

# TRANSACTIONS

Gulf Coast Association of Geological Societies

23rd Annual Convention

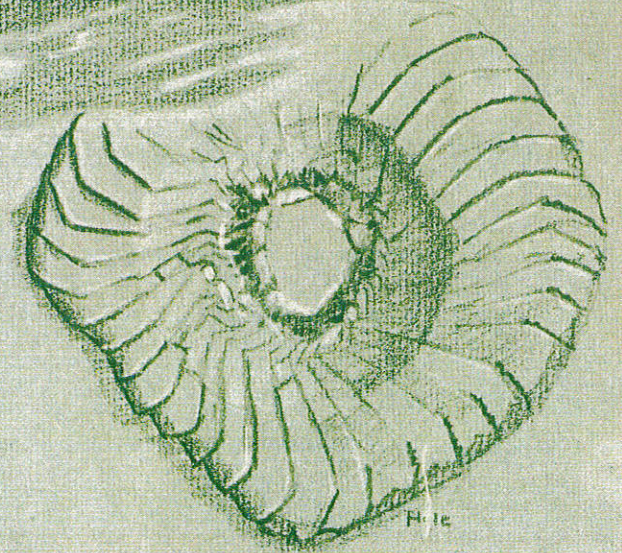
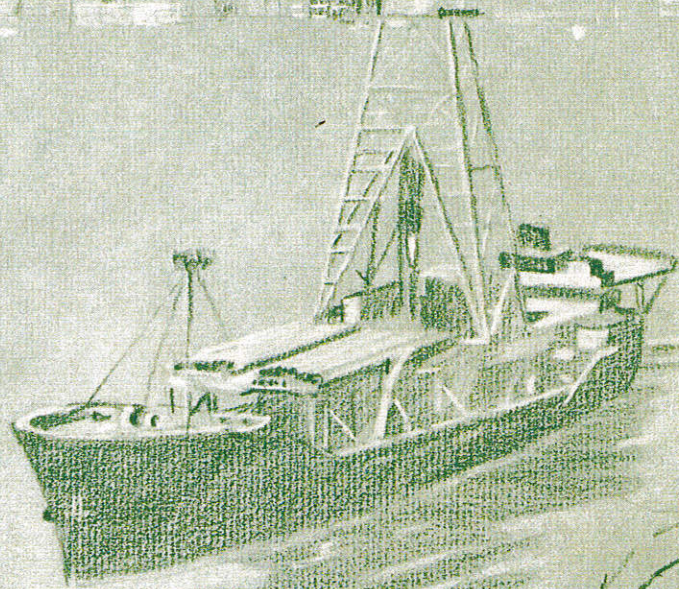
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*South Texas Geological Society*

*Theme:*

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**Today's New Technology**

**Tomorrow's New Targets**



*Houston, Texas*

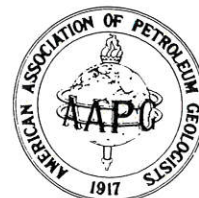
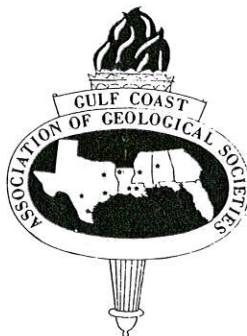
*October 24, 25, 26, 1973*



# TRANSACTIONS

GULF COAST ASSOCIATION OF GEOLOGICAL SOCIETIES

A SECTION OF THE AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS



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STEWART CHUBER  
EDITOR

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AND REGIONAL A.A.P.G. MEETING

*HELD IN COOPERATION WITH THE  
GULF COAST SECTION OF THE*  
SOCIETY OF ECONOMIC PALEONTOLOGISTS AND MINERALOGISTS

WILLIAM W. FAIRCHILD  
S.E.P.M. EDITOR

OCTOBER 24, 25, 26, 1973  
HOUSTON, TEXAS

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**TRANSACTIONS VOLUME  
DEDICATED TO THE MEMORY  
OF**



**EDWARD H. "RAINEY" RAINWATER  
(1909-1972)**

The *Transactions* of the 23rd Annual Meeting is dedicated to "Rainey" Rainwater in honor of his outstanding contributions to the geology of the Gulf Coast region and to the Gulf Coast Association of Geological Societies.

Rainey suffered a heart attack on October 12, 1972, the day that he was scheduled to present a paper at the 1972 GCAGS meeting in Corpus Christi. He died a few weeks later on November 10.

Although Rainey was certainly one of the best-known petroleum geologists in the Gulf Coastal region, there are probably only a few of his friends and acquaintances who were aware that his full name was Edward Harriman Rainwater. Everyone knew him simply as "Rainey."



Rainey was born on September 20, 1909, in Wayne County, Mississippi. He grew up in the Eocene red hills of east-central Mississippi and graduated from Waynesboro High School, Waynesboro, Mississippi, in 1927. In 1932 he received his B.S. degree in geology from Mississippi State College, and in 1934 he received his M.S. degree in geology from Northwestern University. During the period 1934-1935 he studied for his Ph.D. degree at Indiana University. It was while Rainey attended Northwestern that he met Margaret (Peggy) Morse, (a New England girl with a Ph.D. in Geology) who was later to become his very dear and dedicated wife. Rainey readily admitted that a large measure of his success was due to the special assistance and encouragement which he received from her. Anyõne who attended geological conventions throughout this country was almost certain to see Peggy and Rainey.

Rainey began his career as an assistant professor of geology at Mississippi State College in 1935-1937. In 1937 the Royal Dutch/Shell employed Rainey as a paleontologist to work in Holland and Venezuela. A few years later Rainey returned to the United States where he worked for Shell Oil Company as a paleontologist and stratigrapher until 1963. During the nine-year period from 1963 to 1972 he was a worldwide geological consultant for Tenneco Oil Company.

Rainey was an active member of several geological societies in Texas, Louisiana, Mississippi, and Florida. He was much more than just a regular dues-paying member of these societies; he was always deeply involved in special projects, field trips, and meetings.

During the past 15 years he was active in numerous Houston Geological Society affairs. Rainey served as a Society officer, member of the Executive Committee, Assistant Editor, and attended most of the regular meetings and field trips (often as a leader). He also served on several committees. In recognition of his outstanding contributions and participation in the Houston Geological Society over the years, he was elected an Honorary Member of the HGS in 1968. Certainly one of the highlights in my own career occurred on the evening that I had the great honor of presiding over the ceremonies when Rainey received this distinguished award. He richly deserved this honor and appreciated it fully.

His activities and contributions were certainly not confined to the Houston Geological Society. He was also deeply involved in the affairs and activities of various geological societies as follows:

#### ACTIVITIES IN GEOLOGICAL SOCIETIES

- |   |   |
|---|---|
| American Association of Petroleum Geologists.   | Mississippi Geological Society  |
| Distinguished lecturer  | Vice-President  |
| Lecturer for Continuing Education Program   | Chairman of Field Trip Committee  |
| First overseas lecturer   | Member of committee to name oil and gas fields                            |
| Chairman of Field Trip Committee  | Member of Study Groups  |
| Member Research Committee; Geologic Names and Correlation Committee; Committee on Preservation of Samples and Cores | Houston Geological Society  |
| District Representative   | Vice-President and Program Chairman                                       |
| Geological Society of America   | Chairman of Field Trip Committee; leader of field trips                   |
| Chairman of Field Trip Committee  | Assistant Editor of Publications  |
| Leader of field trips   | Member of Study Groups  |
| Editor of special publications  | Member of Executive Committee   |
| Society of Economic Paleontologists and Mineralogists   | Gulf Coast Association of Geological Societies                            |
| Vice-President  | Editor  |
| Member of Research Committee  | Associate Editor  |
| Southeastern Geological Society   | Business Representative   |
| Chairman of Field Trip Committee  | Gulf Coast Section, Society of Economic Paleontologists and Mineralogists |
| Member of Study Groups  | President   |
|   | Vice-President  |
|   | Chairman of several committees  |
|   | Field trip leader   |



Rainey's activities and his relationship with Tenneco Oil Company provided him with the much-deserved opportunity to gain both national and international recognition as a prominent petroleum stratigrapher. He was invited to present lectures to several universities and local geological societies in Canada; to the International Geological Congress in Denmark; to the Petroleum Institute in England; and to groups of earth scientists in India, Nigeria, and Brazil. In the United States he was a special lecturer for the American Geological Institute-National Science Foundation, lecturer for several years at the University of Houston, and also lecturer at the University of Tulsa.

• Few geologists have received more honors than Rainey Rainwater. The G.C.A.G.S. presented him with awards for best paper and outstanding paper in 1960, 1963, 1964, and 1968! In 1963 he received the award for the best paper presented at the annual meeting of the SEPM. He was also an honorary life member of the Gulf Coast Section, S.E.P.M.

Rainey was probably best known for his work as a Gulf Coast stratigrapher. His early experience with Dr. Galloway at the university of Indiana and with Shell in Venezuela was concerned mainly with sedimentary facies and microfaunas on the outcrop and in well cuttings and cores. During the late thirties and early forties when he was living in Houston, his efforts as a micropaleontologist with Shell resulted in the establishment of firm and much-needed subsurface corrections in the Tertiary section of the Gulf Coast. Through the years he acquired a vast knowledge and understanding of Mesozoic and Tertiary stratigraphy and the occurrence of oil and gas in the Gulf Coast region. With Peggy's help, he was able to document this great wealth of knowledge in the form of many papers, several of which have been published in the *Transactions* of the G.C.A.G.S. A list of papers published by Rainey is given below.

Rainey was so dedicated to geology that it was difficult for him to understand why many geologists did not maintain geological libraries and attend society meetings, field trips, and national conventions. He was always willing to purchase geological books and keep abreast of geological progress. Rainey was very suspicious of stratigraphic interpretations based on anything short of direct examination of outcrop and well samples, and he was critical of management decisions which neglected to fully consider stratigraphy.

During the past decade Rainey's association with Tenneco provided him with new opportunities to study the geology of Alaska, Western Europe, and Nigeria. Peggy accompanied him on many of these foreign trips.

Rainey is survived by his beloved wife Peggy, two sons, Charles and Norman, a grandson, and numerous relatives. While Charles and Norman were growing up in various parts of the Gulf coastal plain from Florida to Texas, they had the privilege to see most of the scenic spots of the United States and Canada. It was customary for Rainey and his entire family to take long, annual camping trips across the North American continent.

I am indeed very proud that I had the privilege to work with Rainey and to be one of his close friends for many years. All of us who knew him well have experienced a great loss. However, it is comforting to know that Rainey lived a great life with a wonderful family that he loved very much, and with hundreds of friends on the earth that he was so deeply interested in. He enjoyed it so much that he spent his entire lifetime studying it and sharing his knowledge with his family and his friends.

Rufus J. LeBlanc  
Shell Oil Company  
Houston, Texas



## GEOLOGICAL PUBLICATIONS OF E. H. RAINWATER

- 1936 (Co-author) Contact ore deposition at the Calumet Iron Mine, Colorado: *Econ. Geology*, v. XXXI, no. 8, p. 781-804.
- 1942 Notes on the Midway in east-central Mississippi (Abstract): Twenty-seventh Annual Conv. Program, Am. Assoc. Petroleum Geologists, Denver, Colorado.
- 1944 Southwestern Georgia, *in* Guidebook, Second Field Trip: Southeastern Geol. Soc., Tallahassee, Florida.
- 1945 The Subsurface stratigraphy of western Florida, *in* Guidebook, Third Field Trip: Southeastern Geol. Soc., Tallahassee, Florida.
- 1947 West-central Florida, *in* Guidebook, Fifth Field Trip: Southeastern Geol. Soc., Tallahassee, Florida.
- 1953 Wilcox and Midway Groups, west-central Alabama, *in* Guidebook, Tenth Field Trip: Mississippi Geol. Soc., Jackson, Mississippi.
- 1954 Review of Florida Geological Survey Bulletin 36, by Harbans S. Puri: *Am. Assoc. Petroleum Geologists Bull.*, v. 38, no. 12, p. 2568.
- 1954 Stratigraphic problems in the eastern Gulf Coastal Plain (Abstract): *Geol. Soc. America Bull.*, v. 65, p. 1367.
- 1955 Report of the editor: *Gulf Coast Assoc. Geol. Soc. Trans.*, v. 5, p. 239.
- 1955 Tertiary type localities, *in* Guides to Southeastern Geology: *Geol. Soc. America, Spec. Pub.*, p. 428-458.
- 1956 Report of the president, Gulf Coast section, S.E.P.M.: *Gulf Coast Assoc. Geol. Soc. Trans.*, v. 6, p. 253.
- 1956 Review of Florida Geological Survey Bulletin 37, by Wayne E. Moore: *Am. Assoc. Petroleum Geologists Bull.*, v. 40, no. 7, p. 1727.
- 1959 Review of geological highway map of Texas: *Am. Assoc. Petroleum Geologists Bull.*, v. 43, no. 8.
- 1960 Paleocene of the Gulf Coastal Plain of the United States of America: Report of Internat. Geol. Cong., XXI Session, Part V, p. 97, The Cretaceous Tertiary Boundary, Copenhagen, Denmark.
- 1960 Geology in the search for minerals in Mississippi: *Jour. Miss. Academy Sci.*, v. VI, p. 374-375.
- 1960 Review of Florida Geological Survey Special Publication 5, by Harbans S. Puri and Robert O. Vernon: *Am. Assoc. Petroleum Geologists Bull.*, v. 44, no. 2, p. 261.
- 1960 Dantzler formation (Lower Cretaceous), type subsurface section *in* Type Localities Project, Unit 1: Gulf Coast Section, Soc. Econ. Paleontologists and Mineralogists.
- 1960 Moodys Branch Formation (Upper Eocene), type locality and reference locality *in* Type Localities Project, Unit 1: Gulf Coast Section, Soc. Economic Paleontologists and Mineralogists.
- 1960 Stratigraphy and its role in the future exploration for oil and gas in the Gulf Coast: *Gulf Coast Assoc. Geol. Soc. Trans.*, v. 10, p. 35-75 (winner of Outstanding Paper Award for papers presented at Tenth Annual Meeting, G.C.A.G.S., Biloxi, Mississippi, 1960).
- 1961 Middle Eocene of Houston County, Texas. Field Trip Guidebook: Gulf Coast Section, Soc. Econ. Paleontologists and Mineralogists.
- 1961 Outline of geological history of Mississippi (Abstract): *Gulf Coast Assoc. Geol. Soc. Trans.*, v. 11, p. 43-45.
- 1962 (Senior editor) Foreword, *in* *Geology of the Gulf Coast and Central Texas and Guidebook of excursions*: Houston Geol. Soc. Spec. Publ.
- 1962 Review of *Geology of the Atlantic and Gulf Coastal Province of North America*, by Grover E. Murray: *Am. Assoc. Petroleum Geologists Bull.*, v. 46, no. 1, p. 137.

- 1963 The Environmental control of oil and gas occurrence in terrigenous clastic rocks: Gulf Coast Assoc. Geol. Soc. Trans., v. 13, p. 79-95 (winner of Best Paper Award for papers presented at the Thirteenth Annual Meeting, G.C.A.G.S., Shreveport, Louisiana, 1963).
- 1963 Environmental control of oil and gas occurrence in terrigenous clastic rocks: South Texas Geol. Soc. Bull., v. 3, no. 17.
- 1963 (Abstract) Transgressions and regressions in the Gulf Coast Tertiary: Am. Assoc. Petroleum Geologists Bull., v. 47, no. 2, p. 367.
- 1963 Geological history and oil and gas possibilities of Mississippi: Miss. Geol. Survey Bull. 97, p. 77-105.
- 1964 Regional stratigraphy of the Gulf Coast Miocene: Gulf Coast Assoc. Geol. Soc. Trans., v. 14, p. 81-124. (Winner of Best Paper Award for papers presented at Fourteenth Annual Meeting, G.C.A.G.S., Corpus Christi, Texas, 1964.)
- 1964 Transgressions and Regressions in the Gulf Coast Tertiary: Gulf Coast Assoc. Geol. Soc. Trans., v. 14, p. 217-230. (Winner of best Paper Award, National S.E.P.M. Meeting in Houston, Texas, 1963.)
- 1964 Late Pleistocene and Recent history of Mississippi Sound between Beauvoir and Ship Island: Miss. Geol. Survey Bull. 102, p. 32-61.
- 1964 Regional stratigraphy of the Midway and Wilcox in Mississippi: Miss Geol. Survey Bull. 102, p. 9-31.
- 1964 Look for ancient deltas in your search for oil: The Oil and Gas Jour., v. 62, no. 1, p. 110-114.
- 1964 In memoriam. Harold Norman Fisk: Sedimentology, v. 5, p. 81. (Also Houston Geol. Soc. Bull., v. 7, no. 3.)
- 1965 Dedication of S.E.P.M. Research Symposium (held at New Orleans, Louisiana) to the late Dr. Harold N. Fisk: A.A.P.G.-S.E.P.M. 1965 Convention Program.
- 1966 The geological importance of deltas, *in* Deltas in their geologic framework: Houston Geol. Soc., p. 1-15.
- 1966 Exploration for natural gas, *in* Natural Gas: British Inst. of Petroleum, London, p. 1-31.
- 1966 Miocene of the Gulf Coastal Plain of the United States of America: Proc. of the Second West African Micropaleontological Colloq., Ibadan, Nigeria, p. 141-161.
- 1966 In memoriam, Kenneth H. Clough: Houston Geol. Soc. Bull., v. 8, no. 7.
- 1967 Resume of Jurassic to Recent sedimentation history of the Gulf of Mexico Basin: Gulf Coast Assoc. of Geol. Soc. Trans., v. 17, p. 179-210.
- 1968 Geological history and oil and gas potential of the central Gulf Coast: Gulf Coast Assoc. of Geol. Soc. Trans., v. 18, p. 124-165 (winner of Outstanding Paper Award for papers presented at the Eighteenth Annual Meeting, G.C.A.G.S., Jackson, Mississippi, 1968).
- 1970 Stratigraphy and petroleum potential of peninsular Florida and southern Georgia: Gulf Coast Assoc. of Geol. Soc. Trans., v. 20, p. 49-59.
- 1970 Regional stratigraphy and petroleum potential of the Gulf Coast Lower Cretaceous: Gulf Coast Assoc. of Geol. Soc. Trans., v. 20, p. 145-157.
- 1971 Galveston Island: Houston Independent School Dist. (Guidebook for field trip), 24 pages.
- 1971 Possible future petroleum potential of Lower Cretaceous, western Gulf Basin: Am. Assoc. of Petroleum Geologists, Mem. 15, v. II, p. 901-926.
- 1971 Possible future petroleum potential of Peninsular Florida and adjacent continental shelves: Am. Assoc. of Petroleum Geologists, Mem. 15, v. II, p. 1311-1341.
- 1972 Petroleum geology: McGraw-Hill 1972 Yearbook of Science and Technology.
- 1972 Petroleum in deltaic sediments: 24th Internat. Geol. Cong., sec. 5, p. 105.
- 1972 The factors which control petroleum accumulations: Gulf Coast Assoc. Geol. Soc. Trans., v. 22, p. 39-54.



## TABLE OF CONTENTS

	Page
DEDICATION OF 1973 TRANSACTIONS VOLUME TO EDWARD H. RAINWATER .....	II
THE COVER .....	IX
OFFICERS AND EXECUTIVE COMMITTEE, G.C.A.G.S. ....	X
OFFICERS OF MEMBER SOCIETIES, G.C.A.G.S. ....	X
REPORT OF THE PRESIDENT, G.C.A.G.S., Fred M. Schall, Jr. ....	XII
CONSTITUTION AND BY-LAWS, G.C.A.G.S. ....	XIII
REPORT OF THE GENERAL CHAIRMAN, Clyde E. Harrison .....	XV
REPORT OF THE EDITOR, G.C.A.G.S., Stewart Chuber .....	XVI
ORGANIZATION, TWENTY-THIRD ANNUAL MEETING .....	XVII
BEST PAPER AWARDS, G.C.G.S. TWENTY-SECOND ANNUAL MEETING .....	XVIII
PAST OFFICERS AND CONVENTION CHAIRMEN, G.C.A.G.S. ....	XX
OFFICERS AND BUSINESS REPRESENTATIVES, G.C.S.—S.E.P.M. ....	XXI
REPORT OF THE PRESIDENT, G.C.S.—S.E.P.M., C. Wylie Poag .....	XXII
HONORARY G.C.S.—S.E.P.M. MEMBERSHIP AWARDS .....	XXIII
BEST PAPER AWARDS, G.C.S.—S.E.P.M., TWENTY-SECOND ANNUAL MEETING .....	XXV
PUBLICATIONS OF G.C.S.—S.E.P.M. ....	XXVII
PUBLICATIONS OF G.C.A.G.S. ....	XXVIII
ADVERTISER INDEX .....	434

### TECHNICAL PAPERS AND ABSTRACTS

#### G.C.A.G.S.

DISCOVERIES FROM DEEP OCEAN DRILLING by N. Terence Edgar .....	1
NEW DIRECTIONS FOR SOLAR ENERGY APPLICATIONS by Peter E. Glaser and James C. Burke .....	11
WHERE WE ARE IN NUCLEAR POWER DEVELOPMENT by P. R. Keep and K. F. Paulovich .....	16
SIGNIFICANT STUDIES OF MODERN AND ANCIENT DELTAIC SEDIMENTS by Rufus J. LeBlanc .....	18
ATCHAFALAYA BAY, LOUISIANA: REGIONAL SUBSIDENCE AND CONTEMPORARY DELTA FORMATION by R. J. Shlemon .....	22
RECENT SEDIMENT DISTRIBUTION IN THE COLORADO DELTA AREA, NORTHERN GULF OF CALIFORNIA by L. D. Meckel .....	27
THE MISSISSIPPI AND MEKONG DELTAS—A COMPARISON by Charles R. Kolb and William K. Dornbusch, Jr. ....	30
VARIABILITY OF MODERN RIVER DELTAS by J. M. Coleman and L. D. Wright .....	33
DELTAIC AND ASSOCIATED FACIES OF DIFUNTA GROUP (LATE CRETACEOUS TO PALEOCENE), PARRAS AND LA POPA BASINS, COAHUILA AND NUEVO LEON, MEXICO by E. F. McBride, A. E. Weidie, and J. A. Wolleben .....	37
LATE DEVONIAN—EARLY MISSISSIPPIAN SUBAQUEOUS DELTAIC FACIES IN A PORTION OF THE SOUTHEASTERN APPALACHIAN BASIN by Richard A. Walls .....	41
RECOGNITION OF DELTAIC ENVIRONMENTS FROM SMALL SAMPLES by Frank G. Ethridge and David K. Davies .....	46



HYDRAULIC FRACTURING—NEW DEVELOPMENTS by Gerald R. Coulter .....	47
MAPPING HYDROCARBON CONCENTRATION AND PERMEABILITY IMPROVES EXPLOITATION OF OIL AND GAS by Lloyd C. Fons .....	54
SCANNING ELECTRON MICROSCOPE APPLICATION TO FORMATION EVALUATION by E. M. Kieke and D. J. Hartmann .....	60
SOME PROBLEMS IN THE STRATIGRAPHIC ANALYSIS OF DIPLOGS by Olin R. Holt .....	68
MODERN WELL-SITE EVALUATION OF TEXAS EOCENE WILCOX by Alvin L. Schultz .....	74
EVOLUTION OF THE NORTHERN GULF COAST DEDUCED FROM GEOPHYSICAL DATA by J. Lamar Worzel and Joel S. Watkins .....	84
PRE-JURASSIC GEOLOGIC FRAMEWORK, NORTHERN GULF BASIN by R. D. Woods and J. W. Addington .....	92
PLATE TECTONICS AND THE ORIGIN OF THE GULF COAST BASIN by Robert Beall .....	109
EVOLUTION OF BELLE ISLE SALT DOME, LOUISIANA by Charles A. O'Neill, III .....	115
OLIGOCENE STUDIES, NORTHEAST MEXICO by Daniel A. Busch .....	136
JAY FIELD—A JURASSIC STRATIGRAPHIC TRAP by R. D. Ottmann, P. L. Keyes and M. A. Ziegler .....	146
NATURAL HYDROCARBON SEEPAGE IN THE GULF OF MEXICO by Richard A. Geyer and William M. Sweet, Jr. ....	158
PETROLEUM DERIVED HYDROCARBONS IN GULF OF MEXICO WATERS by C. B. Koons and P. H. Monaghan .....	170
ESTIMATE OF ANNUAL INPUT OF PETROLEUM TO THE MARINE ENVIRONMENT FROM NATURAL MARINE SEEPAGE by R. D. Wilson, P. H. Monaghan, A. Osanik, L. C. Price and M. A. Rogers .....	182
GEOLOGIC CONTROLS ON THE HYDROCARBON SOURCE POTENTIAL OF YOUNG SEDIMENTS (Abstract) by M. A. Rogers, C. B. Koons, T. Y. Ho, and D. Perry .....	194
PALEOTEMPERATURES IN THE GULF COAST USING THE ESR-KEROGEN METHOD by Walter C. Pusey, III .....	195
ENVIRONMENTAL MANAGEMENT IN THE MISSISSIPPI DELTA SYSTEM Sherwood M. Gagliano and Johannes L. van Beek .....	203
OFFSHORE PETROLEUM ECONOMICS by L. K. Weaver, H. F. Pierce and C. J. Jirik .....	210
THE CARBONATE RAMP: AN ALTERNATIVE TO THE SHELF MODEL by Wayne M. Ahr .....	221
HIGH-ENERGY CARBONATES ON THE INNER SHELF, NORTHEASTERN YUCATAN PENINSULA, MEXICO by William C. Ward and Michael J. Brady .....	226
ENVIRONMENTAL MODELING: A USEFUL EXPLORATION TOOL IN CARBONATES by M. Malek-Aslani .....	239
SUBMARINE CURRENT MEASUREMENTS—NORTHWEST GULF OF MEXICO by George T. Moore .....	245
DEEP WATER CHANNELS AND THEIR POTENTIAL VALUE IN PETROLEUM LOCALIZATION by G. T. Moore and T. J. Fullam .....	256
DEEP-WATER INTERPRETATION OF UPPER WILCOX SANDSTONES FROM CORE STUDY, KATY FIELD, TEXAS by Robert R. Berg and Richard L. Findley .....	259
DEPOSITIONAL SYSTEMS OF THE ALABAMA, MISSISSIPPI, AND WESTERN FLORIDA COASTAL ZONE by Peter A. Boone .....	266

**TECHNICAL PAPERS AND ABSTRACTS  
GULF COAST SECTION OF S.E.P.M.**

PETROGRAPHIC ANALYSIS OF A SUBSURFACE PORTION OF THE GLEN ROSE FORMATION (LOWER CRETACEOUS), SOUTH TEXAS by James F. Burkholder and David N. Lumsden .....	278
PETROGRAPHY OF CARBONATE SANDS ON THE CAROLINA CONTINENTAL SHELF by William J. Cleary and Paul A. Thayer .....	288
ORIGIN OF CRISTOBALITE-RICH TERTIARY SEDIMENTS IN THE ATLANTIC AND GULF COASTAL PLAIN by Sherwood W. Wise and Fred M. Weaver .....	305
SEDIMENTARY STRUCTURES AND GRAIN-SIZE DISTRIBUTION, MUSTANG ISLAND, TEXAS by R. J. Muiola and A. B. Spencer .....	324
ANOMALOUS BEACH RIDGES OF SANGAMON AGE by William F. von Drehle .....	333



SHORELINE AND BEACH CHANGES ON HONEYMOON ISLAND, PINELLAS COUNTY, FLORIDA, 1967-1971 by Alexandra P. Wright and Edward O'Donnell.....	341
ERRORS IN THE PRE-HOLOCENE C-14 SCALE by Frank W. Stapor and W. F. Tanner .....	351
POST-TAMPA, PRE-CHIPOLA SEDIMENTS EXPOSED IN LIBERTY, GADSDEN, LEON AND WAKULLA COUNTIES, FLORIDA by J. E. Banks and M. E. Hunter .....	355
WAVE POWER GRADIENT: AN APPROACH TO HOLOCENE DEPOSITIONAL HISTORY by R. S. Murali .....	364
LEVEED-CHANNEL DEPOSITS, TURBIDITES, AND CONTOURITES IN DEEPER PART OF GULF OF MEXICO by Arnold H. Bouma .....	368
WEST FLOWER GARDENS BANK by R. Rezak and W. R. Bryant .....	377
GROWTH RATES OF BEACH RIDGES ON SANIBEL ISLAND, FLORIDA by Thomas M. Missimer .....	383
WEST LOUISIANA CHENIER PLAIN HISTORY by William F. Tanner .....	389
LATE QUATERNARY SEA LEVELS IN THE GULF OF MEXICO by C. Wylie Poag .....	394
THE ROLE OF THE GEOLOGIST IN AN ENVIRONMENTAL IMPACT STUDY by Arnold H. Bouma, Barry W. Holliday, C. Wylie Poag, Gary L. Hall, and Bruce S. Appelbaum .....	401
STONE CITY AND COOK MOUNTAIN (MIDDLE EOCENE) SCAPHOPODS FROM SOUTHEAST TEXAS (Abstract) by Kenneth A. Hodgkinson .....	413
REINSTATEMENT OF NUMMULITES HEILPRINI HANTKEN, 1886 by Richard S. Barnett .....	414
PALEONTOLOGIC EVIDENCE FOR MID-MIOCENE REFRIGERATION, FROM SUBSURFACE MARINE SHALES, LOUISIANA GULF COAST by D. J. Echols and D. M. Curtis .....	422
CALCAREOUS NANNOFOSSIL APPLICATIONS IN THE GULF OF MEXICO-CARIBBEAN REGION by Lee A. Smith and Jan Hardenbol .....	427
LOWER MIOCENE BIOSTRATIGRAPHY ALONG THE SAVANNAH RIVER, GEORGIA (Abstract) by Paul Huddlestun .....	432

*THE COVER* — Houston offers perhaps a unique environment for today's geological exploration. For 12 months of every year her scientific community is exposed to and is influenced by an incredible variety of specialists, many of whom are visiting for brief meetings or are here for annual visits, but who for the most part reside here, contributing to and nourishing an explosive scientific environment.

On the cover a coccolith, highly magnified rendered in chalk accents one facet of TODAY'S NEW TECHNOLOGY as we recognize this year's special S.E.P.M. nannofossil symposium. The Drill Ship suggests that many of TOMORROW'S NEW TARGETS will be in deeper waters; and Houston in the background, vital and explosive will offer a unique culture generating new and imaginative scientific support for tomorrow's exploration effort.

—M. E. Hole



## GULF COAST ASSOCIATION OF GEOLOGICAL SOCIETIES

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SOUTHEASTERN GEOLOGICAL SOCIETY ..	James W. Yon, Jr. ....	Florida Geological Survey
SOUTH TEXAS GEOLOGICAL SOCIETY .....	Wilford Stapp .....	Consultant

### OFFICERS OF MEMBER SOCIETIES

#### GULF COAST ASSOCIATION OF GEOLOGICAL SOCIETIES

ALABAMA GEOLOGICAL SOCIETY, P.O. Box 6184, University, Alabama 35486

PRESIDENT ..... James A. Drahovzal

VICE PRESIDENT ..... Michael W. Szabo

SECRETARY ..... Richard Beckman

TREASURER ..... George W. Swindle, Jr.

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PRESIDENT ..... J. W. Collins

FIRST VICE PRESIDENT ..... Wm. D. Dobbins

SECOND VICE PRESIDENT ..... Wm. A. Atlee

SECRETARY ..... Mark A. Wolbrink

TREASURER ..... Leroy Manka

EAST TEXAS GEOLOGICAL SOCIETY, P.O. Box 216, Tyler, Texas 75701

PRESIDENT ..... Bill C. Ross

VICE PRESIDENT ..... G. C. Merket

SECRETARY-TREASURER ..... Herk Simms



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PRESIDENT ..... Ben J. Sorrell  
FIRST VICE PRESIDENT ..... Sabin W. Marshall  
SECOND VICE PRESIDENT ..... Anthony Reso  
SECRETARY ..... Gay C. Helm, Jr.  
TREASURER ..... Clyde G. Beckwith

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PRESIDENT ..... James J. Bellamy  
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SECOND VICE PRESIDENT ..... Bob Sutter  
SECRETARY ..... Don Ballbach  
TREASURER ..... Thomas L. Caskey

MISSISSIPPI GEOLOGICAL SOCIETY, P.O. Box 422, Jackson, Mississippi 39205

PRESIDENT ..... Larry Walters  
FIRST VICE PRESIDENT ..... Gene Taylor  
SECOND VICE PRESIDENT ..... Harry Fritz  
SECRETARY ..... Elwood Rhul  
TREASURER ..... John Meyers

NEW ORLEANS GEOLOGICAL SOCIETY, P.O. Box 52172, New Orleans, Louisiana 70160

PRESIDENT ..... George D. Severson  
FIRST VICE PRESIDENT ..... Marvin L. Dwight  
SECOND VICE PRESIDENT ..... Rudolph B. Siegert  
SECRETARY ..... M. Jack Reinhard  
TREASURER ..... Robert F. Walker

SHREVEPORT GEOLOGICAL SOCIETY, P.O. Box 11750, Shreveport, Louisiana 71102

PRESIDENT ..... Alan H. Talley  
FIRST VICE PRESIDENT ..... W. E. Hayes  
SECOND VICE PRESIDENT ..... J. B. Harris  
SECRETARY ..... John H. Skinner  
TREASURER ..... Ferrell Burgess

SOUTHEASTERN GEOLOGICAL SOCIETY, P.O. Box 1634, Tallahassee, Florida 32302

PRESIDENT ..... Daniel P. Spangler  
VICE PRESIDENT ..... James P. May  
SECRETARY-TREASURER ..... Burke E. Lane

SOUTH TEXAS GEOLOGICAL SOCIETY, 1622 Milam Bldg., San Antonio, Texas 78215

PRESIDENT ..... Richard N. Hargis  
VICE PRESIDENT ..... George His  
SECRETARY ..... James Swope  
TREASURER ..... Charles Scott

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## REPORT OF THE PRESIDENT GULF COAST ASSOCIATION OF GEOLOGICAL SOCIETIES

The 23rd annual meeting of the Gulf Coast Association of Geological Societies is being held in Houston. This is the fourth time our city has had the privilege of acting as host. We welcome you and hope your visit will be both pleasant and rewarding. Our theme this year is TNT "Today's New Technology—Tomorrow's New Target." Our program chairman Amos Salvador and editor Stewart Chuber have worked diligently to provide you with a number of diverse and interesting papers which we expect, at the very least, will stir your imagination. This year for the first time the program has been organized so that each half-day's session is in the format of a symposium. We hope you will like it.

The *Transactions* are dedicated to E. H. Rainwater. I can think of no more fitting person than Rainey for this honor. His contributions to the stratigraphy and the structure of the Gulf Coast province are numerous and have provided us with a wealth of information to stimulate our minds.

With a successful convention last year your Association's finances are in excellent shape. I urge my successors in office to consider means by which some of these funds can be applied toward improving our knowledge of Gulf Coast geology (special projects) or encouraging young men and women to enter our profession.

Clyde Harrison and James O. Lewis, General Chairman and Vice Chairman, respectively, had full responsibility of planning and arranging this convention. They have done an excellent job and deservedly merit your appreciation. I want to take this opportunity to personally thank them, the Committee Chairmen, and that dedicated group of unsung volunteers who have given so much of their time and effort over the past eighteen months to make this convention a success.

My sincere appreciation goes to my fellow officers of the Gulf Coast Association for the many hours they have spent on its affairs.

It has been an honor and a privilege to serve as your President this past year.

Fred M. Schall, Jr.  
President  
Gulf Coast Association of Geological Societies



# CONSTITUTION AND BY-LAWS

## GULF COAST ASSOCIATION OF GEOLOGICAL SOCIETIES

### ARTICLE I -- Name

This is a non-profit organization and shall be known as the "Gulf Coast Association of Geological Societies". It is hereinafter referred to as "This Association."

### ARTICLE II -- Object

The object of This Association is to provide for discussion and publication of papers on subjects and problems coming within the scope of the Geological profession and with particular emphasis on Gulf Coast geology.

### ARTICLE III -- Organization

This Association is an organization of AAPG-affiliated Geological Societies in the Gulf Coast Area.

#### SECTION 1.

The business of This Association shall be transacted by an Executive Committee composed of one representative from each member society and the President, Vice President, Secretary, Treasurer, and Past President. The Secretary and Treasurer shall be non-voting members of the Executive Committee. The Vice President, Secretary, and Treasurer shall be elected by the Executive Committee at the annual meeting. The Secretary and Treasurer shall be nominated by the Executive Committee of the local Geological Society next in line to host the annual meeting. The Vice President shall be nominated by the Executive Committee of the host society for the annual meeting two years hence and shall accede to the Presidency. Thus each year the President, Secretary and Treasurer will be from the host society with the Vice President providing continuity with the Executive Committee as he assumes the Presidency in the ensuing year. The duties of these officers shall be those customary to their respective offices.

The GCAGS representative to the Advisory Council of the American Association of Petroleum Geologists shall be selected by the Executive Committee of GCAGS and shall be an ex officio, non-voting member of the GCAGS Executive Committee.

Each member society shall designate a representative to the Executive Committee and in the event the chosen representative cannot attend any given Executive Committee meeting, an alternate representative shall be appointed by the member society to attend and vote in the absence of the representative. The representative, when practicable, shall be an officer or past officer of the society he represents.

Each Society thus shall have one vote on actions taken by the Executive Committee with the exception that the host society, the next annual host society and the immediate past host society will be entitled to two votes by virtue of their members holding the offices of President, Vice President and Past President.

The officers of the Executive Committee shall be elected for a term of one year. They shall be elected and assume their duties as soon after the annual meeting of This Association as is practicable. Any vacancies shall be filled by the Executive Committee as provided above in Paragraph 1.

#### SECTION 2.

The business of This Association shall be conducted by the Executive Committee. A simple majority vote of the members present at meetings is required to effect decisions, except in those matters which require a greater majority, as set forth in the Constitution and By-Laws.

A quorum shall consist of more than one-half of the voting members of the Executive Committee.

### ARTICLE IV -- Meetings

#### SECTION 1.

There shall be an annual meeting of This Association, the time and place of which shall be determined by the Executive Committee.

### ARTICLE V -- Publications

There shall be an annual *Transactions* published by This Association, which shall contain papers presented at the annual meeting, and such other material as selected by the Executive Committee. The Executive Committee is authorized to have published additional bulletins, and other material which they feel will further the object of This Association.

## ARTICLE VI – Funds

The funds of This Association shall be deposited in any national bank or Federally insured Savings and Loan Association selected by the Executive Committee, to the credit of This Association, or invested in U.S. Government Bonds at the discretion of the Executive Committee.

## ARTICLE VII – Amendments

Amendments to this Constitution may be proposed by the Executive Committee, or by any two member societies. Proposed amendments shall be submitted to each of the member societies in writing. It shall require an affirmative vote of three-fourths of the member societies to ratify an amendment to this Constitution.

## ARTICLE VIII – Later Affiliation

Non-member Geological Societies in the Gulf Coast Area which are affiliated with AAPG may petition the Executive Committee for membership and shall be accepted by an affirmative vote of three-fourths of the Executive Committee.

### AMENDMENT I

Any member society may resign from This Association at any time by written notice to the Executive Committee. There shall be no obligation to transfer to such resigning society any portion of This Association's funds.

### AMENDMENT II

This Association shall terminate at such time as a majority of the member societies shall so vote. Upon dissolution all funds and other property shall be divided equally among the member societies.

## BY-LAWS

### I. COMMITTEES:

The President, with the approval of the Executive Committee, shall appoint the Annual Meeting Chairman, and the following permanent committees:

- A. Publications
- B. Advertising
- C. Publicity

Appointment to these committees shall be for a term of one year.

#### 1. Annual Meeting Chairman

The Annual Meeting Chairman shall direct the staging of the annual meeting, and shall have the authority to appoint such additional committees as he deems necessary.

#### 2. Publications

The Publications Committee shall be responsible for obtaining papers for presentation at the annual meeting, and for editing and publishing the annual *Transactions*. It shall endeavor to stimulate geologists in the Gulf Coast to prepare papers which can be collected and published in the *Transactions*, symposium or other form in order to further the object of This Association as set forth in Article II of the Constitution. This committee shall be composed of one member from each of the affiliated societies.

#### 3. Advertising

The Advertising Committee shall be responsible for obtaining advertisements in the publications of This Association, as directed by the Executive Committee. This committee shall be composed of one member from each of the member societies.

#### 4. Publicity

The Publicity Committee shall be responsible for obtaining maximum national and local publicity of the activities of This Association. Also it shall be the responsibility of this committee to stimulate interest and participation in association affairs. The Executive Committee shall function as the Publicity Committee.

The President, with the approval of the Executive Committee, may appoint such additional committees as are necessary to conduct the business of This Association.

### II. TREASURER:

The Treasurer shall have the authority to issue checks against the Bank account of This Association on his sole signature, but in the event of his absence or incapacity to act, withdrawals or payments by check may be made on the signature of the President during the continuance of the absence, or incapacity, of the Treasurer. In this event, the identity and authority of the President, and the circumstances relating to the absence or incapacity of the Treasurer, shall be certified by the Executive Committee, if so required by the depository. The Treasurer shall submit a financial report at each meeting of the Executive Committee and shall keep a set of books in accordance with good accounting practices. He shall submit the books for auditing at the end of his term of office.

The Treasurer shall keep an inventory, and storage record, of back publications and equipment owned by This Association. The office of Treasurer shall be bonded as directed by the Executive Committee.

III. These By Laws may be amended by an affirmative vote of three-fourths of the Executive Committee.

IV. There shall be no dues.



## REPORT OF THE GENERAL CHAIRMAN TWENTY-THIRD ANNUAL MEETING—1973

To be a winning team requires much individual talent, dedication to the task, and a large dose of self-discipline. At the time of this writing the outcome of "the game" is unknown, but I know the GCAGS and GCS-SEPM teams have the aforementioned attributes. My job has been made easy by the dedicated efforts of the Vice General Chairman, the Committee Chairmen, their assistants, and the other members of the Houston Geological Society and Houston Geological Auxiliary who have made contributions to the planning and execution of the meeting. I thank each of them.

A special tip of the hat goes to Amos Salvador's Program Committee and Stew Chuber's editorial staff for arranging the excellent program and preparing this *Transaction* which will be a treasured and often-referred-to publication.

The constitutional objective of the GCAGS "...to provide for discussion and publication of papers... with particular emphasis on Gulf Coast geology" has certainly been achieved.

To the companies that have given manpower and services, and to our most valued friends, the advertisers and exhibitors, we are grateful; you have assured the financial success of this convention.

Jerry Sides' Corpus Christi convention committees and the previous committees should take bows for providing the excellent blueprints of achievement and for offering suggestions about staging these conventions.

Lastly, I appreciate the opportunity that Fred Schall and the Executive Committee of the GCAGS have provided by selecting me as General Chairman for the 23rd meeting. Making new friends, and having the occasion to work with old ones has been a significant pleasure to me.

Clyde E. Harrison  
General Chairman

## REPORT OF THE TRANSACTIONS EDITOR

The 'phone rings, and a friend chit-chats with you for a moment. He asks a question, you consider it briefly, and all of a sudden you have made a commitment; you have agreed to be editor of the 1973 *Transactions*.

You think about it later in the quiet of your office—editor of a significant publication. Here you have a good opportunity to renew old acquaintances and to make a few changes. You want to make it the best volume ever published. But what about the work? Is it like the high school yearbook or the college newspaper with which you are vaguely familiar after all these years? With help it should be easy; organization is the answer.

Readers, you must have readers, and this year you decide to form an all-Houston editorial committee. But whom will you pick? It's obvious; fellows who have published or edited before are your best bets. You try several and they all agree. Mo Aslani with Tenneco, Bill North and Bill Soderman with Texaco, and Ron Wilcox, an independent. The really star performers are Clyde Beckwith, Continental, and Dave Calloway with ARCO. They live close to you, and you only realize how important time is when the deadline gets critical, and the shorter distance between you and your reader becomes significant.

How about delegating some other responsibilities? This year Martha Lou Broussard handled her Second Delta Symposium. She did exemplary work organizing, collecting, and editing those papers. Bill Fairchild agreed to be the SEPM editor, and he performed his job admirably and *on schedule*.

But what about a program, where will your authors come from? You sit in on Amos Salvador's program committee meetings to see what the action is and where it is going. Amos handles this job like the professional he is, and soon the program is filled with just a few spots missing. This year double sessions are planned, and each session will have a general theme.

You set a schedule, send it to all the authors, and relax, for the job looks easy from here. Your first meeting with the printer indicates that he will be a pleasure to work with. He has experience and you have enthusiasm; together you drift toward the maelstrom.

Deadlines come and go and you have mixed emotions about the schedule. Your authors turn in superior manuscripts and the readers adjust the style. What is your style policy? You use the USGS standard, the AAPG Suggestions to Authors, and good old Expedience. As the ultimate deadline approaches the pace becomes more frantic.

Zowie! You forgot about the cover. Didn't Clyde Harrison have someone in mind? He suggests Ted Hole with Hamilton Brothers, and your work with him is great. His excellent cover creation ties in the theme with the city. What talent! And how fast he operates.

The final days are here; galleys, page proofing, make-up, pagination. You find yourself spending evenings, early mornings, and weekends working on the ultimate copy. Finally you are relieved; the collective efforts of authors, readers, and helpers have put the *Transactions* to bed. Now you must await publication to review these labors. You hope that the convention-goers and future readers enjoy the book as much as you have, in retrospect, enjoyed putting it together.

Stewart Chuber  
1973 *Transactions* Editor



# ORGANIZATION

## TWENTY-THIRD ANNUAL MEETING

CLYDE E. HARRISON, CONTINENTAL OIL CO., — *GENERAL CHAIRMAN*  
JAMES O. LEWIS, CONSULTANT — *VICE GENERAL CHAIRMAN*

### Advertising

Randall J. Fleming, Superior Oil Co.,

### Arrangements

Richard L. Winborn, Ada Oil Exploration Co., Chairman  
Charles Barber, Atlantic Richfield Company  
Eugene Nakayama, Atlantic Richfield Company

### Awards

Wayne Z. Burkhead, Texaco, Inc., Chairman  
Benjamin T. Simmons, Shubuta Oil Co.

### Editorial

Stewart Chuber, Consultant, Editor  
Morad Malik-Aslani, Tenneco Oil Co., Assistant Editor  
Clyde G. Beckwith, Continental Oil Co.  
Martha Lou Broussard, Rice University  
David C. Calloway, Atlantic Richfield Co.  
William C. Fairchild, Consultant  
William G. North, Texaco, Inc.  
J. William Soderman, Texaco, Inc.  
Ronald E. Wilcox, Consultant

### Cover Design:

M. Ted Hole, Hamilton Brothers Oil Co.

### Entertainment

Otto B. Pixler, Baroid, Co-Chairman  
James L. Smith, Cities Service Oil Co., Co-Chairman  
Otis B. Allred, Union Oil Co. of California  
Charles P. Bragg, Pennzoil Producing Co.  
Hal H. Bybee, Continental Oil Co.  
Steve Gustison, Corpus Christi Offshore  
Reeves Jackson, M. T. Halbouty  
William Oliver, Exxon

### Exhibits

Thomas A. Bay, Jr., Shell Oil Company, Co-Chairman  
H. L. (Rick) Rickard, Geophysical Service, Inc., Co-Chairman

### Field Trip

George E. Gordon, Dow Chemical Co., Brazos Oil & Gas Div., Co-Chairman  
George W. Hinds, Photogravity Co., Inc., Co-Chairman  
Martha Lou Broussard, Rice University  
Merton M. Osborne, Trunkline Gas Co.  
Allen R. Spelman, Texaco, Inc.

### Golf Tournament

John Pate, Geomap Co., Chairman  
R. Dick Miller, Geomap Co.  
Jeff (Curly) Morris, Transco

### Hotels and Housing

Francis V. Daly, Getty Oil Co., Chairman  
William Reinbold, Getty Oil Co.

### Ladies Activities

Mrs. John L. Loftis, Jr. (Teddine) Co-Chairman  
Mrs. Walton S. Launey (Jeanette) Co-Chairman

### Printing

Henry C. Dean, Tenneco Oil Co., Chairman  
George Karabatsos, Tenneco Oil Co.  
Dave Eggleston, Petroleum Information

### Program

Amos Salvador, Exxon, Chairman  
Wayne M. Ahr, Texas A&M University  
Martha Lou Broussard, Rice University  
Stewart Chuber, Consultant  
B. D. Holland, Exxon  
W. H. Roberts, III, Gulf Oil Co.  
DeWitt Van Sicien, University of Houston  
W. C. Wardle, Amoco Prod. Co.

### Publicity

Bill C. Tucker, Pennzoil Producing Co. Chairman  
Jimmie A. Brown, Texas Gas Transmission Co.  
Arnold Gurley, Pennzoil Producing Co.  
Carolyn Ross, Texas Eastern Gas Transmission Co.

### Registration

B. C. Phillips, Phillips Petroleum Co., Chairman  
L. D. Troth, Phillips Petroleum Co., Vice-Chairman  
Donald H. Cummings, Getty Oil Co.  
Matthew Daura, Transco  
R. P. Souders, Phillips Petroleum Co.  
Wes Tiller, Sun Oil Co.

### Speaker's Assistance

William Poyner, Anadarko Prod. Co., Chairman  
Richard Guerrero, Anadarko Prod. Co.  
Jim B. Harris, Anadarko Prod. Co.  
James Sollers, Atlantic Richfield Co.

### Tobin Theater

William F. Howell, Mesa Petroleum Co.

### Transportation

Edward F. McGee Marathon Oil Co., Chairman  
Floyd J. Adcock, Marathon Oil Co.

### S.E.P.M. Program & Transactions

James L. Lamb, Esso Production Research Co.  
John H. Beard, Esso Production Research Co.  
William W. Fairchild, Consultant  
Jan Hardenbal, Esso Production Research Co.  
Lee A. Smith, Esso Production Research Co.

## GULF COAST ASSOCIATION OF GEOLOGICAL SOCIETIES BEST PAPER AWARDS, TWENTY-SECOND ANNUAL MEETING CORPUS CHRISTI, TEXAS

The 1972 G.C.A.G.S. Awards Committee selected the following first-, second-, and third-place winners for their oral presentation at the Corpus Christi Convention:



ROBERT R. BERG

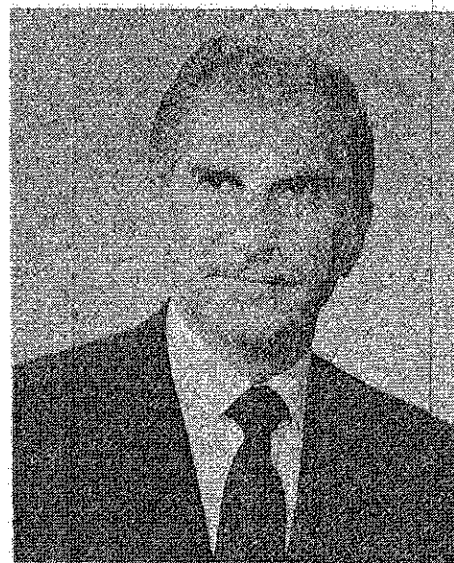
First place and A. I. Levorsen Memorial Award to Robert R. Berg, Director of University Research at Texas A&M University for his paper "Oil Column Calculations in Stratigraphic Traps." Robert R. Berg received his B.A. and Ph.D. degrees in geology from the University of Minnesota (1948, 1951). From 1951 to 1956, he was employed as a geologist by the California Company, a subsidiary of the Standard Oil Company of California, and from 1957 until 1966 he was a consulting geologist in the Rocky Mountain area. In 1966 he became Professor and Head of the Department of Geology at Texas A&M University. He was named Director of the newly created Office of University Research, Texas A&M University, in July of 1972.

Dr. Berg's research interests include structural geology, subsurface stratigraphy, and sedimentology. His publications have described the structure and origin of the Wind River Range, Wyoming, the stratigraphy of Cambrian rocks in the Upper Mississippi Valley, and depositional environments of Lower Cretaceous oil-reservoir sandstones in Montana, Wyoming, and Mississippi.

Dr. Berg served as President of the Rocky Mountain Association of Geologists (1966), as Secretary-Treasurer (1969) and President (1971) of the American Institute of Professional Geologists. He is a Fellow of the Geological Society of America, and member of the American Association of Petroleum Geologists, the American Institute of Professional Geologists, and the Rocky Mountain Association of Geologists.

Second place award to Michel T. Halbouty, to whom the 1972 *Transactions* was dedicated, for his paper "Oil is Found in the Minds of Men." Michel T. Halbouty is a graduate of Texas A&M University, having received his Bachelor of Science Degree in 1930 and his Master of Science Degree from that institution in 1931 in Geology and Petroleum Engineering. In May, 1956, he received the Professional Degree in Geological Engineering from Texas A&M University (the first to be conferred by the University). In June, 1966, the Degree of Doctor of Engineering, Honoris Causa, was conferred upon him by the Montana College of Mineral Science and Technology.

In October, 1965, Halbouty received the Texas Mid-Continent Oil and Gas Association's Distinguished Service Award for 1965, presented to an independent for outstanding services and contributions to his industry and profession. In February, 1968, he was named Engineer of the Year by the Texas Society of Professional Engineers and the Engineer's



MICHEL T. HALBOUTY



Council of Houston. He was also awarded the Texas A&M University's Distinguished Alumni Award in May, 1968. In April, 1969, Mr. Halbouty was awarded Honorary Membership in the American Association of Petroleum Geologists. In June, 1970, he was conferred an Honorary Life Membership in the Houston Geological Society. In 1969, the Wisdom Society for the Advancement of Knowledge, Learning and Research in Education presented Mr. Halbouty with the Wisdom Award of Honor and elected him to the Wisdom Hall of Fame. In February, 1971, he received the DeGolyer Distinguished Service Medal of the Society of Petroleum Engineers of AIME.

In the Fall of 1964 and the Spring of 1965, he was a Distinguished Lecturer for the Society of Petroleum Engineers of AIME and in the Fall of 1965 and Spring of 1966 he was a Distinguished Lecturer for the American Association of Petroleum Geologists.

Halbouty is a member of many worldwide scientific and engineering societies, and has contributed over 185 papers and several books to the literature of geology and petroleum engineering. His latest book, "Salt Domes, Gulf Region, United States and Mexico," is the only such single volume on this subject in the world's scientific literature.

He served as president of the world's largest organization of earth scientists, the American Association of Petroleum Geologists, for the 1966-67 term.

Third place award to John J. Amoruso for his paper "Smackover Stratigraphic Traps—New Production in Old Areas." John J. Amoruso received a B.S. Degree in geology from Tufts College, Medford, Massachusetts in 1952. After graduation, he entered the U. S. Navy for three years before enrolling in graduate school. He received a Master of Science Degree in geology from the University of Michigan, Ann Arbor, Michigan in 1957.

He joined Pan American Petroleum Corporation (now Amoco Production Co.) in 1957, after having worked for its predecessor, Stanolind, in Oklahoma during the summer of 1956. During the period 1957-1969, he held widely varied petroleum exploration assignments in the Four Corners area, Uinita Basin, West Texas, and the East Texas-North Louisiana Area. He opened offices in Houston as an Independent in 1969.



JOHN J. AMORUSO

Mr. Amoruso is certified as a Petroleum Geologist by the American Association of Petroleum Geologists and is certified as a Professional Geologist by the American Institute of Petroleum Geologists. He is also a member of the Society of Independent Earth Scientists, the Houston Geological Society, and the East Texas Geological Society. He is past President of the Houston Geological Society and has served that society as First and Second Vice-President and Editor.

## GULF COAST ASSOCIATION OF GEOLOGICAL SOCIETIES PAST OFFICERS AND CONVENTION CHAIRMEN

YEAR	HOST SOCIETY	PRES.	V. PRES.	SEC.	TREAS.	CONVENTION CHAIRMAN
1951	New Orleans	L. Bowling				
1952	Corpus Christi	W. M. Craddock				
1953	Shreveport	R. T. Wade		J. S. Spencer		E. J. Nugent
1954	Houston	W. R. Canada	W. H. Knight	W. A. Peterson	E. W. Kimball	
1955	Biloxi	A. E. Blanton	L. D. Troupe	F. H. Webster	C. C. Barber	
1956	San Antonio	R. L. Layden	M. W. Beckman	C. W. Holcomb	A. F. Scott	
1957	New Orleans	H. N. Hickey	P. Montgomery	R. A. Davis	K. C. Anderson	
1958	Corpus Christi	E. A. Lohse	R. W. Grayson	E. T. Musselman	W. H. Wallace, Jr.	
1959	Houston	G. C. Hardin, Jr.	L. Harvey	J. F. Moss	J. A. Wheller	O. G. Bell
1960	Biloxi	M. F. Kirby	D. N. Osburn	W. W. Woolfolk	E. G. Jeffreys	A. E. Blanton
1961	San Antonio	D. Dassow	E. P. Roth	A. W. Wood	E. L. Ames	L. L. Palmer
1962	New Orleans	T. H. Philpott	J. C. Byrd	H. O. Woodbury	K. Soule	L. H. Meltzer
1963	Shreveport	J. C. Byrd	E. Knott	W. E. Bancroft	R. E. Rogers	H. J. Tyler
1964	Corpus Christi	E. Knott	R. E. Fairchild	R. W. Luker	D. A. Pedrotti	B. F. Dyer
1965	Houston	R. E. Fairchild	A. M. Borland	K. C. Harkins, Jr.	J. L. George, Jr.	E. A. Lohse
1966	Lafayette	A. M. Borland	J. H. Hensley	W. A. Robbins, Jr.	J. S. Schoelen	R. R. Copeland
1967	San Antonio	W. L. Stapp	M. D. Horton	M. L. Frazier, Sr.	L. C. Bryant	M. O. Turner
1968	Jackson	M. D. Horton	R. O. Vernon	L. G. Hughes	E. D. Minihan	L. E. Warren
1969	Miami	R. O. Vernon	H. J. Tyler	J. W. Yon, Jr.	C. W. Hendry, Jr.	H. S. Puri
1970	Shreveport	H. J. Tyler	L. H. Meltzer	C. E. Brown	B. C. Tucker	J. O. Goffe
1971	New Orleans	L. H. Meltzer	D. R. Boyd	M. L. Dwight	P. G. Gray	R. G. Williamson
1972	Corpus Christi	D. R. Boyd	F. M. Schall	M. H. Oakes	J. E. Melton	J. M. Sides
1973	Houston	F. M. Schall, Jr.	S. J. Lysinger	M. E. Hole, Jr.	P. W. Cawthon, Jr.	C. E. Harrison



# GULF COAST SECTION SOCIETY OF ECONOMIC PALEONTOLOGISTS AND MINERALOGISTS

## OFFICERS

*President:* C. WYLIE POAG, JR., National Science Foundation, Office of National Centers and Facilities Operations, 1800 G Street N.W., Washington, D.C. 20550.

*Vice-President:* EMMETT R. ADAMS, Shell Oil Company, P. O. Box 60775, New Orleans, Louisiana 70160

*Secretary:* GERALD R. STUDE, Exxon Company, U.S.A., P. O. Box 61975, New Orleans, Louisiana 70160.

*Treasurer:* JOAN B. STOUGH, Exxon Company, U.S.A., P. O. Box 2180, Houston, Texas 77001

*Past-President:* WILLIAM W. HAY, School of Marine & Atmospheric Science, University of Miami, 10 Rickenbacker Causeway, Miami, Florida 33149.

*Program Chairman:* JAMES L. LAMB, Esso Production Research Company, P. O. Box 2180, Houston, Texas 77001.

*Editor:* WILLIAM W. FAIRCHILD, W. W. Fairchild and Associates, P. O. Box 35048, Houston, Texas 77035.

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Beaumont: William R. Pampe, Department of Geology, Lamar University, P. O. Box 10031 LU Station Beaumont, Texas 77710.

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Dallas: Ronald W. Morin, Mobil Oil Corporation, Exploration Service Center, Stratigraphic Lab, P. O. Box 900, Dallas, Texas 75221.

Houston: C. Clarence Albers, Amoco Production Company, P. O. Box 3092, Houston, Texas 77001.

San Antonio: Porter A. Montgomery, Jr., Montgomery's Stratigraphic Service, 1517 Milam Building, San Antonio, Texas 78205.

## REPORT OF THE PRESIDENT GULF COAST SECTION—SOCIETY OF ECONOMIC PALEONTOLOGISTS AND MINERALOGISTS

The Gulf Coast Section of the Society of Economic Paleontologists and Mineralogists has enjoyed another fruitful year as the largest and most active regional segment of SEPM. The direction for achievement was set in Corpus Christi, as we enjoyed a series of stimulating papers and welcomed again our seldom seen colleagues and friends. Sincere thanks from all of us go to Bill Hay and his organization of elected and appointed staff who prepared such a fine annual meeting.

This has been a year for innovation. Our Secretary, Jerry Stude, is to be especially commended for constructing a computer program that now handles all of our membership roles and bulk mailing, and for designing a new and more useful format for our biannual newsletter.

Several new business representatives were appointed this year, and through their efforts and those of the incumbents, the local meetings have grown in size and interest.

Our Program Chairman, Jim Lamb, and Editor Bill Fairchild have arranged an outstanding technical session, and as a special attraction Lee Smith has brought together an unusually superb group of authors who will present the first public symposium on Gulf Coast nannoplankton. For the first time, also, the papers included in this symposium have been published together as a volume separate from the *Transactions of the GCAGS*.

We have presented a new type of field trip through the efforts of our Vice President Emmett Adams and his chairmen, John Warne, Bob Perkins, and Bob Stanton. Trace fossils are an important and generally poorly understood group of phenomena and those who attended the field trip have filled a major void in their understanding of Gulf Coast stratigraphy and paleoecology.

This has been a year of retirements. Several of our charter members and staunch long-time supporters are now enjoying at more leisure, the rewards of successful professional careers. The list includes Harry Anisgard, Buz Ellis, Frank West, Charlie Stuckey, Ray Woods, and Fred Setzer. I salute all our retirees with deep appreciation for their achievements and invite their continued participation in our activities.

It is our custom to recognize outstanding professional achievement among our members with honorary memberships. This year it is our pleasure to honor two of the most outstanding members our organization has ever had: Jules Braunstein and Grover E. Murray. May their example always be a stimulus and guide for us all.

As the economic prosperity of petroleum companies has seemed to dwindle somewhat during the last few years, there has been a tendency for some to curtail the participation of their employees in activities not directly related to their primary occupations. I would like to acknowledge, therefore, the employers of our members, and especially of our officers, for their strong support and encouragement, which in many cases went far beyond that ordinarily expected.

To your other officers, Emmett Adams, Jerry Stude, Joan Stough, and Bill Hay, to all of my appointed staff, and to you the active membership I express my heartfelt appreciation for the opportunity of having served you.

C. Wylie Poag  
President, G.C.S.—S.E.P.M.



## GULF COAST SECTION OF S.E.P.M. HONORARY MEMBERSHIP AWARDS

In order to honor members of our society who have made outstanding contributions to the sciences of stratigraphy, paleontology or sedimentary petrology, especially as they relate to petroleum geology in the Gulf Coast, the Executive Council of the Gulf Coast Section of the S.E.P.M. is authorized by its constitution to elect honorary members. In recognition of their contributions to the science of Gulf Coast petroleum geology and in appreciation of their untiring efforts on behalf not only of this society but also the American Association of Petroleum Geologists and the Geological Society of America, the Council is pleased to elect Jules Braunstein and Grover E. Murray to honorary membership.



JULES BRAUNSTEIN

Mr. Braunstein's accomplishments in geology are widely known and his editorial achievements make him the most widely respected and sought after editor in the Gulf Coast. He is an active and dedicated participant in the functions of the G.S.A., A.A.P.G., S.E.P.M. and the American Society for Oceanography. During 1970-71 he served with distinction as president of the Gulf Coast Section of the S.E.P.M.

Born and educated in Buffalo, New York, Mr. Braunstein received degrees from George Washington University and Columbia University. He has worked for the Shell Oil Company since 1937 as micropaleontologist, geologist, and stratigrapher. Currently he is a Staff Geologist in New Orleans.

Dr. Grover E. Murray's biography has been ably summarized in Volume XVI (1966) of the "Transactions" of the GCAGS which was dedicated to him. He attended Louisiana State University and received a Ph.D. degree in 1942. Following employment as a petroleum geologist for Magnolia Petroleum Company from 1941-1948, he returned to Louisiana State University and was awarded the Boyd Professorship in 1955. He has consulted for many oil companies. Dr. Murray was elected president of the Society of Economic Paleontologists and Mineralogists in 1963 and president of the American Association of Petroleum Geologists in 1964. He was appointed president of Texas Technological College in 1966—the office he now holds. Of the many scientific publications Dr. Murray has written, the most significant is his textbook on the "Geology of the Atlantic and Gulf Coastal Province of North America," published by Harpers in 1961. This comprehensive treatise represents many years of inspired work in accumulating interpreting, evaluating, organizing and presenting geologic data.



GROVER E. MURRAY

Aside from the splendid record as academician, professional geologist and leader, his personal character is of the same high quality. His students usually remember the excellent information he imparted and that he always tried to give them the "big picture." Throughout his career, his associations with others, regardless of status, have always been pleasant and on an equal basis.

The Gulf Coast Section of the S.E.P.M. is proud to include Jules Braunstein and Grover E. Murray among its distinguished honorary members.



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**GULF COAST SECTION OF S.E.P.M.  
BEST PAPER AWARDS, TWENTY-SECOND ANNUAL MEETING  
CORPUS CHRISTI, TEXAS**

**FIRST PRIZE:** To William F. Tanner, Professor of Geology, Florida State University, Tallahassee, for his paper "Negative Evidence and Pleistocene History." Dr. Tanner received his B.A. degree from Baylor University, his M.A. degree from Texas Tech University, and his Ph.D. degree from Oklahoma University. Prior to joining the faculty at Florida State, Dr. Tanner held teaching positions at Oklahoma Baptist University and Oklahoma University, and gained professional experience with the Shell Oil Company, Carter Oil Company, Humble Oil Company, the Arkansas and Oklahoma Geological Surveys, and as a consulting geologist. His interest in sedimentology has taken him into the field from Canada to Chile and most points in between. His publications in various journals now number approximately 200.



**WILLIAM F. TANNER**



**ALFRED E. WEIDIE**

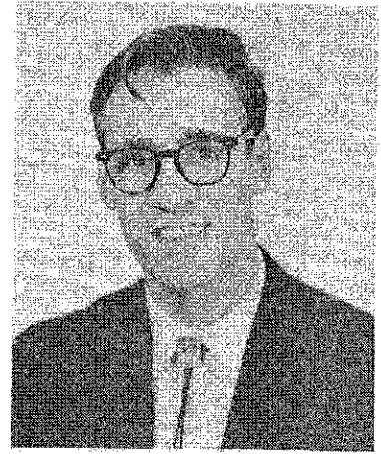
**SECOND PRIZE:** To Alfred E. Weidie, Professor of Earth Sciences, Louisiana State University in New Orleans, for co-authorship of the paper "Late Cretaceous Depositional System, Northeastern Mexico." Dr. Weidie has been with the Louisiana State University in New Orleans since 1961, where until recently he served as Chairman of the Department of Earth Sciences. Dr. Weidie received his B.A. degree in geology from Vanderbilt University and his M.S. and Ph. D. degrees in geology from Louisiana State University in Baton Rouge. He is the author of various papers concerning the structural geology and stratigraphy of northern Mexico, carbonate stratigraphy in the Yucatan, salt deformation, and ancient and recent deltaic systems in northern Mexico.



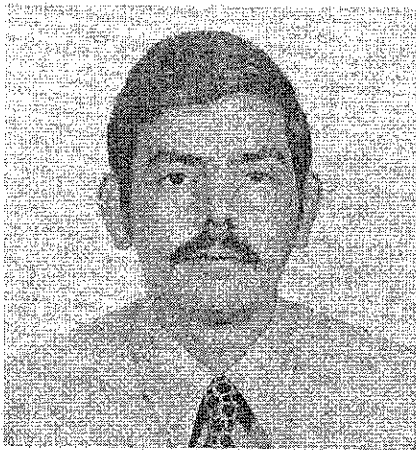
**JAMES A. WOLLEBEN**

To James A. Wolleben, co-author. Dr. Wolleben is Associate Professor and Chairman of the Department of Earth Sciences, Louisiana State University in New Orleans. Dr. Wolleben received his B.S. degree in geology from the University of Southern Mississippi, his M.S. Degree from Louisiana State University, and his Ph.D. degree from the University of Texas. He is presently engaged in research concerning the Mesozoic stratigraphy of northern Mexico and the southeastern United States, ammonite evolution, echinoderm evolution and ecology, biometrics, and computer applications in paleontology.

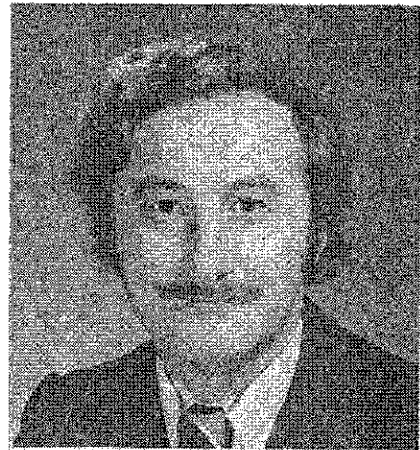
To Earle F. McBride, co-author, Dr. McBride is currently Professor of Geology at the University of Texas, Austin. He received his B.A. degree from Augustana College, his M.A. Degree from the University of Missouri, and his Ph.D. degree from Johns Hopkins University. Dr. McBride is the author of numerous geologic articles treating the origin of various sedimentary rocks. His major research interest has concerned the origin of sedimentary rocks of the Marathon region north of Big Bend National Park, Texas.



EARLE F. McBRIDE



PAUL A. THAYER



DANIEL A. TEXTORIS

**THIRD PRIZE:** To Paul A. Thayer, Associate Professor of Geology, University of North Carolina at Wilmington, and Adjunct Associate Professor, University of North Carolina at Chapel Hill, for co-authorship of the paper "Petrology and Diagenesis of Tertiary Aquifer Carbonates, North Carolina." Dr. Thayer received his B.A. degree from Rutgers University, and his Ph.D. degree from the University of North Carolina at Chapel Hill. Prior to joining the faculty of the University of North Carolina, Dr. Thayer served as a development geologist with the Chevron Oil Company and as Assistant Professor at Texas A. & I. University, Kingsville. Dr. Thayer's research interests and publications are primarily concerned with gravity, regional stratigraphy and sedimentology of Triassic rocks in the southeastern United States, sedimentary petrology, and trace element geochemistry.

To Daniel A. Textoris, co-author. Dr. Textoris is currently Professor of Geology and Assistant Dean of Research Administration, University of North Carolina at Chapel Hill. He received his B.A. degree from Western Reserve University, his M.S. degree from Ohio State University, and his Ph.D. degree from the University of Illinois. Dr. Textoris gained professional experience as a geologist for the Diamond Alkali Company and as a consultant to several other firms. He served as Assistant Professor and Associate Professor at the University of Illinois prior to joining the faculty at the University of North Carolina. Dr. Textoris' research interests and publications are primarily in the field of sedimentary petrology, particularly carbonate sedimentology both modern and ancient.



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