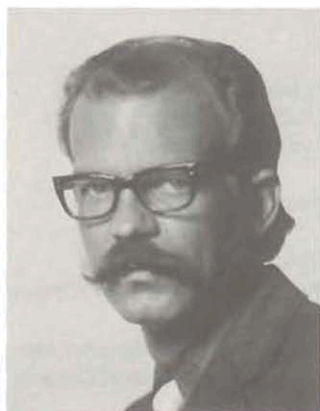


NOON MEETING—OCTOBER 25, 1978

HENRY H. HINCH—Biographical Sketch



Henry Hinch has been employed at the Amoco Production Company Research Center since 1965. He is currently a Research Scientist in the Geological Research Division. His interests include rock properties, fluid-rock interactions, shale diagenesis, hydrocarbon migration, x-radiography and nuclear magnetic resonance.

THE NATURE OF SHALES AND THE DYNAMICS OF HYDROCARBON EXPULSION IN THE GULF COAST TERTIARY SECTION (Abstract)

It has been recognized for a number of years that shales are the most probable source beds of hydrocarbons. It has been natural to attribute expulsion of those hydrocarbons into adjacent carrier and reservoir beds to shale compaction. The carrier medium for the hydrocarbons has been assumed to be shale pore water expelled as the shales compact. A few geologists now realize that it is difficult to explain expulsion of hydrocarbons from shales in this manner.

In the last ten years, many reasonable doubts have arisen as to the mechanism of hydrocarbon expulsion. By the time hydrocarbons are generated in significant amounts, most of the shale pore water has already been expelled and it is highly questionable whether the amounts of pore water remaining are sufficient to flush hydrocarbons, either in solution or as a separate phase, from the shale source beds.

Our more recent studies of Gulf Coast Tertiary shales have cast even further doubts on the generally accepted mechanisms of hydrocarbon migration within the shale pore system. These studies suggest that hydrocarbon expulsion from Gulf Coast Tertiary shales may be due to diffusion of hydrocarbon molecules through the shale pore system rather than flushing of the hydrocarbons by water expelled during compaction. This diffusion process is the result of mechanisms related to the physical properties of the shales and their pore fluids and the molecular interaction between rock grains and pore fluids.