NOON MEETING—APRIL 29, 1981

CHRISTOPHER G. ST. C. KENDALL—Biographical Sketch

Christopher Kendall received a B.A. in geology with first-class honors from Trinity College, Dublin, in 1962, and received his M.S. from Trinity in 1965. He received his Ph.D. in sedimentology from Imperial College, London, in 1966.

Dr. Kendall was Harkness Fellow at the University of Texas from 1966 to 1968 and was a post-doctoral Fellow at the University of Sydney from 1968 to 1969, when he became a consultant geologist in Sydney. From 1970 to 1973, he was Assistant Professor at Ohio State University.

In 1973, Dr. Kendall became a Senior Research Geologist at Exxon Production Research in Houston, and in 1975 he was made Research Specialist. From 1976 to 1977, he was Chief Geologist, Scientific Director, and Vice President of Marengo, Ltd., Bermuda, a geological research group contracted to the National Oil Corporation of Libya.

In 1976 Dr. Kendall became Associate Director of the Earth Science & Resources Institute, University of South Carolina and in 1977, Research Associate Professor at the University of South Carolina. Also in 1977, Dr. Kendall joined the Seismology Department of Gulf Science and Technology Co., Pittsburgh, Pennsylvania, as Senior Research Geologist.

He is a member of AAPG, SEPM, and GSA, and a Fellow of the Geological Society of London.

NATURE, ORIGIN, AND CLASSIFICATION OF PERITIDAL TEPEE STRUCTURES AND RELATED BRECCIAS (Abstract)

Distinctive peritidal tepee antiform structures, buckled margins of saucerlike megapolygons, are common in marine vadose fenestral and pisolitic limestones and/or dolomites of carbonate platform sequences. They occur in intertidal and supratidal carbonates ranging in age from Silurian to Holocene. These megapolygons commonly form, and are sometimes truncated, before the deposition of the next sedimentary layer. The megapolygons result from the expansion of surface sediments by as much as 15%. The expansion is caused by the following continuously repeated sequence of processes: (1) desiccation and thermal contraction causing small fractures; (2) phases of wetting causing enlargement of fractures; (3) phases of crystallization of calcium carbonate and other minerals causing the enlargement, fill, and cementation of the fractures (precipitation is from brines and meteoric waters); (4) hydration of minerals, thermal expansion, breaking waves, and faulting may add to this disruption.

The development of the tepee fabric can be traced from an initially cemented, subaerial fenestral crust exhibiting expansion and compressional structures to a completely disrupted and brecciated sediment riddled by a labyrinth of fractures and solution cavities. These spaces are filled by numerous phases of internal marine and freshwater cement and sediment, the latter containing penecontemporaneous or younger marine faunas.

Peritidal tepees are useful tools for geologic reconstruction and provide evidence of subaerial exposure, a tropical to subtropical climate, and back-beach or back-barrier deposition. Proper identification of tepees is of economic importance, because they proved good early porosity and permeability for petroleum entrapment and a site for mineralization. Aesthetically, tepee rocks are a fine kaleidoscopic decorative stone.