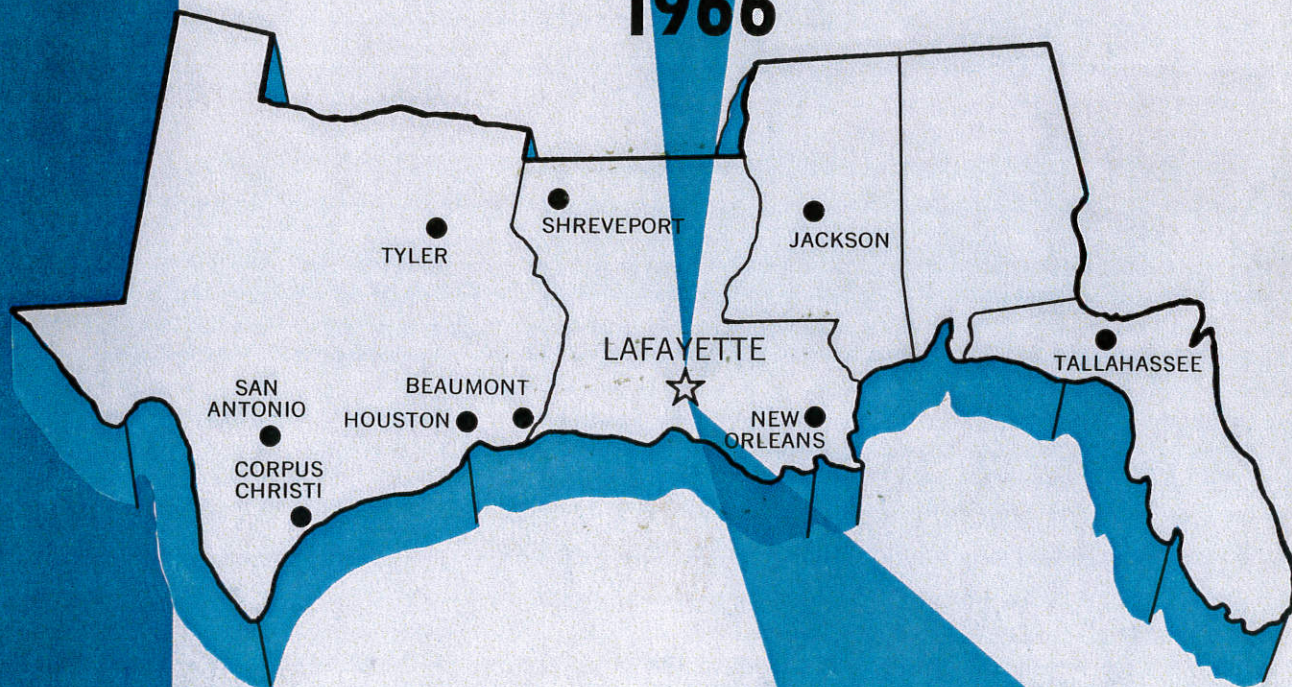


TRANSACTIONS

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1966



16th ANNUAL MEETING
LAFAYETTE, LOUISIANA
OCTOBER 26, 27, 28, 29, 1966

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Gulf Coast Association Of Geological Societies

VOLUME XVI, 1966

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Metropolis of the Acadian Country

"Bienvenu a Lafayette", that is to say, "Welcome to Lafayette", the heart of the Acadian Country. "Laissez le bon temps roulee, mes amis!" (Let the good times roll, my friends!)

It has been called a "dark foreboding land," this land of swamps, lush vegetation, bayous and moss draped oaks; but the description is misleading: this is a happy land, settled by the Acadians, or Cajuns as they are now called, who are by nature a happy people.

The Cajuns' ancestors came from Nova Scotia, which was originally settled by the French and called Acadie. During the 17th century, control of it shifted periodically between the French and British until finally early in the 18th century it became a British possession. In 1755 the British, who were fearful of the Acadians' loyalty, swept up approximately 6,000 men, women and children and deported them. Not only were all of their possessions confiscated, but even more tragic, families, friends and sweethearts were separated and scattered in British colonies along the coast of North America, some never to see each other again.

The story of the separation of two sweethearts and their search for each other was immortalized in Longfellow's poem "Evangeline". Local folklore says that Evangeline was in reality Emmeline Labiche who searched for her betrothed, Louis Arceneaux, for many years, only to find him at last in St. Martinville, happily married to another woman. Emmeline died of a broken heart, they say. She would probably have felt a whole lot less frustrated if she had just shot Louis, but then where would that have left Longfellow!

This then is the story of Lafayette which was originally settled by some of the Acadians who found their way to South Louisiana. They put their mark upon the region, for they brought with them their French language and culture, their Roman Catholic religion and their great joy in living. Over the years a settlement along the banks of the Vermilion River grew into a town which became known as Vermilionville. The Cajuns continued to prosper and multiply until by 1884 Vermilionville had become a fair-sized town which was then rechristened Lafayette.

Whereas some men in the area owned slaves prior to the War, Lafayette was not predominantly an area of large slave owners: it was made up mostly of small farmers who were thrifty, hard working and devout. The people were quite isolated because of inadequate roads; so, their culture was not diluted. They hunted, fished, farmed and enjoyed life without any great hustle and bustle.

The discovery of oil in South Louisiana early in the 20th century was destined to change the whole pattern of life in Lafayette. During the 1937-1947 period which saw the great acceleration of oil production in the U. S., South Louisiana began to rival Texas as a producer. Major oil companies were looking for a place to set up shop in South Louisiana. However, at that time, with the exception of New Orleans and Baton Rouge, there were no cities capable of handling a large influx of people.

Fortunately for Lafayette, one of its citizens realized what was needed and set out to provide it. He built what became known as The Maurice Heymann Oil Center—a group of office buildings constructed for the oil companies. Since they provided excellent facilities in a centrally located area, the oil companies leased office space and moved in. When the oil companies came, they in turn attracted the service companies. As more companies moved to Lafayette, Mr. Heymann expanded the facilities offered, until today the Oil Center and surrounding area houses a total of 600 companies and independent oilmen, and Lafayette has grown to a thriving metropolis of about 60,000 people.

It's difficult to realize that when the Lafayette Geological Society was organized a short 14 years ago, it boasted a scant 23 members (there are now 465 members) and the town of Lafayette had a population of only 33,465. Whereas a part of Lafayette's growth was based on agriculture, certainly the oil industry has played the major role in its expansion. Natural advantages together with progressive thought and action mixed with the fact that South Louisiana is one of the last great frontiers for the oil hunter in this country helped to establish Lafayette as a center for exploration.

In addition to being a hub for the oil industry, Lafayette serves as a medical and education center for the surrounding area. It has two modern hospitals and is home for the University of Southwestern Louisiana which has an approximate enrollment of 8,000.

Its newly constructed Municipal Auditorium not only brings nationally known entertainers to the city but also offers excellent convention facilities as well. Add to this the recently completed Cinerama, the Planetarium and Youth Museum which is being built, and the Art Museum which will be ready in the near future, and you too will agree that Lafayette has all the cultural facilities to provide a good environment for those who live here.

Lafayette, this heart of South Louisiana is a unique blending of old and new—of the cosmopolitan city which at the same time remains a country village. Its charm is unique—a touch of France in America. Salesmen must speak French as well as English to serve all of their customers and contrary to popular belief, the French spoken by the Cajun is not a hodge podge of languages, but is rather an archaic French which has not been modernized but is spoken today very much as it was when the original Acadians settled here.

Dark roast coffee and crawfish are endemic to South Louisiana. The coffee drinking is a ritual, with anyone who doesn't drink coffee being considered just a little strange. Your first cup will jolt you, but once you have acquired a taste for it, you will be as bad as the true Cajun about your dark roast coffee. Contrary to some Yankees' belief, dark roast French coffee is not obtained by boiling light roast coffee until it's strong enough to stand alone. Crawfish are a rare treat. Try the etoufee, bisque or just plain boiled crawfish; whatever you do, don't leave Lafayette without having sampled this delicacy as only the Cajuns can prepare it.

The oil industry has indeed changed the face of Lafayette, yet enough of the old French town remains to enchant yet another generation of newcomers. Lafayette is indeed a metropolis, and it will remain a distinctive one as long as the spirit of the Acadians is kept alive—may that be forever.

DEDICATION



DR. GROVER E. MURRAY

The Gulf Coast Association of Geological Societies dedicates the SIXTEENTH Volume of its "TRANSACTIONS" to Dr. Grover E. Murray for his contributions to the geology of the Gulf Basin. The association, in conferring this honor, takes cognizance of his laudable geological works in many other sedimentary basins throughout the world. We acknowledge the personal sacrifices made on behalf of the profession through his unstinting and dedicated service to professional and scientific geological organizations. He is the only person to be elected President both of The American Association of Petroleum Geologists and of the Society of Economic Mineralogists and Paleontologists. Important to many members of our organization have been his accomplishments in training and influencing geology students for nineteen years at Louisiana State University. This great institution, famous for its School of Geology, awarded him a "Boyd Professorship" for distinguished teaching service. As a petroleum explorationist, he has been employed as a consultant in every state of the gulf coastal region and also North Carolina, South Carolina, Georgia, Illinois, New Mexico, California, Utah, Alaska, Mexico, Australia, Guatemala, Venezuela and western Europe. Success in these endeavors has earned him an enviable record as well as participation in many producing areas. Confidence in his administrative and leadership ability has placed him at the helm of several local, national and international geological organizations; Chairman of the Geology Department at Louisiana State University; Vice-President and Dean of Academic Affairs, Louisiana State University; Vice-President of Academic Affairs for the LSU System; and currently President of Texas Technological Institute, Lubbock, Texas. Notable among his accomplishments was the wooing and winning of his childhood sweetheart, Nancy Setzer. Her influence, devotion and love has permitted Dr. Murray to sustain the stress and demands encumbered upon a successful man.

His unselfish service has extended beyond the realm of his profession and many can say they are better because he shared his knowledge and character with them. This prodigious worker to varying degrees has contributed to the knowledge and welfare of every member of this organization. In the future, we wish to him and his family many years of happiness and continued success. Dr. Murray's contribution to the profession of Geology has earned for him the gratitude of all members of the Gulf Coast Association of Geological Societies.

James Parker Spillers
Chief Geologist
Louisiana State Mineral Board
Baton Rouge, La.

BIOGRAPHY

Born: October 26, 1916; Maiden, North Carolina

Academic Training

1929-1933 Newton High School
1933-1937 University of North Carolina, B.S.
1937-1942 Louisiana State University, M.S., 1939; Ph.D., 1942

Experience

1937-1938 Teaching Fellow, Louisiana State University
1938-1941 Louisiana Geological Survey (Research Fellow)
1941-1948 Magnolia Petroleum Company
1948-1949 Louisiana Geological Survey, Director of Research
1948-1955 Professor Stratigraphic Geology, Louisiana State University; Chairman of Department of Geology, 1950-1953
1949- Consulting Geologist (Part Time)
1949-1951 (Summers) Professor, University of Texas
1951-1960 Technical Adviser, Arkansas Fuel Oil Corporation
1953-1954 Consultant, Houston Oil Company of Texas
1955- Boyd Professor of Geology, Louisiana State University and A & M College
1962- Technical Adviser, Austram Oil Ltd., (Australia); Delhi-Australian Petroleum Ltd.

1963-1965 Vice President and Dean of Academic Affairs, (Louisiana State University System)
9-1-66 President, Texas Technological College

Professional Activities (National)

1951-1954 Geological Society of America (Fellow)
Representative, American Commission of Stratigraphic Nomenclature
1952 Chairman, Symposium on Sedimentary Volumes
1955 Chairman, Program Committee, New Orleans Meeting
1955-1958 Program Committee
1959-1960 Chairman, Southeastern Section
1961-1964 Council
1963-1964 Chairman, Committee on Nominations
1963 Associate Editor
1964 Chairman, Committee on Honors and Awards
1964 Chairman, Committee on Penrose Medal

Society of Economic Paleontologists and Mineralogists

1948-1950 Committee on Members and Papers
1948-1950 Nominating Committee
1952-1954 Editor, Journal of Paleontology
1953-1955
1957-1960 Research Committee, (Vice Chairman, 1957; Chairman, 1958); Member, Gulf Coastal Section; (Vice-President, 1959)

1954-1955 Representative to Paleontological Society Council
1963-1964 President
1964-1965 Past-President and member of National Council
1964-1968 Representative to American Geological Institute's House of Society Representatives

American Association of Petroleum Geologists

1944-1945 Distinguished Lecture Committee
1946-1955 Geologic Names and Correlations Committee; Chairman, 1952-1954
1954 Distinguished Lecturer
1955 Emblem Committee
1955-1960 Tectonic Map Committee
1957-1962 Representative on American Commission of Stratigraphic Nomenclature; Chairman, 1958, 1962
1959-1962 Editor of AAPG Bulletin
1959-1962 Business Committee
1959-1961 Committee on Salt Dome Volume
1963-1964 Associate Editor
1963-1965 Voluntary Research Fund Campaign Committee
1964-1965 President
1965-1966 Past-President and member, National Executive Committee
1965-1968 Representative to American Geological Institute's House of Society Representatives
1966-1967 Chairman, Nominating Committee
1966-1967 Vice Chairman, Academic Advisory Committee
1966-1967 Member, Executive Advisory Committee
1966-1969 Member, Medal Award Committee

American Commission on Stratigraphic Nomenclature

1951-1954 Commissioner from Geological Society of America
1957-1963 Commissioner from American Association of Petroleum Geologists
1960-1962 Vice Chairman and Secretary

Professional Affiliations: (National)

Sigma Xi
Sigma Gamma Epsilon
Omicron Delta Kappa
Paleontological Society
Paleontological Research Institute
Sociedad Mexicana de Geología
Norsk Geologisk Forening
Asociación Mexicana de Geólogos Petroleros
International Commission on Stratigraphy
Australian Petroleum Exploration Association

Professional Affiliations: (Regional)

Shreveport Geological Society (Member 1948-)
South Louisiana Geological Society (Member 1948-1959)
Baton Rouge Geological Society (Member 1952-1959)
Lafayette Geological Society (Member 1950-)
New Orleans Geological Society (Member 1949 to present; Field Trip Leader, 1961-1962)
Mississippi Geological Society (Member 1941-1952; Chairman, Program Committee, 1943-1944; Cenozoic Committee, 1949; Field Trip Committee, 1953)
South Texas Geological Society (Field Trip Leader, 1939)
Corpus Christi Geological Society (Field Trip Leader, 1963)

XX International Geological Congress, Mexico City,

August-September 1956:
Official delegate of the State of Louisiana; and Official Delegate of the Louisiana State University

XXI International Geological Congress, Copenhagen, Denmark,

August-September, 1960:
Official Delegate of the State of Louisiana, the Louisiana State University, The American Association of Petroleum Geologists, and the Society of Economic Paleontologists and Mineralogists

XXII International Geological Congress, New Delhi, India, December 1964:

Official U. S. Delegate; Head Delegate from the A.A.P.G.; Official Delegate of the State of Louisiana; and Official Delegate of the Louisiana State University

U. S. National Committee on Geology: Member, 1965-1969; Chairman, 1966-

American Arbitration Association: Member, National Panel of Arbitrators
Public Affairs Research Institute (Louisiana): Member, Board of Directors, 1964-1966

Organization for Tropical Studies, Inc.: LSU Member on the Board of Directors

Gulf Universities Research Corporation: Member, Board of Directors, 1964-1; Vice President, 1965; President, 1965-1966

American Society for Oceanography: Member, Board of Directors, 1966-

Listed in: WORLD WHO'S WHO IN SCIENCE; AMERICAN MEN OF

PUBLICATIONS

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TABLE OF CONTENTS

	Page
METROPOLIS OF THE ACADIAN COUNTRY.....	II
DEDICATION TO DR. GROVER E. MURRAY.....	III
OFFICERS AND EXECUTIVE COMMITTEE, G.C.A.G.S.....	VII
OFFICERS OF MEMBER SOCIETIES, G.C.A.G.S.....	VII
REPORT OF THE PRESIDENT, G.C.A.G.S., Allen M. Borland	IX
REPORT OF THE GENERAL CHAIRMAN, 16th ANNUAL CONVENTION, Robert R. Copeland, Jr....	X
SIXTEENTH ANNUAL CONVENTION COMMITTEES	XI
REPORT OF THE EDITOR, Fred W. Bates.....	XII
OFFICERS AND BUSINESS REPRESENTATIVES, GULF COAST SECTION SEPM.....	XIII
REPORT OF THE PRESIDENT, GCS SEPM, John B. Dunlap, Jr.....	XIV
BEST PAPER AWARDS, 15th ANNUAL MEETING.....	XV
PUBLICATIONS OF G.C.A.G.S.....	XVI
HONORARY MEMBERSHIP, GCS SEPM, E. H. Rainwater	XVII

TECHNICAL PAPERS AND ABSTRACTS

A SUB-REGIONAL REPORT OF THE CAMERINA ZONE OF SOUTHWEST LOUISIANA,.....7 Frank W. Harrison and Robert A. Anderson	7
GEORGETOWN FORMATION, BELL, WILLIAMSON, AND TRAVIS COUNTIES, TEXAS,13 William Pope Wilbert	13
GEOLOGY OF THE SOUTH BOSCO—DUSON—RIDGE AREA, ACADIA AND LAFAYETTE.....19 PARISH, LOUISIANA, R. O. Steinhoff	19
PRE-CRETACEOUS GEOLOGY OF POOL CREEK FIELD, JONES COUNTY, MISSISSIPPI,35 Edward D. Minihan and Marvin L. Oxley	35
MARINE UNCONFORMITIES IN THE NORTHWESTERN GULF COAST, Max Bornhauser..... 45	45
MODERN PALEOECOLOGY TECHNIQUES—AN EVALUATION OF THE ROLE OF.....59 PALEOECOLOGY IN GULF COAST EXPLORATION, Hubert C. Skinner	59
THE INTER-DISCIPLINE APPROACH TO PALEOENVIRONMENTAL INTERPRETATIONS.....81 B. J. Scull, C. J. Felix, S. B. McCaleb and W. G. Shaw	81
INTERPRETATION OF DEPOSITIONAL ENVIRONMENT IN GULF COAST PETROLEUM.....119 EXPLORATION FROM PALEOECOLOGY AND RELATED STRATIGRAPHY, H. L. Tipsword, F. M. Setzer and Fred L. Smith	119
FORAMINIFERAL PALEOECOLOGY AND PALEOENVIRONMENTAL RECONSTRUCTION.....131 OF THE OLIGOCENE MIDDLE FRIO IN CHAMBERS COUNTY, TEXAS, Robert E. Gernant and Robert V. Kesling	131
ECOLOGICAL CHANGES IN A MASSIVE FRESHWATER CLAY SEQUENCE, J. M. Coleman.....159	159
FORAMINIFERAL REVIEW AND DISTRIBUTION ON THE GULF COAST CONTINENTAL.....175 SHELF, Robert Lankford	175
STRATIGRAPHY OF THE UPPER MIOCENE DEPOSITS IN SARASOTA CO., FLORIDA.....183 Herbert C. Eppert, Jr.	183
A METHOD OF ESTIMATING FORMATION PRESSURES FROM GULF COAST WELL LOGS,....185 H. H. Ham	185

GEOLOGY OF THE WEST BASTIAN BAY FIELD, PLAQUEMINES PARISH, LOUISIANA.....	199
Lee M. Meltzer	
PALEO-STRUCTURAL MAPPING AND APPLICATION OF LATE STRUCTURAL TILTING.....	211
Arthur S. Dickinson	
BLACK LAKE FIELD—BEFORE AND AFTER, B. Ross White and Jerry R. Sawyer.....	219
A LOWER OLIGOCENE DELTA IN THE SUBSURFACE OF SOUTHWESTERN TEXAS.....	227
Jack Lee Gregory	
THE STRUCTURAL HISTORY OF THE HOUMA EMBAYMENT, B. J. Sloane, Jr.	249
STRATIGRAPHY AND SEDIMENTATION OF THE HACKBERRY SHALE AND ASSOCIATED.....	261
BEDS OF SOUTHWESTERN LOUISIANA, William R. Paine	
EXTRUSIVE SHALE MASSES: NEW GULF COAST EXPLORATION FRONTIER, Paul S. Freeman..	275
PALEOCLIMATOLOGY: A NEW DIMENSION IN OIL EXPLORATION, Leonard L. Limes.....	277
PHYSICAL PROPERTIES AND STABILITY OF CONTINENTAL SLOPE DEPOSITS,	279
NORTHWEST GULF OF MEXICO, Jack Morelock and William R. Bryant	
PRIMARY SEDIMENTARY STRUCTURES IN THE SEARCH FOR PETROLEUM, Garrett Briggs...	297
THE CONCEPT OF PALEOECOLOGY AND ITS PRACTICAL APPLICATIONS,	305
F. P. C. M. van Markhoven	
PALEOECOLOGY OF THE LATE NEOGENE DEPOSITS AT BELLE GLADE FLORIDA.	315
Hubert. C. Skinner	
PALEOECOLOGICAL STUDY OF A PLEISTOCENE MARINE FAUNA, FLAGLER COUNTY,	317
FLORIDA, Jackson E. Lewis	
SOME FLORIDA MIOCENE BRYOZOA: PALEOECOLOGY AND TAXONOMY, Reginald J. Scolaro.	329
WEST BLACK BAY, BLACK BAY AND EAST BLACK BAY FIELDS, PLAQUEMINES PARISH, ...	337
LOUISIANA, Dwight A. Free, Jr.	
FORAMINIFERAL ECOLOGIC ZONES OF THE GULF COAST, C. C. Albers.....	345
A BIBLIOGRAPHY OF FORAMINIFERAL ECOLOGY AND PALEOECOLOGY (WITH.....	355
ANNOTATIONS) Hubert C. Skinner and Herbert C. Eppert	
FAULT AND SALT MAP OF SOUTH LOUISIANA, William E. Wallace.....	373
TYPE LOCALITY MAPS AND DESCRIPTIONS.....	381

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REPORT OF THE PRESIDENT OF G.C.A.G.S.

1966

The Annual Convention of the G.C.A.G.S. is convening this year in Lafayette for the first time. Our host, the Lafayette Geological Society, has volunteered time and services so that you may enjoy a memorable and rewarding meeting in the "Heart of South Louisiana."

Each year the G.C.A.G.S. has two primary functions to perform. The first is the arranging and planning of a convention site at which new geological material and ideas can be presented to Gulf Coast geologists. The second is the publication of the annual Transactions, which contains complete text and illustrations of papers delivered at these conventions. These explicit duties are designed to give all Gulf Coast geologists the opportunity to meet annually, to share ideas, to renew old acquaintances, and to make new friends. Operating under these primary principles for the past sixteen years in a region of considerable interest to the entire oil industry, and with the help of publicity given by the A.A.P.G., our Association has gained world-wide recognition.

The present financial condition of the G.C.A.G.S. is excellent; as of June, 1966, the total amount on deposit was \$39,781.59. Our position with the Internal Revenue Service to date is apparently also good. With the continued interest and enthusiasm in Gulf Coast geology this Association should continue to grow from year to year.

Last year Douglas E. Masten and Eugene J. Prochaska assembled and organized an index of all the material in the G.C.A.G.S. Transactions. This data was then published and is now available at Cambe's Log Library in Houston, Texas, at \$2.50 per copy.

The Special Projects Committee, headed each year by the Vice President of the G.C.A.G.S., is continuing its search for ways and means to stimulate interest in all phases of the geology of the Gulf Coast Region. Besides furnishing financial assistance to a variety of geological projects by member Societies, this committee is encouraging geological programs of a more regional nature. One such is a joint project with A.A.P.G. and U.S.G.S., compiling a bibliography of all pertinent Gulf Coast literature. This is currently being published and should be available by the end of the year. Other planned projects are the construction of broad regional maps dealing with faults, tectonics, type localities, and so forth. A project receiving much attention at the present time is the collection of published or unpublished geological theses from all the Gulf Coast Universities, in order to revive and publish the results of this mass of thought and effort. If you know of any papers worthy of this type of attention, please contact the G.C.A.G.S.

It has been an invigorating experience to work with this year's official group. The local geologists undertook the preparation for this Sixteenth Annual Convention, held here for the first time, with unlimited vigor and enthusiasm. The officers and representatives of the G.C.A.G.S. thank you, Lafayette Geological Society, for a job well done.

Allen M. Borland

REPORT OF THE GENERAL CHAIRMAN SIXTEENTH ANNUAL MEETING

1966

Many people say, "Why would anyone accept that job?" The work of staging the convention and all of the various activities attached thereto, is the responsibility of the General Chairman. This sounds like an almost impossible chore, particularly when you have never tackled such a problem. On the other hand, it can be an enjoyable experience. This year, although it was Lafayette's first Annual Meeting, the task was made easier because a dedicated group of excellent helpers enlisted, all of whom had one purpose in mind: to put on the best convention in the history of the Gulf Coast Association of Geological Societies. The success of this meeting is a direct measure of their efforts, and I wish to thank each one of them.

One of the first thoughts that arise in planning is the theme of the year's meeting. Probably any competent geologist can easily develop acceptable and praise-worthy ideas resulting in a flood of fine suggestions; but then he is not writing and presenting a paper. Thus he has time to contemplate and propose what someone else should do. The papers to be presented here and published in the 1966 Transactions

may now—but not by previous plan—be grouped to produce a theme which may be called "Paleoecologic and Regional Characteristics of the Gulf Coast." In any event it is honestly believed that the material will add considerably to the wealth of geological data heretofore published by the Gulf Coast Association of Geological Societies. We hope the concepts described will aid in the finding of sizable new reserves in the Gulf Coast province.

Again a separate session, designed exclusively for the presentation of highly technical papers, by members of the Gulf Coast Section of the Society of Economic Paleontologists and Mineralogists will be held on Friday morning. This convention is pleased to be directly associated with this group of scientists, and also proud that this Sixteenth Annual Convention is at the same time a Regional Meeting of the American Association of Petroleum Geologists. The Lafayette Geological Society and the City of Lafayette hereby extends its warmest welcome to all of you.

Robert R. Copeland, Jr.

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REPORT OF THE EDITOR

1966

Comment should be made that this edition of the Transactions departs from the procedure of many former years, in that it has no stated over-all theme. Numerous studies, however, coincidentally deal with the principles and practices of paleoecology and related concepts. Without intention or design, the theme of the 1966 Transactions has been set by the many papers on phases of this general topic.

The G.C.A.G.S. has always been grateful for the contributions to the Annual Convention made by our associates from the Gulf Coast Section of the Society of Economic Paleontologists and Mineralogists. This is especially true this year, since not only do they have a Symposium Session presenting papers exclusively by their members, but they also have a separate session for more specialized studies, committee reports, and business matters. The 1966 G.C.A.G.S. Editor sincerely thanks David E. Pope, editor for the Gulf Coast Section of S.E.P.M., for the great and willing cooperation given by him and his collaborators in the preparation of this volume of the Transactions.

The Editor is particularly grateful for the help of Jack Shirley as Lafayette Associate Editor, in the final editing and compilation of the papers contained in this Sixteenth Volume of the Transactions. The Editor's job, seldom a happy one, often thankless, and always demanding, was rendered more palatable by the active and competent cooperation of all the members of the various Convention Committees, and by the Associate Editors of the member Societies. We all hope and believe that our efforts have resulted in a worthwhile compilation of Gulf Coast geological literature.

Fred W. Bates

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REPORT OF THE PRESIDENT, GULF COAST SECTION, S.E.P.M.

1966

The Gulf Coast Section of the Society of Economic Paleontologists and Mineralogists has continued to grow during the past year. The section now has a total of 335 members.

In recognition of his contributions to the stratigraphy and paleontology of the Gulf Coast, the 1966 Executive Council of the GCS-SEPM elected Mr. E. H. Rainwater to Honorary Membership.

The increasing emphasis being placed on paleoecology in petroleum exploration was recognized by the formation of a second Committee on Paleocology for the New Orleans area under the chairmanship of Mr. C. C. Albers. This was done to supplement the efforts of the Houston area committee under the chairmanship of Mr. Fred L. Smith, Jr. Two papers in this year's *Transactions* resulted from the meetings of these committees. In addition Mr. James H. Dorman organized the "Symposium on Paleocology" for this convention.

The amendments to our constitution which were purposed at the last business meeting were passed by the members. The first allows full membership to those who may not reside in the Gulf Coast Area. The second allows payment of dues for up to five years in advance.

It has been decided that in order to continue a worthwhile, but unprofitable venture that future contributions to the "Type Localities Project" will be published in the *Transactions* rather than as separate units.

I wish to acknowledge the contributions of the other officers for the year, Vice-President John J. W. Rogers, Secretary M. Ray Bane, Treasurer Charles B. Morris, and Past-President Howard L. Tipsword; our editor Mr. David E. Pope, and the business representatives for the various areas. I wish to thank William R. Paine and James H. Dorman of Lafayette for their outstanding efforts in the preparation and presentation of the convention program. Thanks are also due to Louis deA. Gimbrede for serving as Field Trip Chairman as well as the chairman of the Type Localities Project.

John B. Dunlap, Jr.

BEST PAPER AWARDS, 16TH ANNUAL MEETING HOUSTON, TEXAS

Awards were presented at the 15th Annual Meeting of the Gulf Coast Associations of Geological Societies, held in Houston, October 27-30, 1965. Two awards were given:

First Prize: Charles R. Kolb and Jack R. Van Lopik, Depositional Environments of the Mississippi River Deltaic Plain—Southeastern Louisiana.

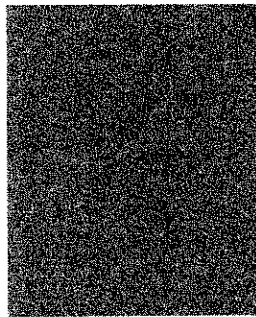
Second Prize: Gene Ross Kellough (Mrs. John S. Kellough), Paleocology of the Foraminifera of the Wills Point Formation (Midway Group) in Northeast Texas.



CHARLES R. KOLB is Chief, Geology Branch, Waterways Experiment Station, U.S. Engineers, Vicksburg, Mississippi. He has B.S., M.S. and Ph.D. degrees from L.S.U. He is a member of A.A.P.G., and numerous other associations. Dr. Kolb, as an undergraduate at L.S.U., worked under the direction of the late Dr. H. N. Fisk.



GENE ROSS KELLOUGH (Mrs. John S. Kellough) received the Bachelor's degree from University of Texas and the M.S. degree from University of Houston. Her paper is the result of research completed under a National Science Foundation grant to the University of Houston.



JACK R. VAN LOPIK is Manager and Technical Director for Space and Environmental Science Programs, Geosciences Operations, Texas Instruments, Inc., Dallas, Texas. He has memberships in many professional societies including A.A.P.G., S.E.P.M., and G.S.A. Dr. Van Lopik has a B.S. from Michigan University and M.S. and Ph.D. degrees in geology from L.S.U.

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Following is a list of available publications of the G.C.A.G.S. They may be ordered from Cambe Log Library, 718 Milam Street, Houston 2, Texas. Prices are postpaid but 2% sales tax must be added to all orders. Make your check payable to Cambe Log Library, Inc. A discount of one dollar per volume is available on orders for complete sets of Transactions and Guide Books.

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1961 Southern Edwards Plateau	4.70
1962 Fault Map of South Louisiana (54" x 52"), edited by W. E. Wallace, Jr.	8.00
1964 Depositional Environments of South Central Texas Coast	6.70

ELECTION OF E. H. RAINWATER TO HONORARY MEMBERSHIP IN GCS-SEPM



Edward H. Rainwater, better known to his colleagues as "Rainey," was born in Waynesboro, Mississippi. He obtained a B.S. degree from Mississippi State College and took advanced work at Indiana University and Northwestern University, receiving an M.A. degree from the latter institution.

In addition to his academic proficiency, Rainey has a broad and practical experience in Gulf Coast stratigraphy. After teaching at Mississippi State College, he worked for many years as micropaleontologist, stratigrapher and research geologist for the Royal Dutch Shell, Caribbean Petroleum Company and Shell Oil Company. In recent years he has conducted courses at the University of Houston in advanced micropaleontology and its relationship to Gulf Coast stratigraphy. He is now a full-time consultant in stratigraphic geology for Tenneco Oil Company in Houston, with his work taking him to "oil patches" throughout the world.

Mr. Rainwater has published numerous papers on paleo-stratigraphy, Gulf Coast geology, and depositional environments as related to the search for oil and gas accumulations. His insistence on conformity to sound principles of stratigraphy, learned through many years of experience in actual operations, is reflected in his publications and lectures which are highly valued by petroleum geologists. Rainey has served as Distin-

guished lecturer for A.A.P.G. and Visiting Scientist for A.G.I.; he recently conducted a series of lectures in Houston under the Continuing Education Program of A.A.P.G. and the Houston Geological Society. His papers have won first place awards at both G.C.A.G.S. conventions and national S.E.P.M. meetings. He is a Fellow of the Geological Society of America, member of the American Association of Petroleum Geologists, Society of Economic Paleontologists and Mineralogists, Sigma Xi, and local geological societies.

Rainey is sincerely dedicated to the science of geology and the concept of serving others. In addition to his regular work through the years, he has found the time to lead innumerable field trips and conduct countless classes in night school courses to share his knowledge and experience. This instruction has inspired many individuals, including both students and fellow workers.

In some small recognition of his many years of outstanding and continuing contribution to Gulf Coast stratigraphy and petroleum geology, the Executive Council is pleased to elect Mr. Rainwater an honorary member of the Gulf Coast section of the Society of Economic Paleontologists and Mineralogists.

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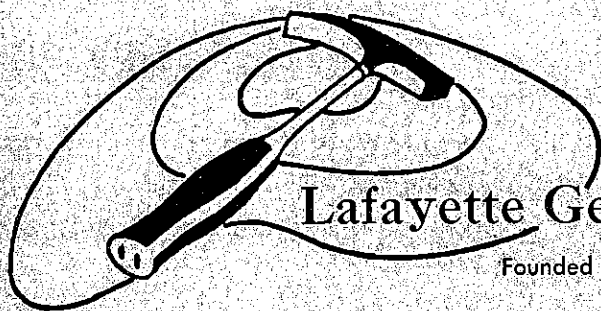
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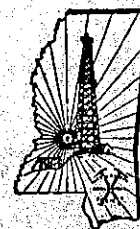
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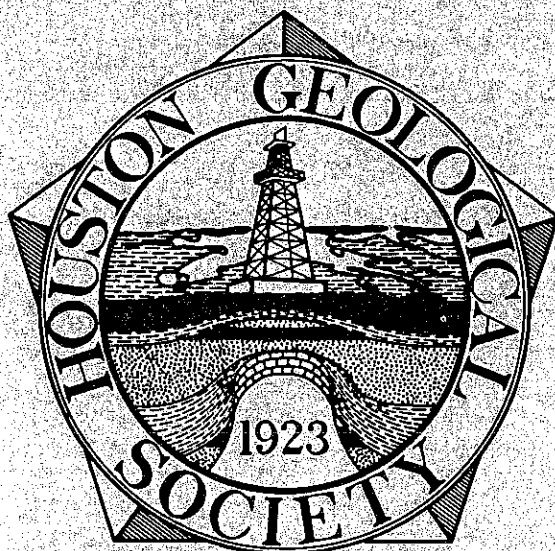
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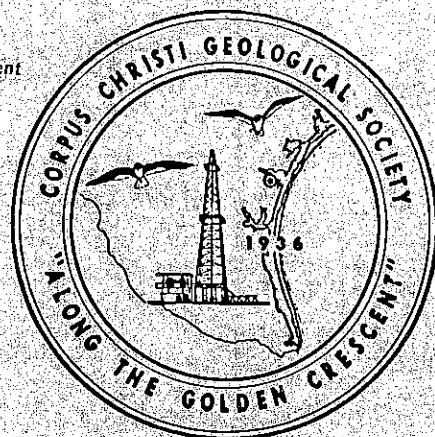
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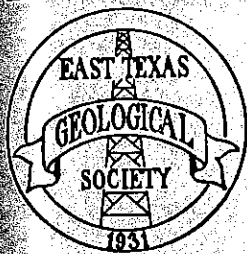
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Philip R. Allin.....	178	Percey M. Lyons.....	245
American Trading & Production.....	303	McCain, Mobley & Davis.....	180
Andrau Petroleum Corporation.....	244	McGoldrick & Watson Drilling Co.....	57
John N. Armstrong, Jr.....	179	T. W. McGuire & Associates, Inc.....	247
Ashy Enterprises, Inc.....	303	C. M. McLean.....	6
Atwater, Cowan & Associates.....	6	Martin & Harrison.....	333
Austral Oil Company, Incorporated.....	334	Roger A. Mateer.....	332
Baroid.....	179	George N. May & Associates.....	353
A. I. Bartow.....	3	John W. Mecom.....	247
Fred W. Bates & Associates.....	380	McJlaender & Prior, Inc.....	303
Bayou Reproductions.....	350	Midwest Oil Corporation.....	56
Terry J. Bills, Jr.....	246	Albert D. Miller.....	245
Leslie Bowling.....	303	E. Lee Mills.....	6
Bradco Oil & Gas Company.....	351	Miocene Oil & Gas, Inc.....	3
Brewer & Company.....	333	Mississippi Geological Society.....	53
The Burmah Oil Western Company.....	352	Mis-Tex Oil Producers.....	5
Cabot Corporation.....	181	George Mitchell & Associates, Inc.....	351
Caddo Oil Company, Inc.....	179	R. B. Mitchell.....	37
Russell Caffery & Associates.....	181	Montgomery's Stratigraphic Service.....	245
Ralph B. Cantrell.....	332	Morris & Burk.....	351
Carrel Oil Frio Drilling, Inc.....	2	John C. Myers.....	353
John E. Chance & Associates.....	351	National Bank of Commerce.....	334
Circle Drilling Company, Inc.....	352	National Geophysical Company, Inc.....	333
Citizens First National Bank of Tyler.....	302	Nemours Corporation.....	246
Coastal States Gas Producing Company.....	335	Newmont Oil Company.....	333
George H. Coates.....	332	Newmont Oil Company.....	177
F. B. Cochran, Jr.....	350	New Orleans Geological Society.....	59
Jack Colle & Associates.....	351	Nixon Blue Print Company.....	335
Collier & Major.....	56	Occidental Petroleum Corporation.....	351
D. Charles Collins.....	181	Ocean Drilling & Exploration.....	302
Colorado Oil Company.....	352	Roger H. Ogden.....	57
W. E. Colson.....	380	Edwin P. Ogier.....	181
Comet Drilling Company.....	54	Oil Center Secretarial Service.....	332
James F. Cooper.....	181	Oil Royalties, Incorporated.....	246
Core Service, Inc.....	301	Oil Well Logging Co.....	54
Drew Cornell, Inc.....	378	P. J. Orchard.....	58
Corpus Christi Geological Society.....	299	Owen Drilling Company.....	54
John Cowan & Associates.....	5	Pan Geo Atlas Corporation.....	56
Wyatt E. Craft.....	350	Penrod Drilling Company.....	375
Crosbie-Macomber Paleontological Laboratory, Inc.....	303	Peoples National Bank.....	5
John David Crow Drilling Company.....	246	Petro-Log, Inc.....	178
Crystal Oil Company.....	244	Robert C. Pettit.....	Back Cover
W. R. Davidson.....	301	Petty Geophysical Engineering Co.....	178
Delta Drilling Company.....	5	Phillips 66.....	57
Delta Marine Drilling Company.....	181	C. R. Pope.....	180
Desk & Derrick Club.....	178	Prospect's Brokage, Inc.....	2
Despot, Inc.....	178	Joseph L. Pritchett.....	376
Drilling Well Control, Inc.....	Inside Back Cover	Prudhomme Truck Tank Service.....	56
East Texas Geological Society.....	349	M. E. Pyle.....	56
Emerald Oil Company.....	377	Ray Geophysical Division-Mandrel Industries, Inc.....	Inside Front Cover
E. L. Erickson.....	54	Reading & Bates.....	4
Robert P. Evans.....	377	Edward P. Roeders, Jr.....	55
Exchange Oil & Gas Company.....	377	Rogers Explorations.....	181
Fair Oil Company.....	3	Rotary Drilling, Inc.....	180
W. C. Fatio, Inc.....	302	St. Martin Land Co. & Iberville Land Co.....	4
Fitzpatrick Drilling Company.....	353	Sidney Shafer & Company.....	55
Forest Oil Corporation.....	57	Schlumberger Well Services.....	354
Forney & Worrel.....	56	George W. Schneider.....	350
Vruce W. Fox.....	300	Seismograph Service Corporation.....	248
R. R. Frankel.....	247	Shell Oil Company.....	353
Franks Petroleum.....	376	Shreveport Geological Society.....	331
Gamma Loy, Ltd.....	351	Fred L. Smith, Jr.....	54
B. C. Garnett.....	350	Siesta Oil & Exploration Co., Inc.....	246
Gas Rock Corporation.....	353	South Louisiana Contractors.....	3
Joe G. Gibson.....	300	South Texas Geological Society.....	375
T. J. Glennon.....	300	Southdown Exploration, Inc.....	350
Vito A. Gotantas.....	246	Southern Minerals Corporation.....	379
Greer's.....	179	Southern Natural Gas Company.....	350
Gulf Printing Company.....	333	Southern Natural Gas Company.....	4
Michel T. Halbouty.....	378	Southwest Gas Producing Co., Inc.....	55
Hamilton Brothers Oil Company.....	332	Southwestern Well Logging Service, Inc.....	352
James W. Harris.....	380	Wm. H. Spice, Jr.....	378
R. Merrill Harris.....	303	Stanrich Oil Company, Inc.....	403
Hatcher & Darden.....	181	Stooksberry.....	55
Hugh A. Hawthorne.....	301	Paul M. Strunk.....	4
Chas. F. Hayes & Associates, Inc.....	5	Adam M. Sturlese.....	379
Heli's Oil & Gas Interests.....	380	Henry R. Toler.....	300
Henry C. Holland.....	332	J. C. Trahan, Drilling Contractor.....	178
Houston Geological Society.....	243	Harrell Town.....	244
Houston Natural Gas System.....	403	Triad Oil & Gas Company, Inc.....	302
Hudnall & Pirtle.....	5	Trowbridge Sample Service.....	245
J. Willis Hughes.....	376	United Producing Co.....	182
W. R. Hughey Operating Company.....	244	United Geophysical Corporation.....	2
Don F. Hugus, Jr.....	3	D. D. Utterback.....	2
Hycalog, Inc.....	303	Van Dyke Oil Company.....	300
George C. Iles.....	377	Vincent & Welch, Inc.....	180
Independent Exploration Company.....	304	W. W. F. Corporation.....	352
R. R. Johnson, Jr.....	178	Welex.....	300
H. E. Karges.....	303	West Texas Drilling Company.....	2
Milton H. Knox.....	5	The Western Company.....	336
Lafayette Geological Society.....	1	Western Geophysical Company of America.....	178
P. G. Lake, Inc.....	301	C. E. Whipp.....	380
Lamson & Bennett.....	377	Warall J. N. Whipple.....	379
Larco Drilling Corporation.....	301	William H. White.....	376
Latham Management Co., Inc.....	4	D. Raymond Wingfield.....	376
Layne & Bowler Service Corporation.....	244	W. W. Wise Drilling, Inc.....	245
		Witt Oil Production, Inc.....	6
		Woodham Consulting Company.....	