pears to be geothermally immature in both the onshore and offshore region and neither the Selma Group nor the Tuscaloosa is considered capable of generating producible quantities of either liquid or gaseous hydrocarbons within these areas.

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Subaqueous Landslides and Diapirs, Gulf of Mexico

No abstract available.

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Gravity-Slide Origin for Mexican Ridges Foldbelt, Southwestern Gulf of Mexico

The geometry of a part of the Mexican Ridges foldbelt in the southwestern Gulf of Mexico as detailed by multifold seismic data suggests an origin by large-scale gravity sliding. Here, apparently competent, lower Tertiary–Holocene strata, probably sandstones and shales, have moved downslope along an underlying deformed zone probably consisting of weak and incompetent Upper Cretaceous–lower Tertiary geopressured shales. Gravity-generated horizontal compressive stresses apparently caused uniform folding and imbricate thrusting within the competent strata. This deformation is probably an important mechanism for overcoming resistance to basal sliding within the incompetent layer. Large-scale submarine sliding is also suggested by the grouping of the fold trends into two large lobate areas. Sliding apparently has continued periodically since about middle Tertiary time. This massive sliding may have been triggered by periods of uplift and seaward tilting and perpetuated by sediment loading in a large growth-fault system just landward of the main foldbelt along the upper slope.

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Miocene Submarine Fans in Deep Western Gulf of Mexico as Interpreted from Seismic Reflection Profiles

Sequences of regularly spaced, seaward-dipping reflections seen on east-west seismic profiles along the lower slope of the western Gulf of Mexico are interpreted to be prograding clinoforms in the distal parts of large submarine-fan complexes. North-south lines define the lobate nature of the fans, some of which are over 50 km across. Some fans appear to be composites of overlapping, individual fan lobes. DSDP hole 90 recovered upper Miocene laminated, silty mud at the top and bottom of one of the prograding sequences, suggesting that any sand in the system must have been deposited farther upslope in the more proximal parts of the fan. Deposition of these sequences may have occurred during a major late Miocene lowering of sea level.

The late Miocene fans appear to be part of an overall fining-upward sequence along the lower slope beginning with the middle Miocene sandy turbidites and continuing through deposition of late Miocene silty clay laminites into Pleistocene deposition of hemipelagic and pelagic sediments. The sandy middle Miocene turbidites were derived from the Mexican mainland on the west and correspond to a zone on the seismic profiles characterized by chaotic and discontinuous reflections. These reflection patterns suggest a fan environment more proximal than the younger fans above—perhaps a suprafan environment with fan channels.

The overall fining-upward sequence and gradual cessation of turbidite deposition probably were due to the late Tertiary growth of the Mexican Ridges foldbelt, which apparently trapped terrigenous sediment and prevented turbidity currents from reaching the deep sea.

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Pan-Pacific Neogene Diatom Correlations

On the basis of piston cores and DSDP sites, a Neogene diatom correlation for Pacific Ocean sediments was determined. Where possible, these correlations rely on the paleomagnetic-reversal record in piston cores. In the central Pacific, diatom datum levels are directly tied to this reversal record. Furthermore, they are extended eastward to DSDP Sites 77 and 158. Although datum levels are generally isochronous in the low-latitude Pacific, some forms have substantially longer ranges in upwelling regions of the easternmost equatorial Pacific. In addition, some high-latitude elements are also present in this region. A mixed assemblage containing both high- and low-latitude diatoms is present at DSDP sites and in piston cores in the northwest and southwest Pacific. This fact permits correlation across several zonal schemes and verifies correlations to such high-latitude sites as 178, 183, and 192 in the North Pacific and 278 in the South Pacific. A series of time-slice maps for the Pacific Neogene depicts changes in the temporal and spatial distribution of diatoms. Diatom-distribution maps reflect accurately the productivity of the overlying water with diatom-bearing sediment present in the eastern equatorial regions and the higher latitude North Pacific. In the South Pacific, diatoms are present south of the Subtropical Convergence. Elsewhere, in the Central Water Masses, the surface sediments are free of diatoms. This pattern holds true generally for much of the Neogene, but major changes in diatom species distribution are indicated in the early Miocene and near the middle/late Miocene boundary.

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Pre-Strike-Slip Positions of Polochic Fault Blocks as Determined from Geomorphic Evidence in Guatemala

Previously reported left-lateral slip of 132 ± 5 km across the Polochic fault of Guatemala and Chiapas, Mexico, was based on a match of structures and stratigraphic units. This amount of offset can also be established by a match of present topographies in the region