GEOSCIENCE NOTES

The South-Central Section Meeting of the Geological Society of America, April 2-4, 1970, College Station, Texas, included several papers of interest to local geologists. Abstracts of these papers are included below.

CRUSTAL STUDIES IN THE GULF OF MEXICO

Antoine, John W., and Thomas E. Pyle, Department of Oceanography, Texas A&M University, College Station, Texas 77843, and Marine Science Institute, University of Southern Florida, St. Petersburg, Florida, 33701.

Deformation of the uppermost crust in the northern and western Gulf of Mexico is due mainly to salt movement. The east Mexico and Texas-Louisiana continental margins appear to represent a sequence of structural development from salt ridges on the south to diapirs on the north. Distribution of the Sigsbee Knolls and domes, from which petroleum and caprock were recovered, may be explained by the influence of the Yucatan Platform whose marginal escarpments subparallel this belt of diapirs. Seismic surveys suggest that the southern limit of the northern Gulf Coast salt is the Sigsbee Escarpment and that the Sigsbee Knolls represent the northern limit of the salt of southern Mexico.

Subsidence of the Yucatan and Florida Platforms is indicated by dredged reef limestones from their escarpments. Seismic porfiles have traced the shelf-edge reef from the Alabama-Mississippi boundary southward to the Florida Straits and the northern coast of Cubs. Magnetic surveys in the Straits suggest the presence of igneous intrusive bodies paralleling the ultramatic rock outcrops of Pinar del Rio province, Cuba.

Of broader interest is the anomalous nature of the crust beneath the south Florida Platform. Magnetic and faunal evidence has led others to propose that all or part of Florida was added to the North American continent in early Paleozoic time.

The salt distribution in the Gulf of Mexico, the location of reef trends and a nomalous nature of the south Florida Platform have all been explained by various models involving continental drift and sea floor spreading. Some of these models have not explained geologic conditions within the Gulf such as the great thickness of basin sediments, the oceanic nature of the crustal structure, etc., which put some restraints on proposed models. On the basis of available data, if the concept of sea floor spreading is accepted, the Gulf of Mexico should be considered an old basin which drifted westward with the rest of the North American Continent.