

JOHN W. ANTOINE

Biographical Review

John W. Antoine spent his first twelve years in Missoula, Montana. He went to Colgate University, Hamilton, New York, where he received a B. A. Degree in Geology in 1954, and he later earned a Masters Degree in Oceanography at Texas A & M University. Mr. Antoine experienced an eventful six years at the Lamont-Doherty Geological Observatory, Columbia University, New York, where under the tutelage of Maurice Ewing and John Ewing he joined in extensive oceanographic cruises through the Caribbean and Mediterranean Seas, the Argentina offshore shelf and the Red Sea. He thus became expert in seismic reflection and refraction profiling.

Since 1960 Mr. Antoine has been a research scientist in charge of the Marine Geophysics Section of the Department of Oceanography at Texas A & M University. He has been supervisor of numerous oceanographic projects in the Gulf of Mexico and the Caribbean and published some twenty papers on these regions. Mr. Antoine is currently employed by Decca Survey Systems, Inc., while on a leave of absence from Texas A & M. His project at Decca concerns the interpretation of geophysical engineering data from site investigations for rig and platform placements and pipeline surveys.

Mr. Antoine holds memberships in numerous professional organizations including the American Geophysical Union, the Society of Exploration Geophysicists, and the American Association of Petroleum Geologists.

Reflections on -- and Reflections from -- Offshore Florida

by John W. Antoine

ABSTRACT

The recent opening of sections of offshore Florida for petroleum exploration has rejuvenated interest in the geology of the eastern Gulf of Mexico. The great carbonate platform of west Florida has been a principal target for extensive geophysical exploration. This platform forms the western half of twin carbonate basins (the South Florida Basin) with the Blake Plateau representing the eastern section. Each of these features has its own unique geologic peculiarities which can be integrated into a complete geologic history that explains the development of the entire carbonate area of southeastern United States.

Features of the western carbonate platform are: 1) the DeSoto Canyon which is probably genetically related to the Suwannee Strait and the early history of the Gulf Stream. This canyon also marks the location of the most easterly shallow piercement salt domes of the northern Gulf Coast. The "Destin Dome" is located near the head of this canyon, 2) the "Ocala Extension" which is possibly the structure that limits the eastern distribution of Triassic-Jurassic salt of the northern Gulf, and 3) the lower Cretaceous reef trend which borders both the western and eastern carbonate banks and which (in conjunction with a basement high) controlled the particular deposition of carbonate rocks across Florida and its margins during late Mesozoic and early Tertiary time.

Significant features of the eastern basin are: 1) the bordering reef and ridge discussed above, 2) the Blake Spur which offsets this ridge and suggests that the basement high is contiguous with the Cape Fear Arch, and 3) the breaks in the offshore extension of the Cape Fear Arch that imply an early Gulf Stream that flowed through the DeSoto Canyon and the Suwannee Strait.