able targets. If governmental restraints are minimized the widespread use of computerized industry data can assist attainment of adequate energy supply.

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Mexican "Island" Arc

The idealized island-arc system includes a deep-sea trench on the ocean side, a chain of islands (at least partly volcanic) landward of the trench, and a wide saltwater basin between the islands and the continental mainland. There may be a large negative gravity anomaly along either the trench or the chain of islands, and there is typically an active seismic zone which dips landward from a line beneath the trench. The Japanese Islands and the Marianna Islands have been cited as good examples of island-arc systems.

The southern half of Mexico exhibits the characteristics of an island-arc system except for the fact that it is composed of no islands: neither large like Japan nor small like the Mariannas. The Mexican trench, the volcanic chain, and the northward-dipping active seismic zone are present; furthermore, the Gulf of Mexico has the same approximate size and characteristics as the middle-sized basins along the eastern edge of Asia.

In general, the trench-volcano-basin transect looks very much like cross sections taken through recognized mature island-arc systems. The gravity anomaly, although present, is small, but this is not unusual along other trenches and island arcs.

The entire system is associated with well-developed north-south tension; that is, the Mexican "island" arc lies along the narrow trailing tensional edge of a roughly triangular continent. The absence of islands is the result of two facts: (1) the Mexican system is mature in the sense that the Japanese system is mature, rather than immature like the system in the Mariannas; and (2) the development near the tip of a roughly triangular continent makes fragmentation into islands unlikely. The Mexican system is approximately the length of the main Japanese island (Honshu) which likewise is not cut by straits, and is smaller than the main Indonesian island.

Knowledge of the other island-arc systems of the world can be applied in a useful way to the Mexican system; knowledge of the petroleum production continentward from the Mexican arc (on both Mexican and U.S. sides of the Gulf of Mexico) can be extrapolated to the middle-sized basins in other parts of the world.

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Relict Lacustrine Sediments on Inner Continental Shelf, Southeast Texas

Using scuba, 27 rock samples were collected from a small northwest-trending ridge with 5.5 m of relief located 74 km south of the northern entrance to Padre Island National Seashore and 3.2 km offshore from Padre Island (26°51′N, 97°18′W) in 14 m of water. All are massively bedded subarkoses and sublitharenites cemented by low-Mg micritic calcite. The acid-insoluble residue, which averages 73 percent, is a subrounded muddy, fine sand ($M_z = 3.06\Phi$) that is poorly sorted ($\sigma_1 = 1.74\Phi$), extremely leptokurtic ($K_G = 4.32$), and strongly fine skewed ($Sk_1 = +0.65$). Most contain mesovugs and channels that are lined with sparry calcite, clay, or fibrous chalcedony. Irregular shaped lumps and clots of iron and manganese oxides are common. Land snails (*Helicina orbiculata tropica, Polygyra septemvolva febigeri*) and freshwater snails (*Helisoma trivolvis, Physa* sp.) have been extracted from the rock. Teeth and bones of Pleistocene mammals (*Mammuthus columbi, Mammut americanum, Bison* sp.) also have been found in crevices in the ridge.

The ridge is interpreted as an intermittent lake deposit that formed on a late Pleistocene extension of the South Texas eolian sand sheet. Mud and fine sand were blown into the lake from surrounding dune fields and mixed with accumulating carbonate deposits. During dry periods, the sediments developed soils that were vegetated and later calichified. Because of their superior hardness, the lake sediments survived the Holocene transgression and have become a submarine prominence.

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Origin of Bahama Platform

The origin of the Bahama platform and its continued subsidence to permit the accumulation of a thick carbonate cap have been a problem of Middle American geology. The relation of this feature to previously published reconstructions of the late Paleozoic–early Mesozoic "fit" of North America, Africa, and South America also has posed a problem. A new model incorporating the volcano-tectonic rift and ignimbrite-sheet association is proposed to explain the origin of the Bahama platform as an integral part of Caribbean plate tectonics. A new North America–South America join is utilized to account for the major geologic and tectonic continuities of Paleozoic age throughout Mexico and Central America.

The clockwise rotation of North America as it separated from South America and Africa caused the counterclockwise bending of the entire peninsula of Mexico and Central America, with the newly accreted Caribbean plate into a subduction zone that was to evolve into the arc-trench system of the Greater Antilles. The rotation and beginning of subduction of this Caribbean plate into the Cuban trench, in Jurassic time, triggered volcanic eruptions that provided the foundations for the Cuban volcanic arc. Additionally the eruptions provide the usual thick and widespread ignimbrite sheet behind the arc in the area now occupied by peninsular Florida and the Bahama Banks.

Not only is evidence for this feature found in wells drilled in Florida, but it also provides the foundation on which was deposited the thick sequence of carbonate strata that form the Bahama Banks. This interpretation eliminates the overlap of the Bahama salient onto Africa, explains the origin of the Old Bahama Channel, serves the same purpose as the sedimentary prism proposed by Dietz and others, and has the volcanic character to meet the geophysical requirements indicated by Uchupi *et al.*

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Arctic Gas—New Natural Gas for United States

After over six years and $50 million worth of environmental and engineering studies, officials from Alaskan Arctic Gas Pipeline Co. and Canadian Arctic Gas Pipeline Ltd. submitted simultaneous applications to the United States and Canadian federal governments last March, for permission to build a 2,600-mi pipeline from the Arctic to the United States.

The 100 pounds of filing materials represent the most thorough environmental study ever undertaken for a project such as this—in addition to engineering studies which have been massive.

The 48-in. Arctic Gas pipeline will transport to U.S. markets all of the Alaskan gas from Prudhoe Bay as well as that Canadian gas from the Mackenzie delta which is surplus to Canada's needs.

Although the Arctic Gas pipeline will end at the northern U.S. border, three companion pipeline facilities will be constructed to transport the gas directly to markets throughout the country in what will be the most economical way of distributing Arctic gas directly to U.S. consumers.

Northern Border Pipeline, a consortium of six Arctic Gas members, will construct a 1,600-mi, 48-in. telescoping line from