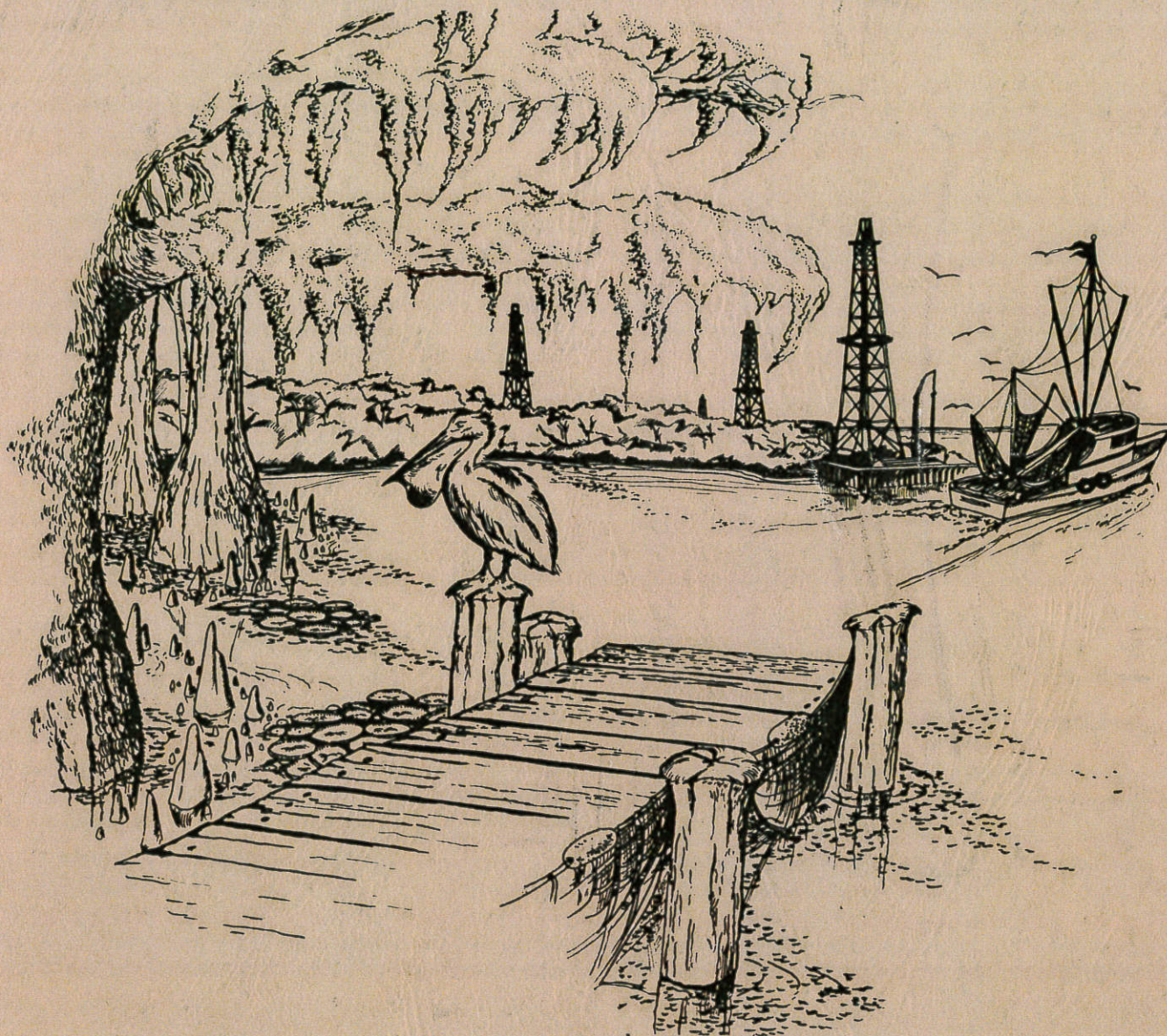


# GULF COAST ASSOCIATION OF GEOLOGICAL SOCIETIES

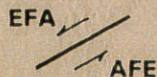
TRANSACTIONS OF THE

## *24th Annual Meeting*



### THEME

ENERGY FOR ACTION



ACTION FOR ENERGY

*Austin Geological Society*  
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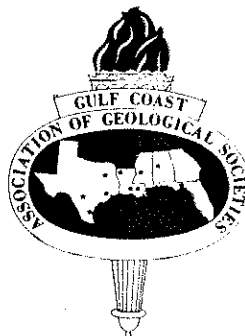
LAFAYETTE, LOUISIANA

OCTOBER 16, 17, 18, 1974

# TRANSACTIONS

GULF COAST ASSOCIATION OF GEOLOGICAL SOCIETIES

A SECTION OF THE AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS



VOLUME XXIV, 1974

JACK W. SHIRLEY  
EDITOR

PREPARED FOR THE

*Twenty-Fourth Annual Meeting of the  
Gulf Coast Association of Geological Societies*

AND REGIONAL A.A.P.G. MEETING

*HELD IN COOPERATION WITH THE  
GULF COAST SECTION OF THE*

**SOCIETY OF ECONOMIC PALEONTOLOGISTS AND MINERALOGISTS**

DANA ROBERSON  
W. P. LEUTZE  
S.E.P.M. CO-EDITORS

**OCTOBER 16, 17, 18, 1974  
LAFAYETTE, LOUISIANA**

PUBLISHED AT  
HOUSTON, TEXAS

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DEDICATION OF THE 1974  
GCAGS TRANSACTIONS VOLUME  
TO



WILLIAM R. PAINE

The officers and committee chairmen of the G.C.A.G.S. for 1973-1974 dedicate the 1974 *Transactions* volume to William R. Paine, Associate Professor of Geology at the University of Southwestern Louisiana, in recognition of his outstanding work and contributions to the profession, the association and the industry.

Bill Paine's love for geology can probably be described best in the words of C. Walter Dobie who announced Paine's Honorary Life Membership in the Lafayette Geological Society and said, "His interest in geology knows no bounds. He is as excited examining the sutures on a fossil as he is pondering environments at the outcrop. He is one of those rare creatures equally at home on the university campus, in the research lab, or in the hurly-burly world of industry. He is a familiar figure in the Oil Center, always eager to discuss the problems we, as subsurface geologists daily encounter, and he serves as a consultant to the industry during the summer. He is an instinctive teacher, and his students are unanimous in their enthusiastic evaluation of him. On weekends he can probably be found on an outcrop somewhere either with the Boy Scouts at Montgomery Landing or with his own USL students at the Winnfield Salt Dome. His knowledge of Gulf Coast Geology is enormous, and he is most generous in sharing it with fellow geologists. On questions for which he has no answer he can seemingly always direct one to appropriate publications."

Bill was born and raised in Minneapolis. He attended Montana School of Mines and earned BS and MS degrees in Geological Engineering. His education there was interrupted while he served in the U.S. Navy in the South Pacific from 1943-1946. From 1947-1948, he was an instructor at Kent State University, Kent, Ohio, teaching geology and physics.

Following a year's graduate study at the University of Wyoming he served as an Assistant Professor of Geology at Monmouth College, Monmouth, Illinois. He did further graduate study at Louisiana State University and joined the geological faculty at the University of Southwestern Louisiana in 1954 where he is presently Associate Professor of Geology. Bill received the Halliburton Award for Excellence in Teaching from 1969-1972.

Bill is a devoted family man and he and his wife Rose have two daughters.

Bill is a past president of the Lafayette Geological Society of which he is an active Honorary Member. His students give competitive papers before the Lafayette Geological Society each year. He has lead numerous field trips and he is Field Trip Committee Chairman for this convention.

William R. Paine has greatly added to our knowledge of Gulf Coast Geology through his publications on the *Nonion struma*, lower Frio Wedges, the Hackberry Wedge and other formations with particular emphasis on South Louisiana.

What kind of man is Bill Paine? He is conservative, serious and hard working. He is patient, quiet and unassuming. He has a quick grasp of geological problems and concepts. He is one who keeps abreast of the industry in activity and concepts and adds to them—an active contributor of time and effort to geological organizations—a writer of valuable geological papers—and, above all, an excellent teacher.

The Gulf Coast Association of Geological Societies is proud to dedicate the 1974 *Transactions* Volume to William R. Paine.

## GEOLOGICAL PUBLICATIONS OF WILLIAM R. PAINE

- Paine, W. R., The *Nonion struma* "Lower Frio" wedges of Acadia Parish: Gulf Coast Assoc. Geol. Socs. Trans., v. 6, 1956.
- Paine, W. R., Frio sedimentation patterns in Acadia and Jefferson Davis Parishes of Louisiana: Gulf Coast Assoc. Geol. Socs. Trans., v. 8, 1958.
- Paine, W. R., Geology of Acadia and Jefferson Davis Parishes: Louisiana Geol. Survey Geol. Bull. no. 36, 1962.
- Paine, W. R., Frio sedimentation of the Rayne field of southwest Louisiana, in Developments in sedimentology—v. 1, Deltaic and shallow marine deposits: Internat. Sedimentology Cong., 6th, Amsterdam and Antwerp, 1963, Proc., 1964; also in Deltaic and shallow marine deposits: New York, N.Y., American Elsevier Pub. Co., 1964.
- Paine, W. R.; Burdine, E. D.; Wire, J. C., Environmental observations in Grande Isle-Grande Terre area of South Louisiana (abs.): Am. Assoc. Petroleum Geologists Bull., v. 49, no. 10, p. 1755, 1965; Gulf Coast Assoc. Geol. Socs. Trans., v. 15, p. 221, 1965.
- Paine, W. R. (and others), Frio and Anahuac sediment inclusions, Bell Isle Salt Dome, St. Mary Parish, Louisiana: Lafayette Geol. Soc. Bull., v. 11, no. 2, Am. Assoc. Petroleum Geologist Bull., v. 49, no. 5, 1965.
- Paine, W. R.; Mitchell, M. W.; Copeland, R. R., Jr.; Gimbrede, L. de A., Frio and Anahuac sediment inclusions, Belle Isle Salt Dome, St. Mary Parish, Louisiana: Am. Assoc. Petroleum Geologists Bull., v. 49, no. 5, 1965.
- Paine, W. R., Stratigraphy and sedimentation of subsurface Hackberry Wedge and associated beds of southwestern Louisiana: Gulf Coast Assoc. Geol. Socs. Trans., v. 16, 1966.
- Paine, W. R.; Dickey, P. A., Geological significance of abnormal pressures in deep oil and gas wells (abs.): Houston Geol. Soc. Bull., v. 10, no. 8, p. 5, 1968; South Texas Geol. Soc. Bull., v. 8, no. 4, p. 1, 1968.
- Paine, W. R., Stratigraphy and sedimentation of subsurface Hackberry wedge and associated beds of southwestern Louisiana: Am. Assoc. Petroleum Geologists Bull., v. 52, no. 2, 1968.
- Paine, W. R.; Meyerhoff, A. A., Catahoula Formation of western Louisiana and thin-section criteria for fluvial depositional environment: Jour. Sed. Petrology, v. 38, no. 1, 1968.
- Paine, W. R.; Meyerhoff, A. A., Gulf of Mexico Basin: Interactions among tectonics, sedimentation, and hydrocarbon accumulation: Gulf Coast Assoc. Geol. Socs. Trans., v. 20, 1970.
- Paine, W. R., Petrology and sedimentation of Hackberry Sequence of southwest Louisiana: Gulf Coast Assoc. Geol. Socs. Trans., v. 21, 1971.
- Paine, W. R., Computer mapping in Lower Frio Formation (Oligocene-Miocene), southwestern Louisiana (abs.): Gulf Coast Assoc. Geol. Socs. Trans., v. 22, 1972.

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REPORT OF THE PRESIDENT  
GULF COAST ASSOCIATION OF GEOLOGICAL SOCIETIES



This year the G.C.A.G.S. welcomes the Austin Geological Society as its eleventh member. Austin geologists have long been contributors to the scientific understanding of the Gulf Coast, and we are proud to officially have them as one of the Association societies.

As a result of good planning over the years, the Association is in an excellent financial position. A detailed Treasurer's report, made recently to each society, summarizes a sizable cash reserve plus publication assets estimated at over \$100,000. Annual income from sale of the *Transactions* and other publications remains high and steady, indicating a comfortable fiscal future. These funds are used to underwrite costs of the annual meeting and to finance G.C.A.G.S. special projects such as the Tectonic Map and the Gulf Coast Bibliography. In addition, loans have been made to member societies to finance their local publications. In my opinion, these loans represent a good use of Association funds, and I would like to encourage each society to consider this type of assistance in future projects.

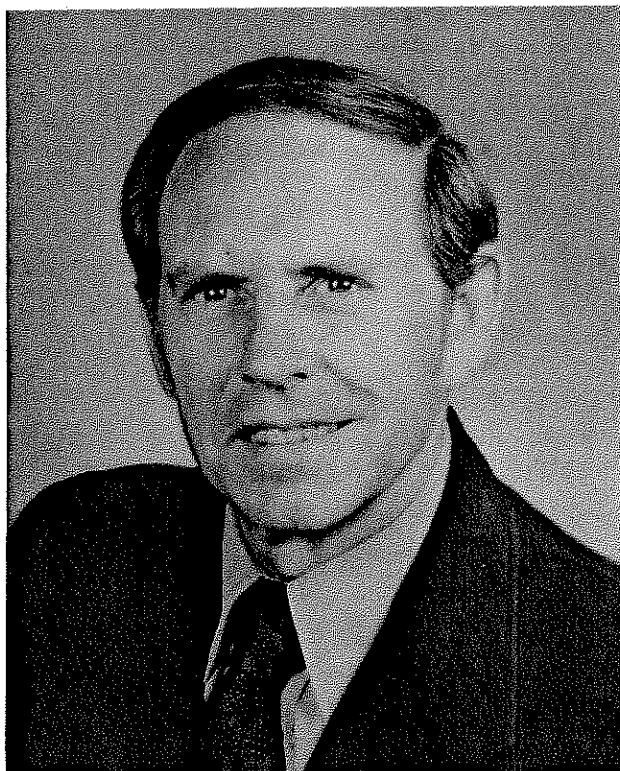
Don Boyd of Corpus Christi has been selected by the Executive Committee to serve as Gulf Coast Regional Counsellor to the A.A.P.G. Advisory Committee. Don's experience as past president of the G.C.A.G.S., remodeler of our Constitution and Chairman of the Special Projects Committee gives him a unique capability to fill this cabinet type position. I urge all societies to lean on Don during his three-year term, and on your local delegates to make your views known to the A.A.P.G.

My thanks go out to the members of the G.C.A.G.S. for allowing me to serve this year as President. My appreciation goes also to the officers and Executive Committee for their assistance and to the Convention Committee for their splendid effort in planning our annual meeting.

Lafayette is proud to serve as the 1974 host city. We extend our heartiest welcome to all attending and hope that your visit will, in all ways, be rewarding.

Scott J. Lysinger  
President  
Gulf Coast Association of Geological Societies

## REPORT OF THE GENERAL CHAIRMAN TWENTY-FOURTH ANNUAL MEETING—1974



Although the 24th Annual Convention of G.C.A.G.S. is several months away, I can predict without qualification that it will be a successful and profitable session. My confidence springs from the devotion and dedication that has been exhibited by all of the convention committees in discharging their responsibilities. The most rewarding aspect of the general chairmanship has been the total cooperation that I have received from everyone in developing the 24th Annual Convention. This factor, along with the efficient operation of the committee chairman, has made my job as General Chairman an interesting and pleasant experience. I want to thank everyone who contributed to the convention's success with special recognition to the convention committee chairmen for their tireless efforts. My report would not be complete without expressing my appreciation, as Chairman, to the officers and members of the Lafayette Geological Society; the officers and members of the Lafayette Geological Auxillary; Scott Lysinger, President of G.C.A.G.S.; and the officers and representatives of G.C.A.G.S. for their help and advice in planning the convention.

This year's convention will follow the general format of the G.C.A.G.S. Conventions as established in previous years. The technical sessions will develop the provocative theme of "Energy for Action and Action for Energy," a topic which is highly apposite at this time. The program is designed to inform and stimulate those who are directly responsible for alleviating the energy shortage. Lafayette's French heritage, with its relaxed atmosphere, provides a perfect setting to stage the convention; therefore, the technical program is complimented by an array of "cajun" entertainment featuring a "Cochon de Lait" and a "Fais Do Do." In addition, the Geological Auxillary will offer a daily slate of unusual ladies activities which will occupy the visiting ladies during the technical sessions. It is the intent of the Convention Committee to provide a blend of professional papers and French entertainment which will make the 24th Annual Convention in Lafayette one to remember.

Bienvenue a Lafayette,  
Frank W. Harrison, Jr.  
General Chairman

## REPORT OF THE TRANSACTIONS EDITOR

The idea of editing a major geological publication had never entered my mind until the General Chairman, Frank Harrison, asked me to undertake this for the 1974 G.C.A.G.S. *Transactions*. The significance of this task doesn't hit you until you realize that the G.C.A.G.S. is the only section of the A.A.P.G. which publishes a volume of this type. We all have our own ideas on how a project of this nature should be handled; however, it is not until you have the responsibility that you realize the difference between day dreams and reality. After reviewing the reports of the previous editors it becomes apparent that all of them experienced the same problems and disappointments and yet were able to put together exceptionally outstanding *Transactions*.

Program Chairman, Lee Mills, did an outstanding job of assembling the program under the most trying circumstances. It is evident that the local societies do not put enough emphasis on their responsibilities of soliciting worthwhile papers concerning their areas. The full participation of the local societies is the key for continuation of the *Transactions* as a major geological publication. The *Transactions* belong to the members of the G.C.A.G.S. and it is only through their participation that it succeeds. It is strongly recommended that each society appoints a committee with the responsibility of obtaining papers from its members for presentation to the Program Chairman and Editor.

Perhaps the most enjoyable part of this task has been the contact with the authors of papers presented here. The large majority of the authors have been cooperative and have read and followed the necessary instructions.

The Co-Editors of the Gulf Coast Section of the S.E.P.M., Dana Robertson and Bill Leutze, have performed their editorial task in an outstanding manner and have cooperated in meshing their part of the *Transactions* with the whole.

Special credit is due to the Assistant Editors, Cliff Naylor, Gene Woodyard, Ed Roederer, I. W. Russek and Bob Bell, who read themselves bleary-eyed. It was necessary to read and edit each paper at least 3 times. My special thanks also to Mary Zeringue who typed the mountain of correspondence which was essential in communicating with the authors.

The *Transactions* have now been "put to bed" and we hope you enjoy reading it as much as we enjoyed putting it together.

Jack W. Shirley  
1974 *Transactions* Editor

# ORGANIZATION

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James Sansom, Texas Water Division  
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Richard Berryhill, Consulting Geologist  
Robert J. Bell, Samedan Oil Corp.

### Arrangements

Robert T. Holleman, Consulting Geologist, Chairman  
Shelvie Perkins, Baroid Division, NL IND.  
Warren Stoddard, Atlantic Richfield  
Harold E. Mathy, Continental Oil Co.  
Douglas Lynn, Lynal, Inc.  
G. J. Favalaro, Chevron Oil Co.  
J. C. Duncan, Jones O'Brien

### Awards

Robert A. Anderson, Consulting Geologist, Chairman  
E. Homes Smart, Apexco, Inc.

### Editorial

Jack W. Shirley, Marr Co., Editor  
Clifton R. Naylor, Marr Co.  
Edward P. Roederer, Jr., Consulting Paleontologist  
Kenneth E. Woodyard, Continental Oil Company  
I. W. Russek, Geophysical Consultant  
Robert J. Bell, Samedan Oil Corp.

### Cover Design:

Earl Warner, Houston Oil and Minerals  
Paul B. Smith, Houston Oil and Minerals

### Entertainment

John H. Van Amringe, Union Oil Co. of California, Chairman  
Al Hand, Union Texas Petroleum  
Pat Hurley, Despot Exploration, Inc.  
William P. Scott, Petro-Log, Inc.  
Al Dee, Jr. The Analysts, Inc.  
Donald N. Ballbach, Union Oil Co. of California  
David A. Herndon, Union Texas Petroleum  
James J. Bellamy, McCord-Goodrich  
Robert M. Condon, Union Oil Co. of California  
James Koffskey, Quintana Petroleum Corp.

### Exhibits

Allen M. Broland, Consulting Geologist, Chairman  
R. J. Granberry, Core Labs, Inc.  
E. D. Burdine, Petroleum Associates of Lafayette  
Fred Dischler, Texas West Oil & Gas Corp.

L. B. McKnight, Consulting Geologist

### Field Trip

William R. Paine, University of Southwestern Louisiana, Geological Dept., Chairman  
W. P. Leutze, Atlantic Richfield  
B. J. Sloan, Tiger Oil Co.  
Warren Brooks, Union Oil of California  
Donald H. Kupfer, Louisiana State University, School of Geoscience  
John Tubb, Signal Oil and Gas  
James Melancon, Texoil  
Tommy McFarlan, Brazos

### Hotels and Housing

George W. Schneider, Jr., Consulting Geologist, Co-Chairman  
Jack P. Martin, Consulting Geologist, Co-Chairman

### Auxiliary Executive Committee

Mrs. Joseph F. Moss, President  
Mrs. Phillip Brammell, 1st Vice President  
Mrs. George Schneider, 2nd Vice President  
Mrs. Bob Whitney, Treasurer  
Mrs. Mark Robert, Secretary  
Mrs. John B. Vercellino, Jr., Past President

### Ladies Activities

Mrs. Marvin A. Munchrath (Sue) Co-Chairman  
Mrs. Paul M. Toce (Patti) Co-Chairman  
Mrs. William P. Scott  
Mrs. Roy Melton  
Mrs. A. E. Anderson  
Mrs. Leo R. Chisholm  
Mrs. James W. Fambrough  
Mrs. D. Bryan Ferguson  
Mrs. M. R. French  
Mrs. Huell Ham  
Mrs. Frank W. Harrison, Jr.  
Mrs. Robert T. Holleman  
Mrs. John C. Holmes  
Mrs. Richard D. House  
Mrs. Burton W. Hoyt  
Mrs. Patrick J. Hurley  
Mrs. Pete Klentos  
Mrs. Charles R. Lee  
Mrs. C. M. McLean  
Mrs. J. Allen Melton  
Mrs. James H. Morris  
Mrs. Roy L. Naumann  
Mrs. Phillip D. Parker  
Mrs. C. W. Rogers  
Mrs. George Schneider  
Mrs. Joe Siegmund  
Mrs. H. K. (Bo) Ware  
Mrs. Gary Reagan

Mrs. Richard Campbell  
Mrs. Leale Slate  
Mrs. B. H. Dehart  
Mrs. J. L. Pritchett  
Mrs. Jack P. Martin  
Mrs. James E. Smyth  
Mrs. Charles A. Barton  
Mrs. I. W. Russek  
Mrs. Phillip R. Allin  
Mrs. Joseph F. Moss  
Mrs. Frank Danna  
Mrs. William H. Hollingsworth  
Mrs. John Van Amringe  
Mrs. Norman Smith  
Mrs. Robert Sutter  
Mrs. Jack Lane

**Printing**

Fred W. Bates, Bates and Associates,  
Chairman  
James Sheller, Consulting Geologist  
Robert R. Copeland, Fred Bates and  
Associates

**Program**

E. Lee Mills, Consulting Geologist,  
Chairman  
James Smyth, Consulting Geologist  
Robert R. Copeland, Fred Bates and  
Associates

William Paine, University of Southwestern  
Louisiana, Geological Dept.

**Publicity**

Jack A. Campione, South Louisiana  
Production, Chairman  
Ralph Wharton, Texas Pacific Oil Co.  
A. J. Trepagnier, Dow Chemical Co.

**Registration**

Thomas L. Caskey, Texas Pacific  
Oil Co., Chairman  
Warren Trimm, Tenneco Oil Corp.  
Alden Wickstrom, Texas Pacific Oil Co.  
Allen Hubbard, Amerada Hess  
Marvin Martin, Amerada Hess  
Ernie Otto, Sun Oil Company  
Desk & Derrick Club of Lafayette,  
Sally Ware, President

**Transportation**

Pete J. Klentos, Consulting Geologist,  
Chairman

**S.E.P.M. Program and Transactions**

Louis de A. Gimbrede, University of South-  
western, Program Chairman  
William P. Leutze, Atlantic Richfield,  
Co-Editor  
Dana S. Roberson, Co-Editor

## GULF COAST ASSOCIATION OF GEOLOGICAL SOCIETIES BEST PAPER AWARDS, TWENTY-THIRD ANNUAL MEETING HOUSTON, TEXAS

The 1973 G.C.A.G.S. Awards Committee recognizes the following first, second and third place winners, together with the A.I. Levorsen Memorial Award winner, for their presentations at the 1973 G.C.A.G.S. Houston Convention:

The A.I. Levorsen Memorial Award, given by the A.A.P.G. for the best paper giving special emphasis to creative thinking in the field of petroleum geology, was awarded to the paper "Variability of Modern River Deltas" co-authored by Dr. James Malcolm Coleman and Lynn Donelson Wright.

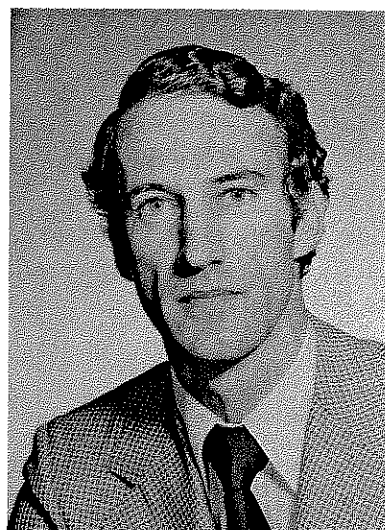
James Malcolm Coleman, born in Vinton, Louisiana, 1935, received his B.S., M.S. and Ph.D. degrees in Geology from Louisiana State University (1958, 1962, 1966). He has been associated with the University since graduation in a teaching capacity and as Assistant Director, Coastal Studies Institute. He has participated in and directed numerous deltaic and clastic sediment seminars and study groups in investigations of the Gulf Coast Delta as well as other world-wide delta provinces.

Dr. Coleman's research interests and work in coastal morphodynamics have been world-wide, including field trips to Australia, Malaya, Bangladesh, Mexico, Romania, Brazil, Spain, Africa, Canada and Alaska, as well as his native Louisiana.

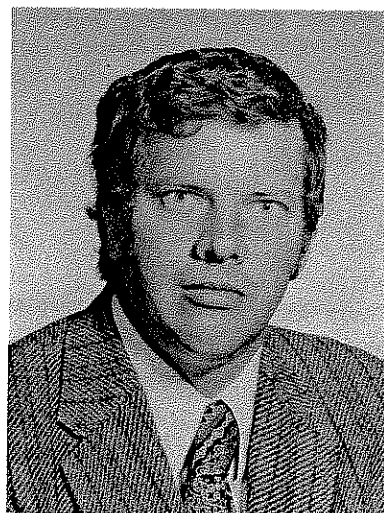
He is a member of the International Association of Sedimentology, American Association of Petroleum Geologists, Geological Society of America, Society of Economic Paleontologists and Mineralogists and Sigma Xi.

Lynn Donelson Wright, born in Nashville, Tennessee, in 1940, received his B.A. degree from the University of Miami in 1965, M.A. from University of Sydney (Australia) in 1967, and Ph.D. from L.S.U. in 1970. He affiliated with Louisiana State University at his graduation and is now Assistant Professor of Geology, as well as Associate of Research with the School's Coastal Studies Institute. He has conducted several delta seminar groups, and his principal research interests are coastal morphodynamics and water mixing and exchange. He has participated in field studies in Australia, Brazil, Alaska, the Gulf of Mexico and the Atlantic Seaboard.

Dr. Wright is a member of American Geophysical Union and the Association of American Geographers.



James M. Coleman

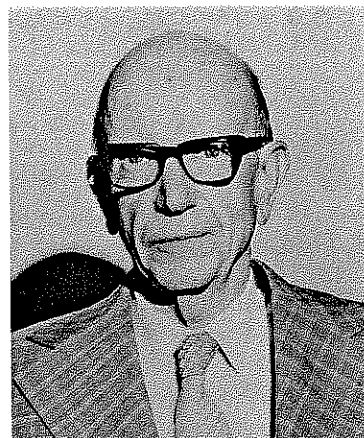


Lynn D. Wright



First place award went to Ray D. Woods and James W. Addington who co-authored the paper "Pre-Jurassic Geologic Framework, Northern Gulf Basin."

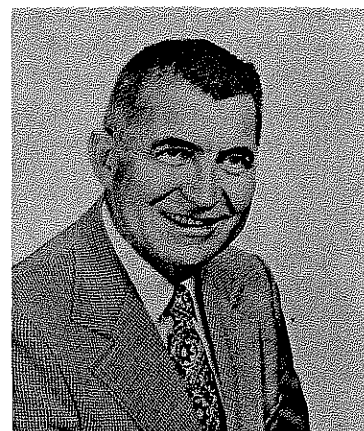
Ray D. Woods earned his B.A. and M.A. degrees in Geology at the University of Texas from 1931 to 1934, doing advanced studies at Louisiana State University in 1964. He was employed by Humble Oil in 1934 as a paleontologist and petrographer until 1948, while also serving part-time as an instructor in Geology at the University of Houston. In 1948 Mr. Woods assisted Dr. H. N. Fisk to organize the Humble (Exxon) Geologic Research Section, and in 1961 became its Assistant Chief of Geologic Research. Five years later he advanced to position of Assistant Chief Geologist for the company. In 1970, three years prior to retiring, he was made Senior Petroleum Scientist with Exxon, the first geologist to be so elected to that position. He presently serves as a consultant to Exxon, U.S.A.



Ray D. Woods

Mr. Wood's research interests and publications include stratigraphy, paleontology and palynology. He is a Fellow of the Geological Society of America and member of the American Association of Petroleum Geologists, Society of Economic Paleontologists and Mineralogists, and the Houston Geological Society.

James W. Addington was awarded a B.A. in Geology from the University of Texas in 1937, and has been employed by Exxon, U.S.A. in the geophysical section of the Exploration Department since that date. Early assignments were in the Texas and Louisiana Gulf Coast and in East Texas. From 1948 to 1967 he served in various supervisory capacities in the East Texas Division and is currently on assignment as an exploration geophysicist in the Gulf Coast Division.



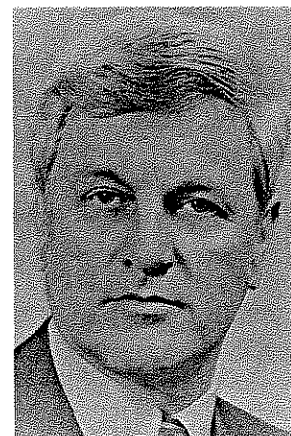
James W. Addington

His papers include "A Case History of the Frawick Gas Field, Nacogdoches and Rusk Counties, Texas."

Mr. Addington is a member of the American Association of Petroleum Geologists, Geophysical Society of Houston and the Geological Society of Houston.

Second place award was to Robert D. Ottman, Paul L. Keyes, and Martin A. Ziegler for their presentation of "Jay Field—A Jurassic Stratigraphic Trap."

Robert D. Ottman, a native Louisianan raised in Fort Worth, Texas, attended New Mexico State University, prior to military duty in World War II. Upon his discharge Mr. Ottman completed his studies and was awarded a B.S. in Geology from the University of Texas in 1951. He began his employment with Exxon and has had successive assignments in Texas, California, Oklahoma, Louisiana and Midland, Texas, where he now serves as Project Leader for Exxon's Oklahoma Project.



Robert D. Ottman

Martin A. Ziegler, born in Switzerland in 1931, received his Diploma in National Sciences and his Ph.D. in Geology from the University of Zurich in 1959 and 1961. His specialty fields include carbonate petrology, carbonate facies analysis, carbonate sedimentology, biostratigraphy, photogeology and physical stratigraphy.

Dr. Ziegler was employed by the Royal Dutch Shell Group from 1961-1966 and spent the following two years with Holderbank Technical Centre in Switzerland in cement raw material acquisitions. In 1968 to the present he has been with Exxon Production Research, in various capacities with carbonate study projects. He is currently on loan assignment from Exxon to Aramco.

Dr. Ziegler is a member of the American Association of Petroleum Geologists, Society of Economic Paleontologists and Mineralogists, Association Suisse des Geologues et Ingenieurs du Petrole, and the Swiss Geological Society.

Paul L. Keyes received a B.S. in Geology from the University of Notre Dame in 1959. He has been in the employ of Exxon, U.S.A. since 1960, and has had various assignments in production and exploration, onshore and offshore, along the Gulf Coast of Texas, Louisiana, Mississippi, Alabama and Florida. He is presently the Exploration Project Leader for the offshore Eastern Gulf Coast Area.

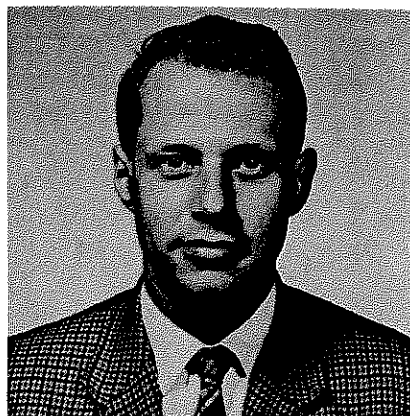
He has presented papers concerning the regional Jurassic geology of Alabama and Florida.

Mr. Keyes is a member of the American Association of Petroleum Geologists, a Fellow in the Geological Society of America and a member of the Houston Geological Society.

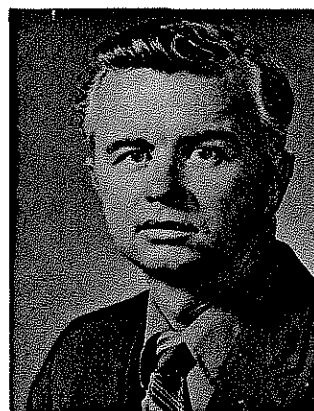
Third place award for the presentation of the paper entitled "Deep-Water Interpretation of Upper Wilcox Sandstones from Core Study, Katy Field, Texas" went to Dr. Robert R. Berg and Richard L. Findley.

Dr. Berg, Director of University Research at Texas A & M University, is the 1972 first place award winner and recipient of that year's A.I. Levorsen Memorial Award. Dr. Berg received his B.A. and Ph.D. in Geology from the University of Minnesota (1948-1951). He was employed as a geologist by the California Company until 1956, was a consulting geologist from 1959 to 1966 in the Rocky Mountain area, and in 1966 became Professor and department head for the School of Geology at Texas A & M University, serving in that capacity until 1972 when he became the School's Director of Research.

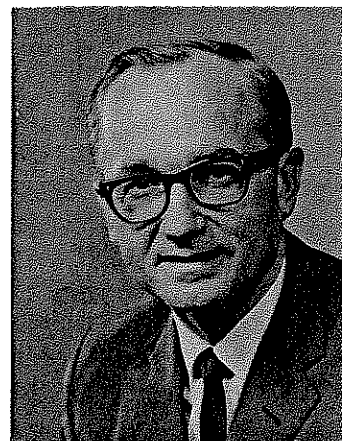
Dr. Berg's research interests include structural geology, subsurface stratigraphy, and sedimentology. His publications have described the structure and origin of the Wind River Range, Wyoming, the stratigraphy of Cambrian rocks in the upper Mississippi Valley and depositional environments of lower



**Martin A. Ziegler**



**Paul L. Keyes**

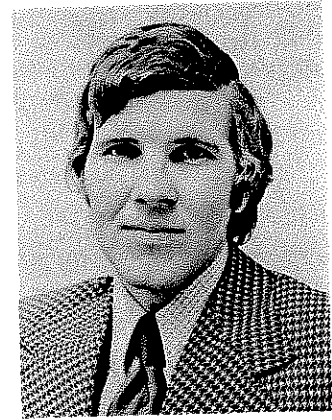


**Robert R. Berg**

Cretaceous oil-reservoir sandstones in Montano, Wyoming and Mississippi.

Dr. Berg served as President of the Rocky Mountain Association of Geologists (1966), and he served 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 a member of the American Association of Petroleum Geologists, the American Institute of Professional Geologists and the Rocky Mountain Association of Geologists.

Richard L. Findley is a graduate student at Texas A & M University. He received his B.S. in Geology from Texas A & M. His professional experience began with employment for the past summer with Union Oil of California. His research interest is in stratigraphy, specifically in determination of environments of deposition. He is currently doing research on the Stevens Sandstone in Kern County, California.



**Richard L. Findley**

# 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. Craddick				
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
1974	Lafayette	S. J. Lysinger	W. H. Moore	T. J. Eby, Jr.	J. J. Bellamy	F. W. Harrison, Jr.

# 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, 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:

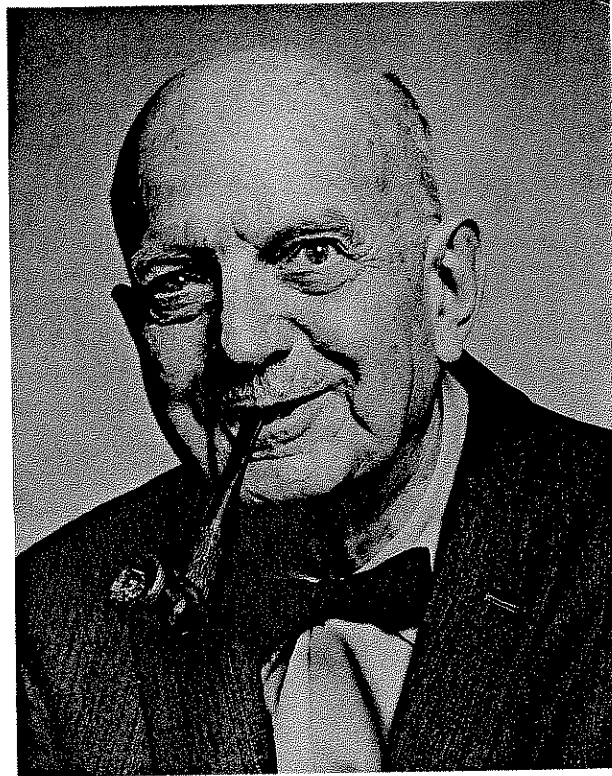
The Treasurer shall have the authority to issue checks against the Bank account of This Association on his sole signature, but in the event of his absence or incapacity to act, withdrawals or payments by check may be made on the signature of the President during the continuance of the absence, or incapacity, 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.

IN MEMORY  
OF



HENRY VAN WAGENEN HOWE  
1896—1973

When Henry Van Wagenen Howe died in his home in Baton Rouge, Louisiana on September 27, 1973, a brilliant career as geologist, paleontologist, teacher, and administrator ended. He is survived by his wife Evelyn; two daughters, Eleanor, a chemistry teacher at Del Mar College, and Patricia, a housewife; two sons both with doctorate degrees in geology, Herbert teaching at Purdue University, and Robert teaching at Indiana State; and six grandchildren. He was 77 years old.

“Heinie” or “Doc,” as he was known by his colleagues and students respectively, warranted and received many honors in the latter years of his life. One very meaningful honor was the dedication of the 1957 convention of the Gulf Coast Association of Geological Societies to Dr. Henry V. Howe. Upon his return from the convention held in New Orleans, Doc told me that the *Transactions* of that meeting contained the finest obituary any man could possibly read while still alive. I feel, therefore, that the statements relative to his life up to 1957 would please Doc in being the excluded initial portion of this obituary, having been published previously on pages 337 and 338 of the *Transactions* in Volume VII.

Not recorded in the 1957 commemorative are his efforts in helping to save the Society of Economic Paleontologists and Mineralogists. Doc was one of the charter members of the organization, and served as

president *pro tempore* at the first meeting of the Society held in Dallas, Texas, in March of 1926. He was elected, subsequently, secretary-treasurer in 1937 and 1938, and was again elected president in 1941. According to Doc's contemporaries, changes in the constitution and by laws of the constitution and in the publishing of the *Journal of Paleontology*, insisted upon by Doc Howe while he served as secretary-treasurer, put the Society in the black.

Keeping people and organizations in the black appears to have been one of Doc's attributes. In 1938 he established a graduate student loan fund with the University, and in 1964 he was asked by the Commissioner of the Louisiana Department of Conservation to assist in keeping the State of Louisiana in the black. Doc's leadership as chairman of the Louisiana Mineral Board during its inception in 1937 apparently induced the Commissioner to request that he again assume Chairmanship of the Board in 1964. The added responsibilities as Chairman in 1964 can be attributed to the fact that among potential oil and gas producing properties owned by the state, many now lay off its shores in the Gulf of Mexico, a realm of uncertainty to all involved. According to C. J. Bonnecarre, Secretary to the State Mineral Board, "his (Doc Howe's) name and his deeds are indelibly inscribed in the Board's history."

Not chronologically presented in this obituary is, in my estimation, the greatest honor bestowed upon Doc—the receipt of the Sidney Powers Medal. This award was presented at the April 26, 1960 meeting of the American Association of Petroleum Geologists in Atlantic City. It was assurance to Doc that he warranted national recognition for what he had contributed to the fields of geology and paleontology. Later he used the wording in the citation to assure any undergraduate, who accused Doc of not clearly presenting material in his Physical Geology lectures, that there was reason to doubt the accusation. The wording of the Sidney Powers Medal award follows:

"For outstanding contributions to petroleum geology through research in stratigraphy and micropaleontology; for distinguished service to the profession by organizing and guiding the development of a leading school of geology at Louisiana State University, and by inspirational teaching of many of industry's geologists and micropaleontologists."

In the field of paleontology, Doc's initial interest, locally, was in the Foraminifera of the Gulf Coast Tertiary. Congestion of workers therein induced him to abandon the Protozoa for the lesser known and not adequately understood ostracods also present in the sediments. Attesting to Doc's stature as an ostracodologist, approaching the time he died, was the dedication of a book on Ostracoda to him at the Hull, England, Ostracod Symposium in 1967. Local recognition of his international standing as an ostracodologist is the dedication of several papers on ostracods to be published in a single volume by the School of Geoscience (L.S.U.) in its technical series, *Geoscience and Man*.

After his retirement in 1966, Doc devoted much of his energy toward the preparation of assemblage slides of Foraminifera and Ostracoda which are retained as the H. V. Howe Micropaleontological Collection in the School of Geoscience Museum. He did not complete all the work he had planned for the museum; however, he died trying. The day before he expired, he was in his office working on slides to be added to his commemorative collection.

The loss of Doc Howe to science is inestimable. Even though retired, he was always available for discussions, either academic or social. We, the Louisiana State University Geology Department faculty, are most fortunate to have lived in the same era as Henry Van Wagenen Howe. We miss his presence in the department.

H. V. Anderson



## GEOLOGICAL PUBLICATIONS OF H. V. W. HOWE

- 1956 . . . and Sylvester-Bradley, P.C. Proposed Addition to the Respective "Official Lists" of the Generic Name "Limnocythere." Brady, 1868, and the Family-Group Name "Limnocytherinae" Sars, 1925 (Class Crustacea, Order Ostracoda). *Bull. Zool. Nomencl.*, V. 12, pt. 5, 159-160.
- 1958 . . . and Laurencich, L. Introduction to the Study of Cretaceous Ostracoda. Louisiana State University Press, 536 p., 1600 Figs., November.
- 1959 Fifty Years of Micropaleontology. *J. Paleontology*, Vol. 33, No. 3, p. 511-517. (Address given on Fiftieth Anniversary of Society of Economic Paleontologists and Mineralogists).
- Review of Porkorny, V., Grundzuge der seelogischen Mikropalaontologie. *In Micropaleontology*, V. 5, No. 4, p. 500, October.
- Status of Cretaceous Ostracod Studies: Congreso Geologico Internacional, XX Session, Symposium del Cretacico, p. 53-64.
- 1961 Treatist on Invertebrate Paleontology, Part Q, Arthropoda (3), Morphology of Living Ostracoda, p. Q3-A17, Figs. 1-12:  
*H. V. Howe:*  
 Cytheracea, p. Q254-Q358, Figs. 184-276. Addendum.  
 Families Cytheridea, p. Q254-Q259.  
 Brachycytheridae, p. Q260-Q267.  
 Cytherettidae, p. Q268-Q272.  
 Cytherideidae, p. Q272-Q290.  
 Entocytheridae, p. Q300.  
 Hemicytheridae, p. Q300-Q306.  
 Entocytheridae, Hemicytheridae, Kliellidae, Leguminocytheridae, Limnocytheridae, Loxoconchidae, p. Q300-Q315.  
 Progonocytheridae, Psammocytheridae, Schizocytheridae, p. Q322-Q331.  
 Xestoleberiae, p. Q343-Q344.  
 . . . and Sylvester-Bradley, P. C. Families Paradoxostomatidae, p. Q315-Q318 and Trachyleberididae, p. Q333-Q343.
- 1962 Ostracod Taxonomy, Louisiana State University Press, 366 p., April.
- 1964 Faunes d'Ostracodes du Mesozoique de France, by H. J. Oertli; A Review. *in J. Paleontology*, V. 38, No. 4, p. 789, July.
- Hilgard as a Geologist. Mississippi Geological Survey, Bull., 104, p. 33-64.
- 1965 Review of Post-Paleozoic Ostracoda by F.P.C.M. van Morkhoven, *Quart. Review of Biology*, V. 40, No. 2, p. 189-190.
- 1969 Homonymy and other man-created taxonomic afflictions of recent ostracoda., in Neal: The Taxonomy, Morphology and Ecology of Recent Ostracoda., Oliver & Boyd, Publ. p. 1-13.  
 H. V. Howe, *Chairman*: Techniques and Approaches to Taxonomy in Relation to the Ostracod Shell., in Neale: The Taxonomy Morphology, and Ecology of Recent Ostracoda. Oliver & Boyd, Publ., p. 237-241.  
 Discussion: Cyprideis, Cypria, and Candona in duck's stomachs. *In Hardina, J. P., Chairman, Techniques and Approaches to Taxonomy in relation to the Limbs and Soft Parts of Ostracods., in Neale: The Taxonomy, Morphology & Ecology of Recent Ostracoda. Oliver & Boyd, Publ., p. 243.*
- 1971 Ecology of American Torose Cytherideidae. *In H. J. Oertli (ed.) Colloque sur la Paleocologie des Ostracodes*, Bull. Centre de Rech. Pau-SNPA, p. 349-359, 1 pl.  
 Preliminary List New Ostracod Taxa 1961-1971, *Melanges*, No. 3, La. St. Univ. p. 1-28.
- 1972 Corrections and Additions to Preliminary List of New Ostracod Taxa 1961-1971: *Melanges*, No. 5, La. St. Univ.
- In Press* H. V. Howe and W. A. van den Bold, Mudlump Ostracods.  
 H. V. Howe and J. W. Neale, Ostracods from Russian Harbor, Nouaya Zemlya.

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

Houston: Dunn, David L., Tenneco Oil Company, P.O. Box 2888, Houston, Texas 77001.

San Antonio: Montgomery, Porter A., 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, now in its 22nd year, continued in 1974 to fulfill the objectives of its founders: "to promote the science of stratigraphy in the Gulf Coast states through research and paleontology and sedimentary petrology, especially as it relates to petroleum geology." Our section continues to be the largest and most active regional division of SEPM with a present membership of 410.

The course for the continuing success of our section was set at the 1973 meeting in Houston where many of our members enjoyed the presentation of an excellent technical program which included the first symposium on Gulf Coast nannoplankton. We sincerely thank C. Wylie Poag, his executive council, and appointed committees for having organized this outstanding meeting.

In April of 1974, your president attended the SEPM council sessions held in connection with the AAPG-SEPM annual convention in San Antonio. By attending both the outgoing and incoming sessions, an excellent insight into the structure and functioning of our national organization was obtained. Incoming SEPM president, Gerald M. Friedman, convened a special meeting of all section presidents for the purpose of discussing problems of mutual interest and for outlining activities for the year. At this meeting he commended our Gulf Coast Section for its continuing vitality and growth.

The success of our annual meetings is dependent upon many factors. Perhaps the most important is the selection of outstanding papers for the technical sessions. This difficult and tedious task was ably handled by our co-editors, Willard P. Leutze and Dana S. Roberson, and we are indeed indebted to them for their fine efforts. Monty Gimbrede, our program chairman, has performed an outstanding job of arranging for the section's technical program. Although over three-quarters of our GCS membership are industry oriented, it should be pointed out that the academic members, comprising less than a quarter, consistently contribute a disproportionately large share of papers to the annual meetings. For this they are to be commended; however, I encourage more participation by our industry members.

This year, our Gulf Coast Section is co-sponsoring, with the GCAGS, an exciting geological and archeological excursion to Guatemala. Credit and thanks go to Bill Leutze, who conceived and organized this outstanding trip. A special note of appreciation is expressed to H. Hugh Wilson who volunteered his services as field-trip co-leader. This trip will afford participants an opportunity to study the structure and stratigraphy of a significant mobile belt and to explore prehistoric Mayan ruins.

In 1974, many new local business representatives were appointed and through their efforts and that of our secretary Lawrence Menconi, two very informative news letters were published. Our local chapters in Houston, Lafayette, and New Orleans continue to maintain active programs including quarterly meetings.

The Gulf Coast Section takes pride in congratulating Doris Malkin Curtis for her recognition as a honorary member of SEPM. Doris is widely known for her publications in paleontology and sedimentation. She continues to be a tireless worker for our Gulf Coast Section as well as for the national SEPM.

We acknowledge with special sadness the deaths of Dr. Henry V. Howe and Dr. Orville L. Bandy, both preeminent contributors in the field of paleontology and sedimentary geology. Their excellent publications stand as guides for achievement by others; however, they cannot convey the generous nature and personal warmth of these great men.

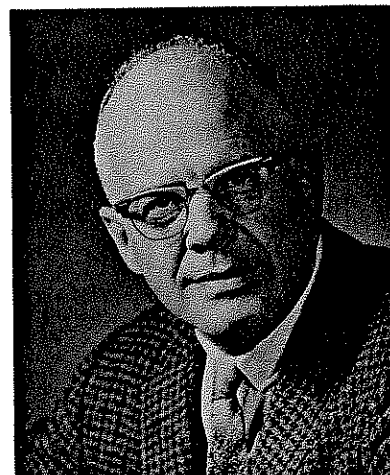
I would like to take this opportunity to thank Scott J. Lysinger, GCAGS president and Frank W. Harrison, Jr., chairman of this 1974 meeting, for their effective cooperation with me and my committees.

It has been a pleasure and an honor to have served as your president this year. Much of the real work, however, was not done by your president but by appointed committees and by our local business representatives who provide constant liaison between the membership and the executive council. I extend my deepest appreciation to each of you for your efforts, which are essential to the continuing success of our Gulf Coast Section. In conclusion, my sincere appreciation and thanks are extended to each member of the outgoing council who served with me: Walter H. Trechard, Vice-President; Lawrence C. Menconi, Secretary; J. Lloyd Tuttle, Jr., Treasurer; and C. Wylie Poag, Past President.

Edward B. Picou, Jr.  
President, G.C.S—S.E.P.M.

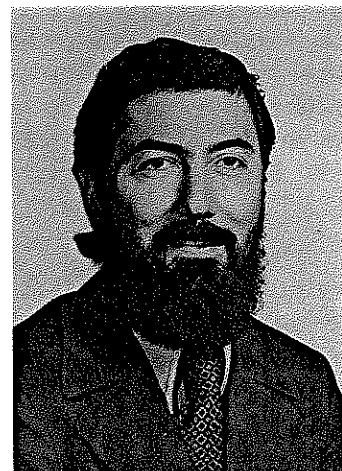
**GULF COAST SECTION OF S.E.P.M.  
BEST PAPERS AWARDS, TWENTY-THIRD ANNUAL MEETING  
HOUSTON, TEXAS**

**FIRST PRIZE:** To William F. Tanner, professor of geology, Florida State University in Tallahassee, for "West Louisiana Chenier Plain History." Dr. Tanner received his B.A. from Baylor, M.A. from Texas Tech, and Ph.D. from Oklahoma University. He was formerly employed by Texas Tech, Oklahoma Baptist University, Oklahoma University, Shell Oil Company, Carter Oil Company, Humble Oil Company, Arkansas Geological Survey, Oklahoma Geological Survey. Dr. Tanner has served as consultant for various organizations in the general areas of petroleum geology and beach erosion. He has done field work in the United States in the southern states and the Rocky Mountain states; outside the United States in Canada, Mexico, Panama, Venezuela, Colombia, Ecuador, Peru, Chile, Uruguay and various parts of Brazil. His professional publications number 210. Dr. Tanner has been editor of Coastal Research Notes since 1962. He was a member of the International Commission on Coastal Sedimentology and Geomorphology until its dissolution in 1962. Sediment transport is Dr. Tanner's chief speciality. He convened the 1974 conference on the "Sediment transport in the near-shore zone" held in Tallahassee in January.



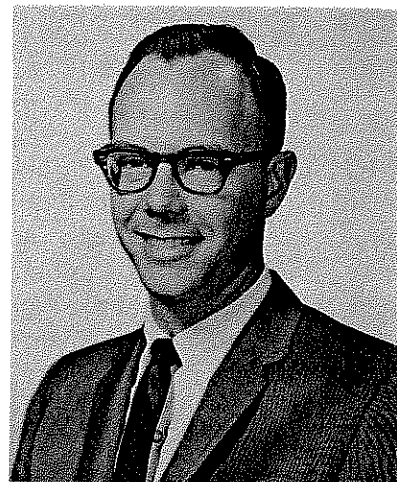
William F. Tanner

**SECOND PRIZE:** To Richard J. Moiola, Senior Research Geologist, Mobil Research and Development Corporation, Dallas, for co-authorship of the paper "Sedimentary Structures and Grain-Size Distribution, Mustang Island, Texas." Dr. Moiola received his B.A. and Ph.D. degrees from the University of California, Berkeley. He has been with Mobil since 1963, where his research activities have been concerned primarily with the sedimentology of modern and ancient sand bodies. Dr. Moiola has authored various papers in the fields of stratigraphy, sedimentology and zeolitic diagenesis.



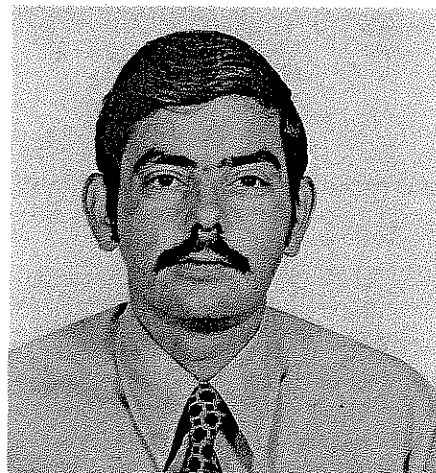
Richard J. Moiola

To Alexander B. Spencer, co-author, second prize paper. Dr. Spencer is employed by Mobil Research & Development Corp., Dallas, Texas 75211. He received his B.S.C. degree from Texas Western College in El Paso in 1955; M.S. degree from the University of Oklahoma in 1961; and Ph.D. from the University of Texas in 1966. Dr. Spencer was Instructor of Chemistry and Geology at Carnegie-Mellon University from 1965-66; Assistant Professor of Chemistry and Geology at Carnegie-Mellon from 1966-67; Research Geologist at Mobil Research & Development Corporation from 1967-70 where he is now Senior Research Geologist. Petrology of sandstones is Dr. Spencer's major interest.



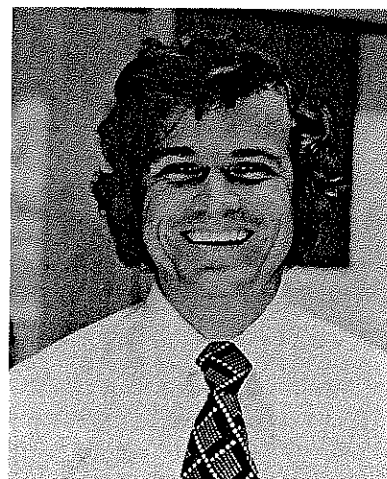
Alexander B. Spencer

**THIRD PRIZE:** To Paul A. Thayer for "Petrography of Carbonate Sands on the Carolina Continental Shelf." Dr. Thayer is Associate Professor of Geology at the University of North Carolina at Wilmington, and Adjunct Associate Professor, University of North Carolina at Chapel Hill. He 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 concerned with sedimentology of Triassic rocks in the southeastern United States, petrology and diagenesis of marine and nonmarine carbonates, deep sea sediments, and trace element geochemistry.



Paul A. Thayer

To William J. Cleary, Assistant Professor of Geology, University of North Carolina at Wilmington, for co-authorship of the paper, "Petrography of Carbonate Sands on the Carolina Continental Shelf." Dr. Cleary received his B.A. degree from Southern Illinois University, his M.A. from Duke University and his Ph.D. degree from the University of South Carolina. Dr. Cleary served as an exploration geologist for AMOCO for a period of time. His present interests and publications are primarily in the field of sedimentology and sedimentary petrology and he is particularly interested in deep-sea environments off the southeastern United States.



William J. Cleary

**THIRD PRIZE (Tie):** To E. O'Donnell, University of South Florida, Tampa, (photograph not available) and Alexandra P. Wright for their paper "Shoreline and Beach Changes on Honeymoon Island, Pinellas County, Florida 1967-1971." Mrs. Wright is hydrogeologist for Woodward-Moorhouse & Associates, Inc., consulting engineers and geologists. She received her M.A. degree in geology at the University of South Florida. Prior to joining Woodward-Moorhouse, Mrs. Wright was a geologist for the Florida Bureau of Geology. She also worked for the U.S. Geological Survey in Tampa, Florida for several years.



**Alexandra P. Wright**

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