

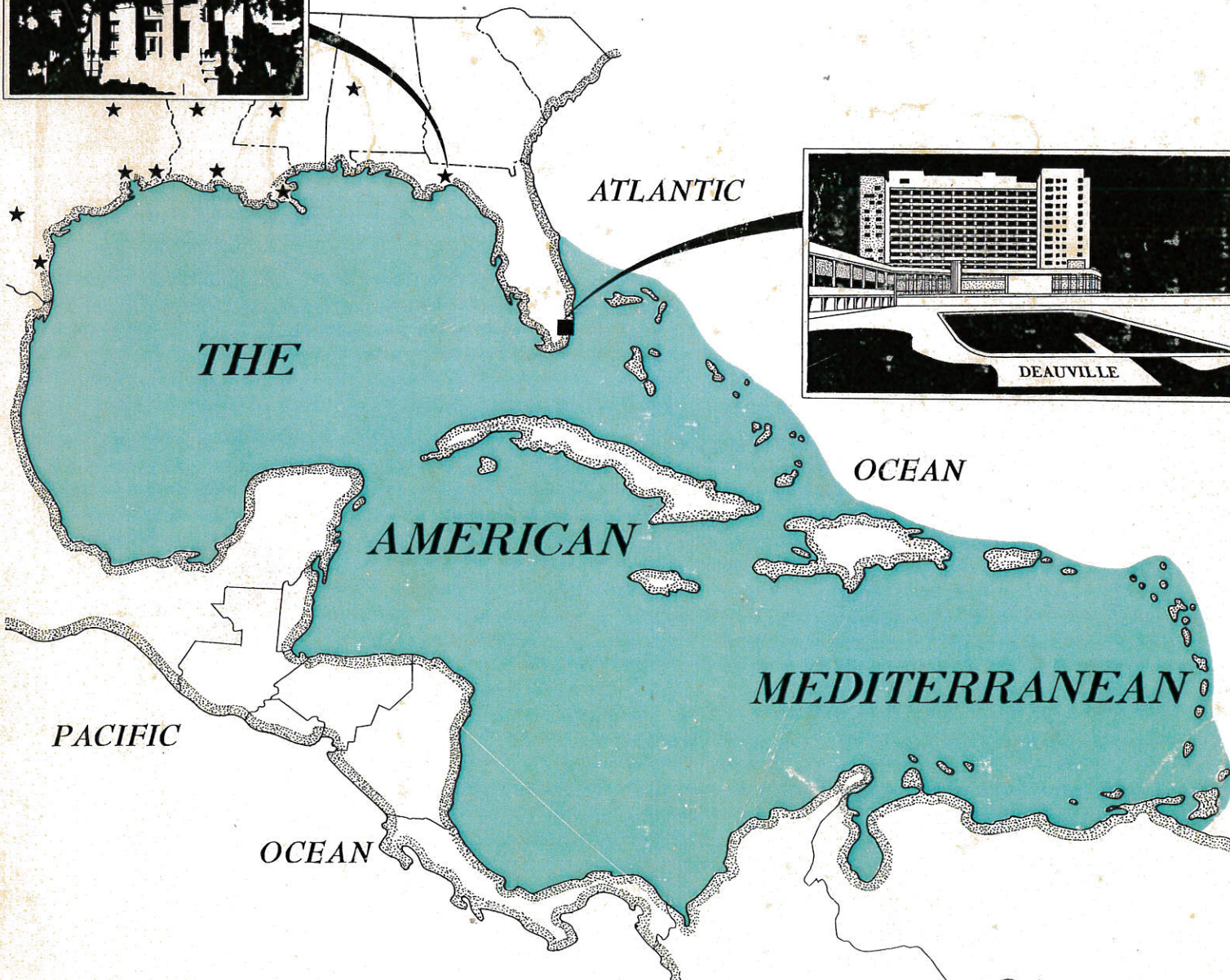
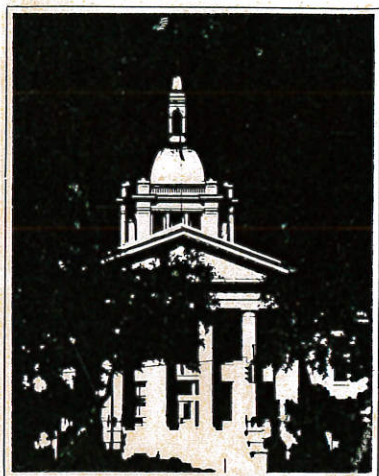
Neil M. Sullivan

GULF COAST ASSOCIATION of GEOLOGICAL SOCIETIES

TRANSACTIONS

19th ANNUAL MEETING

Theme: "GEOLOGY
of
THE AMERICAN MEDITERRANEAN"



MIAMI BEACH, FLORIDA

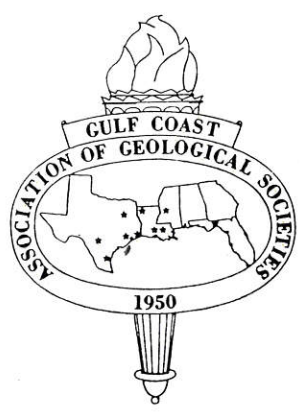
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VOLUME XIX 1969



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STEPHEN S. WINTERS
Editor

Prepared for the

NINETEENTH ANNUAL MEETING OF THE GULF COAST ASSOCIATION OF GEOLOGICAL SOCIETIES AND REGIONAL A.A.P.G. MEETING

held in cooperation with the
SOCIETY OF ECONOMIC PALEONTOLOGISTS AND MINERALOGISTS

OCTOBER 29-NOVEMBER 1, 1969

MIAMI BEACH, FLORIDA



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PRESIDENT'S REPORT

All earth life is dependent physically, biologically, and chemically upon a fine equilibrium in the adjustment and balance in the interaction of this life with the mineral, fluid and gaseous resources. The misuse of these resources, or the change in the balance of the interaction of life processes with these, results in environmental problems—today the source of much attention from the public and governmental agencies—judicial, executive and legislative.

Apparently man can live in isolation on the world and in its environment with little more than the proverbial loaf of bread. As the world population increases alarmingly, and affluence follows, togetherness becomes necessary and difficult. We are approaching the limits to the pollution of water, air, the sub-surface, the ocean, and the earth's surface around us, that we can and are willing to tolerate.

Earth scientists, and particularly those oriented toward the discovery, production and use of fossil and nuclear fuels, have, with their specialized training and experience, the potential to provide answers to many of the environmental problems facing the world today. Answers to the safe disposal of noxious fluids, to the storage of potable waters in the sub-surface in areas where evaporation rates are high, and where surface reservoirs are not available or where surface storage is impractical, are only two of many ways we can contribute to improving our environment.

Opportunity has not ceased to knock, and to make a million dollars you can still outline a dirty job that needs to be done, organize or develop a better way to do the job and sell the service, activity or mechanism to eliminate the problem.

In planning an orderly world, the input from the geological sciences must be available before any planning of land use is projected. The knowledge of water and mineral resource occurrence, availability, and use must be available before, during and after the development of the land. Geologic hazards—natural or conceived through man's use of the land—sinkholes, mining scars, earthquakes, landslides, mine collapse, leakages and dam failures, foundation slippages, pollution and waste disposal require that the earth scientist become intimate with these problems and that his community participation must be over and above that required of him professionally, and for which he may expect a reasonable return of dollars.

A high priority must be given by the sciences to alerting the citizen to geologically oriented problems, and it is necessary that the elected officials and community leaders be involved in the solution.

The geological sciences must generate these contributions to solutions of these problems and the solutions must be sold to the civic meetings, county commissioners, state legislature, the Congress and the President if we are to regain that reasonable balance between the use of the air, water, and mineral resources, and the maintenance of a liveable, enjoyable environment and an adequate reserve of expendable resources.

The opportunities for the geoscientists are greater today than ever and await the participation, dedication, and coordination of us all. Join the petrochemihydrogeoscience work-corps and start today.

1968-69 has been a tremendous year for the Gulf Coast Association of Geological Societies. We are in sound financial shape, our membership continues to increase, the Gulf Coast Bibliography is a reality, and I know as you read this report you will be realizing a most successful, educational and enjoyable convention. Thank you for the opportunity to have had you in Florida—

Robert O. Vernon
Chief, Bureau of Geology
Division of Interior Resources
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Tallahassee, Florida

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REPORT OF THE GENERAL CHAIRMAN NINETEENTH ANNUAL MEETING 1969

The present 19th Annual Meeting of the Gulf Coast Association of Geological Societies is the first time the Southeastern Geological Society has had the pleasure of being the host society for the meeting.

Our responsibilities have been made easier because of the excellent reports and suggestions furnished us by the various committee chairmen of last year's Jackson meeting.

We have adhered to the objectives of the GCAGS and GCS-SEPM and thus have tried to provide a balanced, as well as diversified, program, field trips, ladies activities, and entertainment. It has been a great pleasure to work with the dedicated men on the GCAGS and the GCS-SEPM committees. If this convention is a success, it is because of the conscientious hard work by the members and the chairmen of the various committees who so willingly gave their time, talent and facilities.

The theme of the meeting differs somewhat from the past meetings in as much as we are considering the entire American Mediterranean which, in addition to the Gulf of Mexico, also includes isolated basins bordered by North, Central, South America, and the Caribbean Sea. Since this basin has a large potential for oil and gas production, an understanding of the geologic history is essential in exploration and exploitation of gas and oil reserves. To meet this challenge, the program on the "Geology of the American Mediterranean" will provide some answers to the complicated structural, sedimentary, and paleoecological problems encountered in this area. It is also the first time that a colloquium has been organized and presented by the GCAGS and another in the form of a Symposium by the GCS-SEPM. These colloquia, we hope, will give an opportunity to the participants to express their views on the time boundaries, ecology, paleoecology and structure of the region.

Harbans S. Puri
General Chairman

REPORT OF THE EDITOR

Each year for nearly two decades the editors of the Transactions have enjoyed the privilege of editing and assembling technical papers and abstracts of high quality and interest. This year, "Geology of the American Mediterranean," theme of the meeting, has generated a large number of stimulating papers. The editor wishes to acknowledge the fine cooperation of contributing authors and the area geologists who assisted in the critical reading of manuscripts. In particular, the work of George DeVore, Chris Harper and Cam Mosher of the Department of Geology, Florida State University, and Woody Oglesby, Steve Windham and Bill Yon of the Florida Geological Survey is appreciated. Lyman D. Toulmin, editor of the Gulf Coast Section of S.E.P.M. has been most helpful in the preparation of this volume of the Transactions.

The Table of Contents has no logical order (it approximates the program at the meeting) but papers and abstracts for the colloquium and symposium are respectively grouped together. An author index has been added this year to serve as a cross reference.

Undoubtedly the wide range of problems and topics presented in this volume will add immeasurably to our understanding and application of geology in the exploration and exploitation of oil and gas reserves in the American Mediterranean.

Stephen S. Winters

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REPORT OF THE PRESIDENT GULF COAST SECTION, SEPM 1969

Sixteen years ago, a group of far-sighted paleontologists initiated efforts to establish the Gulf Coast Section of the Society of Economic Paleontologists and Mineralogists. The primary objective of the section was "to promote the science of stratigraphy in the Gulf coastal states through research in paleontology and sedimentary petrology, especially as they relate to petroleum geology." Subsequently, elected officers were to coordinate paleontologic and petrographic studies in the Gulf Coast area which would promote the recognition of these sciences, and cooperate and work closely with all local geological societies.

Participation of our membership in achieving and promoting the above objectives throughout the year has been outstanding. During the past year, many of our members published papers which have contributed to the knowledge and understanding of the biostratigraphic complexities of the Gulf Coast and adjacent areas. Numerous others served on geological society study groups, or committees of scientific societies. Others worked with Boy Scout groups; served as science fair judges; were field trip leaders for geological societies, local "rock hound" clubs and science classes, or participated in similar activities of a civic nature.

Quarterly luncheon or dinner meetings and programs were held during the year by the Houston, New Orleans, and Lafayette chapters. It is hoped that similar meetings will be initiated during the coming year by business representatives in other areas having sufficient local membership. The Section's contributions to the 1969 GCAGS Annual Convention were outstanding, with forty percent of the total technical papers, two field trips, and eleven Gulf Coast type locality synopses generated by the unselfish, dedicated efforts of our members. All having participated in the activities of the Section can collectively take pride in its accomplishments as a successful team effort.

The interval from 1953 to present has been a period of growth and progress for the Gulf Coast Section. Membership has doubled during the organization's existence. Approximately three-fourths of the current membership are affiliated with the petroleum industry with the remaining twenty-five percent being affiliated with academic, state, or federal organizations. A vigorous and sustained effort was maintained throughout the past year to encourage non-SEPM members to join the national organization and for SEPM members in the Gulf Coast area to join the Section.

Again this year the Section enjoyed a close liaison with both the national SEPM and the AAPG. Doris Curtis and Greg Turner served ably as Gulf Coast delegates to the SEPM annual business meeting in Dallas. The Gulf Coast Section was honored to have Dr. Lloyd C. Pray, national SEPM president, attend the convention and address the presidential luncheon.

I wish to express my appreciation to the GCAGS which has for the past sixteen years graciously allowed the Section the opportunity to participate in and contribute to the overall success of the annual convention. The *Transactions* provide a highly sought-after publication on Gulf Coast geology and biostratigraphy containing informative and timely papers, many of which have become indispensable references for the region.

I wish to thank the membership of Gulf Coast Section, SEPM, for allowing me the honor and privilege of serving their organization and profession in an administrative capacity during the past year. Amendments to the Section's Constitution and Bylaws, which will enable the organization to function more efficiently, were submitted to the membership by the Council. A 1968-69 membership list, newsletters, and special mailings were sent to all members. Arrangements were made which will enable a portion of the Section's money to draw interest and steps were taken to painlessly retire, over a three-year period, the Section's longstanding debt to GCAGS.

I gratefully acknowledge the contributions, teamwork, and support of the outgoing Council: Vice President Ed O'Quinn, Secretary Jim Fowler, Treasurer Bill Steinkraus, Past President Ben Petrusek. Editor Lyman Toulmin efficiently handled all technical papers submitted through GCS, SEPM. Jim

Kennett, our Program Chairman, did a very commendable job of arranging the Section's technical program and, together with Lyman Toulmin, coordinating the SEPM program with that of the GCAGS. Jim Lamb conceived the idea for our symposium on the Marine Quaternary, solicited the papers, aided in their editing, and served as symposium chairman. Field Trip Committee Chairman, Jules Dubar, and Co-Chairman, Ted Robinson, are especially recognized for making available two outstanding field excursions for the convention.

Last, but certainly not least, I wish to thank all committee chairmen and our twenty local business representatives whose unsung efforts are vital to the continuing success of the Section.

WILLIAM A. ATLEE

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

The Editor of the Gulf Coast Section—S.E.P.M. acknowledges assistance from the local societies and area representatives in soliciting papers. He is especially grateful to James L. Lamb for organizing the symposium, to Program Chairman James P. Kennett for his contributions, to Richard P. Zingula for editing the type locality descriptions, and to the authors for their promptness and cooperation. The quality and number (31) of papers attest to the vitality of the Gulf Coast Section of the Society of Economic Paleontologists and Mineralogists.

Lyman D. Toulmin

BEST PAPER AWARDS EIGHTEENTH ANNUAL MEETING JACKSON, MISSISSIPPI

Three authors were recognized for their outstanding contributions at the Eighteenth Annual Meeting of the Gulf Coast Association of Geological Societies, held in Jackson, Mississippi, October 23-25, 1968.



First Prize: To John D. Myers, Independent Geologist in Jackson, Mississippi, for his paper, "Differential Pressures: a trapping mechanism in Gulf Coast oil and gas fields." He received the B.S. and M.S. degrees in geology from Mississippi State University. Prior to becoming an Independent in 1968, Mr. Myers served twelve years as a geologist for Phillips Petroleum Company.

Second Prize: To E. H. ("Rainey") Rainwater, geological consultant for Tenneco Oil Company, for his paper, "Geological history and oil and gas potential of the Central Gulf Coast." He received the B.S. degree in geology from Mississippi State University and did post-graduate work at Northwestern University and Indiana University. In addition to his principal activity in petroleum exploration, he has taught and been a special lecturer at many universities both at home and abroad and is currently Lecturer for the A.A.P.G. Continuing Education Program. This is the fourth time a paper by Rainey received recognition at G.C.A.G.S. Meetings. The other awards were made in 1960, 1963, and 1964.



Third Prize: To Dudley J. Hughes, partner in Hughes and Hughes, consulting geologists and oil operators, Jackson, Mississippi, for his paper, "Salt tectonics as related to several Smackover fields along the northeast rim of the Gulf of Mexico Basin." He received the B.S. degree from Texas A&M University. Mr. Hughes has been a petroleum geologist since 1951, forming his present partnership in 1965. He received an outstanding paper award in 1960 at the G.C.A.G.S. Meeting in Biloxi, Mississippi.