Current have produced this feature on a grand scale by a mechanism believed to be widespread, but little recognized. It is suggested that these asymmetrical base-of-slope anticlines of deposition find their counterparts in ocean-basin seamount-moat-swell sequences, along deep sea channels which are flanked by levees of asymmetrical depositional anticlines, and in most other depositional areas of the sea floor where deep currents flow along scarps of locally steep slopes.

The base-of-slope depositional anticline concept, as applied to "reverse drag" anticlines associated with scarps in the Gulf of Mexico and in the ancient sediments of the Gulf Coast, appears to satisfy the data better than previously proposed models. It is concluded, therefore, that depositional anticlines are widespread in space and time.

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GEOPHYSICAL STUDIES OF SOUTH FLORIDA CONTINENTAL MARGIN AND WESTERN STRAITS OF FLORIDA

Seismic-reflection profiles off the western coast of Florida south of 27° N lat. have been recorded during two cruises of Texas A&M University's R/V *Alaminos* in May 1967 and June 1968. They show that the anticlinal ridge present near the top of the West Florida escarpment, which has been proposed to be an extension of the Washita-Fredericksburg reef trend, may possibly be traced southward to the latitude of the Florida Keys.

Several crossings have been made of a large knoll in the western end of the Straits of Florida. Preliminary analysis of the real-time records, without benefit of playback, indicates the presence of a terrace at a water depth of 840 fm, and the possibility that an anticlinal feature, remarkably similar to that seen on the Florida escarpment toward the north, is present.

Reexamination of earlier data from the Campeche Bank and comparison with those presented here reveal several similarities and provide evidence that the Campeche Bank and the Florida escarpment once might have been connected. However, the presence of deep-water Lower Cretaceous in northern Pinar del Río Province, western Cuba, may indicate that no connection ever existed. If the two escarpments ever were connected, it is not known whether grabenlike faulting, erosion, or both caused the separation of these two features. More information is being sought in geomagnetic and sedimentological studies now in progress.

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DISTRIBUTION OF MINOR STRUCTURES IN GULF OF MEXICO SEDIMENTS

Minor sedimentary structures are studied by means of X-ray radiography from cores collected from various physiographic provinces of the Gulf of Mexico.

The Gulf can be divided into two large petrographic provinces meeting at DeSoto Canyon and Campeche Canyon. The western part is a terrigenous clastic province and the eastern is a carbonate province. For a study of the sedimentary structures it is necessary to divide both petrographic areas into their proper physiographic provinces.

The sedimentary structures and characteristics distinguished are: thin bedding (regular, irregular, lenticular), lamination (parallel, lenticular, irregular), coarse-grained laminae, turbidites (single, multiple, vague), convolute lamination, load casts, degassing structures, mottled, slump, homogeneous, burrowing, mycelium, shells, and shell fragments.

Several of these characteristics can be found in almost any area but some of them are of restricted occurrence. Cores collected from one province reveal only slight variations in their content of sedimentary structures.

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ORIGIN AND CONFIGURATION OF ALAMINOS CANYON, NORTHWESTERN GULF OF MEXICO

A submarine canyonlike feature, called "Alaminos Canyon," is located at the change in trend of the Sigsbee scarp between 94° 15′ and 94° 30′ W long. The approximately N-S-trending system terminates just south of 26° N.

Bathymetric and seismic-profiling records reveal the existence of a complex area in which many single and multiple canyon sections can be observed in a single tract across the area. The sides of the depressions are steep in some places, and a few terracelike features are found. Subbottom profiles show that some depressions are half or completely filled with sediments. Diapiric structures and faults also are observed.

Sediment cores collected in the deepest parts of the canyon present a lithologic character which is a combination of a *Globigerina* ooze and a clayey pelite. No sand layers have been found.

The interpretation of this complex area ranges from that involving a complex submarine canyon system and one involving a hummocky area underlain by salt diapirs. It seems likely that an interpretation utilizing both hypotheses is required.

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INFLUENCE OF SAMPLING ON GEOLOGIC INTERPRETATION BASED ON PISTON CORING IN GULF OF MEXICO

Examination of samples taken on the northwest slope of the Gulf of Mexico with a newly developed flexible liner coring device indicates a possible source