

PACIFIC PETROLEUM GEOLOGIST

NEWS LETTER OF THE PACIFIC SECTION AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS

Volume 21

January, + 1967

Number 1

ASSOCIATION ACTIVITIES

SENATOR MURPHY ATTACKS CORRAL CANYON REACTOR SITE

Senator George Murphy, in a recent letter to Dr. Glenn Seaborg, Chairman of the AEC, has strongly criticized the governmental staff procedures in selecting Corral Canyon as a site for a nuclear power generator in Malibu. He noted that the Regulatory Staff has requested a reversal of the decision of the Atomic Safety and Licensing Board regarding the safety of the site, a decision reached after 41 days of hearings in Santa Monica.

Senator Murphy suggested that the staff, "... having made a hasty and possibly ill considered judgment in the first place, based on incomplete and erroneous information, now finds itself backed into a corner, its infallibility successfully challenged, its 'facts' controverted and its conclusions found wanting, and is trying to save face". He noted that the Los Angeles Department of Water and Power, after agreeing to attempt to redesign the proposed plant to meet the objections of the Licensing Board, now is objecting to the decision of the Licensing Board itself.

The Corral Canyon proposal has developed into a heated controversy in geological circles because of the appearance of distinguished geologists for both sides during the hearings.

During the hearings, according to Senator Murphy, it was proved that the Regulatory Staff had "caused the wording of a key conclusion of the USGS to be changed against the wishes of the authors of the report". This wording affected the USGS conclusion regarding the risk of ground displacement at the site. He also remarked on the many parallels between Corral Canyon and a proposal to build a reactor at Bodega Head near the San Andreas fault. The Bodega Head site has subsequently been rejected.

In his letter, Senator Murphy advised the AEC to review their site selection program to permit thorough assessment of geological factors involved prior to the initial application. He observed that "the Corral Canyon case raises serious questions concerning your - - procedures for licensing nuclear facilities as well as questions regarding the competency and objectivity of the Regulatory Staff in making judgments to the public health and safety".

He noted that some of the interested parties have recommended a congressional investigation into the whole field, but indicated his reluctance to support such a hearing "when such simple, corrective measures seem to be so available".

PACIFIC SECTION AAPG SPECIAL LUNCHEON MEETING

"Oil Exploration in North Alaska", a 16 mm color movie filmed and narrated by Dr. Sigmund Snelson, Shell Oil Company, Los Angeles, 12 Noon, February 2, 1967, Rodger Young Auditorium, 936 W. Washington Boulevard, Los Angeles.

For reservations, call Mrs. Dorothy Conley, Humble Oil & Refining Company, phone 879-2700, ext. 317, or write Glen Specht, Humble, 1800 Avenue of the Stars, Gateway East, Los Angeles 90067

NORTHWEST GEOLOGICAL SOCIETY

The monthly dinner meeting was held at the Country Broiler south of Seattle on Tuesday, December 6. AAPG Distinguished Lecturer E. L. Dillon presented a most interesting talk entitled "Modern Geology Requires Modern Technology". One of the largest groups of the year attended the meeting to hear about the latest tools of the geological profession.

CALENDAR

January 10 is set as the next meeting for the Northwest Geological Society at the Poodle Dog Restaurant in Fife. Dave Rahm of Washington State University will discuss "Aerial Views of Northwest Geology". Happy Hour at 6:00 P. M. - Dinner at 7:00 P. M.

In February AAPG Distinguished Lecturer Dr. A. W. Bally, Manager of Exploration for Shell Development in Houston, will deliver his talk on "Oil and Gas Exploration, Seismic Reflections and Mountain Building in the Canadian Rockies". Tentative plans call for the meeting to be held February 21 at the Poodle Dog.

* * * * *
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1967 - 1968

Ballots will be mailed in mid-February

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DEADLINE FOR NEXT ISSUE----January 20, 1967.

NOTE FROM THE EDITOR:

The PPG typewriter with the special large type has been ailing for some time. During the typing of this issue, it finally slipped into a coma so we hope that this small type will be legible.

The Professional Corner

JOBS FOR GEOLOGISTS - A NEW CYCLE BEGINS

(Editorial)

A number of petroleum geologists attended the National G.S.A. meeting in San Francisco in November. Many things were impressive - - two days of heavy rain (more like Houston than San Francisco), an array of outstanding papers on the San Andreas fault, geomagnetic reversals, sea floor spreading, and other matters. But perhaps the most startling observation was the number of jobs for geologists that are now available.

The national convention of the G.S.A. is sort of a geological Farmer's Market - - job opportunities are posted on a large bulletin board, prospective candidates sign up for interviews, and there is much dickering in the hallways over salaries, job opportunities, and so forth. It is clear that today the geologist is in demand. The blossoming of local campuses of state universities in California, New York, Illinois, and elsewhere requires a large number of PhD's to staff the local earth sciences departments. The U.S.G.S. is hiring new people. The junior colleges are expanding their earth sciences offerings. The mining companies are looking for people. And, yes, so are the oil companies.

The cycle was predicted by nearly everyone. A few years back, when geologists were pounding the sidewalks, undergraduate enrollments dropped drastically. Now, a small crop of graduates is ready for employment in an expanding, competitive job market.

To be sure, the employers are not hiring indiscriminately. The dissatisfied petroleum geologist who, upon accepting employment, gave up reading the current literature in favor of sliding E-logs and trying to keep the boss happy, will not find a job. But to the experienced geologist who has maintained himself professionally, horizons are indeed broad, even with only a master's degree.

There is a note to major oil company management in this. No longer do the major oil companies enjoy a large salary advantage over the universities, at least not the larger universities. No longer do the majors hold a thumb over their geologists because of limited opportunity elsewhere.

Clearly, if the oil companies wish to maintain imaginative, highly capable staffs, to search for expensive offshore oil professional upgrading is necessary, both in salary and in professional recognition. And, if the money placed on the table at the recent Federal drainage sale is an indication of things to come, such upgrading is an essential investment in the future of West Coast oil.

- Bob Yeats -

"Modern Geology Requires Modern Technology"

by Ed. L. Dillon, Shell Oil Co.

The marked increase in the use of computers by geologists is having a pronounced effect both in the field of oil and gas exploration and in management reporting. The number of geologists who are effectively using new computer techniques is increasing, but unfortunately at a rate slower than is justified by the versatility of these techniques. A number of geologists risk falling behind professionally because they are not remaining abreast of the latest technology which can be applied to their chosen field.

One of the problems facing the oil and gas industry is the assimilation of the large quantity of information which is being made available for the very first time through various computer file and retrieval systems. During 1966 the various well data systems, which include most of the United States and parts of Canada, released to their subscribers some one billion characters of basic well information in machinable form. The continuation of the work of these systems during 1967 will increase this volume of machineable data to approximately two billion characters of information. This is not new information: it is information which has been buried in the files of the oil and gas companies and the individual geologists because it was previously in a form which could not be analyzed effectively. A natural partner to this generation of large machine files is the development of programming techniques that offer much more powerful methods for analyzing geological data. In most cases, the publication of these new programs has been limited to special releases by state surveys and universities. There has been too little publication of the results of applying these programs to the analyses of geologic data in oil and gas producing basins of economic importance. Through simple illustrations and a few direct examples, it is possible to show how these techniques may lead directly to the finding of oil and gas prospects.

One of the most active areas of progress in management reporting has been the development of statistical data gathering and compilation techniques, led by the AAPG's Committee on Statistics. This effort has come at an opportune time for it fits in perfectly with a greatly increased demand for information, as voiced by the United States Department of Interior, with the increasing awareness of company management and state surveys of the importance of well statistics, and the efforts of the American Petroleum Institute to establish certain basic standards for the handling of well data.

UNIVERSITY OF SOUTHERN CALIFORNIA

For a number of years, this department has undertaken to provide advanced courses in the evening program not only for people interested in higher degrees, but also for those persons in industry who wish to expand their training in some particular field.

The department is offering the following courses in the evening program during the Spring Semester, 1967. Registration will be February 2 - 4

Ground Water	6-9 P. M.	Monday
Advanced Structural Geology	7-10 P. M.	Thursday
Engineering Geology	6-8 P. M.	Thursday
Lunar Geology	6-10 P. M.	Tuesday
Remote Sensing	6:30-8:30 P. M.	Wednesday

In addition, Oceanography will be offered at 4 P. M. Wednesday and Friday, and Petrography at 4 P. M. Tuesday, in case late-afternoon classes can be taken.

The monthly dinner meeting of the Coast Geologic Society was held in the Jet Room at Ventura on November 9. Our guest speaker was Mr. Louis F. Villanueva, geologist with Tidewater Oil Company. Mr. Villanueva's talk was titled, "Oil Exploration in the Spanish Sahara, Africa".

He presented a resume' on the logistics, operational procedures employed, and the geology of the Spanish Sahara and Canary Islands. The talk was supplemented with colored slides of exploratory activity, and the long "commute" from the Canary Islands.

Mr. Villanueva's assignments with Tidewater Oil have been in the Ventura Basin, Offshore Los Angeles, San Joaquin, and Sacramento Basins. His foreign work has included study of Bolivia, Paraguay, Peru, and Argentina, and the more recent assignment on the Spanish Sahara. The discussion of this "African Campaign" covered exploration activity from the initial reconnaissance to the drilling of a wildcat well.

Continental Oil at Ventura reports that JIM STEVENS is in the hospital for surgery and will be out of pocket for a couple of weeks. Jim recently returned from his vacation. Some vacation that must have been!

In addition, BOB BERINGER is nursing aches and pains from his first encounter with skis in the Sierra over Thanksgiving holiday.

DON DE MAY - new geophysicist from Billings is a scuba diving enthusiast. Wild bunch these Continental boys!

At the recent GSA meeting in San Francisco BRICK ROBINSON, DON LINDSEY, BOB SNEIDER, SIG SNELSON, NORM MC IVER, and JIM ELISON of Shell Oil were careful not to let the natural outcrop of the area go unattended. Of particular interest to the Shell delegation was the structure and outcrop distribution of the North Beach area.

SAN JOAQUIN VALLEY

January 10, 1967

Tuesday Evening, 6:30 P. M.
Social Hour 5:30, American Legion Hall, 17th & L Streets Bakersfield: San Joaquin Geological Society, "The Application of Passive Microwave Radiometry to Geological Mapping", by J. M. Kennedy, Advanced Microwave Systems Division of Space General Corp. (Mr. Kennedy was formerly an exploration geologist with Superior Oil Company.)

January 9, 1967

Monday Evening, 7:30 P. M.
Bakersfield College, Science & Engineering Building, Room 56. Biostratigraphic Seminar, "The Distribution of Upper Cretaceous Planktonic Foraminifera in California", by Dr. Robert G. Douglas, University of California, Davis.

February 6, 1967

Monday Evening, 7:30 P. M.
Bakersfield College, Science & Engineering Building, Room 56. Biostratigraphic Seminar, "Modern Foraminiferal Faunas from off the Oregon Coast", by Dr. Gerald A. Fowler, Oregon State University.

PERSONALS

Recent visitors to the U. S. C. campus were DR. KIYOSHI ASANO and DR. YOKICHI TAKAYANAGI of Tohoku University, Sendai, Japan. While there, they participated in a symposium on the Neogene of the Pacific Rim in which DR. ORVILLE BANDY of U. S. C., DR. JAMES KENNETT of New Zealand, and local geologists participated. DR. JAMES INGLE of U. S. C. is presently at Tohoku University on an exchange arrangement.

DICK STORY, Shell, Los Angeles, has been transferred to the Area Staff. Replacing him as Northwest Division Manager is QUEY HEBREW, Chief Geologist. The new Chief Geologist will be former West Coaster, WALT WINFREY, who is presently in Houston, Texas with Shell Development Company.

Recent additions to the Shell Development staff in Ventura are ART SYLVESTER, who recently received his PhD from U. C. L. A., and BOB SMITH, from the Los Angeles office, and JACK HOWARD, Shell Development, Houston.

January will see the return of DANA BRAISLIN from Olympia, Washington to Los Angeles. Dana has been District Geologist for Union at Olympia for 5 years and during that time has become a well known supporter of the Pacific Northwest. HAROLD BILLMAN will remain as Union's Exploration representative for Washington and Oregon.

DREW HAMAN is a new paleontologist in Standard's Seattle office. Drew is a native of Wales and recently obtained his Doctorate at the University College of Wales.

It has been reported that JOE SCHWEITZER of Standard in Seattle and his family are traveling to Southern California for a vacation in the "sun" over the Holidays.

MR. & MRS. DARRELL KIRKPATRICK, Consultant, Bakersfield, returned November 17th from a six week tour of Europe and the Near East. They visited the IVANHOES and CHRISTIANSONS in Rome and the ED WELLBAUM family in London. They just barely beat the Northern Italy floods when they left Venice.

DICK VAUGHN, Occidental, is back from Libya to spend the holidays in Bakersfield.

MRS. WES BRUER is wearing a plaster-of-paris stocking for the Holiday Season. WES insists that he didn't push his wife off the curb when she suffered a broken leg.

BILL PARK, AAPG AND AIPG member, has been appointed to Congressman-elect Bob Mathias' Staff as Administrative Assistant. Bill has been an Associate Oil and Gas Engineer with the California Oil and Gas Division for the past 14 years. He has been serving on the Bakersfield City Council also. Best of luck, Bill, on your new endeavor.

BOB CRITCHLOW, Occidental, has returned to Bakersfield after spending several months in Libya.

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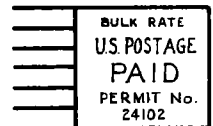
Volume 21

Number 1

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Pauley Petroleum, Inc.
10000 Santa Monica Blvd.
Los Angeles, Calif. 90067

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PACIFIC PETROLEUM GEOLOGIST

NEWS LETTER OF THE PACIFIC SECTION AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS

Volume 21

February, + 1967

Number 2

ASSOCIATION ACTIVITIES

LIVING UP TO OUR NAME

Within the last couple of years, we have been reminded repeatedly that "Petroleum" is our middle name. I have especially tried to remember this when soliciting papers for the noon luncheons at the Rodger Young Auditorium. As a result, we have had papers with subject matter ranging from space photography to computer technology, all presented within the context of usefulness to petroleum geologists. The speakers are to be commended for excellent talks, and the attendance has been good. Yet, I wonder if our technical meetings really live up to that which our name implies.

If you will look at our speaker resources, you will see what I mean. Of our first eight speakers three have been consultants working on projects outside of the petroleum industry, two have been University personnel, one has been a government scientist, one has been a distinguished lecturer (Oil Company employee) and one has been a local Oil Company employee. We are indebted to people from outside the industry for contributing to our knowledge, and ask that this flow of information be continued. I believe, however, we can all see a distinct lack of papers coming from the petroleum industry itself.

In looking for means to correct this situation we may find inspiration in the list of "Research Needs" published in the August 1957 Bulletin. Of all the exotic research needs rated at that time, one listed among the most important was "Detailed Studies of Producing Fields." Here, I believe, is a challenge to the great majority of our membership, the operations personnel. Our colleagues in research can theorize sedimentary and structural geology, oil source, hydrodynamics, capillarity and so forth, but we in operations have the responsibility of testing these theories in every prospect we generate and every well that we drill. Reporting on the validity of these theories in field situations should be a professional obligation of each of us.

It is realized that much data obtained during drilling operations must be held confidential so long as it has competitive economic value. Note, however, that nearly 2,500 wells are drilled in California each year and, certainly, some of these wells must have stories which can and should be told. Also, isn't there some data which was confidential seven or eight years ago, but can now be released?

As I write this I am reminded of an unusual tilt of the water table in the "X" Pool. And what about those wet sands 100' above the "Main"? Why haven't hydrocarbons accumulated in them?

How about you? Remember, "Petroleum" is our middle name. Lets live up to it. If you have a paper on petroleum geology, please let me know.

Glen Specht
Noon Luncheon - Program Chairman

ANNUAL HOLIDAY DINNER-DANCE DRAWS LARGE TURNOUT

More than one hundred couples, the largest attendance of the decade, enjoyed the Annual Holiday Dinner-Dance of the Pacific Section AAPG-SEG-SEPM, held December 16th in the Banquet Rooms aboard the S.S. Princess Louise at Terminal Island. The evening opened with cocktails and hors d'oeuvres provided thru the courtesy of our many friends among the service companies. Dinner - cruise ship cuisine - was served in the glass-enclosed dining room in the fantail, overlooking the harbor, and was followed by dancing to the music of Carrol Wax and his Orchestra.

Dance Committee Chairman Lou Heintz is to be commended for a noteworthy evening. The beautiful table decorations were provided by Barbara Heintz and her bridge club. Also assisting in the arrangements were Tom Wright and Glen Campbell.

The Pacific Section is especially appreciative of the fine support given by the following organizations:

Mercury Christensen Diamond Bit Co.
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Western Offshore Drilling and Exploration Co.
Schlumberger
Geologic Engineering Service
Munger Oilgram
Byran Jackson
McCullough Tool Co.
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Exploration Logging
United Geophysical
Pacific Oil Well Logging
Rapid Blueprint
Western Geophysical
Dyna Drill
Geological Exploration
General Oceanographics
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LOS ANGELES -- NOON LUNCHEON

March 2nd, Roger Young Auditorium. Dr. Roland von Huene, U.S.N.O.T.S. at China Lake will speak on "Marine Geophysical Observations at the Juncture of the Murray Fracture Zone and the Transverse Ranges".

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Membership Secretary	Pat Metcalf

NEXT DEADLINE - FEBRUARY 15

FLASH! News correspondents needed for L. A. Basin representation - no previous experience required. Contact the P. P. G. Editor, John Terpening, at 772-4115

The Professional Corner

DEPARTMENT OF GEOLOGY
UNIVERSITY OF SOUTHERN CALIFORNIA
ANNOUNCEMENT OF EVENING GEOLOGY COURSES FOR
SPRING SEMESTER, 1967

A new course, Seminar of Geologic Interpretation of Remote Sensing Imagery (Geology 600) will be taught by Dr. Floyd Sabins of Chevron Research Corporation in University College (evening school) during the Spring Semester. This two unit course is especially designed for interested personnel in the petroleum and aerospace industries. It will meet on Wednesday evenings from 6:30 to 8:30. Registration for evening classes is from 1:00 to 4:30 P.M., Friday, February 3 and 8:30 until noon on Saturday, February 4.

The purpose of the seminar is to explore the earth science applications of remote sensor imagery, including the ultraviolet, infrared, and microwave bands of the electromagnetic spectrum. Three broad questions vital to remote sensing will be examined: (a) how do earth materials interact with various bands of the electromagnetic spectrum, (b) how are these energy changes detected and imaged, and (c) how is the remote sensor imagery interpreted? Throughout the seminar, emphasis will be on working with imagery, rather than theoretical and equipment design problems.

Major topics encompassed by the course are the earth's energy field covering the electromagnetic spectrum, and matter and energy relationships; detection and imaging in which types of sensor, photographic, microwave, and infrared imagery will be studied; and imagery interpretation. Field problems will include ground truth studies and sensor imagery studies of the Pisgah Craters, Indio Hills, Imperial Valley, and the Carrizo Plains. One or two weekend field trips will be made to several of these localities. Other applications of remote sensing for pollution studies, oceanography, military terrain analysis, forestry, and engineering will be investigated.

OTHER UNIVERSITY COLLEGE (EVENING) COURSES
AT USC:

Ground Water, Geology 525-L, 6:00-8:00 Monday, Dr. John F. Mann, Jr.

Seminar in Lunar Geology, Geology 565, 6:10-7:30, and 8:00-10:00 Tuesday, Dr. Jack Green.

Seminar in Advanced Structural Geology, Geology 532, 7:00-9:50, Thursday, Dr. Gregory A. Davis.

Seminar in Engineering Geology, Geology 536, 6:00-7:40 Thursday, Dr. Richard H. Merriam (Prerequisite, Geology 527, Engineering Geology).

Over the Hill and Down the Creek, by Walter Youngquist.
The Caxton Press, Caldwell, Idaho, 1966, 322 p. \$5.00

Normally the Pacific Petroleum Geologist doesn't have book reviews, since other publications contain adequate sections for reviewing geological literature. But Youngquist's book is of such a nature that a review in the P.P.G. seems not only desirable but necessary.

Most of us are aware that the personal lives of many of our colleagues contain many adventures which, if collected in book form, would make mighty interesting reading. Whenever I sit in on a bull session with a group of field geologists, and the conversation runs from Alaskan bear stories to mapping in the Spanish Sahara, Tierra del Fuego, or other out-of-the-way places, I generally end up thinking somebody ought to be taking notes.

Well, somebody was, and the result is Over the Hill and Down the Creek. As Youngquist says in his foreword, "Some of the experiences which I and my fellow geologists have had seem to me to be too rich a lore to be lost; unfortunately, to date these stories have been largely unrecorded. I heard these tales around campfires in the Andes, in the lounge of the Biltmore Hotel during a lull in the annual meeting of the A. A. P. G., and on summer field trips with my graduate students."

Stories about geologists have appeared in book form before. But the average reader finds it difficult to identify with giants of the profession like Bailey Willis in A Yanqui in Patagonia or Hans Cloos in Conversation with the Earth. Youngquist's book is, rather, our story, including the trials and tribulations of graduate school, encounters with rattlesnakes in the Pacific States while doing field work, the economic tribulations of an under-paid geology professor ("too much month at the end of the money"), and field work and home life while working for an oil company in South America. In reading the book, you feel that you're reading about yourself, or somebody you know.

The ease of identification was such that my wife appreciated the book more than I did, which may be another way of saying that Youngquist told my story better than I could myself. At least, she became aware that the mode of dress, the conversation, the interests, and the problems of my circle of acquaintances were somewhat related to the profession as a whole rather than individual peculiarities, and, therefore, something she could mention in public. (Flushed with this success, I now plan to give the book to my mother-in-law.)

It is the ease with which Youngquist tells the geologist's story to laymen that has led to this book review. At a time when geology is seeking its own recognition commensurate with that given to chemistry, physics, and the life sciences, the personal side of a geologist's life needs to be told. Youngquist has done this with a light-hearted, humorous style that makes the book a real pleasure to read.

The book is perfect for the high school junior or senior who is casting about for his life's work and may, in his investigations, consider geology. There is excellent source material about the profession available to him through A. G. I. But the clincher may be this book, which makes me wish that a copy of it might be on the shelf of every high school library.

I'll let Youngquist say it. "The colorful old prospector... has a modern equivalent - the professional geologist. He uses a Jeep instead of a burro. And he may even have a Ph.D., but the rattlesnakes he meets aren't impressed, nor is the rain, the snow, the mud, nor the poison ivy..."

"The geologist must be equally at home in a dugout canoe in western Brazil, or in the research laboratories and classrooms of a university. And therein lies the theme of this book. To find new oil fields to supply your gasoline needs, or find the copper mine from which will come your latest model TV set five years hence, some geologist is at this moment paddling along an Amazon tributary; another is walking across the central Australian desert. A third one is probably in the hospital recovering from one or the other of the trips."

In what other profession is it possible to "visit the Grand Canyon and claim (sometimes even legitimately) that he is working?"

Bob Yeats

COAST GEOLOGICAL SOCIETY

On Friday December 9, 1966 one hundred and four members and guests of the Coast Geological Society thoroughly enjoyed their annual Champagne Dinner Dance. The dance was held at the Ventura Women's Center overlooking the city and dancing, dining and champagne toasts lasted until 1:00 A.M. Success of the affair was insured by generous contributions from the following listed companies:

Magcobar
Geological Exploration Inc.
W. W. Murphy
Exploration Logging Inc.
Western Offshore Drilling and Exploration Co.
Borst and Giddens Logging Service
Aden W. Hughes
McCullough Tool Co.
Schlumberger Well Surveying Corp.
Baroid Well Logging Service
Core Laboratories Inc.
Dave Dimitt Directional Drilling
Geologic Engineering Service
Pacific Oil Well Logging Inc.
Lane Wells Co.

SAN JOAQUIN SECTION

CALENDAR

- March 6, 1967 Monday evening, 7:30 P.M., Bakersfield College, Science & Engineering Building, Room 56, Biostratigraphic Seminar "Proposed USGS Studies on San Andreas Fault", by Dr. Robert E. Wallace, USGS - Geologic Division
- March 14, 1967 Tuesday evening, 6:45 P.M. Social Hour 5:45 P.M. American Legion Hall, 17th & L Streets, Bakersfield, California San Joaquin Geological Society "Railroad Gap Area - New Reserves in an Old Province" by J. S. Cunningham and M. Zeni. Standard Oil Co. of California, WOI.
- April 7, 1967 Monday evening, 7:30 P.M., Bakersfield College, Science & Engineering Building, Room 56, Biostratigraphic Seminar "Ecology of Recent Radiolaria", by Dr. Richard Casey, University of Southern California.

Water Supply Paper 1696-D: Quantitative determination of tritium in natural waters, by C. M. Hoffman and G. L. Stewart 15¢

Water Supply Paper 1757-E: The occurrence, chemical quality and use of ground water in the Tabulbah area, Tunisia, by L. C. Dutcher and H. E. Thomas \$1.25

Water Supply Paper 1869-C: Velocity-head coefficients in open channels by Harry Hulsing, Winchell Smith and E. D. Cobb 25¢

Geophysical Abstracts 238, November 1966 35¢

Geophysical Abstracts 239, December 1966 35¢

Abstracts of North American Geology, October 1966 45¢

Abstracts of North American Geology, November 1966 45¢

Professional Paper 543-D: Geologic effects of the March 1964 earthquake and associated seismic sea waves on Kodiak and nearby islands, Alaska, by George Plafker and Reuben Kachadoorian 60¢

Circular 518: Reports and maps of the Geological Survey released only in the open files 1965 by B. A. Weld, M. S. Griffin, and G. W. Brett. 16 pages Free

Circular 532: The interior of the earth - An elementary description, by E. C. Robertson, 10 pages Free

Circular 535: Distribution of gold, silver, tellurium, and mercury in the Ely mining district, White Pine County Nevada, by G. B. Gott, and J. H. McCarthy, Jr. 5 pages, 10 maps Free

MAPS:

GQ 529: Geologic map of the Blanco Mountain quadrangle, Inyo and Mono Counties, Calif., by C. A. Nelson \$1.00

GQ 548: Geologic map of the Mount Vernon quadrangle, Grant County Oregon, by C. E. Brown and T. P. Thayer \$1.00

GP-561: Aeromagnetic map of parts of the Mother Lode gold and Sierra Foothills copper mining district, California, and its geologic interpretation, by J. R. Henderson, Jr. A. A. Stromquist, and Anna Jespersen. 75¢

HA-199: Preliminary map of the conterminous United States showing depth to and quality of shallowest ground water containing more than 1,000 parts per million dissolved solids, by J. H. Feth and others (Reprinted 1966) \$1.25

HA-218: Fresh-water springs of Hawaii from infrared images by W. A. Fischer, D. A. Davis, and T. M. Sousa 75¢

HA-222: Hydrology and physiography of the Salton Sea, California, by W. M. Littlefield, 50¢

HA-239: Floods in Kahaluu area, Oahu, Hawaii, by M. M. Miller \$1.00

HA 212: Annual runoff in the conterminous United States, by M. W. Bushby 75¢

I-272: Geology of the San Francisco North quadrangle, California by J. Schlocker, M. G. Bonilla and D. H. Radbruch (Reprinted 1966) \$1.00

I-498: (LAC-42) Geologic map of the Mare Serenitatis region of the Moon, by M. H. Carr \$1.00

I 512: Geologic map of California. Compiled by U. S. Geological Survey and California Division of Mines & Geology (Scale 1:2,500,000) (Note: This is a correction. Incorrectly listed in December issue of this paper as I-521. Ed.) 25¢

Open Filed Reports (Inspection only)

Location of pingos and pingolike mounds observed from the ground, from aerial reconnaissance, and on aerial photographs in interior Alaska, by G. William Holmes. 13 pages.

Progress report on analog model construction, Orange County, California, by E. H. Wall, and J. A. Moreland. 49 pages 4 figs.

Methods for estimating ground-water withdrawals in Madera County, California, by William Ogilbee. 42 pages 1 fig.

Geologic maps of Bradley and Tierra Redonda Mountain quadrangles, Monterey and San Luis Obispo Counties, by David L. Durham. 2 maps, scale 1:24,000

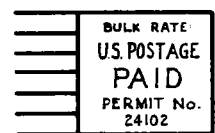
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Volume 21

Number 2

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AAPG - HEADQUARTERS - NEWS RELEASE

ABSTRACT

HENRY H. NEEL

MICHEL T. HALBOUTY, addressing the Interstate Oil Compact Commission, December 13, stressed the looming shortage of domestic oil the U. S. is facing unless better conservation methods are practiced and new oil reserves are discovered.

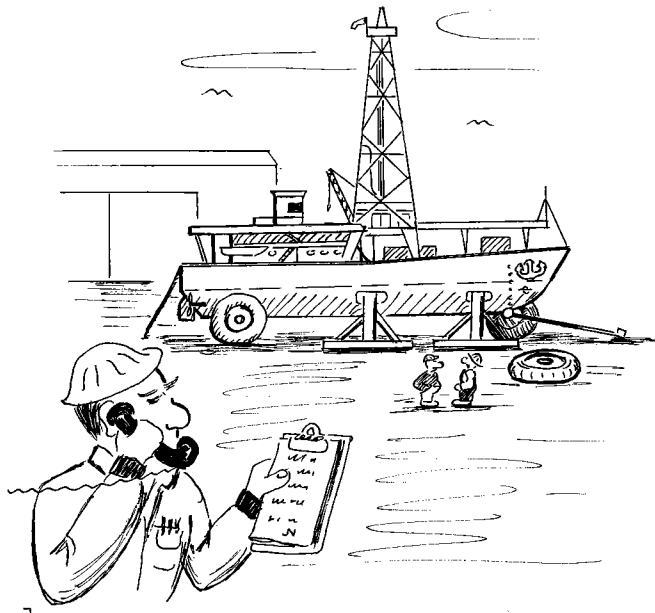
The Metropolitan Water District of Southern California supplies water to 26 different distribution agencies in Los Angeles, Orange, Riverside, San Bernardino, San Diego and Ventura Counties. In its future planning for additional supplies the District has been interested in determining the feasibility of desalting sea water. With this in mind, it entered into a contract in 1964 with the Office of Saline Water of the Department of Interior, and with the Atomic Energy Commission to jointly sponsor an engineering and economic feasibility study for a combination nuclear power and desalting plant.

He urged a "crash program in exploration, since any surplus of oil and gas production is temporary and before long the country will be facing a serious shortage in domestic supplies of oil and gas."

Bechtel Corporation was awarded a contract to perform this study. The initial phase of the study consisted of a preliminary survey of possible sites for producing desalted water and introduction of this water into the MWD system. Seventeen sites in Ventura, Los Angeles, Orange and San Diego Counties were evaluated. Of these, only ten were strategically located for delivery of the 150 million gallons per day into the system. Three of these ten were selected as being superior. Detailed analyses were made for each of these three sites in the fields of engineering, soil engineering, meteorology, geology, oceanography, marine biology and seismology. These analyses indicated that an artificial island opposite the Bolsa Chica Gun Club was the most desirable site. This has been named the Bolsa site. The specific location for the Bolsa site was made only after geological study of the area between Sunset Beach and Huntington Beach determined the most optimum geologic setting.

The antidote for this is to bring the wildcatter back into the picture, said MR. HALBOUTY. He explained that the wildcatter must be allowed to make a profit, and one way to do that would be for the Federal government to stop offering offshore leases for sale, but a more important way would be to require by law that all oil and gas prospects and fields be unitized.

Halting of the sale of offshore leases, where produced oil and gas belongs to the government, would be a tremendous incentive for domestic explorers to return to the onshore hunting grounds, he said.



THAT'S RIGHT, BOSS - ONE MORE WHEEL AND A BIG ENOUGH TRACTOR, AND WE'RE BACK IN BUSINESS.

The geological problems which were particularly considered in this study were:

1. Active faulting, through or adjacent to the proposed site which might be expected to produce permanent differential displacement.
2. Active faulting near the site which might be expected to produce significant temporary displacement as a result of earthquakes generated by fault movement.
3. Subsidence caused by the consolidation of young sediments underlying the alluvial deposits on the ocean floor.
4. Subsidence or consolidation caused by the reduction of formation pressure due to the withdrawal of oil or gas.
5. Subsidence caused by the withdrawal of ground water.

In addition to the information available from subsurface oil-well data, core-hole data, electric logs of oil wells and core holes and data on known faulting in the Huntington Beach offshore field, all of which was generously furnished by various oil companies, it was necessary to do considerable work specifically for this project. Seismic profiles made with a high resolution Boomer and Sparkarray provided basic data for interpretations of the geological conditions existing above the shallowest oil well information.

The seismic profiles revealed faulting, unconformities and pinch-outs, all of which could adversely affect the installation if it were improperly located. One fault appears to come to the surface and actually exhibits a submarine scarp. Other faults showed no movement since the Pleistocene.

The clarity with which these records showed faults and pinch-outs of even very minor significance, indicated that any geological hazards of sufficient magnitude to be serious could have escaped notice. Notwithstanding this, however, the next phase of the investigation will include geological work in much greater detail to safeguard against the possibility of having missed any particular geological factors which should be considered.

Please address all comments directly to the National AAPG. - Editor PPG -

PERSONAL ITEMS

BOB FLAHERTY, formerly District Manager for Atlantic Richfield, Bakersfield, has been transferred to Lafayette, Louisiana in a similar position. BILL KEELER formerly in Dallas replaces Bob.

JOHN WEIDMANN visited the Bakersfield office of Atlantic Richfield recently. He is returning to the North Sea area for a minimum two year assignment.

REX YOUNG, Atlantic Richfield, Bakersfield, can be seen in the late evenings and early mornings, piercing his way through the fog on his new semi-motorized bicycle. He has to use a little manpower to help the motor over Bakersfield's small hillocks.

JUDY WRAY became the bride of TAD FYOCK, Geologist with Texaco, Bakersfield, on December 21, 1966 in Oregon.

MARK ROBINSON, formerly from New Orleans, replaces HOP CONGER as Division Exploration Manager for Shell in Bakersfield. HOP CONGER is transferred to the Houston Division as Senior Staff Geologist.

GUY L. BURGE, JR., Geophysicist, formerly with Superior in Casper, Wyoming is now employed by Union Oil Company in Bakersfield.

JOHN KELLEY, a recent graduate of San Jose State has joined the USGS staff at Elk Hills.

In August, 1966 D. KEITH MURRAY joined Sinclair Oil & Gas Company's Western Region office in Denver as Senior Geologist.

A. A. CARREY has returned from Manila to Long Beach and opened a consulting office at 2875 Cherry Avenue - Phone 427-8425.

William H. LeRoy has been named Manager of Exploration for Reserve Oil and Gas Company, effective January 1, 1967.

BIBLIOGRAPHY
OF RECENT PUBLICATIONS

GEOLOGICAL SOCIETY OF AMERICA BULLETIN
vol. 77, no. 8, August 1966

Structural interpretation of sandstone dikes, northwest Sacramento Valley, California by Gary L. Peterson.

GEOLOGICAL SOCIETY OF AMERICA BULLETIN
vol. 77, no. 10, October 1966

Kelso Dunes, Mojave Desert, California, by Robert P. Sharp

Evidence for an early Recent warm interval in northwestern Alaska, by David McCulloch and David Hopkins

Paleoecologic implications of Early Permian fossil communities in eastern Nevada and western Utah, by Calvin H. Stevens.

GEOLOGICAL SOCIETY OF AMERICA BULLETIN,
vol. 77, no. 11, November 1966

Gravity in the eastern Klamath Mountains, California, by T.R. LaFehr

Diagenetic stability of temperature-sensitive skeletal properties in *Mytilus* from the Pleistocene of California, by J. Robert Dodd.

K/Ar chronology of the Tucson Mountains, Pima County, Arizona, by Michael Bikerman and Paul E. Damon

Facies changes in the Cambrian Muav Limestone, Arizona, by W.H. Wood.

Tieton volcano, a Miocene eruptive center in the southern Cascade Mountains, Washington, by Donald A. Swanson

U. S. GEOLOGICAL SURVEY

Professional Paper 403-I: Smaller foraminifera from Guam, by Ruth Todd 75¢

Professional Paper 422-J: Resistance to flow in alluvial channels, by D.B. Simons and E.V. Richardson 50¢

Professional Paper 500-C: Probability concepts in geomorphology, by A.E. Scheidegger and W.B. Langbein 20¢

Professional Paper 524-F: A compositionally zoned ash-flow sheet in southern Nevada, by P.W. Lipman, R.L. Christiansen & J.T. O'Connor \$1.00

Professional Paper 543-B: Geomorphic effects of the earthquake of March 27, 1964 in the Martin-Bering Rivers area, Alaska, by S.J. Tuthill and W. M. Laird 30¢

Professional Paper 544-A: Effects of the March 1964 Alaska earthquake on the hydrology of south-central Alaska, by R.M. Waller 30¢

Professional Paper 544-B: Effects of the March 1964 Alaska earthquake on the hydrology of the Anchorage area, Alaska, by R.M. Miller 60¢

Professional Paper 560-B: Geology of the Arabian Peninsula, Yemen, by F. Gueken, Translated from the French by S.D. Bowers 30¢

Professional Paper 560-H: Geology of the Arabian Peninsula, Eastern Aden Protectorate and part of Dhufur, by Z.R. Beydoun. \$1.00

Bulletin 1240: Sources of fertilizer minerals in South America - a preliminary study, by J. F. Harrington, D.E. Ward, and V.E. McKelvey 60¢

Bulletin 1244-A: Changes in stratigraphic nomenclature, by the U.S. Geological Survey, 1965, by G.V. Cohee and W.S. West 25¢

Water Supply Paper 1592-C-D:
C: Free-surface instability correlations.
D: Roughness-concentration effects on flow over hydrodynamically rough surfaces, by H. J. Koloseus and Jacob Davidian 40¢

Water Supply Paper 1610-D: Waterpower resources and Reconnaissance geology of sites in the Alsea River basin, Oregon, by L. L. Young, D.W. Neal, and D. L. Gaskill 70¢

PACIFIC PETROLEUM GEOLOGIST

NEWS LETTER OF THE PACIFIC SECTION AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS

Volume 21

March, + 1967

Number 3

ASSOCIATION ACTIVITIES

AAPG UNDERWATER FIELD TRIP --

Persons wishing to take part in the first underwater field trip to be sponsored by a national convention should send their applications with the required \$15.00 deposit to:

John K. Cassell
Exploration Department
Standard Oil Company
P. O. Box 606
La Habra, California

A questionnaire will be sent to all applicants to determine their equipment needs (U.S. Navy Electronics Laboratory will furnish tanks, regulators, fins, and face plates) and sizes.

As now planned, the first day will be spent 17 miles off San Diego at the Coronado Islands, Mexico studying the biogenous sediments, old beach levels, algal nodules, and erosion by organisms. The unique Miocene (?) sandstone and conglomerate beds exposed on the islands will also be available for sampling and study. These beds have many undescribed sedimentary features that will interest most geologists.

The second day will be spent in the heads of Scripps and La Jolla Submarine Canyons. Scripps Canyon is located just north of Scripps Institution of Oceanography and is cut in resistant Eocene shales, sandstones, and conglomerates. Submarine erosional features, organic-sediment mats, and evidence of mass movement of canyon fill are well demonstrated in this canyon. Gas is generated in the sedimentary fill and can be collected by interested participants.

One mile to the south, La Jolla Submarine Canyon presents an entirely different type of erosion than that seen in Scripps, in that it is cut through a thick section of Pleistocene alluvium and Holocene lagoonal sediments. The difference in erosional forms is due to the difference in competence of the two types of wall rock. Excellent comparisons can be made and related to features seen in ancient rocks. Pure carbonate beds 2 to 4 inches thick

--continued--

and of unknown origin are unique features of the lagoonal sediments. Submarine erosion has been measured to be as high as 2 feet per year in some of the channels cutting the head-wall of this canyon. Organic reworking is extensive. Submarine erosional features related to sand flows, slumping, bottom currents, along with burrows of different types are well developed.

The field party will be divided into two groups consisting of 3 five man teams. Each team will be escorted to key areas by two geologists from NEL familiar with the dive area. Underwater signs will be posted to explain the different stops along the underwater traverses. An illustrated field guide book will also be provided.

Classification Committee

The A. A. P. G. Classification Committee and the Conservation Committee have announced their new lists of "California Oil Field and Pool Names", and "California Gas Fields and Pools" effective January 1, 1967. Copies may be obtained by contacting M. C. Barnard, Jr., Atlantic Richfield Company, 5900 Cherry Avenue, Long Beach or by phoning 423-7921, Ext. 31.

Members of the Classification Committee are:

M. C. Barnard, Jr.	-	Atlantic Richfield Company
Cliff Edmundson	-	Shell Oil Company
R. R. Knapp	-	Standard Oil Company
L. E. Chatfield	-	Texaco, Inc.
Bernard Minch	-	Union Oil Company
D. E. Ritzius	-	Division of Oil and Gas
T. H. Sisk, Jr.	-	Humble Oil & Refining Co.
J. D. Traxler	-	Signal Oil and Gas Co.
W. R. Wardner, Jr.	-	Conservation Committee of California Oil Producers
M. T. Whitaker	-	Mobil Oil Company