p. 2-3. P. B. King - Structural Geol. of W. North America

PACIFIC PETROLEUM GEOLOGIST

NEWS LETTER OF THE PACIFIC SECTION
AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS

ASSOCIATION ACTIVITIES

Volume 15 January 1961 Number 1

PACIFIC SECTION INCORPORATION

Your Executive Committee recommends approval by the membership of our proposal to incorporate the Pacific Section, A.A.P.G. because, by incorporating, we reduce exposure of officers and members to personal liability involved in incurring of financial obligations.

Bill Edmund, the Sacramento Petroleum Association member on the Executive Committee, has rendered us a great assistance and financial saving by securing the voluntary services of Mr. Vernon Barrett, of the law firm Wellborn, Barrett and Rodi, in the drafting and processing of the papers connected with incorporation. Mr. Barrett advises the following: "The outstanding advantage of incorporating an organization of this type is to reduce the exposure of its members to personal liability, particularly those members who take action in behalf of the association which leads to the incurring of financial obligations. A corporation is an artifically created person who can own property and have duties and obligations in much the same manner as a natural person. When officers deal in behalf of a corporation, they can without much difficulty make it clear that the obligations they are incurring are those of the corporation and not their own. An unincorporated association is generally an unsatisfactory arrangement in terms of its rights and duties and its ownership of property and corresponding rights and duties of its members."

Prior to filing papers on incorporation, it is necessary that our membership approve this proposed move. In addition, certain minor constitutional changes are in order so that the printed matter fits currently recognized facts.

Please refer to your December, 1960 issue of P.P.G., page 2, and note the following proposed changes:

Article I. After the words "This organization" insert "whose area of interest comprises the Pacific coastal region"

Article III, Section 1. Delete "and residing in California, Oregon, or Washington."

Article IV, Section 2. Delete the word "and" after the words "San Joaquin Geological Society", substitute a comma for the period after the words "Coast Geological Society," and add the following, "and one member selected by the Sacramento Petroleum Association."

In connection with Article I and Article III, Section 1, above, the facts are that we do have a large membership residing outside of the three Pacific Coast states, and in connection with Article IV, Section 2, you will remember that we welcomed affiliation by the Sacramento Petroleum Association late last year.

Please vote yes on the ballot below, sign your name, and return to:

Robert O. Patterson, Secretary
Pacific-Oil Well Logging, Inc.
714 West Olympic Boulevard
Los Angeles 15, California

Ballot must be in hands of Secretary by January 25, 1961 to be counted!!

Ballot

	(Put "X" in box below) Yes	No
1. Incorporation of Pacific Section of A.A.P.G.	☐	☐
2. Amend Articles of Constitution as proposed above. (Note, that if you favor incorporation these changes should likewise be approved by a "yes" vote.)	☐	☐

_____
Signature - Active Member

PACIFIC PETROLEUM GEOLOGIST

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Alaska Correspondent	Robert Kenyon
Los Angeles Correspondent	
Northwest Correspondent	Malcolm B. Greene
Sacramento Correspondent	Lowell Garrison
San Francisco Correspondent	D. H. Pfeiffer
San Joaquin Correspondent	Ronald G. Heck

Next Deadline: January 27, 1961

SACRAMENTO GEOLOGICAL SOCIETY

On December 13, 1960 Philip B. King (USGS) spoke on the "Structural Evolution of Western North America" before members of the Sacramento Geological Society.

Abstract

Western North America is the region of the Cordilleran system of mountain ranges, which extend inland from the Pacific Coast 400 to 1,000 miles to the Great Plains of the continental interior. The landscape of the region has been shaped by surface processes of erosion, sedimentation, and volcanism, but ultimate cause of the features is deeper in the crust, in processes that have deformed the rocks, brought about emplacement of magmas, and raised or lowered large sections of the surface. These processes, though spasmodic, are persistent through history. In considering the growth of a mountain system such as the Cordillera, they may be generalized into a geosynclinal phase, an orogenic phase, and a post-orogenic phase.

The geosynclinal phase was a time of sedimentation and rather mild crustal activity. In the Cordilleran region it persisted through Paleozoic time and through the first half of Mesozoic time.

The orogenic phase began earliest in the western part of the Cordillera, broadly in mid-Mesozoic time--in places in the Jurassic, elsewhere somewhat later. Rocks formed in this part of the geosyncline were deformed, metamorphosed, and invaded by large bodies of magma. The deformed rocks were raised into a land surface, from which detritus was shed westward into the Pacific Ocean basin, and eastward as a broad sheet into the interior of the continent, across the remainder of the geosyncline.

During Cretaceous time, deformation progressed eastward from the initial disturbed belt, folding and faulting the rocks of the Great Basin area, more lightly affecting those on the site of the Colorado Plateau, and more heavily affecting those in the Rocky Mountains beyond. In the southern part of the Rocky Mountains, zones of weakness had already been created by mountain-making during Paleozoic time. By the close of the orogenic phase, in Late Cretaceous and Paleocene times, deformation had reached the edge of the present Great Plains, but it progressed no farther inland.

The folding and faulting of the orogenic phase did not produce the modern topography. While the surface was raised and lowered by it, leveling processes of erosion and sedimentation were active and prevented development of strong relief; moreover, regional altitudes remained low.

Modern surface features evolved by a multitude of crustal processes during the post-orogenic phase, in Tertiary and Quaternary times. Intermontane basins subsided (as in Wyoming and Colorado), large areas were broken up by block faulting (as in the Great Basin), and other large areas were overspread by lava (as in the Columbia Plateau), and mountains were formed by the building of chains of volcanoes (as in the Cascade

Range). Besides, extensive regions were uplifted relative to their surroundings, with little internal deformation. The largest uplifted region centered in the Rocky Mountains and extended into the Great Plains and Colorado Plateau; it was raised mainly before later Tertiary time, but with diminishing uplifts into the Pleistocene. Smaller, more complex uplifts took place somewhat later in the Sierra Nevada and Cascade Range; in the Sierra Nevada, uplift was accompanied by marked faulting along the eastern side.

The post-orogenic (Tertiary and Quaternary) movements raised the Cordilleran region to its present generally high altitude. Streams quickened by the uplift and by increased rainfall during the Pleistocene, etched out the mountains and canyons; mountain barriers prevented free circulation of moisture-laden winds from the Pacific and heightened the climatic contrasts. Since mid-Tertiary time, regional relief, local relief, and climatic contrasts have been greater in the Cordillera than at any earlier period.

Throughout geologic time, the Cordilleran system has been bordered on the west by the deep Pacific Ocean basin, floored by crustal material different from that of the continent. It is unlikely that any additional lands ever existed offshore that have since foundered to oceanic depths. More likely, continental area has been added at the expense of ocean basin by various accretionary processes. On the other hand, land connections persisted intermittently along the strike of the Cordilleran system, between North America, Asia, and South America, as the coastal areas of all three are part of a circum-Pacific belt of mountain structures whose origin, like the North American Cordillera, extends far back into the geologic past.

NORTHERN CALIFORNIA GEOLOGICAL SOCIETY

The Northern California Geological Society has elected the following slate of officers for 1961:

President: William P. Winham
Standard Oil Co. of Calif.
Vice-President: Earl W. Hart
Calif. Div. of Mines.
Secretary-Treasurer: William K. Gealey
Calif. Exploration Co.

1962 NATIONAL MEETING

Technical Program Committee Chairman Graham Moody and Co-Chairman John Kilkenny, AAPG-SEPM Convention 1962, held an important meeting with General Convention Chairman Gordon Oakeshott recently to begin crystallization of the program for the 1962 Convention to be held in the San Francisco Civic Auditorium March 26 - 29 of that year. Members of the Committee are: Graham Moody, John Kilkenny, Ed Lammers, Antonie Paap, Art Huey, Bob Dyk, Dana Braislin, Vic King, William Barbat, Oliver Bowen, Herschel Driver, Bill Goth, Roger Alexander, Mason Hill, and John Hazzard. Tentative plans are for a research symposium and discussion Monday afternoon and evening, March 26, 1962, on automatic data processing and its application to geology. The following Tuesday morning, in conformance with tradition, will be devoted to the National President's program. Tuesday afternoon will offer a series of papers on the geologic setting for petroleum in California and selected papers on exploration for oil and gas in California, including offshore geology and offshore developments. Wednesday morning will continue the convention theme of circum-Pacific petroleum exploration, with a wider group of circum-Pacific papers, including authoritative discussions on Alaska, Baja California, the Gulf of California area, and the western coast of South America. That afternoon the eastern hemisphere will be treated by a series of papers dealing with Japan, the Philippines, Indonesia, Papua, and New Guinea, and the latest developments in Australia. The Thursday morning program will be on the general oceanic area of the Pacific, including Pacific oceanography, submarine features, seismicity of the Pacific belt, deep sediments in the Pacific Ocean, and an up-to-date account of the Mohole project. Thursday afternoon will conclude the program with papers on world-wide developments outside the circum-Pacific theme. These will be on such areas as Africa, the Middle East, and Europe. The Committee is currently crystallizing these ideas into invitations to geologists and related scientists who are best prepared to make presentations of value. The ideas of the readers of PPG are invited.

IN MEMORIAM

Rebecca Woodward, daughter of Warren Woodward, Shell Oil Company geologist, was aboard the United Airlines plane that recently crashed over New York. Miss Woodward was returning to New York for the Christmas holidays.

HOLIDAY DINNER DANCE

The Holiday Dinner Dance, sponsored jointly by the Pacific Section, A.A.P.G., S.E.P.M. was held December 17, 1960, at the Oakmont Country Club. 224 persons enjoyed the dinner and dancing to the music of Ivan Scott and his orchestra, as well as the cocktail party preceding which was sponsored by donations from the following service companies:

Lane-Wells
Exploration Logging
Robert Ray
Schlumberger
Western Offshore
Cook Testing
Formation Logging
B. J. Service
United Geophysical
Western Geophysical
Munger Oilogram
Rapid Blueprint
Pacific Towboat
Geol. Exploration
Partain Exploration
Johnston Testers
Welex
Mojave Mud Company

The dance committee wishes to thank all the persons attending and the service companies for their help in making the dance a successful affair.

COAST GEOLOGICAL SOCIETY

An interesting and well-presented talk on "The Timber Canyon Field," was given by Spence Fine, Richfield Oil Corporation, Ojai, at the Pierpont Inn, Ventura, on December 13, 1960.

Located approximately 4 miles north of Santa Paula at an elevation of about 2600 feet, Timber Canyon Field is one of the more unique fields of the Ventura Basin. The producing sands

dip steeply northerly and are overturned, being part of the south flank of the Sulphur Mountain anticline. The sands also crop out updip from the producing wells and are oil-stained. There is a column of oil sand nearly a mile high, thus the reservoir is literally standing on end. The geology of the area is complex. A typical well may spud in Eocene, encounter the San Cayetano fault, where a Monterey fault sliver may be present, then drill in Pliocene of the north flank of the anticline before encountering the Sisar (?) fault, below which the "Santa Margarita" and producing basal Pico sands are overturned. About 500 bbls/day of 35 gravity oil is produced at the present time, and the principle mechanism of drainage may be gravity.

NORTHERN CALIFORNIA PETROLEUM ROUND TABLE

On Friday afternoon, December 23rd, the Northern California Petroleum Round Table held a cocktail party for members of the Sacramento industry at the Sacramento Inn. Thanks are extended to contributors to the 7th annual N. C. P. R. T. Barbecue held this summer at the Yolo Fliers' Club, Woodland. Their generous support financed both activities:

Blackwelder Iron Works
Newton Drilling
Borst and Giddens Well Loggers
Johnston Testers
Exploration Logging
Santa Fe Drilling Co.
Western Geophysical Co.
Schlumberger Well Surveying Co.
United Geophysical Co.
Rental Tools Corp.
Butte Creek Rock Co.
Leutholtz Crane Co.
Asta Construction Co.
John N. De Witt
Brown Service Co.
Guarantee Title Co.
Hunnicut and Camp Drilling Co.
Evers Drafting Service

COAST GEOLOGICAL SOCIETY

John Beall, who was elected Vice President of the Coast Geological Society in November, has found it necessary to resign because of a transfer to Los Angeles. The Coast Society has, therefore, elected a new officer, Charles F. Johnson.

President:	Harry Whaley P. O. Box 811 Ventura, Calif.
Vice President:	Charles F. (Chuck) Johnson P.O. Box 670 Santa Paula, Calif.
Secretary:	Eugene C. (Gene) Johnson P.O. Box 691 Ventura, Calif.
Treasurer:	James J. (Jerry) Williams P.O. Box 3035 Ventura, Calif.

LOS ANGELES LUNCHEON MEETING

Clarence Allen spoke before the Los Angeles Luncheon Meeting, December 1, 1960, on "Strike-Slip Faulting in Northern Chile." Pierre St. Amand, as senior author, worked jointly with Allen on the paper.

Abstract

Several right lateral strike-slip faults parallel the north-trending coastline throughout most of northern Chile. A conjugate left lateral set strikes east to northeast and is particularly evident north of Iquique. Here the system rotates so the dextral faults trend northwest parallel to the Peruvian coast. Evidence of Recent activity decreases markedly inland.

The major north-trending Atacama fault zone probably is more than 1000 km long. Discontinuous breaks delineate its southern end for 300 km south from Copiapo, but northward the El Salado segment is clearly continuous for 180 km through El Salado to Taltal airport, where it is offset by a northwest-trending sinistral fault. The probable offset equivalent extends 450 km north from Paposa through Salar Remiendos and Salar Carmen to Salar Grande, where branches pass out to sea. Alluvial scarps testify to Recent activity along all segments of Atacama fault. Although the youngest displacements near Antofagasta have been predominantly vertical, an overall history of dextral strike slip is suggested by (1) linearity over hundreds of kilometers, (2) rift topography, with no consistent differential evaluation across the fault, (3) dextral stream offsets near Salar Grande, (4) Moletrack scarps, and (5) widespread horizontal slickensides. Rakes of slickensides averaged 29° in 52 mines throughout northern Chile along this and subsidiary faults.

The largest demonstrable Recent displacements are on northeast-trending faults: sinistral stream offsets average 0.4 km along Camarones fault 7 km southeast of the mouth of Rio Camarones, and a parallel fault 10 km east offsets Quebrada Chiza 1.5 km.

DIRECTORY AND CROSS SECTIONS

The new directory and cross sections are available from Harry Stuveling, Jr., Pacific Log Exchange, 11515 East Washington Blvd., Whittier, Calif. Remittance in full must accompany orders: Directory: $3.50 postpaid. Cross Sections: $2.00 each postpaid.

No.	A.A.P.G. Sections
1	Sacramento Valley - South (2 sheets). North side of Sacramento Valley through Rio Vista, Thornton and Lodi Gas Fields, including Mt. Diablo-South Sacramento Correlation Chart.
2	Ventura Basin - East (1 sheet) Basement North of Oak Canyon Oil Field to Aliso Canyon Oil Field.
3	Los Angeles Basin (1 sheet) Palos Verdes Hills to San Gabriel Mountains.
4	Salinas Valley (1 sheet) San Antonio River northerly to San Andreas Fault, through San Ardo Oil Field.

6 Sacramento Valley - North (2 sheets)
A. From T-23N, R-1W through R-16N, R-1E; and
B. Correlation Chart.

7 Ventura Basin - Central (1 sheet)
From Santa Ynez Fault north of Ojai to Western Santa Monica Mountains, through Ventura Avenue and West Montalvo Oil Fields.

8 San Joaquin Valley - South (1 sheet)
From San Andreas Fault to Sierra Nevada Foothills, passing through Belgian Anticline, McKittrick, Elk Hills, Coles Levee, Fruitvale, Kern River and Round Mountain Fields.

9 Central San Joaquin Valley (1 sheet)
From San Andreas Fault to Sierra Nevada Foothills, passing through Coalinga, Guijarral Hills and Riverdale Fields.

10N Central San Joaquin Valley (1 sheet)
From Rio Vista to Riverdale through Rio Vista, McDonald Island, Tracy, Chowchilla, Gill Ranch, Raisin City, Helm and Riverdale Fields.

10S Central San Joaquin Valley (1 sheet)
From Riverdale to Tejon Ranch through Riverdale, Trico, Wasco, Rio Bravo, Greeley, Strand, Ten Section, Paloma, Wheeler Ridge, Grapevine and Tejon Ranch Fields.

11 West Side San Joaquin Valley (1 sheet)
From Coalinga to Midway-Sunset and across San Andreas Fault to southeast Cuyama Valley.

12 Santa Maria Basin (1 sheet)
From Lompoc to Nipomo Hills through Lompoc, Orcutt and Santa Maria Valley Fields.

13 Sacramento Valley - North-South (1 sheet)
From Redbluff to Rio Vista through Beehive Bend and River Island.

PERSONAL ITEMS

The Union Exploration Department Hawaiian Christmas party was held in Bakersfield just prior to the holidays. Secretaries Sharon Liefer and Betty Michele provided authentic hula entertainment.

Chuck Cary is the Union San Joaquin Valley 1960 Golf Champion with a low 12 month total. Ed Borglin is runner up and Joe Rossi placed 3rd.

Joe Johnson formerly with Shell in Bakersfield, Los Angeles, and Olympia has resigned and is home in Bakersfield. Future plans have not been announced.

John Castano, Shell, Bakersfield, after ordering a new Rambler with refrigeration quickly changed the order to an extra heater upon learning of his transfer to the Southern Alaska District. John and family are presently residing in Seattle.

As of the second week in January, 1961, the California Division of Mines and Geology will be located in new quarters in the New State Building: Room 1065, 107 South Broadway. Please note the change in Telephone, too. MAdison 0-3560.

Exploration Logging threw a dance at the Del Norte Country Club, Thursday, December 18th. Some suggestions for the next time (?) --- Friday night instead of a week night.

Ernie Lian, Ohio, and wife have just recently sold their La Crescenta home and plan to move elsewhere after the first of the year. They are reportedly looking for a neighborhood full of children. This is difficult?

Humble Oil's Bill Smith is being transferred to Chico, California from the Los Angeles office.

Lauren Wright of the California Division of Mines made his annual journey to Shoshone to mail his Christmas cards, as evidenced by the postmark on the incoming mail.

Hal Fothergill, Union Oil, henceforth known as the "Durango Kid", took over Union's Durango District office January 1. Anyone looking for a place in Arcadia that has just been recarpeted, redraped and repainted can contact Hal's local representative for further heart-breaking details.

Welcome to Ed Larson and George Harlow of Humble, who have just transferred from Eugene, Oregon to undertake subsurface work in the Los Angeles office.

Gene Johnson, Shell, was recently nominated Secretary of the Coastal Geological Society by Frank "Mum-C-Puffs" Yule and was elected in spite of campaign promises of a drink for each vote cast for his opponent. We expect many good personal items as a result of this election.

Eric Lindvall Richfield, Ojai, recently decided to go into orbit via the electronics industry. Eric has resigned from geology to join an electronics firm in the San Fernando Valley. Rumor has it that Eric will earn more greenbacks as a trainee than he would as a senior geologist!!!

Have you noticed the quizzical look on the brow of Wayne Lowell? It seems that an original geological map of the Santa Monica Mountains that he loaned to an unnamed friend some 30 years ago, was returned by mail with an illegible signature.

Word has come in that John Kirkpatrick of Superior has been transferred to their Billings, Montana office.

Hurry - hurry - all prospective purchasers of Bull. 170, on the geology of Southern California, California Division of Mines, are advised to buy at the old price of $12.00 plus 48¢ tax for California residents. All orders received prior to February 1, 1961, will be honored at the $12.00 price. After February 1, 1961, the price for this set will increase to $13.00 plus 52¢ tax for California residents. Copies of this set may be ordered by mail from either the Los Angeles office, 512 W. Fifth Street, or the San Francisco office, the Ferry Building.

Warren Woodward, formerly of Los Angeles, was recently transferred from Farmington, New Mexico to Shell's New York office.

Union Oilers up and down the coast and points east are tensely waiting for the tentative visit of the modern-day hatchet men, the "McKensie Raiders!". Reliable sources report that these efficiency experts do not sport horns or fangs!

Anchorage Petroleum Club members are anxiously waiting the picture spread in Sports Illustrated which will depict Gulf's Jim Wylie and Ivy League friends braving the wilds of Alaska on a moose hunt. It is understood that Jim missed the shooting of both moose and pictures.

Humble Oil's double switch brings in John Elliott from the Castaic office and sends Glen Specht from Los Angeles to Castaic.

Earl David, Shell Scout from Seattle, and Harry Jamison, Richfield geologist from Los Angeles, were recently seen together in the Chart Room Bar of the Westward Hotel in Anchorage. They were overheard discussing the relative merits of being trapped by bad weather in King Salmon or Yakataga.

Walt "Curly" Fillippone has left the Ivory Tower and is setting up shop as District Geologist in Union's Denver office.

The grapevine has reported Bob Paschall's grudging admission of actually enjoying his Los Angeles transfer from Ojai. Sheer heresay, Bob!

The Richfield Research Department is researching the identity of Santa Claus at John Wiese's Christmas-Housewarming party. The party was a tremendous success and it is only hoped that house damages were not too extensive.

Bob McConville, Signal Oil, was recently in town, thawing his bones during a well timed business trip from Signal's Calgary, Canada office.

J. Hubert Mee has joined Standard's Sacramento staff as area landman.

A recently observed get-together east of Piru involved Sam Cayetano and Oscar Oakridge, prominent tectonic experts.

New personnel to the Sacramento area are Joe Jones and Dorman Graves of Southland Royalty Company. Offices are at 3382 El Camino Avenue, Sacramento 21, California. Telephone is IVanhoe 33146.

A total of 15 U.S.C. alumni from the South San Joaquin Valley area got together to renew old ties December 15th, and found it to be such a success they would like to make it a regular affair. Interested ex-S.C.'ers should contact Dick Pierce, Richfield, Bakersfield at TEmple 1-1600. Turning out were: Glenn Ferguson (I. W. Bosworth), Bill Lewis (Standard), Ray Knight (Franco-Western), Al Simpson (McCullough), Ed Sprotte (Shell), Vince Scurry (Texaco), Ed Karp (Kern Oil), Ralph Brodek (KCL), Hank Walrond (Sunland Refng.), and Warren Stoddard, Bill Horsely, Hal Reade, Ray Arnett, Dick Pierce (Richfield).

Jean Senteur deBoue, Gaviota Consultant, has donated a free course of exercise at Slenderella reducing salon to his good friend Jim O'Neal, Montgomery Drilling, Bakersfield. Jim has lately been accused of wearing leg-o-tards to work but claims they are only tight trousers.

The Continental crowd is on the move. Chuck Norman has been transferred from Bakersfield to Los Angeles and passing him on the Ridge Route was A. T. Anderson moving from smog valley to fog valley.

NURSERY NEWS

Quentin and Susan Moore, Mobil Oil, Santa Fe Springs, have added a fourth member to their family. Susan Virginia was born November 29, 1960 and weighed 8 lbs. and 6-1/2 oz.

Pat and Frank Exum of Ohio Oil, Los Angeles, beat the income tax deadline with the arrival of Susan Elizabeth, 7 lbs., on December 28.

Tod and Babette Harding, Humble Oil, Los Angeles, are pleased to announce the arrival of their first daughter, Helene Elizabeth, born on November 18, 1960. She is the Harding's third child.

Bill and Dee Adent of Wico Oil Company, Sacramento, are the proud parents of a new daughter, Alicia, born on October 27, 1960.

Dave and Coleen Engstrom, Standard Oil, welcomed their second son, John David, on December 7th. John David weighed 8 lbs., 7-1/2 oz.

Lowell and Colette Garrison of Gulf Oil, Sacramento, announce the arrival of a daughter, Nicole, born on November 10, 1960.

CALENDAR

January 10, 1961: Sacramento Geological Society, William B. Bull, U.S.G.S., Sacramento, "Tectonic Significance of Alluvial Fans" and Charles A. Lee, Engineer with P.G.E., "History and Development of McDonald Island Gas Field, San Joaquin Co., California."

January 12, 1961: Thursday noon, S.E.G. Luncheon, Rodger Young Auditorium, Los Angeles. A tour of the plant of Fairchild Aerial Surveys, Inc. will follow the luncheon.

January 16, 1961: Los Angeles Forum Meeting, 7:00 P.M. sharp, Union Auditorium, Union Oil Building, Los Angeles. "Financing Wildcat and Development Wells", Richard C. Bergen (O'Melveny and Myers), "Bank Financing of Oil and Gas Properties", R. L. Hock (Vice President Oil and Gas Division, Citizens National Bank), Moderator, Milton W. Lewis (Consultant).

Following the talks, for those interested, a movie of the recent disturbances at the House Un-American Activities Committee Session in San Francisco will be shown.

January 18, 1961: Wednesday evening, 6:30 P.M., Coast Geological Society dinner meeting, Wagon Wheel Restaurant, Oxnard (Jct. of US 101 and 101A); "Geology Along Hadrian's Wall, England", by Dr. William H. Easton, Professor of Geology, University of Southern California.

February 2, 1961: Thursday Noon, A.A.P.G. Luncheon Meeting, Rodger Young Auditorium, Los Angeles. Robert H. Paschall (Signal), "Dip-Slip Versus Strike-Slip Movement on the San Gabriel Fault."

February 6, 1961: Monday Evening, 7:30 P.M., Science and Engineering Building, Room 56, Bakersfield College, Dr. Harold E. Sullwold, Jr. (Consultant), "Turbidity Currents."

BIBLIOGRAPHY OF RECENT PUBLICATIONS

AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS, Bulletin, vol. 44, no. 12, December, 1960.

Relation of deformational fracture in sedimentary rocks to regional and local structure, by John F. Harris, Garvin L. Taylor, and Jack L. Walper.

Electric log interpretation in exploring for stratigraphic traps in shaly sands, by Howard A. Slack and Carol Otte.

Recent domal structures in southeastern New Mexico, by James D. Vine.

Concepts of foraminiferal paleoecology, by Orville L. Bandy and Robert E. Arnal.

AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS, (Tulsa, Oklahoma).

Stratigraphic cross section of Paleozoic rocks, West Texas to Northern Montana, edited by John C. Maher (1960). ($4.00; to members, $3.00).

WESTERN OIL AND REFINING, Vol. 57, No. 12, December, 1960

Why drill in the Sacramento Valley, by Eugene F. Reid.

WESTERN OIL AND REFINING, Review Number, vol. 57, no. 12, November 15, 1960

Alaska, its infant oil industry is beginning to grow up, by Charles W. Barnes.

Gas was the star in California during 1960, by L. P. Stockman.

Exploration in the Pacific Northwest, by R. J. Deacon.

Alberta-California pipeline stimulates Canada, by Leslie Orr Rowland.

California waterflood practice, by API Pacific Coast District Study Committee on Fluid Injection.

Refinery construction will stress quality not quantity, by Dr. Clyde Berg.

West Coast refining review, 1960, by L. K. Cheney.

WORLD OIL, volume 151, no. 7, December, 1960

Abo reef play in southeast New Mexico, by William J. LeMay.

New pipe configuration reduces wall sticking, by Fred K. Fox

How to determine permeability from well log data, by Karl P. Johnson.

OIL AND GAS JOURNAL, vol. 58, no. 46, November 14, 1960

Sacramento Valley is hottest California exploration prospect.

OIL AND GAS JOURNAL, vol. 58, no. 45, November 7, 1960

California toys with leasing change.

OIL AND GAS JOURNAL, vol. 58, no. 48, November 28, 1960

Market for Russian exports has limits, by Paul Swain.

New electric rig is compact, portable, flexible--for Rocky Mountain drilling, by F. R. Mayer.

Swan Hills may be Canada's largest reservoir, by Frank J. Gardner.

U. S. GEOLOGICAL SURVEY

Professional Paper 365: Apparent resistivity of a single uniform overburden, by Irwin Roman...$ .70

Circular 435: Summary of preliminary findings in ground-water studies of southern Oahu, Hawaii, by F. N. Visher, and J. F. Mink. 16 pages.... Free

Circular 434: Progress report on use of water by riparian vegetation, Cottonwood Wash., Arizona, by E. L. Hendricks, William Kam and James E. Bowie.....11 pages..... Free

OPEN FILE REPORTS

Geology of the Baldwin Hills area, California, by R. O. Castle.....Inspection Only.

Surficial geology of the Beverly Hills and Venice quadrangles, Calif., by R. O. Castle. .....Inspection Only.

Preliminary geologic maps of the La Habra and Whittier quadrangles, Los Angeles Basin, California, by R. F. Yerkes....Inspection Only.

Geologic interpretation of magnetic data in the Copper River Basin, Alaska, by G. E. Andreasen, Arthur Grantz, and Isidore Zietz.....Inspection Only.

BOOKS

How to collect mountains, by Charles Hunt. 38 pages, 1958. W. H. Freeman and Company, San Francisco, Calif.....$1.25

Paleogeologic maps, by A. I. Levorsen. 178 pp. 102 ills., 1960. W. H. Freeman and Company, San Francisco, Calif.....$6.00

Many geologists on the Pacific Coast may be interested to learn that the results of a comprehensive study of Cretaceous Ammonites of California and Alaska by T. Matsumoto have now been published and a limited supply of these publications are now available for sale at the Stanford Bookstore, as follows:

T. Matsumoto, 1959, Cretaceous Ammonites of California, part I: Memoirs of the Faculty of Science Kyushu University, Series D, Geology, v.8, no. 4, p. 91-171, 16 plates.....$3.00

----------, 1959, Upper Cretaceous Ammonites of California, Part II: Memoirs of the Faculty of Science Kyushu University, Series D, Geology, Special volume I, 172 p., 41 plates.....$6.00

----------, 1960, Upper Cretaceous Ammonites of California, Part III: Memoirs of the Faculty of Science Kyushu University, Series D, Geology, Special Volume II, 204 p.....$3.50

----------, 1959, Cretaceous Ammonites from the Upper Chitina Valley, Alaska: Memoirs of the Faculty of Science Kyushu University, Series D, Geology, v. VIII, no. 3, p. 49-90, 18 plates.....$3.00

PACIFIC PETROLEUM GEOLOGIST
PACIFIC SECTION, A. A. P. G.
799 SUBWAY TERMINAL BLDG.
LOS ANGELES 13, CALIFORNIA

Volume 15 Number 1

Fred R. Neumann GA
381 E. Fourth Street
Chico, California

Form 3547 Requested

PACIFIC PETROLEUM GEOLOGIST

NEWS LETTER OF THE PACIFIC SECTION
AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS

ASSOCIATION ACTIVITIES

Volume 15 February 1961 Number 2

NATIONAL A.A.P.G. PRESIDENT

Mason Hill has been elected President of The American Association of Petroleum Geologists. He will assume office at the National Meeting in Denver, April 24-27.

SPRING MEETING

A two-day joint meeting of the Pacific Section A.A.P.G.-S.E.P.M.-S.E.G. is planned for May 12-13, 1961 in Bakersfield. Papers will be presented on Friday followed by an evening dinner meeting. A field trip to the south end of the San Joaquin Valley is scheduled for Saturday.

The usual fall meeting of the Pacific Section will not be held in 1961, and in 1962, the section meets jointly as host with the National A.A.P.G. in San Francisco.

SACRAMENTO PETROLEUM ASSOCIATION

The Sacramento Petroleum Association held an inaugural at the El Rancho on January 20th. It was second only to the one farther east held that same day.

Frank Jacobs (Union) spoke on "Fifty years of Petroleum". Newly installed officers for 1961 are:

Art Hawley (President)
Ron Ackerley (Vice-President)
John Evers (Secretary)
Joe Parmenter (Treasurer)

!!! 1961 DUES !!!

To those of you who have not yet paid your 1961 dues..... This is the last issue of the Newsletter that will be sent until dues are paid.

Mail you check for $3.50 to:

Mr. Richard L. Hester
Pauley Petroleum Inc.
10,000 Santa Monica Blvd.
Los Angeles 25

LOS ANGELES LUNCHEON MEETING

A regular monthly noon luncheon was held at Rodger Young Auditorium, January 5, 1961. D. G. Herring, Jr., (Texaco) presented an unusually fine group of colored slides on the geology, geography, culture, and ancient history of Libya.

Most of Libya is a near-featureless desert with slight topographic relief and scant vegetation. Outcrops of significant thickness are restricted to mountains in the northwest, where Triassic, Jurassic, and Cretaceous carbonates may be observed, and to mountains in the northeast, where the Eocene and Upper Cretaceous are exposed. A Tertiary embayment, reflected by the present outline of the Gulf of Sirte, allowed deposition of carbonates, from which the bulk of the presently discovered oil comes. The structures show little compressional type folding, and five degrees is a steep dip. These gentle folds may represent draping over basement horsts and grabens.

Most of Libya's people live on the coastal fringe along the Mediterranean. Tripoli and Benghazi, the largest cities, have populations of approximately 150,000 and 20,000 respectively.

Historically, this part of North Africa has always been under foreign domination. About 800 B.C. the Phoenicians founded Carthage and other settlements in present-day Libya. The Greeks moved into Cyrenaica about the same time, occupying a coastal strip. Neither the Greeks, the Phoenicians, nor any of their successors succeeded in conquering the interior.

Around 250 B.C. the Romans overthrew the Greeks and Phoenicians in North Africa, and developed a high level of culture. Many fine buildings were built, but were later covered by sand and were not excavated until the 20th Century. North Africa reached a peak about 200 A.D. and declined thereafter with the Roman Empire. With the final collapse, Arabs and Turks became the rulers, and the Ottoman Empire held Libya for 1000 to 1200 years. In 1911 Italy took over, building roads and cities and contributing many Italian nationals as colonists. After World War II, Libya was a ward of the United Nations until 1952, when it became an independent nation.

The dominant influence today is Arabic, modified by the Italian occupation. Several thousand people of Italian descent live in Tripoli and other cities, dominating the business life. Higher education is rare among the Libyans, and only about 700 have college degrees. Very few of these have technical knowledge.

Nationalism is strong and, according to Herring, is likely to be felt more as actual production is established. At present, red tape and delay in the government causes problems for the operating companies.

SACRAMENTO GEOLOGICAL SOCIETY

Charles A. Lee (P.G.E.) and William B. Bull (U.S.G.S.) recently presented the following papers before the Sacramento Geological Society:

McDonald Island Gas Field (C.A. Lee):

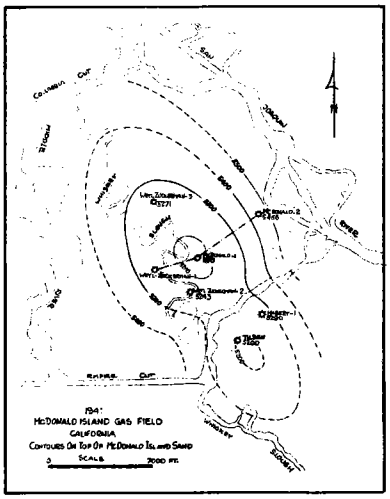
Next Deadline: March 3, 1961

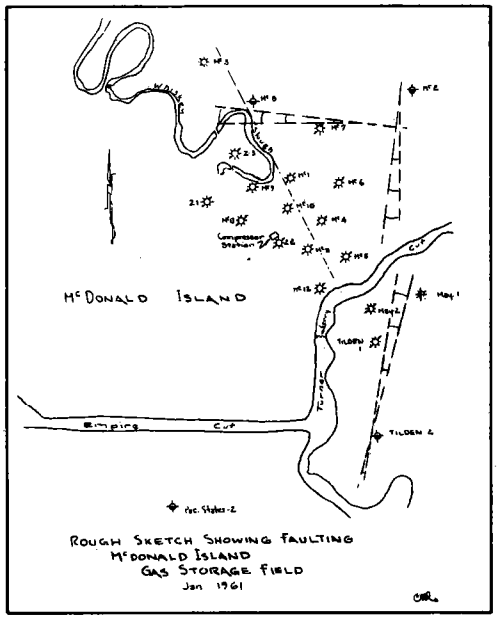
The P.G. and E. Co. has a gas demand that is widely variable throughout any given year. As California's population has grown, so has this variation in demand. The existing and proposed supply lines of interstate gas necessarily are operated at near maximum capacity on a year round basis. For this reason, additional capacity is needed for winter peak loads and inversely, there is a smaller market for the steady supply during low load periods in the summer.

One of the most effective methods for combating this problem lies in storing that surplus supply during off-peak load periods and withdrawing this stored gas during peak load periods. When the McDonald Island program is complete, 30 billion cubic feet can be stored as in-and-out gas. An average of 150 million cubic feet a day is the planned injection rate and withdrawal rates will vary between 150 to 400 Mmcf/D.

The Standard Oil Company wildcat well, McDonald Island Farms No. 1, (1936) paid out at a discovery pressure of 2086 psig at approximately 5150 feet. Five additional wells were drilled within a few years after the original discovery. This development indicated the field to be a domed trap with the sand having good porosity and permeability. The McDonald Island sand is the producing gas sand of the structure. It is a fine- to medium-grained friable gray sand, with interbedded siltstone, brownish-gray shale, and occasional streaks of carbonaceous material.

In 1949-1950 Standard drilled five additional development wells and built the combination 16"-18" main from the Island 16 miles westerly to the Brentwood Terminal Station. At this time it was determined that the field was ideally located and structurally suitable for gas storage after depletion of the native reserve. Standard produced the field until the pressure had declined to 450 psig in February of 1958. During March of 1958 the P.G. and E. Co. and a subsidiary conducted injection tests on the Island using transmission main pressure from Brentwood Terminal Station.





Pressure observations between March and September of 1958 indicated the possibility of water encroachment into the sand. Accordingly, P.G. and E. personnel began gas injection in September with an available line pressure of 610 psig. On 11 December 1958, Natural Gas Corporation of California completed negotiations with Standard and ownership of the field rights came under P. G. and E. control.

A 3000 HP compressor station at Brentwood was engineered and constructed allowing a maximum line pressure of 867 psig at 75 Mmcf/D. With this source of pressure the field has been brought back to 780± psig at present. An ultimate minimum field pressure of 900 psig will be maintained and operations will vary between 900 psig and 1500 psig in order to store the 30 billion cf. In order to reach a field pressure of 1500 psig and in order to attain the 400 Mmcf/D production rate, the P.G. and E. will accomplish the following construction work:

1. Drill a total of 16 new gas wells in addition to the five

drilled in 1960 and install collection mains thereto.

2. Construct a 3000 HP compressor at McDonald Island. This will be in addition to the 2000 HP compressor now being completed.

3. Construct a 2500 HP compressor at Brentwood.

FACTS

1. McDonald Island Gas Field production prior to P.G. and E. acquisition - 148 billion cubic feet.

2. Estimated original gas volume - 178 billion cubic feet.

3. Estimated size - 1600 acres with approximately 81000 acre feet of sand.

4. Ground elevation in the field averages 10' below Delta water levels. This water is held back by 16' high levees.

5. Peak soil in the field erodes, decomposes and compacts at an average rate or 4-1/2" a year.

6. The entire operation is designed to be automatic and remotely controlled from Brentwood. The compressors as well as the wells will be controlled by "push button" operation.

7. Due to the instability of the peak soil, the McDonald Island compressor station rests on 70' cast in place cement piles - the area supported by these piles is 80' x 100'.

8. The compressor at McDonald Island and the well head controls are designed to operate under a 20' head of water. The compressor is elevated above ground level by concrete columns which rest on the pilings.

9. 54 billion cubic feet will remain in the field as cushion gas. This estimated figure stems from the minimum field pressure of 900 psig.

Tectonic Significance of Alluvial Fan Geomorphology in Western Fresno County (W. B. Bull):

The geomorphology of the alluvial fans along the western border of the San Joaquin Valley in western Fresno County, Calif., is interesting because the fans are classic examples of segmented fans, and because their shape can be used to help decipher part of the tectonic history of the area.

The overall radial profiles of the alluvial fans are gently concave upward, but the slope does not decrease at a uniform rate away from the mountain front. Instead the radial profiles are segmented. Profiles of fans whose streams head in the foothill belt have three straight-line segments; profiles of fans whose streams head in the main Diablo Range have four segments: three are straight lines but the uppermost segment may be concave upward.

The uppermost fan segments and the valleys upstream from the fans for a distance of 1/2 to 1 mile have the same general slope. High terraces found in some drainage basins may indicate that intermittent uplift has steepened the slope of the valley floor upstream from a fan. A rapid change in the valley slope may produce a straight-line segment, but a gradual increase in the valley slope may be accompanied by a gradual steepening of the fan, resulting in a concave upward fan segment.

Stream-channel trenching helps preserve the upper one or two fan segments by preventing deposition on the fan surfaces within the extent of the trenching.

Fan segmentation may be useful for deciphering part of the diastrophic history of mountain ranges, because the fan profile and the volume of material within a given fan segment reflect the erosional and diastrophic conditions within the drainage basin. The segmented fans of western Fresno County indicate three or four episodes of uplift of the Coast Ranges rather than continuous uplift. Part of the uplift may have occurred in the last 3,000 years. Charcoal that was 10.5 feet below the surface of the upper fan segment of the Arroyo Hondo fan was 1,040 ±200 years old according to a radiocarbon age determination. The total thickness of deposits of the fan segment at this locality is estimated to be 24 feet, which suggests that the segment is 2,000 to 3,000 years old, if a similar rate of deposition existed throughout its history.

INTRODUCTORY PETROLEUM GEOLOGY COURSE OFFERED BY U.C.L.A.

The University Extension of the University of California will offer a course on Introductory Petroleum Geology during the spring. The class will meet at the U.C.L.A. campus, Room 3656 Geology Building, for 18 weeks starting Monday, February 6th. Hours each Monday night are from 7:00 to 9:30 p.m. Three units of university credit are offered and enrollment fee is $35.00. Richard L. Hester of Pauley Petroleum Inc. is the instructor.

The course covers the processes and materials of physical and historical geology with emphasis on applications to petroleum, with a study of the natural occurrence of petroleum and the geologic principles, methods, tools and techniques by which it is found and produced.

The course will be of particular benefit to those persons working for oil companies, but not directly involved with petroleum geology; such as, secretaries, draftsmen, landmen, engineers, and students.

SAM DOLMAN - TESTIMONIAL DINNER

Sam Dolman, consulting geologist, Santa Barbara and former president of the Coast Geological Society, was honored by a testimonial dinner at the La Cumbre Country Club in Santa Barbara on January 14, 1961. A group of approximately 67 friends, associates and wives gathered to pay tribute to Sam for his outstanding qualities which have endeared him to his friends and associates. Sam was presented with a scroll containing telegrams and letters of congratulations and a silver-plated geologist pick. Also, the local Santa Barbara luncheon group which meets every Tuesday will be known henceforth as the "Dolman Club". In addition to the above a large birthday cake was wheeled out to celebrate Sam's 74th year as a fine friend and member of the oil industry.

A brief biographical sketch follows: born in Brainerd, Kansas, 1887; graduated from the University of Kansas in 1910; following graduation did mining work in Mexico; in the early 20's worked for the Ray Consolidated Copper

Company in Arizona; came to Los Angeles in 1925 and entered the contracting business; joined the California State Division of Oil and Gas in 1927 in Los Angeles; opened a district office in 1930 at Santa Barbara; in Santa Maria 1942-1952; retired in 1952 from the Division of Oil and Gas after compiling a fine record of service; worked for the Honolulu Oil Corp. for 1-1/2 years and since that time has been doing various types of consulting work in California.

SUMMARY - 1960 SACRAMENTO VALLEY DRILLING

The following figures include all reworks and deepenings where footage was made. Figures in parentheses refer to 1959, shown for comparison.

Total Figures

	1960	1959
1. Total footage, drilled:	1,389,622'	(965,111')
2. Total number of wells drilled T.D.:	244	(184)
Average depth:	5,697'	(5234')

Footage and Number Breakdown as to Type of Well

3. Total footage, field wells drilled:	436,113'	(214,075')
4. Total number of field wells drilled:	80	(43)
5. Total footage, outpost and new pool tests, drilled:	244,884'	(295,439')
6. Total number of outpost and new pool tests, drilled:	48	(54)
7. Total footage, wildcats drilled:	658,594'	(455,597')
8. Total number wildcats drilled:	116	(87)

Completion Data

9. Total footage, all completed wells:	580,308'	(305,386')
10. Total number, completed wells:	94	(57)
11. Total footage, completed field wells:	318,162'	(132,806')
12. Total number completed field wells:	57	(28)
13. Total footage, completed outpost and new pool tests:	175,686'	(300,533')
14. Total number completed outpost and new pool tests:	25	(36)
15. Total footage, completed wildcats:	86,460'	(23,317')
16. Total number, completed wildcats:	12	(4)

Success Ratios

17. Ratio, completed wells/ wells drilled:	37%	(32%)
18. Ratio, completed field wells/field wells drilled:	71%	(65%)
19. Ratio, completed outpost and new pool tests/those drilled:	52%	(57%)
20. Ratio, completed wildcats/wildcats drilled:	10%	(5%)

Abandonment Data

21. Total abandonments:	149	(130)
22. Total footage abandonments:	809,314'	(670,809')

Miscellaneous

23. Wells active, December 31, 1960:	18	(5)
24. 1960 Reworks (no drilling involved):	9	(where blank
Recompletions:	7	no figure
Abandonments:	2	available)

25. Operators (wells commenced or drilled 1960)

Gulf	18	(5)
Standard	18	(12)
Occidental	17	(9)
Great Basins	15	
Humble	15	(6)
Porter Sesnon	10	
Amerada	9	(4)
E. C. Brown	8	
Trico	8	(7)
Brazos	7	(4)
Texaco	6	(14)
McCulloch	6	(8)
Buttes	5	
Zephyr	5	
Cameron	4	
Signet	4	
Reserve	4	
Rinde	4	
Arcady	3	
Artnell	3	
Kadane	3	
Kern Co. Land	3	
Christiana	2	
Socony Mobil	2	(14)
Sunray	2	
Univ. Consolidated	2	
Union	1	(1)
Others	60	

26. Counties; number of wells:

San Joaquin	70
Colusa	36
Solano	28
Sacramento	19
Glenn	18
Tehama	17

Yolo	16
Stanislaus	9
Contra Costa	7
Humboldt	7
Sutter	8
Butte	5
Shasta	2
Amador	1
Sonoma	1

27. Discoveries: New Field

1. Gulf Oil Corp. of California F. Strain #1, NE section 14-13N-1W. Buckeye Field, Colusa County. Completed 1-1-60. TD 8972' RD. Productive interval 8468'-8487'. Casing production test, 2575 mcf/d, 3/8 x 3/8". Producing horizon: upper Cretaceous F zone sands.

2. Cameron Oil Company and McElroy Ranch Co. Cameron-Armstrong #1, NE section 7-14N-1E, Grimes Field, Colusa County. Completed 1-2-60. TD 7540'. Productive interval 6552'-6592'. Production test 6568-6588', 5000 mcf/d. Productive horizon: upper Cretaceous F zone sands.

3. Great Basins Pet. Co. Signet-Whiting 66-23, SE section 23-2S-6E, McMullin Ranch Field, San Joaquin County. Completed 5-4-60. TD 6425'. Productive interval 5925-45', 5957-70'. Initial production, 3200 mcf/d, 1/2" choke. Productive horizon: upper Cretaceous F zone sands.

4. G. E. Kadane & Sons, Maine Prairie Gas Unit A-1, SW section 20-6N-2E, Bunker Gas Field, Solano County. Completed 6-5-60. TD 7502'. Productive interval 6831-45'. Initial production, 7100 mcf/d on 3/8". Potential, 20,000 mcf/d. Productive horizon: Paleocene (Martinez Fm.) sands.

5. Zephyr Oil Co., Leon Oro Blanco #1, SE section 6-3N-1W, HBM. Table Bluff Field, Humboldt County. Completed 6-8-60. TD 5652'. Productive interval 4800-4810'. Initial production 800 mcf/d, 3/16" choke. Presently shut in. Productive horizon: Pliocene Eel River Fm.

6. Humble Oil and Refining Co., John R. Hulen #1, SW section 23-18N-1W. Angel Slough Field, Glenn County. Completed 6-18-60. TD 7019'. Initial production 2884 mcf/d, 3/8". Productive horizon: upper Cretaceous E zone Kione sands.

7. Amerada Petroleum Corp., Garin Gas Unit #1, NW section 29-5N-4E. Grand Island Field, Sacramento County. Completed 8-2-60. TD 6465'. Producing interval 4672-77'. Initial production 2782 mcf/d. Productive horizon?: top stringer Midland sand of lower Eocene age.

8. Gulf Oil Corp. of California, Goff-Erdman Unit #1, SW section 15-13N-1E. Kirk Field, Colusa County. Completed 10-18-60. TD 9522'. Producing interval 7503-43'. Initial production 3417 mcf/d, 1/4" and 3/8". Productive horizon: upper Cretaceous F zone sands.

9. Atlantic Oil Company, U. E. Frye #1, SE section 27-15N-1E. East Grimes Field, or pool of the Grimes Field, Sutter County. Completed 11-22-60. TD 8020'. Producing intervals, 5900-40', 5950-6020', 6140-73' (casing); 6655-80', 6690-6720', 6740-60', 6792-6802', 6810-20', (tubing). Initial production upper zone (casing) 5250 mcf/d, 18/64"; lower zone (tubing) 5500 mcf/d, 18/64". Productive horizon: upper Cretaceous F zone sands.

10. Buttes Gas and Oil Co., Natomas #2, NW section 5-10N-4E. Elkhorn Field (?), Sutter County. Completed 12-1-60. TD 4580'. Producing interval about 3200'. Initial production ? not released. Productive horizon: not released, probably upper Cretaceous sands.

11. Occidental Petroleum Corp., Sachreiter #1, SE section 4-14N-1W. West Grimes Field, Colusa County. Completed 12-5-60. TD 8263'. Producing interval 7645-56'. Initial production 12470 mcf/d, 7/16". Productive horizon: Upper Cretaceous F zone sands.

12. Reserve Oil and Gas Co., Liberty Farms-Reynolds #2, SE section 19-5N-3E, Liberty Island Field, Solano County. Completed 12-17-60. TD 6500'. Producing interval 4783-73', 4763-55', 4744-26'. Initial production 3920 mcf/d, 3/8". Productive horizon: Midland sands (lower Eocene).

New Pools of Significance

1. Artnell Oil & Gas Co., Universal-Richey et al #1, SW section 35-11N-1W. Dunnigan Hills, "Forbes" New Pool, Yolo County. Completed 5-4-60. TD 9082'. New pool producing interval 8077-97'. Initial production 2250 mcf/d, 20/64". Productive horizon: lenticular upper Cretaceous F zone sands.

2. W. S. Payne, Jr., Operator, James W. Morgan #2, NE section 8-23N-3W. Kirkwood Kione Pool, Tehama County. Completed 5-31-60. TD 4500'. Initial production ?: (data not released). Productive horizons: not released, possibly Upper Cretaceous.

3. Universal Consolidated Oil Co., Rheem-Hammer #1, SW section 5-17N-1W. Compton Landing, Catfish Bend Pool, Colusa County. Completed 9-25-60. TD 3490'. Producing interval 2315-28'. Initial production 2037 mcf/d, 24/64". Productive horizon: Upper Cretaceous E zone Kione sands.

COAST GEOLOGICAL SOCIETY

Members of the Coast Geological Society were treated to a most interesting talk on the "Geology along the Roman Wall, England," by Dr. William H. Easton, Prof. of Geology, USC, at the monthly dinner-meeting on January 18, 1961, at the Wagon Wheel Restaurant, Oxnard. Dr. Easton's talk covered the history, archaeology, and geology along the Roman Wall constructed by the Emperor Hadrian around 124 A.D. between Scotland and England. The talk included many excellent color slides taken by Dr. Easton who was in Europe during 1959-1960 on a Guggenheim scholarship.

LOS ANGELES FORUM

The Los Angeles forum meeting was held in the Union Oil Auditorium on January 16th. A symposium on financing oil and gas exploration and development included papers by R. L. Hock (Vice President, Citizens National Bank) and Richard C. Bergen (Partner, O'Melveny and Myers). Milt Lewis served as moderator.

Mr. Hock spoke on "Bank Financing of Oil and Gas Properties".

Abstract

A.B.C. Loans

Oil payment loans have been growing in importance since 1951. The use of the A.B.C. method is fully recognized and accepted by the Internal Revenue Department, and the basic income tax questions involved have been quite well clarified in many judicial proceedings. Following is an example of an oil payment loan made in connection with the purchase of a producing property on an A.B.C. method.

The seller of a proved oil producing property wants to get $3,250,000 cash for the property. The seller ("A") sells to the buyer ("B") an operating leasehold for $1,250,000 cash; the seller "A" concurrently reserves an oil payment in the amount of $2,000,000 (plus an accretion of 6-1/2% per annum and minor other charges), this $2,000,000-plus payment to be payable out of 75% of production after royalties. This carved-out oil payment is concurrently sold to an independent third party ("C") who may or may not have financial responsibility. Third party "C" pledges the oil payment to the bank lender for $2,000,000 loan, at a 6% interest rate and the 1/2% per annum differential represents compensation for "C's" services.

All production expenses, further development costs, and remedial work will be paid by the buyer "B" out of his 25% of net production. All of the proceeds from the 75% of production are applied against "C's" bank loan. "C" takes cost depletion and pays income tax only on the 1/2% per annum differential. When the oil payment has been retired and the bank loan repaid, the buyer then owns all of the leasehold, free and clear.

The tax benefits to the buyer on the above method, commonly called an A.B.C. transaction, are compared below to a regular purchase thru the use of a regular production bank loan.

	Ordinary Sale	Sale on A.B.C. Oil Payment Basis
Paid in Cash	$1,250,000	$1,250,000 cash
Proceeds Production Loan	2,000,000	2,000,000 proceeds of oil payment loan
Total Purchase Price	$3,250,000	$3,250,000

	Buyer B	Buyer B (25%)	Intermediary C (75%)
4-1/2 years Production Proceeds after Royalties	$2,740,000	$690,000	$2,050,000
Cash Operating Expenses	690,000	690,000	-0-
	$2,050,000	-0-	$2,050,000
Depletion at 27-1/2% Cost Depletion	750,000	-0-	$2,050,000
Taxable Profit	$1,300,000	-0-	-0-
Income Tax (52%)	670,000	-0-	-0-
Net Profit	$ 630,000		
Add back depletion	750,000		
Cash profit 4-1/2 yrs.	$1,380,000	-0-	-0-
Bank Loan remaining Unpaid	$ 620,000	-0-	-0-

On above example Buyer "B" still has $620,000 bank loan to pay out of future production on an ordinary production loan basis; on an oil payment loan basis he has no further payments and is thus $620,000 better off cashwise. This amounts to 31% saving on amount of oil payment.

Because the purchaser of an oil property on the A.B.C. method has a perfectly legitimate tax saving amounting to approximately 1/3 of the amount of the oil payment involved, very few oil properties change hands without using the A.B.C. method.

One of the basic legal requirements of the method is that the purchasing company can have no connection whatever with the intermediary corporation which buys the oil payment and which signs the bank loan. The purchasing company cannot guarantee directly or indirectly any obligation of the intermediary corporation.

In practice these intermediary corporations have relatively slight financial responsibility in proportion to the oil payment loans involved, and every oil payment loan is supported solely by the pledged collateral.

Use of the A.B.C. method has definite advantages for the purchasing oil producer; however, the bank lender has the disadvantage of having recourse only to the specific collateral, i.e. the oil payment itself. Banks which finance on this basis rely on the following factors:

1. The purchasing oil company has made a substantial cash payment for their residual interest in the property and will not recover their investment until the bank loan has been retired.

2. The purchasing oil company pays all production expenses, all costs of development of additional wells, all remedial work, and none of such costs are chargeable to or payable out of the oil payment collateral. Such operator, thus, must be entirely capable and experienced and financially strong enough to insure proper operation.

3. The lending bank knows that the income pledged to retire the bank loan is not subject to income tax and that even in the remote possibility of future change in the applicable tax law, the bank's prior claim to oil payment funds could not be compromised.

Year-End Oil Payment Loans

Maximum Depletion Deduction Through Sale of Oil Payment

In the determination of Federal Income Tax on oil and gas properties, it is permissible for a taxpayer to use percentage depletion. Under this method, 27-1/2% of the gross income from the property is taken as the depletion deduction; however, this percentage depletion deduction may not exceed 50% of the operating income from that property.

There are circumstances under which an oil or gas producer is not able to take full advantage of the percentage depletion method because heavy intangible development costs or other non-recurring expenses have reduced income from a property to the point that depletion allowance is governed by the "50% of income" concept.

Under such circumstances, many operators have found it advantageous to sell an oil payment carved out of the respective operating property. This increases taxable income for the operating unit to the point where an operator would not lose any of the percentage depletion deduction.

The schedule below illustrates the cash savings possible through the sale of a $200,000* oil payment in such an instance. It is assumed that the oil payment will be paid out within the subsequent tax year:

	Without Sale of Oil Payment	
	Current Year	Subsequent Year
Net Production Proceeds	$1,800,000	$1,600,000
Expense	900,000	300,000
Operating Income	900,000	1,300,000
Depletion	450,000	440,000
Net Income Before Tax	450,000	860,000
Federal Income Tax - 52%	234,000	447,000
Net Profit	216,000	413,000
Add Back Depletion	450,000	440,000
Cash Profit	$ 666,000	$ 853,000
Cash Profit for the 2 years		$1,519,000

	Sale of $200,000 Oil Payment	
	Current Year	Subsequent Year
Net Production Proceeds	$2,000,000	$1,400,000
Expense	900,000	300,000
Operating Income	1,100,000	1,100,000
Depletion	550,000	385,000
Net Income Before Tax*	550,000	715,000
Federal Income Tax - 52	286,000	372,000
Net Profit	264,000	343,000
Add Back Depletion	550,000	385,000
Cash Profit	$ 814,000	$ 728,000
Cash Profit for the 2 years		$1,542,000

In the first column it is noted that allowable depletion is only $450,000, or one-half of the $900,000 operating profit, although 27-1/2% of $1,800,000 is actually $495,000. The producer thus has lost forever the $45,000 difference between the permissible deduction and the percentage deduction.

Sale of the oil payment, illustrated in the third and fourth columns, actually shifts $200,000 in net production proceeds from the following year to the current year, permitting the operator to take advantage of full 27-1/2% depletion allowance for both years.

The combined cash profit for the two years is $23,000 higher through the use of the sale-of-oil-payment method.

* To compute the amount of the desired oil payment, divide the estimated current year's expense ($900,000) by .45, arriving at the desired figure for production proceeds ($2,000,000); from this figure subtract the estimated production proceeds ($1,800,000) to arrive at the amount of the oil payment to be sold ($200,000).

The second apeaker of the evening, Richard Bergen, discussed "Financing Wildcat and Development Wells".

Abstract

With respect to the financing of wildcat wells, it has been common practice in the industry for many years for a lessee who needs financing to assign his lease to an oil operator who has available financing and to reserve in the transaction some type of a free interest in any production that may be developed from the lease. This free ride commonly takes the form of an overriding royalty, a net-profits interest, a carried interest or a free well or series of wells. No doubt many of you already are familiar with the use of most of these devices, particularly overriding royalties and net-profits interests; therefore, this discussion will be confined to recent developments or novel uses of these interests.

Overriding Royalty and Net-Profits Interest

The only relatively novel use of overriding royalties that might be of interest is the fact that it is possible to retain an option to convert an overriding royalty into a working interest effective at the time the financing party has recovered his investment; this conversion, if properly drawn and made by a person who is not a dealer in real property, can be transacted

without tax consequences as an exchange of like kind. With respect to net-profits interests, it is important to keep in mind that, if the appropriate language is used, a net-profits interest can create an economic interest in production so that all proceeds applicable to the net-profits interest will be subject to the allowance for depletion; however, if the language used indicates purely a contractual arrangement as contrasted with an economic interest in the oil, no depletion will be allowed to the owner of the net-profits interest and all depletion will be available to the operator. Thus, by drafting a net-profits agreement one way rather than another, the depletion allowance can be shifted - as between the operator and the net-profits owner.

Carried Interest

A carried interest is created when A, a lease owner, assigns an interest in the lease to B with an agreement for B to pay all drilling and other costs, including costs attributable to A's retained interest, and with B having the right to be repaid for the costs attributable to A's retained interest out of production attributable to such interest. Normally, B is given complete right to manage and operate the lease until he recoups his total expenditures, after which time A and B divide the income (less current expenses) in proportion to their respective interests in the lease. Although B actually puts up all the money for intangible drilling costs and is entitled to all production until he is re-imbursed, the question arises as to whether A or B is entitled to the deduction for intangible costs attributable to A's interest and whether A or B is obliged to take into his taxable income the production attributable to A's interest during the payout period. Whoever is obliged to take the production into income is entitled to claim depletion on such production.

It now appears to be the present status of the law that A and B have a choice of the results they want to achieve. If the agreement is drawn one way, A will be able to deduct the tangible expenses attributable to his interest in the lease even though he never pays therefor, and A will have to take into his taxable income the production attributable to his share of the lease income (less depletion) even though he never receives such income. This result can be achieved if title to A's interest is retained by A, if the advances from B to A are labeled as loans to A (even though recoverable only from the proceeds production attributable to A's interest) and if A has normal management rights and controls in the operation of the lease consistent with a continued ownership therein. On the other hand, if it is desired that B be entitled to all intangible deductions attributable to A's interest in the lease and be charged with all income during the payout period, then this result too can be achieved by having A transfer full title to the lease to B for the entire payout period, by negativing in the agreement any indication of a loan of funds from B to A, and by having A forego management rights and controls during the payout period. Although it has been authoritatively said that decisions in oil cases do "not turn upon the particular instrument involved, or upon the formalities of the conveyancer's art", it now appears that in carried-interest transactions the tax consequences do turn upon the intent of the parties as evidenced by the form of agreement, accordingly, both deductions and income will be allocated either to A or to B depending upon the intent of the parties as evidenced by the terms of their agreement.

Free Well

The last method of financing wildcat wells involves an agreement whereby the investor pays the entire cost of the first well or series of wells on a lease in return for a one-half or some other fractional interest in such lease. This is commonly known as a free-well deal. In such a situation it is established that in the absence of a formal partnership between the parties, the investor may charge to expense only that fraction of the intangible drilling costs which is equal to his fraction of the working interest and that he must capitalize as part of his acquisition costs that fraction of the intangible expenses attributable to the interest retained by the prior owner. Thus, if pursuant to the usual type of joint-venture agreement (where no formal partnership is involved) one-half of the working interest in a lease is acquired by an investor in consideration of his paying the full cost of a well, then he may deduct only one-half of the intangible drilling costs of such well; the other one-half of such costs must be capitalized as part of his costs of the lease. However, if an actual partnership is formed between the parties with respect to the lease and an agreement is made whereby one partner contributes the lease to the partnership and the other pays all intangible costs, then the partner paying such costs and pledging the proceeds to the development of the property as previously described is to transfer an oil payment to a drilling contractor for a free well. In this situation, A has no taxable income at the time of the transfer, and any enhancement of the value of his property as a result of the drilling of the well does not have tax consequences. The drilling contractor does not realize taxable income at the time of the receipt of the oil payment. Although such contractor must take the proceeds of production attributable to the oil payment into his taxable income as and when he gets it, his drilling costs are his cost bases for the oil payment; accordingly, he pays an income tax only on that portion of the oil payment representing his profit in the transaction. Moreover, the drilling contractor can, in the situation of a proven lease, take the oil payment to a bank and borrow the full face value. Accordingly, he need not personally finance the well; by hypothecating the oil payment, he can derive the money for drilling the well from a bank when the drilling takes place.

Because A usually wants to take his deduction for intangible costs at the time he drills a well, he normally will avoid using an oil payment which is pledged to the development of the property to pay such intangible costs. However, with respect to casing and other tangible costs, A would have to capitalize such costs if he paid for them in cash, depreciating his investment over a period of years. Accordingly, with respect to such capital costs, A could carve out an oil payment pledged to the development of the property sufficient to pay for such costs alone, thus, not having to set up on his books any capital items with respect to the well. This permits A to take advantage of the intangible drilling costs as a deduction against his current income and still not have any capital costs in the well.

PAY YOUR DUES

PERSONAL ITEMS

Andy "Swab 'em Dry" Vidos (Consultant, Ventura) was seen rubbing elbows with the law along the streets of Ventura and weakly trying to explain why his driver's license had expired two months ago.

Charley (Fat Sam) Booth, Shell, Ventura, has been accusing all Shell employees of stealing his cookies ever since he received the call to serve on local jury duty - the halls of Shell now reverberate with the crunch of cookie crumbs!

Attention all Skin Divers: Jean B. Senteur de Boue, Gaviota Consultant, has lost one navy spy glass 16 x 11 Mod. 43, one-half mile south of Platform Harry, just inside the 975 fathom contour. Happy Hunting!

It has been reported that Doug Traxler, Signal, was unable to find a parking place on the Rancho drill site last weekend durjng the Los Angeles Open Golf Tournament, due to the sudden interest by the service companies in "hole activity". Doug was last seen being swept along the fairway as he attempted to walk through the mob to the drillsite.

The near demise of Mobil's Santa Fe Springs office brings about the following changes: Rod Colvin and Quentin Moore are departing for the Bakersfield office, which will be headquarters for West Coast Exploration. Ed Morris, senior geophysicist with Mobil will transfer to Roswell, New Mexico, and R. E. Plumb will move from Los Angeles to Durango as District Geophysicist. Bob Orwig and John Terpening will complete the exodus by moving to the head office in Los Angeles, which will supervise Rocky Mountain and West Coast activities.

All the San Joaquin Valley golfers had better sharpen their games because Mobil's "old pro", Frank Yule, has been officially notified that he will go to Taft, where they are reportedly building him an office for his golf equipment.

Mel Swinny, Richfield, Anaheim, reportedly is keeping in shape and at the same time contributing to the Community effort by taking the Boy Scouts on hikes to Mt. Lowe and Mt. Wilson. Mel is quoted as saying that these trips definitely separate the men from the boys and he hopes his next trip will be with the girl scouts!

We understand Darren Wales, Richfield, Long Beach, has named his new home in Long Beach the "Little Rancho Viejo".

Walter Scott, Richfield geologist, formerly with Richfield in Bogota, Columbia, recently joined the geological staff in the reaches of the Upper Ojai Valley.

E. C. (Mick) McKnight, formerly with Standard, Ventura, has become associated with Johnston Testers and currently is undergoing training as a sales-engineer in Houston and California.

Leland Rhodes, formerly Cal Pan Am Loggers, Ventura, has moved to Sacramento and is now associated with the Exploration Logging Company.

Margaret Cox, Richfield, Long Beach, and her husband Jim are leaving for a two week skiing vacation in Sun Valley.

Richfield paleontologist Bob Hickernell discovered a perfectly preserved Isurus shark's tooth in a core from the ROC-H21-15 at San Emigdio. Shark-tooth hound Arch Warne is reportedly now mobilizing heavy equipment although anyone can go to Bakersfield Shark-tooth hill and find the same variety.

Tidewater exploration has moved from downtown Bakersfield to Oil Center. Mobil's attempt to lease the vacated offices netted only the basement, in which geologists are now being deposited. Greatest effort, to date, has gone toward perfection of an antimildew compound for maps.

Martin McAndrews, Shell Division Stratigrapher in Bakersfield, has been moved to Farmington, New Mexico via Las Vegas. T. W. (Bill) King, Shell, Bakersfield, who was mentally preparing himself for Los Angeles has been short circuited over to Ventura.

Changing Times: Richfield, Bakersfield, has hired Stanford graduate student John A. Levorsen; Shell added Occidental graduate Stanford Eschner to its growing staff and the McElroy Ranch Company hired Steward Chuber, ex-Mobil geologist.

Bob Mitchell, formerly of Salt Lake City, has joined Gulf's Sacramento land staff.

Personnel changes within Standard of California evolve into the following scramble: Bob Kropschot moves from Ventura to Oildale to replace Larry Malarin who moves to La Habra. Chuck Reynolds moves from La Habra to Ventura, while Bob Seltzer exchanges with Dick Darrow, La Habra, for Oildale and vice versa. This is a system???!!!

C. F. (Fred) Green, Consultant, Santa Barbara, recently joined the staff of Verde Enterprises in San Francisco.

Vern Rutherford, Union, Santa Maria, is leaping with joy these days since learning the news that Chuck Johnson, Union, Santa Paula, will soon join him in the quest of "black gold" in the north country.

Jerry Williams (Ohio, Ventura) and Don Hagen (Texaco, Ventura) are recovering from a week of wild abandon and debauchery on the slopes of Sun Valley. Seems that their eyes are horribly bloodshot after eyeballing those ski stretch pants sported by the female snowbunnies.

Roy Martens, Union, Santa Paula, was transferred to Sacramento and at last report was unable to locate the Union office because of the "Tule" fog. Roy will work as a Landman in the Sacramento Valley.

Mary Blakeslee is now Mary Barrick, still with Richfield in Los Angeles. She was married to Robert Barrick on January 14, 1961.

NURSERY NEWS

Congratulations and another exemption to the Bud Marchettes (Schlumberger, Sacramento) for the December 28th birth of Janet Marie.

CALENDAR

February 8, 1961: California Association Engineering Geologists. 7:00 p.m. at California State Division Highway Building, Basement Hearing Room, 120 South Spring Street. Speaker: Dr. Ronald L. Shreve (Dept. Geology & Institute of Geophysics, UCLA "Blackhawk landslide-Lucerne Valley, California."

February 9, 1961: S.E.G. Noon Luncheon, Rodger Young Auditorium, Los Angeles. Round table discussion on exploration in metropolitan Los Angeles with William McCoy and C. A. Richards, both with the City.

February 14, 1961: Tuesday, Geological Society of Sacramento. Eugene Shoemaker (U.S.G.S.), "Impacts and Relation to Lunar Geology."

February 15, 1961: Wednesday noon, Geology 104-A, U.S.C. Campus (855 W. 37th St.) Los Angeles. C. Stevens, "Pennsylvanian Intermountain Basin Sedimentation in Central Colorado."

February 20, 1961: Monday, 7:00 P.M., Forum Meeting, Mobil Auditorium, Los Angeles.
Sacramento Valley Roundup
"A.A.P.G. 1960 Correlation Section, Red Bluff to Rio Vista", Tod P. Harding (Humble).
"Geology of Compton Landing to Beehive Bend Area", David C. Calloway (Rheem).
"Recent Developments in Sacramento Valley", E. F. Reid, Jr. (Occidental).

Extra Feature: Short movie of blowout of Thorup, "Doud" 5, King City.

February 23, 1961: Thursday evening, 6:30 p.m. Coast Geological Society dinner-meeting, Pierpont Inn, Ventura, "Hebgen Dam Earthquake" by Dr. Finn Bronner, General Electric, Santa Barbara.

March 2, 1961: Thursday noon luncheon, Rodger Young Auditorium, Los Angeles. Illustrations of the Historical Earthquakes of California will be presented by V. L. Vanderhoof (Director, Museum of Natural History, Santa Barbara).

March 6, 1961: Monday evening, 7:30 P.M., Science and Engineering Building, Room 56, Bakersfield College, Dr. Fred B. Phleger (Scripps Institute of Technology), "Ecology of Foraminifera."

March 7, 1961: Tuesday evening, cocktails 6:30 P.M., dinner 7:30 P.M., Hotel El Tejon, Bakersfield, Phillip B. King (U.S.G.S.), "Structural Evolution of Western North America."

March 9, 1961: S.E.G. Noon Luncheon, Rodger Young Auditorium. Presidential address, John P. Woods, National S.E.G. President.

BIBLIOGRAPHY OF RECENT PUBLICATIONS

THE GEOLOGICAL SOCIETY OF AMERICA MEMOIR

Biostratigraphic studies in the Comanche (Cretaceous) Series of Northern Mexico and Texas, by Bob F. Perkins. Memoir 83. Pre-Pub $5.25
GSA Members $4.50

U. S. GEOLOGICAL SURVEY

Professional Paper 354-F: Zones and zonal variations in welded ash flows, by R. L. Smith $.75

Professional Paper 354-E: Interpretation of the composition of Lithium micas, by Margaret D. Foster $.30

Bulletin 1043-D: Isopach mapping by photogeologic methods as an aid in the location of swales and channels in the Monument Valley area, Arizona, by Irving J. Witkind, William R. Hemphill, Charles L. Pillmore, and Robert H. Morris $.50

Bulletin 1089-A: Geology of the Alvord Mountain quadrangle, San Bernardino County, California, by F. M. Byers, Jr. ?

Water Supply Paper 1480: Evaporation control research, 1955-58, by R. R. Cruse, and G. E. Harbeck, Jr. $.50

Circular 432: Interpretation and current status of ground-water rights, by A. M. Piper free

Open File Reports:

Geology and ground-water appraisal of Edwards Air Force Base and Vicinity, California, by L. C. Dutcher and G. F. Worts, Jr. Inspection only.

Appendix A. Tables of basic data for wells on Edwards Air Force Base, by L. C. Dutcher and W. J. Hiltgen Inspection only

Appendix B. Tables of basic data for areas outside Edwards Air Force Base, by L. C. Dutcher and W. J. Hiltgen Inspection only

Iron ore deposits of northern Nevada, by F. R. Shawe, R. G. Reeves, and V. E. Kral Inspection only - Menlo Park

Surficial geology of the Wilkenson quadrangle, Washington, by D. R. Crandell. 1 map and explanation Inspection only

Surficial geology of the Orting quadrangle, Washington, by D. R. Crandell. 1 map and explanation Inspection only

Surficial geology of the Summer quadrangle, Washington, by D. R. Crandell. 1 map and explanation Inspection only

Geology of the Poverty Bay quadrangle, Washington, by H. H. Waldron. 1 map and explanation Inspection only

Geology of the Des Moines quadrangle, Washington, by H. H. Waldron. 1 map and explanation Inspection only - Menlo Park

OIL & GAS JOURNAL, vol. 59, No. 2, January 9, 1961

Where we are on LACT, by W. B. Bleakley.

Is all your hydraulic horsepower working for you (How to reduce Drilling Costs: Part 8), by Preston L. Moore.

OIL & GAS JOURNAL, vol. 59, No. 1, January 2, 1961

How to correct bed-thickness data from directional wells, by B. V. Savoy and A. L. Valentine.

How to find reservoir-oil properties from laboratory fluid-analysis data, by E. T. Guerrero and F. M. Stewart.

OIL & GAS JOURNAL, vol. 59, No. 3, January 16, 1961

World Proration: Would it solve the surplus problem? by M. J. Sladic.

Oil stands to gain from the Mohole, by Frank J. Gardner.

Four major discoveries get 1961 off to a good start.

AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS, Bulletin, vol. 45, no. 1, January, 1961

Regional study of jointing in Comb Ridge-Navajo Mountain area, Arizona and Utah, by Robert A. Hodgson.

Reconnaissance of jointing in Bright Angel area, Grand Canyon, Arizona, by Robert A. Hodgson.

Pre-Carboniferous Paleozoic rocks in Central Chihuahua, Mexico, by Luther W. Bridges and Ronald K. DeFord.

Permian outcrops in western Duchesne County, Utah, by E. L. Yochelson, T. M. Cheney, Dianne Van Sickle, and D. H. Dunkle.

CALIFORNIA DIVISION MINES AND GEOLOGY

Geologic reconnaissance of the Northern Coast Ranges and Klamath Mountains, California, by William P. Irwin. Bulletin 179 $3.00

WORLD OIL, vol. 152, no. 1, January, 1961

Special report on North Africa (11 articles).

How to improve your hydraulic pumping operations, by John B. Woods.

Tyler sand trend becoming better known in Dakotas, by Frank W. Foster.

Magnetic particle inspection pays off, by Walter A. Henkes.

Gas injection program pays off in South Louisiana, by L. G. Shivers.

THE GEOLOGICAL SOCIETY OF AMERICA BULLETIN, vol. 72, No. 1, January, 1961

Mathematical models of slope development, by E. A. Scheidegger.

San Andreas fault north of San Francisco, California, by Charles G. Higgins.

Petrologic study of Bald Rock batholith, near Bidwell Bar, California, by Leonard H. Larsen and Arie Poldervaart.

Petrology of three volcanic suites, Unnak and Bogoslof Islands, Aleutian Islands, Alaska, by F. M. Byers, Jr.

GEOPHYSICS, LOGGING ISSUE, vol. 25, no. 4, August, 1960

Special editor, G. E. Archie. 986 pp. 9 articles.

Society of Exploration Geophysicists, Box 1536, Tulsa 1, Oklahoma. members $2.50
non-members $3.00

BOOKS

Petroleum Developments and generalized geology of Africa and Middle East, October, 1960. Compiled by A. H. Munger and E. Placidi. 115 pp. Munger Map Book. (Geological compilation by Edward A. Gribi, Jr.) Munger Oil Information Service, Los Angeles 43, Calif.

The geology of the Arctic. Proceedings of the First International Symposium on Arctic Geology. Two volumes. (University of Toronto Press, Toronto 5, Canada). $25.50

Offshore topographic maps of the ocean floor off Southern California and Baja California are available from:

U. S. Bureau of Commercial Fisheries
Biological Laboratory
Box 6121
Pt. Loma Station
San Diego

PACIFIC PETROLEUM GEOLOGIST
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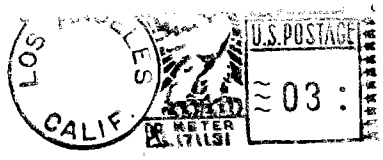
Volume 15 Number 2



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PACIFIC PETROLEUM GEOLOGIST

NEWS LETTER OF THE PACIFIC SECTION
AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS

ASSOCIATION ACTIVITIES

Volume 15 March 1961 Number 3

DENVER CONVENTION

Homer Steiny, Pacific Section Transportation Chairman, is working with United Airlines to reserve a block of seats for Southern California Geologists attending the national convention in Denver. The flight on which he has tentatively reserved space is #728, departing Los Angeles at 9:45 A.M. on Sunday April 23, arriving Denver 12:45 P.M. (MST). For further information contact United Airlines regarding this flight.

GEOLOGICAL SOCIETY OF SACRAMENTO

A highly interesting and unusual talk on Interplanetary Correlation of Geologic Time, was given by Dr. Eugene Shoemaker, U. S. Geologic Survey, Menlo Park, before the Geologic Society of Sacramento, February 14, 1961. Dr. Shoemaker's presentation was accompanied by excellent slides of the moon's surface.

Abstract

Asteroid impact has produced a significant number of medium and large-sized craters on the earth in comparatively recent geologic time, and the rate of impact can be interpreted to have remained fairly steady for at least the last half-billion years. By extrapolation of this rate, the lunar maria are found from the number and distribution of superimposed primary impact craters to have formed at a very early period in the history of the moon. With appropriate modification, the same principle should be applicable to Mars when detailed photographs become available for photogeologic mapping.

A second potential method of interplanetary correlation depends upon the actual transport of impact debris from other planets to the earth, where the debris becomes incorporated in the terrestrial stratigraphic record. Some tektites may be formed by ejection of fused rock from the moon or by ablation of ejecta thrown into orbit around the earth. It may be possible to identify the craters from which the ejecta are derived at some advanced stage of lunar and planetary exploration and thus tie the age of these craters directly to the terrestrial time scale.

SACRAMENTO PETROLEUM ASSOCIATION

Two excellent slide presentations were given before the Sacramento Petroleum Association, February 15, 1961, by Charlie Lundgren, Exploration Logging, and Vern Jones, Exploration Logging. Mr. Lundgren covered well logging operations at Iniskin Bay, Alaska, plus the scenic trip from Anchorage to Valdez, Alaska. Mr. Jones presented slides of Southern Europe, including the Canary Islands, taken during several of his trips to the Continent, plus several slides on Exploration Logging's Bolivia operations.

LOS ANGELES LUNCHEON

Robert H. Paschall of Signal Oil & Gas Company addressed the monthly Los Angeles luncheon group on the subject of "Dip Slip versus Strike Slip Movement on the San Gabriel Fault." Paschall's talk was essentially a recapitulation of a speech made in April, 1958 by Ted Off, before the Coast Geological Society, and reviewed in the May, 1958 issue of Pacific Petroleum Geologist. Paschall and Off are currently preparing a paper on this same subject for submittal to the Bulletin of the A.A.P.G.

NOTICE

The A.A.P.G. Classification Committee and the Conservation Committee have announced their new list of California fields and pools effective January 1, 1961. Copies may be obtained by contacting M. C. Barnard, Jr., Richfield Oil Corporation, 555 South Flower Street, Los Angeles 17, or by phoning Madison 9-4111, Ext. 2312.

Members of the Classification Committee include the following:

Messrs. M. C. Barnard, Jr. - Richfield Oil Corporation.
Harold Clark - Conservation Committee of Calif. Oil Prod.
C. J. Edmundson - Shell Oil Co.
Irvin Frazier - Texaco, Inc.
J. R. Jackson, Jr. - Humble Oil & Refining Co.
W. O. Plant - Union Oil Co.
E. H. Rader - Std. Oil Co. of Calif.
D. E. Ritzius - Division of Oil & Gas.
M. T. Whitaker - Mobil Oil Co.

SAN JOAQUIN GEOLOGICAL SOCIETY

On January 31, 1961, Dr. Charles L. Drake of the Lamont Geological Observatory, New York, a department of Columbia Unitersity, and a distinguished lecturer for the A.A.P.G. presented a timely and interesting talk on the "Structural Evolution of Northeastern North America" before the San Joaquin Geological Society in Bakersfield.

Abstract

Many geophysical measurements, including seismic refraction, seismic reflection, gravity, total field magnetics, bottom and sub-bottom soundings, have been made along the continental margin of eastern North America during the last twenty years. Through these measurements and associated geological investigations the structure of the margin has been determined in some detail.

The seismic measurements have revealed the presence of two sedimentary troughs paralleling the

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Next Deadline: March 31, 1961

coast. The inner one, under the continental shelf, contains sediments up to 20,000 feet in thickness and is bounded near the edge of the shelf by a basement ridge which rises to within 5,000 feet of the surface in places. The outer trough, under the continental slope and rise, contains a greater thickness of sediment, up to 30,000 feet off the Grand Banks of Newfoundland. The sedimentary column decreases in thickness towards the ocean basin, reaching an average thickness of about 3,000 feet.

Beneath the sedimentary rocks are two crustal layers; the basement rocks under the continent, and an oceanic crustal layer under the ocean. Both are found in the vicinity of the continental margin but the basement rocks pinch out as the ocean basin is approached. Both layers may continue under the continent but the boundary between them may be gradational rather than sharp. The boundary between the crust and the mantle becomes obscure in the margin area and the Mohorovicic Discontinuity may not be a sharp interface in this region. Gravity measurements indicate that the change from continental to oceanic crustal properties takes place in a narrow region near the edge of the shelf.

The configuration of the depositional system off northeastern North America compares very favorably with that of the Appalachian system as reconstructed prior to the Taconic Revolution. The shelf is similar to the early Paleozoic Appalachian miogeosyncline with sediments of shallow water origin derived from the continent and an abundance of fauna. The basement ridge resembles the Precambrian ridge (Green Mountains, Reading Prong, etc.) which separates the two depositional troughs of the Appalachians. The sediments of the outer trough are similar to the eugeosynclinal sediments of the Appalachian and other alpine-type mountain systems and resemble the graywackes of Pettijohn's classification. They are marked by an absence of shallow water features and a dearth of fauna. Bucher has interpreted the scarcity of fauna in eugeosynclinal sediments as due to original scarcity rather than to destruction during metamorphism, an hypothesis which supports a deep water origin for these sediments.

Comparison of the continental margin of northeastern North America with others reveals similarities in some instances and differences in others. Among the other areas studied are the southeastern and Gulf coasts of the United States, some parts of Africa, and South America, especially the Argentine coast between Buenos Aires and Tierra del Fuego.

The San Joaquin Geological Society was a co-sponsor with the valley chapters of the AIME, A.P.I. and C.N.G.A. of a timely and informative talk by Mr. George Getty III, President of Tide-water Oil Company, on his trip to Russia in August, 1960. Over 500 oil men heard the talk at the Bakersfield Inn, February 9th. Mr. Getty was one of ten American oil executives who traveled 7,000 miles within the borders of the U.S.S.R. witnessing petroleum operations therein. The delegation was accompanied on its tour in the U.S.S.R. by two Russian representatives, one acting as official escort, the other as official interpreter.

It is the consensus of the delegation that the trip to Russia was a worthwhile and fruitful undertaking. The benefits cannot be measured in terms of what was learned that can be applied to the operation of our own petroleum industry. Rather, the values lie in having observed first hand the manner in which the Russians carry on their petroleum industry operations - in having seen the quality of their personnel - in acquiring from conversations a feel for the pace of their progress - and in confirming that the exploitation of the great oil potential of the U.S.S.R. is being accelerated.

COMMITTEES

FOR THE SEPM-SEG-AAPG SPRING
FIELD TRIP AND TECHNICAL MEETING
(Bakersfield, May 12-13, 1961)

General Chairman: E. H. Stinemeyer - Shell
Field Trip: Richard L. Pierce - Richfield
Technical Meeting: Robert A. Nesbit - Gulf
Luncheon Meeting: Irving T. Schwade - Richfield
Dinner Meeting: David C. Calloway - Rheem
Housing, Reservations,
Registration and Tickets: Carl Helms, Jr. - Standard
Refreshments: Charles W. Cary - Union
Traffic Control, Signs
and Loud Speakers: William F. Edmondson - Consultant
James Groom - Texaco
Philip Ryall - Shell
Visual Aids: Jack Gouty - Shell
Maps and Cross Sections: Tom W. Dibblee - USGS
Road Log Preparation
and Trip Leaders: Tom W. Dibblee - USGS
Otto Hackel - Intex
Robert A. Nesbit - Gulf
Richard L. Pierce - Richfield
William J. Lewis - Standard
Jack C. Miller - Shell
E. H. Stinemeyer - Shell
Robert Steinert - Shell
Syllabus (Guidebook): Richard L. Pierce - Richfield
Syllabus Sales: Robert L. Hickernell - Richfield
Milton Norton - Richfield
E. H. Stinemeyer - Shell
Publicity: William J. Lewis - Standard
Finances: William J. Lewis - Standard
David C. Calloway - Rheem
Louis J. Fitzhugh - Texaco

Harry Johnson, Consultant, Los Angeles, has donated his entire geological library to Stanford University. Jerry Knowles, Richfield geologist, Los Angeles, vows that this contribution consists of several tons of books, as he personally delivered them to the second floor of the Stanford library.

Robert E. Anderson has resigned from Signal Oil and Gas Company to open consulting offices at 2776 Club Drive, Los Angeles 64, California, phone UP 0-8288. Bob has just returned to California after four years of work in Venezuela and Guatemala where he was Chief Geologist and Manager of Operations, respectively, of Signal's subsidiary companies in those countries.

Joe Jones and Dorman Graves, Southland Royalty, Sacramento, having recently returned from the Eureka redwood country, were overheard mumbling something about logging trucks and trees. Guess these Texans have never seen California underbrush cleaned out before!

Since things are up in the air at Honolulu the Bakersfield boys are taking it to heart. Cutler Webster glides around weekends in a sailplane and Rod Nahama is taking flying lessons using something that carries its own pistons, however.

Vince Scurry, Texaco, has moved up the Valley from Bakersfield to Sacramento.

NURSERY NEWS

Congratulations to the Charlie Lundgrens (Exploration Logging, Sacramento) for the arrival of Lisa, January 30, 1961.

The George Rudkins added their 4th child and 3rd boy to the family when Ronald Earl weighed in at 7 lbs. 13 ozs. February 4.

CALENDAR

March 14, 1961: Tuesday, Geologic Society of Sacramento. 7:45 at California State Public Works Bldg., 1120 "N" Street. Speaker: Dr. Fred A. F. Berry (visiting Professor of Geology, University of California at Berkeley). "Anamolous Hydrodynamic and Geochemical Conditions - Their Influence on Petroleum Accumulation".

March 14, 1961: Tuesday evening, 6:30 P.M., Coast Geological Society Annual Ladies Night Dinner Meeting, Miramar Hotel, Santa Barbara, "Foreign Operations including the Spanish Sahara", by Henry H. Neel, General Mgr. - Foreign Exploration and Production Division, Tidewater Oil Company, Los Angeles.

March 14, 1961: Tuesday, 3:30 P.M., Room 3656, Geology Bldg., U.C.L.A. "Symposium on Feldspars with Special Reference to their Use as Geological Thermometers", Dr. Tom F. W. Barth (Director, Mineralogist Institute, Oslo).

March 15, 1961: Wednesday, 7:00 P.M., Special Lectures in Geochemistry, U.S.C., Geology A, 855 W. 37th St., Los Angeles. A. Brainbridge (Scripps), "The Geochemistry of Carbon-14 and Tritium".

March 15, 1961: Wednesday noon, U.S.C. Campus, Room 104, Geology A, 855 W. 37th St., Los Angeles. D. Droge, "Underwater Geology of Pipeline Construction from Venezuela to Margarita and Coche Islands". (For parking space call U.S.C. Geol. Secy. at RE 8-2311, Ext. 387).

March 20, 1961: Forum Meeting, Monday, 7:00 P.M., Union Auditorium, Los Angeles. "Well Completion Methods", Chester Davis (Richfield), "Well Stimulation Techniques", Ed Bemis (Standard), and we hope "Field Production Practices", Frank Lamb (Pennant Operating Co.).

March 28, 1961: Tuesday evening, 6:30 P.M., jointly sponsored special dinner meeting by Coast Geological Society, Soc. Pet. Engineers, API (Ventura Chapter), Ventura Petroleum Club and Desk & Derrick Club of Ventura; American Legion Hall, Ventura, "Socialism in the Oil Patch", by George Getty II, President, Tidewater Oil Company - (note: tickets should be obtained from above organizations - none sold at door).

April 4, 1961: Tuesday evening, cocktails 6:30 P.M., dinner 7:30 P.M., Hotel El Tejon, Bakersfield, John Carson and Wally Block (Standard Oil Co.), "The Geology and Petroleum Engineering Story of the 29-D Oil Field, Midway-Sunset Area."

April 6, 1961: Thursday Noon, A.A.P.G. Luncheon, Roger Young Auditorium, Los Angeles. Robert E. Anderson (Consultant), topic to be announced.

April 6, 1961: Wednesday Noon, U.S.C. Campus, Room 104, Geology A, 855 W. 37th St., Los Angeles. D. Warnke, "Wind and Ocean Water and its Influence on the Climate of Southern California".

April 10, 1961: Monday evening, 7:30 P.M., Science and Engineering Building, Room 56, Bakersfield College, Dr. Harry D. MacGinitie (Humboldt State College), "Reconstruction of Eocene Landscape."

April 13, 1961: S.E.G. Luncheon and tour of United Electrodynamics Laboratory, Pasadena.

April 24-27, 1961: Annual Meeting A.A.P.G., S.E.P.M. and Rocky Mountain Section A.A.P.G., Denver, Colorado.

May 12-13, 1961: Pacific Section A.A.P.G., S.E.P.M. and S.E.G. Spring Meeting, Bakersfield.

May 27-28, 1961: Geologic Society of Sacramento Field Trip - "Marysville Buttes, Chico Creek and Oroville Damsite". Field trip chairman - Loel Garrison, Gulf. Program: Saturday, May 27th, A.M. - Chico Creek led by Louella Saul, U.C.L.A; P.M. - Oroville Damsite, led by Al O'Neill, Dept. of Water Resources. Sunday, May 28th, Marysville Buttes, led by Jeff Watts, Buttes Gas and Oil Co.

May 26, 1961: Friday - 8th Annual Barbecue, jointly sponsored by the Northern California Petroleum Round Table and the Sacramento Petroleum Association. Time and Place to be announced. Swiss Holmes, Shell, chairman of food committee. Charlie Guion, Humble, chairman of golf committee. To be held in conjunction with the Geologic Society of Sacramento field trip.

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Tectonic framework of Egypt and its

influence on distribution of foraminifera, by Rushdi Said.

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Contemporaneous normal faults of Gulf Coast and their relation to flexures, by Frank R. Hardin and George C. Hardin, Jr.

*Analysis of fracture trace pattern of Adak and Kagalaska Islands, Alaska, by Laurence H. Lattman and Antonio V. Segovia.

Results of deep drilling in Southwestern Utah, by Edgar B. Heylmun.

Sweet Arrow Fault, East-Central Pennsylvania, by Gordon H. Wood, Jr. and Thomas M. Kehn.

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PACIFIC PETROLEUM GEOLOGIST
PACIFIC SECTION, A. A. P. G.
RM. 424, RICHFIELD OIL CORP.
555 SOUTH FLOWER
LOS ANGELES 17, CALIFORNIA

Volume 15 Number 3

Richard L. Hester DA
Pauley Petroleum, Inc.
10000 Santa Monica Boulevard
Los Angeles 25, Calif.

Form 3547 Requested

PACIFIC PETROLEUM GEOLOGIST

NEWS LETTER OF THE PACIFIC SECTION
AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS

ASSOCIATION ACTIVITIES

VOLUME 15 APRIL 1961 NUMBER 4

ANNUAL CONVENTIONS

At the business meeting of the Pacific Section Executive Committee in November, 1960, the membership approved, among other matters, authority of the Executive Committee to select the time of our meetings, both for business as well as technical purposes.

In proposing these statutory changes, the then Executive Committee aimed at removing the tie between the business meeting and the annual convention, because it was apparent that due to numerous conflicts almost every year between our convention date and those of G.S.A., S.E.G., and other organizations, we were suffering both financially, due to a drop in exhibitor income, and from reduced attendance. Further, the proposal to hold, periodically, a National AAPG Convention in the spring in conjunction with a section meeting would throw the burden on this section to hold three conventions in a one-year period during those years that a National meeting was held here. This, obviously would present too great a financial and manpower burden on this organization, the former particularly in view of falling exhibitor income during the present reduced period of exploration activity, with the likelihood that we would suffer severe financial losses.

To overcome the problem of three full-scale conventions in a 12-month period, we propose to do the following during 1961, 1962, and 1963:

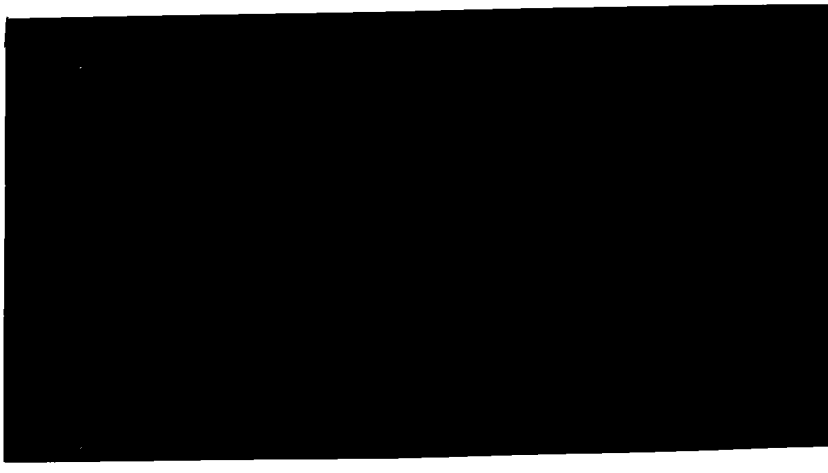
1961 - No regular fall convention, but hold a joint Pacific Section SEPM-SEG-AAPG two-day meeting and field on May 12-13, in Bakersfield.

1962 - National AAPG Convention - San Francisco, March 26-29. No regular Pacific Section convention, but depending upon the success of the 1961 Bakersfield meeting, a two-day fall meeting and field trip with presentation of papers of a more local nature, may be held in Sacramento, Santa Barbara, or.....?

1963 - Regular Pacific Section annual Convention, proposed by this Executive Committee to be held about one month apart from National AAPG (which is committed to Houston, March 25-28, 1963)-- our proposed date is latter part of week of April 24-30, 1963. Attempt to also hold a two-day local meeting as 1961 Bakersfield, on a continuing basis each year thereafter.

In addition to eliminating a possible conflict by holding this convention in the spring, we are likely to obtain a better exhibitor's income by holding the meeting before budgeted funds are exhausted.

We should be prepared to make our hotel reservation for the auditorium and exhibit space by about May of this year. Therefore, we request that you members register your choice in the ballot below, and clip same and mail it to Robert O. Patterson, Secretary, Pacific Section, A.A.P.G., Pacific-Oil Well Logging, Inc., 714 West Olympic Blvd., Los Angeles 15, California. We recommend a "yes" vote in favor of a regular spring convention. We will attempt to continue the two-day meeting and field trip, as that coming up in Bakersfield, at the opposite time of the year, and will therefore end up with more participatory functions than in past years.



COAST GEOLOGICAL SOCIETY

The Coast Geological Society was co-sponsor with local chapters of the Desk & Derrick Club, A.I.M.E., A.P.I., and Ventura Petroleum Club of a most interesting and thought-provoking talk by George F. Getty II, President of Tidewater Oil Company, on his trip to Russia in 1960 as a member of a team of oil experts. Over 340 persons gathered at the American Legion Hall, Ventura, for dinner and the program on Tuesday evening, March 28, 1961.

Mr. Getty spoke on the topic, "Socialism in the Oil Patch - The Russian Oil Industry", and stated that the Soviet Union is making a major bid toward domination of the world's oil markets by 1965. He said that "the only thing holding the Soviet Union up right now is its distribution system." He said the Soviets are currently building pipelines to deliver the oil from fields in the eastern Ural Mountains to the country's Baltic ports.

Next Deadline: April 28

[redacted]

"The American government can do something about this," he said. "Anti-trust regulations in this country should be modified to help prevent Russia from taking markets which we have spent decades building." He said if oil companies were allowed to work together on exports, they would stand a better chance of competing with the government-directed Russian oil industry.

"The (American) government could also help by diplomatically discouraging the purchasing of Communist oil," he said. "The Communists consider themselves a great oil nation, and I think they're quite right," Getty said. "Considering current production and oil exploration possibilities, Russia has a tremendous future."

He said Soviet wells currently produce about three million barrels daily. The new distribution systems will include 11,250 miles of crude-oil pipelines and 8,000 miles of product lines.

"Russian people are not unhappy," he said. "They have profound confidence in their ultimate world leadership and a great desire to catch up and surpass American industry," Getty said.

He described Americans as being "pretty complacent" and likened the American-Russian competition to "the old tale of the tortoise and the hare." Gasoline in Russia is only 72 octane and improvements will make it only 82 by 1965, he said. "Nobody really cares what the people get," he stated.

He emphasized the "Communist threat to the free world" and stated that most of the audience would continue to see the cold war waged during most of their lifehood. Getty said that he is "impressed by the amount of control the Soviet government has over its people. He said that the group of American oil men with whom he traveled was constantly being watched and spied upon during their tour of Russia.

A humorous phase of the trip was recounted by Mr. Getty concerning the drinking bouts the American team waged with their hosts. He said that usually breakfast consisted of "ham and vodka which really got us off to a flying start."

SACRAMENTO GEOLOGICAL SOCIETY

Dr. Fred A. F. Berry, visiting Professor of Geology, University of California, spoke before the Geologic Society of Sacramento, March 14, 1961, on "Anomalous Hydrodynamic and Geochemical Conditions, and Their Influence upon Petroleum Accumulation". Dr. Berry accompanied his presentation with slides and blackboard illustrations.

Abstract

Numerous stratigraphic horizons in widely separated areas have anomalously low or high fluid potentials (essentially the same concept may be expressed by potentiometric surfaces, piezometric surfaces, or by comparing pressures corrected to the same datum elevation in accord with the hydrostatic pressure gradient) when compared to various other aquifers stratigraphically above or below the aquifer in question. Commonly, such fluid potential anomalies are accompanied by anomalous chemical concentrations of the formational waters. Large fluid potential anomalies between stratigraphically higher or lower horizons indicate that vertical hydrodynamic conditions exist. Lateral hydrodynamic flow may or may not accompany such vertical flow. Such vertical flow may significantly add or subtract from the petroleum trapping capacity that might be present under static conditions as determined by the interrelationship of the geometric configuration and the displacement pressure of the "cap rocks" resisting migration. Dynamic forces directed vertically upward tend to decrease the capacity to accumulate petroleum in any trap, whereas downward forces tend to increase such trapping capacity.

Zones with anomalously high or low fluid potentials may exist both by means of "short circuiting" of hydrodynamic flow controlled solely by gravitational forces and by means of membrane phenomena. Such "short circuiting" phenomena resulting in either anomalously high or low potentials might be created by such flow paths as fracture permeability, fault systems, unconformities, reefing, and high-permeability sand channels. "Short circuiting" exists in the Amarillo-Wichita Mountains area of Oklahoma and Texas, the Midale formation in southeastern Saskatchewan, the Woodbend reefs of central Alberta, the Wheeler Ridge and the Kettleman-Lost Hills districts in the San Joaquin Valley of California, and the Tertiary basins of western Oregon and Washington.

Other anomalous pressure data occurring with anomalous salinities cannot be explained by prior theories in hydrodynamics and geochemistry. Laboratory evidence has shown that compacted clay minerals act as semi-permeable membranes and thereby exhibit osmotic-pressure and salt-filtration effects. Several widely separated areas in North America (central Alberta, Canada; San Juan basin, New Mexico and Colorado; and Wheeler Ridge anticline, San Joaquin Valley, California) have anomalous potentials and salt concentrations that may be explained by the movement of water moving cross-formationally through shales acting as semi-permeable membranes.

In each of the discussed areas, the fluid potentials have affected to some degree the ability to accumulate petroleum. In certain instances, low fluid potentials provide the sole trapping mechanism. In other instances, such low potentials act only in conjunction with more conventional trapping mechanisms (the geometry of any "contact" between rocks of relatively high displacement pressure, the "cap rock", underlain by, and/or adjoining rocks of lower displacement pressure, the "reservoir rock") to increase the trapping capacity and in certain instances to modify the position of the petroleum accumulation. Anomalously high fluid potentials in certain instances have destroyed the ability to accumulate petroleum within what otherwise would be considered a petroleum trap.

If shales truly serve as semi-permeable membranes, the geologic significance might be quite extensive. Some of the problems on which membrane concepts might shed some light in addition to those listed above are: salinity anomalies; secondary evaporites; gravitational compaction; possibility of high fluid pressures within shales existing by osmotic mechanisms, thus "unloading" the stratigraphic section so as to achieve low-angle thrusting as described by Hubbert and Rubey; primary migration of petroleum from shales into reservoir rocks; the possibility of the selective primary migration solely of the gas phase in certain instances; and concentration of ore-bearing solutions.

Other Announcements

Reprints of the Geological Society of Sacramento 1960 field trip to Northwestern California are now available. The guide book includes maps and road logs over the Klamath Uplift, Northern Coast Ranges, and the Eel River Basin. The price per guide book is $3.00.

Other available Geological Society of Sacramento guidebooks include:

1958; East Side Sacramento Valley - Mother Lode Area ($2.00).

1959; Coast Ranges, Livermore Valley to Hollister Area ($2.00).

Guidebooks can be obtained from Jack Kearns, Gulf Oil Co., P. O. Box 4195, Sacramento 21, California.

AAPG PRESIDENT'S AWARD

Richard W. Fetzner, research geologist, Sun Oil Company, Richardson, Texas, has been selected as the recipient of the President's Award for his article "Pennsylvanian Tectonics of Colorado Plateau", which appeared in the August, 1960, issue of the Bulletin. This award, consisting of a certificate and $100 in cash, is given annually to the author whose work is considered the most significant contribution to petroleum geology during the year.

SACRAMENTO PETROLEUM ASSOCIATION

Joe Poland, geologist, Groundwater Branch, U.S.G.S., presented a short talk on "Ground water and its Association with Petroleum", March 1, 1961.

The chief difference between the groundwater geologist and the petroleum geologist is in the type of reservoirs they seek; usually the groundwater reservoir is a single phase fluid system, while the petroleum reservoir is a two or three phase system. Geologists in either field use essentially the same methods in their search, but there are several groundwater tools that can be of assistance to the petroleum geologist. They are: flow maps (elevation of water surface) to define groundwater barriers, usually faults; structure contour maps of near surface deposits; and maps of structural features that develop secondary porosity, fractures, joints, etc., which could indicate subsurface porosity if they occurred at depth.

Larry James, Chief Geologist, California Department of Water Resources, spoke before the S.P.A., March 8th, on "Engineering Geology", with emphasis on the activities of the California Department of Water Resources.

Participation of geologists in public works is a relatively recent occurrence. Prior to 1927, engineering geologists were not employed by the State, but this situation changed with the failure of St. Francis Dam in Southern California.

The Department of Water Resources is concerned with: the Feather River Project, precipitated by the influx of people into Southern California; groundwater studies; seepage from waterways and reservoirs; testing of and exploration for construction materials; land subsidence, especially the west side of San Joaquin Valley; foundation studies; and, delimiting areas of most active crustal strain, so that they can be avoided by future projects.

Joe Newman, President Go Western Services, spoke before the S.P.A., March 22nd, on the "Multi-Spaced Neutron Log".

The Multi-Spaced Neutron log originated in Venezuela in 1953. The instrument is a combination of two neutron logs, and is used to distinguish gas zones and to differentiate gas cap from oil pool. The log measures hydrogen content of the formation, which is graphically expressed by separation of the recorded curves. The Multi-spaced Neutron log will not work where: the liquid and gas are a mixture; and hydrogen concentration of the gas approaches that of a liquid; and where the invaded zone is deeper than the penetration depth of the long spaced curve.

Roy D. Lynam, Jr., District Landman, Humble, Chico, gave an excellent presentation on "Depletion Allowance" before the S.P.A. March 29, 1961. Mr. Lynam followed his presentation with a film, "It Never Rains Oil".

EDITORIAL CHANGE

Brad Johnson is retiring from his position as Editor of the P.P.G. The Executive Committee, on behalf of the members of the Pacific Section, A.A.P.G., wishes to express its thanks for an outstanding job. The new Editor is Frank A. Exum, Ohio Oil, Los Angeles.

AAPG-SEG-SEPM
Technical Session and Field Trip
May 12 and 13, 1961
Hacienda Motel, Bakersfield, California

General Chairman - E. H. Stinemeyer
Field Trip Chairman - Richard L. Pierce

An excellent technical session has been planned by Robert A. Nesbit and David C. Callaway and will include the following speakers:

Mr. Bill Le Roy	- North Tejon Area
Mr. Arch Warren	- Wheeler Ridge Field
Mr. Fred Sierveld	- San Emidio Nose Field
Mr. E. D. B. Laudeman	- Arvin Area and Its Recent Developments
Mr. Douglas Waterman	- Pioneer Anticline Field
Dr. Orville L. Bandy	- Early Tertiary Paleo-environmental Trends in Type Tejon Area
Mr. Dave Day	- Regional Picture of the Stevens Formation
Drs. Loeblich and Tappan	- Foraminifera
Mr. Richard Tedford	- Vertibrates of the Tecuya Formation
Dr. R. Kleinpell and Mr. Donald Weaver	- Microfauna and Mega-fauna Aspects of the Oligocene Boundary Problem
Dr. J. W. Durham	- Paleocene-Eocene Stages of California
Mr. Bill Sax	- Seismic Energy
Dr. Richard Allenby	- Problem of Reflected Refractions
Mr. Ardel Bayoumi	- A Gravity and Magnetic Study in the San Joaquin Valley
Mr. Robert Wells	- Seismic Operations in the San Emigdio Area

The Friday luncheon will be presided over by Pacific Section, AAPG President, Mr. Irving Schwade. The speakers will be Mr. Mason Hill, National President of the AAPG, reporting on National AAPG affairs, and Mr. Gordon Oakeshott, Chairman of the forthcoming National AAPG Convention in San Francisco in 1962, will report on the Committee's plans.

The Friday evening dinner meeting will feature Mr. Tom Dibblee speaking on "The Geology of the San Emidio Range" followed by a talk by Mr. Otto Hackel giving a summary of the Saturday field trip that will cover the south end of the San Joaquin Valley.

Liquid refreshments will be made available on the trip.

The field trip will be limited to 250 because of the off-highway road conditions.

There will be no fall Pacific Section meeting this year, so this event will provide an opportunity to meet your friends that you normally see only at the Convention. See you in Bakersfield.

BACK ISSUE

Vol. 5, No. 7 (May, 1951) of the Pacific Petroleum Geologist is missing from the editorial files. A temporary loan from anyone having a copy of this issue would be greatly appreciated by the Editor.

SACRAMENTO FIELD TRIP

The Geological Society of Sacramento will hold its annual spring field trip, on the weekend of May 27 and 28, 1961. The trip will cover the geology along part of the east side of the Sacramento Valley, from Oroville Damsite area, to Chico Creek, and the Marysville Buttes. Saturday, May 27th itinerary: AM - Oroville Damsite, led by Al O'Neill, California Dept. of Water Resources; PM - Chico Creek, led by Louella Saul, UCLA. Sunday, May 28th itinerary: Marysville Buttes, led by Jeff Watts, Buttes Gas and Oil Co.

Accommodations and a banquet for Saturday evening are being arranged for the group at Richardson Springs, north of Chico. A package price will cover banquet, room shared by two, breakfast and box lunch for Sunday. Individual accommodations need not be made.

Guidebooks will be prepared and will contain other articles pertinent to the areas visited. For further information contact Lowell Garrison, Field Trip Chairman, Gulf Oil Co., P. O. Box 4195, Sacramento 21, California.

The field trip will be held in conjunction with the Northern California Petroleum Round Table -- Sacramento Petroleum Association annual barbecue, which will be held Friday, May 26th, time and place to be announced.

LE CONTE GEOLOGICAL CLUB

The Spring meeting of the Le Conte Club will be held at 1:30 P.M., Saturday, April 15, 1961, in Cubberly Auditorium, Stanford University.

Symposium: The Pre-batholithic Framework of the Sierra Nevada

Paul Bateman	Introduction.
Lorin Clark	Major Structural & Stratigraphic Features of the Western Border.
Myron Best	Deformation of Jurassic(?) Rocks in the Indian Gulch Quad.
Donald Ross	Some Stratigraphic & Structural Features of the Eastern Border.
Clemens Nelson	Patterns of Structural Deformation in the White Mountains.
Paul Bateman	Summary and Some Mega-thoughts.

Dinner will be at Rickey's Studio Inn, 4219 El Camino Real, Palo Alto, 7:00 P.M. Price $3.85 including tax and tip. Dinner will be preceded by a reception at the restaurant, beginning at 6:00 P.M. Reservations should be sent to Mark N. Christensen, Department of Geology, University of California, Berkeley 4, California, and should be in his hands by Wednesday, April 12.

Evening Address: Cordell Currell - "Landscapes & Cities of Northern Brazil".

DISTRICT MAILINGS

Many Pacific Section members have indicated that they would like to receive notices of meetings in Districts other than those in which they reside. A charge of $1.00 per person will be made to pay the cost of setting up this list and the mailing charges. If you are interested in receiving notices of the other Districts of the Pacific Section, send your name and $1.00 to Bob Patterson, Secretary, Pacific Section, P. O. Box 2985, Terminal Annex, Los Angeles 54, California.

FORUM MEETING

The monthly Forum meeting was held March 20th in the Union Oil Auditorium. Three speakers were scheduled to participate in a symposium on production practices, but Frank Lamb (Pennant Operating Co.), unfortunately, was unable to attend.

Ed Bemis (Standard) presented a talk on "Well Stimulation Techniques". He defined well-stimulation as the method used to repair well-bore damage resulting from drilling and producing operations and described the types of damage encountered, including mud-invasion, sand-plugging, and wax accumulation. Some of the techniques used to correct well-bore damage are redrilling (expensive), reperforation (fairly unsuccessful), fracturing and washing. Well-washing has been used by Mr. Bemis to an extent not reached elsewhere in the country and with considerable success. A fluid is introduced into the well opposite the damaged zone where it is agitated by a stirring tool. The fluid contains chemicals designed to dissolve waxes, carbonates and other plugging materials not normally soluble in water. The fluid and the included debris are then circulated out to the surface. Mr. Bemis concluded his presentation with graphs showing marked production increases obtained through well-washing.

Chester Davis (Richfield) in a talk entitled "Well Completion Methods" emphasized that a good completion program begins before the well is drilled. The geologist, engineer, and production superintendent should cooperate in laying out a well program satisfactory to all. Any well drilled in a field in which secondary recovery techniques might later be used should be completed with a solidly cemented liner, selectively gun-perforated. Completion techniques used by Richfield in the Hibberd pool (Cuyama) and Coles Levee were explained and slides of the surface equipment used in multiple-zone wells were shown.

PERSONAL ITEMS

"Metric-Hal" Rader of Standard pulled a beaut at the Buttery in Buena Park. Seems he ordered a "Low Calory" Plate and proceeded to put salt and pepper on the "Low Calory" mashed potatoes. Much to his chagrin the "spuds" turned out to be sherbert. The guffaws could be heard for miles.

R. A. Nesbit (Gulf, Bakersfield) is joining the gas-rush to Sacramento. He will relinquish his gavel as President of the San Joaquin Geological Society to Bob Lindblom (Standard, Bakersfield), who moves up from the office of Vice-President.

Lauren Wright, long time geologist for the California Division of Mines is pulling up stakes to try his hand at teaching. Lauren will leave sunny, golden California for the greener pastures of Penn State in August.

John Bendetto, Exploration Logging, Sacramento, is anxiously looking forward to his transfer to Alaska sometime in April.

Over one-hundred fellow workers recently joined in honoring H. W. "Herm" Weddle on his retirement from Standard Oil Company. A dinner party was held at the Noreiga Hotel in Bakersfield, March 29th. Herm had been with Standard for 33 years.

Brian Parks, Schlumberger, Sacramento, has just returned from Houston, where he underwent two weeks of logging school.

Apologies to LOWELL Garrison, Gulf, Sacramento, for misspelling his given name. Okay, Loel, a public apology has been made.

Thirty-six Standard Oilers took part in their recent annual spring golf tourney. Winners included Fred Flege, Greg Stanbro and John Jacobson. John Silcox and George Starke may have set back golf in Kern County fifty years by their participation in the meet. They accumulated a total of 301 strokes between them but only after Starke obtained a firm understanding that the two dollar green fee was for the WHOLE round and not just for one green. Don Laswell was chairman of the event.

Bob Erickson, Standard, has been transferred to Bakersfield from Ventura as head development geologist to replace the retiring Herm Weddle.

Jean Senteur de Boue has utilized the slack spring fog season along the Santa Barbara coastal area to research into various financial problems. Of course, with his French background, he knew by intuition the conclusion reached by the following analysis:

De Boue price per 100% alcohol gallon

$$= \text{Cost per Gallon} \times \frac{100}{\%\,\text{Alcohol}}$$

or:

$$= \text{Cost per Gallon} \times \frac{200}{\text{Proof}}$$

TABULATION	DE BOUE UNIT PRICE
DRY WINE, local, $1.90/gallon	$15.95
GIN, local name, 85 Proof $2.86/fifth	33.50
BEER, western, 15 gal keg, wholesale	33.50
BEER, western, Supermarket special, $.80/sixpack	41.50
BOURBON, local name, 86 proof, $3.60/fifth	41.80
SCOTCH, local name, 87 proof, $4.67/fifth	54.25
BOURBON, the best, 100 proof, $6.06/fifth	60.60
BEER, eastern, $1.20/sixpack	62.00
DRY WINE, the best, $1.50/fifth	62.50

Lew Nelson, Ohio, Ventura, and Karl Arleth, Ohio, Sacramento, have received "The Call of the Bayou" and are due to depart soon for their new assignment in Lafayette, Louisiana.

The usual precedure of a California geologist undergoing a winter transfer to Calgary turned out with disasterous results for Bob McConville, Signal, recently. The current fad in Canada is the "easy-way-backyard-skating-rink", formed by the difficult and complex method of turning on a backyard faucet in the evening and awakening in the morning with one nicely frozen backyard pond. With the typical lack of communications that geologists are sometimes confronted with, betterhalf Marilyn stepped into the backyard pond, slipped and broke her ankle. Consequently, Bob now has the additional title of Chief Cook and Bottlewasher while Marilyn looks on from the easy chair - foot-in-cast-look, that is.

Bill Bauer, Texaco's Sacramento "Tower of Power", has been transferred to Long Beach. Joe Ernst, formerly in Long Beach, and Vince Scury, formerly in Bakersfield, were transferred to Sacramento in the same move.

Bob Reedy, Gulf, Sacramento, has been transferred to a new assignment in Casper, Wyoming. Bob has been replaced by Bob Nesbitt from Bakersfield.

A follow-up of the recent PPG sales plug for Hal Fothergill's newly draped, carpeted, and painted Arcadia home indicates that it is still on the market. While action at this end is pending, Hal, ever thankful that summer is approaching, continues to negotiate for a suitable tent in Durango.

Lou Canut, Texaco, Long Beach and Sacramento, has left Texaco and reportedly is working for an engineering firm in Long Beach.

Howard "Happy Hour" Level, Union, Santa Paula, recently completed two-weeks Naval Reserve training duty at the Fleet Anti-Submarine Warfare School in San Diego - the fleet will never be the same!

Don Collins, Shell, has been transferred from Durango, Colorado to Sacramento.

Margaret Cox, out of the working world for some four or five weeks under Doctor's orders, is now looking forward to her approaching return to Richfield's Long Beach office.

Charlie Lundgren, Exploration Logging, Sacramento was exuberant over his recent two week stay in Bethel Bay area of Alaska. Charlie's first action upon returning was to go on a 10-day vacation. Wonder if the lack of a powder room in the 20° above weather had anything to do with the vacation???

At a farewell luncheon for Richfield's Ben Ryan, who leaves Los Angeles to assume the duties of Division Geologist in Anchorage, Mase Hill asked Ben to give a farewell speech. Nothing daunted Ben, who is affectionately known as "No Dope Ryan" from Cuyama days, rose and gave forth with a sonorous "Adios". Having nothing further to add, he sat down to tumultuous applause.

NURSERY NEWS

Congratulations to the Wally Fongs, Texaco, Sacramento, on the arrival of Kathleen, March 19, 1961.

Jack and Pat Kearns, Gulf, Sacramento, are the happy parents of a son, Timothy, born March 22, 1961, weighing in at 6 lbs., 6 oz.

Karl and Clara Arleth, Ohio, Sacramento, welcomed John Victor into the family March 18, 1961. This is number seven for the Arleths, 5 boys and 2 girls.

CALENDAR

April 12, 1961: Wednesday, 12:00 N., Sacramento Petroleum Association luncheon at Scheidel's Bavaria, 2764 Fulton Ave. Vern Coates (Brown Drilling Co.), "Cost Estimating Contract Drilling, Sacramento Valley".

April 12, 1961: Wednesday, 12:00 N., U.S.C. Campus, Room 104, Geology A Barracks, 855 W. 37th St. R. Nahama, "Oil Exploration in Alaska during Summer, 1960".

April 13, 1961: Thursday, 3:30 P.M., U.C.L.A. Campus, Room 3656, Geology Bldg. Prof. Augusto Gansser (Federal Institute of Technology, Zurich, Switzerland) "Problems of Alpine Geology".

April 13, 1961: S.E.G. Luncheon and tour of United Electrodynamics Laboratory, Pasadena.

April 17, 1961: Monday, 4:00 P.M., Stanford University Journal Club, Room 320, Geology Corner. Coffee at 3:45 P.M. Lee Smith, "Marine Ecology and its Application to the Study of Well Sections".

April 24, 1961: Monday, 4:00 P.M., Stanford University Journal Club, Room 320, Geology Corner. Coffee at 3:45 P.M. Joseph C. Clark, "Possible Tectonic Significance of Quartz Extinction in Ben Lomond Pluton, Santa Cruz County, California". Phillip E. Playford, "Stratigraphy and Structure of the Egan Range, near Lund, Nevada".

April 24-27, 1961: Annual Meeting A.A.P.G., S.E.P.M. and Rocky Mountain Section A.A.P.G., Denver, Colorado.

April 26, 1961: Wednesday, 12:00 N., U.S.C. Campus, Room 104, Geology A Barracks, 855 W. 37th St. W. Merselis, "Low Terraces of the Southern California Coast".

May 1, 1961: Monday, 4:00 P.M., Stanford University Journal Club, Room 320, Geology Corner. Coffee at 3:45 P.M. Wesley LeMasurier, "Structural Study of a Laramide Fold Involving Shallow Seated Basement Rock, Larimer County, Colorado". Paul P. Enos, "The Panoche-Franciscan Contact in the Western Vallecitos Syncline, San Benito County, California".

May 3, 1961: Wednesday, 12:00 noon, U.S.C. Campus, Room 104, Geology A Barracks, 855 W. 37th St. J. Ingle, "Upper Miocene and Lower Pliocene Foraminifera and their Zonation in the Los Angeles and Ventura Basins", and J. Wilcoxon, "Influence of the Gulf Stream on Foraminifera and Foraminiferal Ecology off the Coast of Florida".

May 4, 1961: Thursday Noon, A.A.P.G. Luncheon, Rodger Young Auditorium, Los Angeles. Speaker and subject to be announced.

May 8, 1961: Monday evening, 7:30 P.M., Science and Engineering Building, Room 56, Bakersfield College. Dr. Tj. H. van Andel (Scripps Institute of Technology, La Jolla), "Sedimentation in Modern Basins".

May 8, 1961: Monday, Geologic Society of Sacramento. 7:45 P.M. at California State Public Works Building, 1120 "N" Street. Speaker: Lewis L. Nettleton, A.A.P.G. Distinguished Lecturer, "Gravity and Magnetics for Geologists".

May 9, 1961: Tuesday, 4:00 P.M., Stanford University Journal Club, Room 320, Geology Corner. Coffee at 3:45 P.M. Ronald R. McNaughton, President, A.I.M.E., "Canadian-American Relationships".

May 12-13, 1961: Pacific Section A.A.P.G., S.E.P.M. and S.E.G. Spring Meeting, Bakersfield.

May 15, 1961: Monday, 4:00 P.M., Stanford University Journal Club, Room 320, Geology Corner. Coffee at 3:45 P.M. Peter W. Lipman, "Geology of the Eastern Trinity Alps, Calif."

May 17, 1961: Wednesday, 12:00 noon, U.S.C. Campus, Room 104, Geology A Barracks, 855 W. 37th St. D. Garrett, "Origin and Nature of Saratoga Springs, California Dunes".

May 22, 1961: Tuesday, 4:00 P.M., Stanford University Journal Club, Room 320, Geology Corner. Coffee at 3:45 P.M. Roland Brinkman, A.G.I. Lecturer, "Varisician Mountain Building in Central Europe".

May 26, 1961: Friday - 8th Annual Barbecue, jointly sponsored by the Northern California Petroleum Round Table and the Sacramento Petroleum Association. Time and place to be announced. Swiss Holmes (Shell) is chairman of the Food Committee and Charlie Guion (Humble) is chairman of the Golf Committee. The barbecue is being held in conjunction with the Geologic Society of Sacramento field trip.

May 27-28, 1961: Geologic Society of Sacramento Field Trip - for details, see notice elsewhere in this issue.

May 29, 1961: Monday, 4:00 P.M., Stanford University Journal Club, Room 320, Geology Corner. Coffee at 3:45 P.M. James W. Sides, "Geology of the Butte Mountains, White Pine County, Nevada". Gregory Mursky, "Pitchblende Mineralization at Great Bear Lake, Canada."

June 5, 1961: Monday, 4:00 P.M., Stanford University Journal Club, Room 320, Geology Corner. Coffee at 3:45 P.M. Peter W. Birkeland, "Pleistocene History of the Truckee River Valley, North of Lake Tahoe, California".

August 2-5, 1961: Wyoming Geological Association Sixteenth Annual Field Conference, a symposium on the post-Cody and pre-Eocene stratigraphy of Wyoming. The field trip will cover portions of the Green River Basin, Rawlins Uplift, Wind River Basin and west flank of the Powder River Basin. Transportation will be by private car. Registration by mail will be available after May 1, 1961 from Wyoming Geological Association, P.O. Box 545, Casper, Wyoming.

BIBLIOGRAPHY OF RECENT PUBLICATIONS

U. S. GEOLOGICAL SURVEY

Bulletin 1111-B: Field description and sampling of coal beds, by J. M. Schopf.....$1.00

MAPS

I-201-B: Geographic map of the Jawf-Sakakah quadrangle, Kingdom of Saudi Arabia, by R. A. Bramkamp, and L. F. Ramfrez.....$1.00

MF 161: Preliminary geologic map and sections of the Osgood Mountains quadrangle, Humboldt County, Nevada, by P. E. Hotz and Ronald Wilden.....$ .50

MF 197: Preliminary geologic map of the Emmett Wash NW quadrangle, Coconino County, Arizona, by R. G. Petersen and J. D. Wells.$ .50

PAPERS

Prof. Paper 330-A: Paleozoic species of Bairdia and related genera, by I. G. Sohn..$1.00

Prof. Paper 374-A: Upper Eocene and Oligocene larger foraminifera from Viti Levu, Fiji, by W. Storrs Cole.....$ .25

Prof. Paper 356-B: Uranium and other trace elements in petroleums and rock asphalts, by Kenneth G. Bell.....$1.00

Water Supply Paper 1535-A: Ammoniated thermal waters of Lake and Colusa Counties, California, by C. E. Roberson and H. C. Whitehead.....$ .15

Water Supply Paper 1535-B: Geologic control of mineral compositions of stream waters of the Eastern slope of the Southern Coast Ranges, Calif., by G. H. Davis.....$ .20

GEOTIMES, Vol. 5, no. 6, March, 1961.

Geologic aspect of Coast and Geodetic Survey operations, by Rear Admiral H. Arnold Karo.

AMERICAN SCIENTIST, Vol. 48, no. 3, September, 1960.

Climatic changes of the past and present, by Erling Dorf.

AMERICAN JOURNAL OF SCIENCE, Vol. 258, no. 10, December, 1960.

Repeated avalanches at Chaos Jumbles, Lassen Volcanic National Park, by James P. Heath.

SEISMOLOGICAL SOCIETY AMERICA, BULLETIN, Vol. 50, no. 3, July, 1960.

Creep on the San Andreas Fault. Three related articles by 1) Karl V. Steinbrugge and Edwin G. Zacher, 2) Don Tocher, and 3) Charles A. Whitten and C. N. Claire.

SEISMOLOGICAL SOCIETY AMERICA, BULLETIN, Vol. 50, No. 4, October, 1960.

S. Waves: Alaska and other earthquakes, by William V. Stauder.

A field report on the Alaska earthquakes of April 7, 1958, by T. Neil Davis.

WORLD OIL, Vol. 152, no. 3, February 15, 1961.

What's new in the drilling industry, by Jack F. Earl.

Advancements in production methods--1960, by R. W. Scott.

Exploration outlook, 1961.

WORLD OIL, Vol. 152, no. 4, March, 1961.

New radio reflection method finds oil and gas directly, by Harrison T. Brundage.

Mobile magnetometer gives rapid regional coverage, by Walter E. Heinrichs, Jr.

How to use foaming agents in air and gas drilling, by W. C. Goins, Jr., and H. J. Magner.

Index maps aid air/gas drilling operations, by Anthony Gibbon.

Automatic gas well dewatering system cuts costs, by M. C. Gillis.

Drilling fluids in the Rocky Mountain area, by Homer B. Brown, Jr.

ENGINEERING AND MINING JOURNAL, Vol. 162, no. 3, March, 1961.

Antarctica's 'Operation Deep Freeze': A visit to geophysical frontiers, by Finn B. Domaas.

GEOLOGICAL SOCIETY AMERICA BULLETIN, Vol. 72, no. 3, March, 1961.

Welded tuffs and flows in the rhyolite plateau of Yellowstone Park, Wyoming, by Francis R. Boyd.

Limnology, sedimentation, and micro-organisms of the Salton Sea, California, by Robert E. Arnal.

Experimental deformation of viscous layers in oblique stress fields, by A. R. McBirney and Myron G. Best.

GEOLOGICAL SOCIETY OF AMERICA, 417 W. 117 St., New York 27, N. Y.

Memoir 83: Biostratigraphic studies in the Comanche (Cretaceous) series of Northern Mexico and Texas, by Bob F. Perkins.....Members: $4.50
.....Non-Members: $6.00

WASHINGTON DIVISION MINES AND GEOLOGY, Olympia, Washington.

Bibliography and index of the Geology and Mineral Resources of Washington, 1937-1956, by William H. Reichert (Bulletin No. 46, 1960).

OIL AND GAS JOURNAL (Reader Service Department, P.O. Box 1260, Tulsa, Okla.)

The natural gas industry. Monopoly and competition in field markets, by Edward J. Neuner. $5.75

ARIZONA BUREAU OF MINES, University of Arizona, Tucson, Arizona.
County geologic map series: (Scale 6 miles to the inch)

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NEVADA BUREAU OF MINES, University of Nevada, Reno, Nevada.
Bulletin 57: Geology of the White Pine Mining District, White Pine County, Nevada, by Dr. Fred L. Humphrey $3.50 plus 15 cents mailing charges

U. S. BUREAU OF MINES

Petroleum refineries, including cracking plants, in the United States, January 1, 1960, by C. E. Henning. 13 pages. Info. Circ. 8009. GPO.....$ .20

Minerals Yearbook, Volume I: Metals and minerals other than fuels.....$4.50

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SCIENCE, Vol. 133, no. 3453, March 3, 1961.
Radiocarbon dating, by W. F. Libby.

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Volcanology, by G. A. Macdonald.

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The basement rocks of Malaya and their paleogeographic significance in southeast Asia, by Charles S. Hutchison.

Notes on faceted slopes, rock fans and domes on granite in the east-central Sudan, by Bryan P. Ruxton and Leonard Berry.

Occurrence of silicified wood in Hawaii, by R. T. Okamura and J. C. Forbes.

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The California independent producer plays important role in oil industry.

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Helium--its increased use and importance, by P. V. Mullins.

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Oil-Well Pumping. Part 34; The how and why of torque factors, by Joseph Zaba.

WPRA panel answers alkylation problems.

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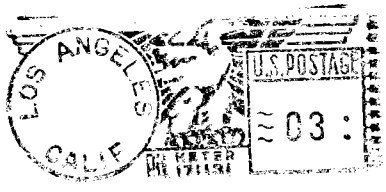

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PACIFIC PETROLEUM GEOLOGIST

NEWS LETTER OF THE PACIFIC SECTION
AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS

Volume 15 | May, 1961 | Number 5

ASSOCIATION ACTIVITIES

AAPG-SEG-SEPM
Technical Session and Field Trip
May 12 and 13, 1961
Hacienda Motel, Bakersfield, California

General Chairman - E. H. Stinemeyer
Field Trip Chairman - Richard L. Pierce

An excellent technical session has been planned by Robert A. Nesbit and David C. Callaway and will include the following speakers:

Mr. Bill Le Roy	- North Tejon Area
Mr. Arch Warren	- Wheeler Ridge Field
Mr. Fred Sierveld	- San Emidio Nose Field
Mr. E. D. B. Laudeman	- Arvin Area and its Recent developements
Mr. Douglas Waterman	- Pioneer Anticline Field
Dr. Orville L. Bandy	- Early Tertiary Paleo-environmental Trends in Type Tejon Area
Mr. Dave Day	- Regional Picture of the Stevens Formation
Drs. Loeblich and Tappan	- Foraminifera
Dr. Richard Tedford	- Vertibrates of the Tecuya Formation
Dr. R. Kleinpell and Mr. Donald Weaver	- Microfauna and Megafauna Aspects of the Oligocene Boundary Problem
Dr. J. W. Durham	- Paleocene-Eocene Stages of California
Mr. Bill Sax	- Seismic Energy
Dr. Richard Allenby	- Problem of Reflected Refractions
Mr. Ardel Bayoumi	- A Gravity and Magnetic study in the San Joaquin Valley
Mr. Robert Wells	- Seismic Operations in the San Emigdio Area

The Friday luncheon will be presided over by Pacific Section, AAPG President, Mr. Irving Schwade. The speakers will be Mr. Mason Hill, National President of the AAPG, reporting on National AAPG affairs, and Mr. Gordon Oakeshott, Chairman of the forthcoming National AAPG Convention in San Francisco in 1962, will report on the Committee's plans.

The Friday evening dinner meeting will feature Mr. Tom Dibblee speaking on "The Geology of the San Emidio Range" followed by a talk by Mr. Otto Hackel giving a summary of the Saturday field trip that will cover the south end of the San Joaquin Valley.

Liquid refreshments will be made available on the trip.

The field trip will be limited to 250 because of the off-highway road conditions.

There will be no fall Pacific Section meeting this year, so this event will provide an opportunity to meet your friends that you normally see only at the Convention. See you in Bakersfield.

LOS ANGELES LUNCHEON MEETING

An interesting and beautifully illustrated talk entitled "Volcanoes of Central America - a geological travelogue" was presented by Mr. Robert E. Anderson, consulting geologist, Los Angeles, at Rodger Young Auditorium, on April 6th. Mr. Anderson has recently returned to California after four years as Chief Geologist and Manager of Operations of the Signal Oil & Gas Company's subsidiaries in Venezuela and Guatemala.

Abstract

Central America lies at the western end of the Caribbean Sea, a sea that is bounded on the north and south by east-west transverse belts.

Northern Central America, sometimes called Nuclear Central America, is a part of the great transverse belt consisting of the Antillean Geanticline and Geosyncline, which extend to the east through the Greater Antilles. The volcanoes of Northern Central America, which follow a generally northwest-southeast trend, were formed in the Quaternary.

Southern Central America started its formation in late Jurassic in a manner similar to what now exists at the eastern end of the Caribbean, i.e., a chain of volcanic islands. Subsequent periods of erosion, deposition of sediments in the surrounding seas and uplift led eventually to the establishment of a land bridge which now connects the Americas. This link has remained uninterrupted since the Pliocene, although it has undergone modifications. Some of the volcanoes in Nicaragua may date back to the Eocene and some of those in Costa Rica may be as old as late Cretaceous.

The basin containing lake Atitlan in Guatemala, according to a recent article by Howel Williams, is the result of a cauldron subsidence caused principally by collapse resulting from the subterranean withdrawal of magma. The basin is surrounded by a ring fracture and enclosed by scarps cut in the gently folded late Tertiary lavas, tuffs and tuffaceous sediments which were the result of fissure eruptions. The volcanic cones at Lake Atitlan developed during the Quaternary and after the initial subsidence of the basin. The cone of the volcano Atitlan is located on the ring fracture, but the other two craters, Toliman and San Pedro, are within the basin.

Next Deadline: May 31, 1961

There are three major volcanoes in the vicinity of Antigua, the old capitol of Guatemala. These are Agua, Fuego and Acatenango. The last two named are nearly twin cones and lie on a north-south fracture, the predominate trend of faulting in the Guatemala highlands. Fuego last erupted in 1957, spreading a blanket of ash over Guatemala City, some 20 miles distant, and depositing some ash at least as far away as southeast El Peten, about 150 miles distant.

The crater of Izalco in El Salvador was reportedly formed during historic times and erupted continuously until about two or two and a half years ago. This dependability led to its use as a navigation point and recently to the building of a modern hotel on an adjacent peak with a view of the erupting volcano as the major tourist attraction. The building was completed, but not yet furnished, when the volcano quit, leaving a dormant volcano and a dormant hotel.

San Salvador volcano last erupted in 1917. This eruption resulted in the formation of a perfect miniature crater inside of the half-mile deep main crater.

Momotombo crater on the shore of Lake Managua last erupted about 1947. Another Nicaraguan volcano, Ometepe, located on an island in Lake Nicaragua, is still active and produces a minor eruption every twelve minutes.

Irazu volcano, a few miles from the city of San Jose, Costa Rica, is considered still active, even though dormant at the present.

Although outside of the subject area, illustrations were included of Mt. Pelée and the ruins at St. Pierre on the island of Martinique. Pelée is the most famous volcano in the entire Caribbean area, due to the eruption of May 8, 1902. This eruption produced a flaming cloud of gas and lava particles, called "nuée ardente", which swept down and wiped out the town of St. Pierre, killing 140,000 people and leaving but one alive, a condemned murderer confined in a deep dungeon.

LOS ANGELES FORUM MEETING

Lateral faulting was the subject of the A.A.P.G. evening forum meeting held at Rodger Young Auditorium, April 17. Talks were presented by Mr. William J. M. Bazeley, Geologist, Richfield Oil Corporation, Bakersfield, and by Mr. Richard F. Walters, Geologist, Humble Oil & Refining Co., Chico.

Mr. Bazeley began with a lucid and detailed account of two widely separated areas along the San Andreas fault zone in California in an effort to answer the controversial question: "175 miles of lateral movement along the San Andreas fault since lower Miocene?".

Abstract

Hill and Dibblee (1954, Bull. G.S.A., V. 64, p. 448-9) have suggested that the Oligocene - lower Miocene strata of the San Emigdio Mountains and the San Juan Bautista area are uniquely similar, and may have been offset approximately 175 miles along the San Andreas fault zone; this talk is essentially an exploration of this hypothesis.

The oldest sedimentary unit at San Juan Bautista is the marine San Juan Bautista formation - approximately 1800 feet of fine-grained sandstone and lesser amounts of lutites that are Refugian (Eocene) in age. The probable correlative of this unit at San Emigdio is the San Emigdio formation - a maximum of about 700 feet of marine fine-grained sandstone and lesser amounts of Refugian (Eocene?) age. Overlying the San Emigdio formation is the Pleito formation - 0 to 1800 feet of marine, moderately conglomeratic sandstones and lutites that are Refugian (?) in age. These rocks in turn are overlain by a maximum of 2,500 feet of the so-called Vaqueros formation. This unit, Zemorrian in age, is essentially identical in lithologically to the Pleito formation, and no valid basis for its separation from Pleito could be found (in the area east of San Emigdio Canyon).

At San Juan Bautista, the probable correlative of the "Pleito - Vaqueros" is the Pinecate formation. approximately 1,000 feet of resistant, massive, conglomeratic sandstone. This unit, as defined here, includes the Vaqueros formation and ranges in age from probable Refugian to Zemorrian. The Pinecate is overlain by, and interfingered with, the predominantly non-marine "Red Beds formation" of Zemorrian age - 0 to 950 feet of texturally hetrogeneous, pell-mell limestone breccias, sandstones and lutites that are distinctive for their high percentage of limestone fragments.

At San Emigdio, the "Pleito-Vaqueros" is overlain by, and interfingers with, the predominantly non-marine Tecuya formation -- 0 to 3,000 feet of hetrogeneous conglomerates, sandstones, and lutites of Zemorrian age whose cheif constituent is granitic detritus.

At San Juan Bautista, both the non-marine rocks and the Pinecate formation are overlain by a 1,400 foot thick assemblage of clastic, pyroclastic, and flow rocks of probable Zemorrian to possible Saucesian age, - the "Volcanic group" . Very close to the base of this unit there is present 0 to 200 feet of distinctive, light jade green andesite breccia that contains two major constituents: a light green biotite andesine andesite and a purplish-brown biotite andesine andesite. A third distinctive but quantitatively minor, constituent is a grey perlitic biotite andesine hyalodacite.

In the San Emigdio Mountians, there is present, overlying and interbedded with the "Pleito-Vaqueros" and "Tecuya" formations, 0 to 600 feet of predominantly basic flow rocks, acid to basic pyroclastics, and associated clastic sediments, that range in age from Zemorrian to Saucesian. The pyroclastics, which are sedimentary and compositionally hetrogenous, contain fragments of light green biotite andesine andesite, purplish-brown biotite andesine andesite, and grey perlitic biotite andesine hyalodacite. The similarities of these rock types to the ones at San Juan Bautista is such that the two sets may be considered identical.

It seems unlikely that two sets of identical volcanics would be deposited 175 miles apart, apparently at the same time, on either side of the San Andreas fault zone so that they rest on contemporaneous interfingering marine-non-marine sequences whose facies relationships, were they contiguous, would have approximately the same spatial relationships, and which both rest on apparently contemporaneous, fine grained, less-resistant rocks. Furthermore, the decreasing similarity of the two sequences downward from the identical volcanics is a strong argument for lateral movement along the San Andreas during the deposition of these rocks.

Mr. Bazeley's talk was followed by a timely discussion by Mr. Walters on "Theoretical Aspects of Lateral Faulting".

Theoretical Aspects of Lateral Faulting

The problem of lateral fault nomenclature was briefly reviewed together with a short discussion of the world-wide distribution of such faults. Criteria which can be used for the detection of lateral displacement were also discussed with illustrations from well-known studies by Campbell, Kennedy and Fletcher. The concept of scale of displacement and the lack of precision in determining lateral movement by means of most sedimentary units were stressed.

Mechanical analysis of the stresses which lead to faulting based on work by Hubbert and Anderson, starts with the resolution of all stresses into three mutually perpendicular principal stresses, one of them being, in most cases, vertical. A horizontal decrease in stress could result in normal faulting when the horizontal stress reached approximately one-third the lithostatic load. Similarly, a three-fold increase in a horizontal component of stress would result in thrust faulting. Lateral faulting, however, requires both horizontal compression and extension. The interrelationships of the three types of faulting were summarized. This stress analysis can be applied to California, relating the San Andreas Fault, the Transverse Ranges and the Basin and Range province in a single framework which had its inception in Upper Cretaceous time.

Recommendations for additional study of lateral faulting in the California area include:

1) Compilation of a matched pair of cross sections on either side of the San Andreas fault zone, to be revised approximately every ten years.

2) Compilation of an annotated bibliography of original work on lateral faulting in California, to be updated annually.

3) Preparation of a map with published data on first motion studies of earthquakes in Western United States.

4) Initiation of a detailed study of volcanic rocks in the vicinity of the San Andreas Fault, including the distribution of these fragments in sediments.

5) Collection in a central "library", such as U.C.L.A., of critical hand specimens, thin sections, etc., relating to volcanics and other diagnostic rocks, for purposes of future comparison.

6) Promotion of suitable thesis problems relating to lateral faulting by means of enthusiasm, aid and interest, securing material when compiled.

These functions could well be satisfactorily performed by a committee of the A.A.P.G., serving as a valuable contribution to science and the industry.

SPRING BARBECUE

The Annual A.A.P.G. Spring Barbecue will be held this year on Friday, June 9, 1961, at the Shell Club House in Ventura. This is a change from previous years when the annual spring barbecue was held at Britt Park, Piru.

Activities available to members and guests are as follows:

Friday morning, June 9: golf at the Ojai Valley Country Club or field trip in the Ventura-Oak View area.
Friday afternoon, June 9: barbecue and liquid refreshments.
Saturday morning, June 10: deep sea fishing trip to the Channel Islands.

Keep these dates open on your calendar since this promises to be one of the biggest and best barbecues to date.

EASTERN NEVADA GEOLOGICAL SOCIETY

The Eastern Nevada Geological Society will hold its first meeting of the season at 7:00 P.M., Wednesday evening, June 28, 1961, at the Hotel Nevada in Ely.

Dr. W. H. Easton, Professor of Geology at the University of Southern California, will give a talk entitled "Stratigraphic Succession and Problems in the Illipah Quadrangle, White Pine County, Nevada", in which he will discuss his views on rocks of Late Paleozoic, Cretaceous, and Eocene age.

The following two days, Thursday and Friday, June 29th and 30th, Dr. Easton will conduct field trips from Ely through the Illipah quadrangle. These trips will be informal and those wishing to participate will be responsible for their own transportation, insurance, meals, and lodging. The I.A.P.G. "Guidebook to the Geology of East Central Nevada" (1960) will serve as reference on these trips. This publication can be purchased (price - $12.00) from Petroleum Information, P.O. Box 2612, Denver 1, Colorado.

SACRAMENTO FIELD TRIP

The Geological Society of Sacramento will hold its annual spring field trip, on the week end of May 27 and 28, 1961. The trip will cover the Geology along part of the east side of the Sacramento Valley, from Oroville Damsite area, to Chico Creek, and the Marysville Buttes. Saturday, May 27th, itinerary: AM - Oroville Damsite, led by Al O'Neill, California Dept. of Water Resources; PM - Chico Creek - led by Louella Saul, UCLA. Sunday May 28th, itinerary: Marysville Buttes, led by D. H. Thamer, Buttes Gas and Oil Co.

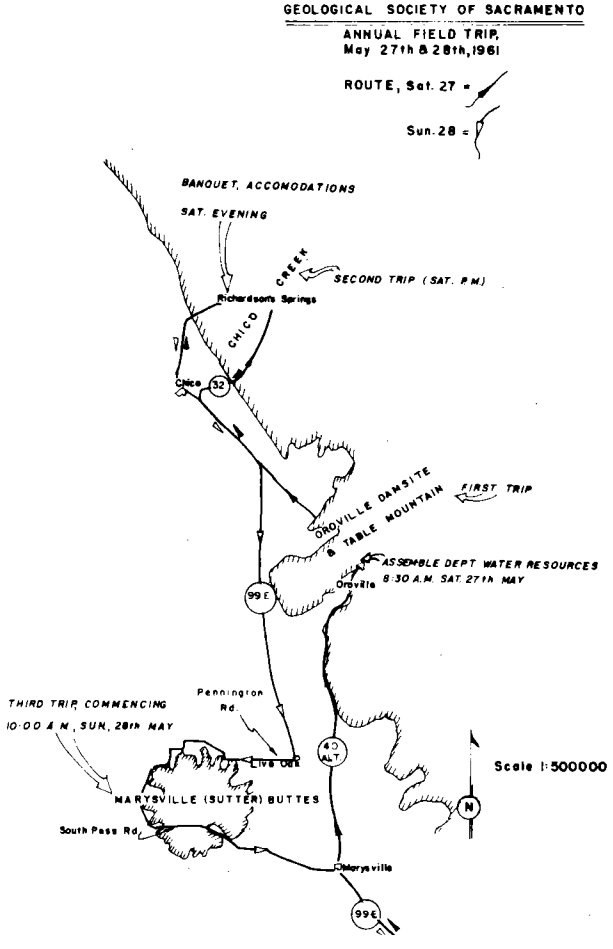
Accomodations and a banquet for Saturday evening have been arranged for the group at Richardson Springs, north of Chico. A package price will cover banquet, room shared by two, breakfast and box lunch for Sunday. Individual accomodations need not be made; however, anyone so desiring may obtain a directory of Oroville Motels from the field trip chairman. Literature on Richardson Springs is also available from the field trip chairman.

Meeting place: Dept. of Water Resources Building, Oroville, near intersection of Bird and Oliver Streets.

Time: 8:30 AM, Saturday, May 27.

For further information contact Lowell Garrison, Field Trip Chairman, Gulf Oil Co., P.O. Box 4195, Sacramento 21, California.

The field trip will be held in conjunction with the Northern California Petroleum Round Table-Sacramento Petroleum Association annual barbecue, which will be held Friday, May 26th, at the Green Valley Country Club west of Fairfield.



OTHER ANNOUCEMENTS

Reprints of the Geological Society of Sacramento 1960 field trip to Northwestern California are now available. The guide book includes maps and road logs over the Klamath Uplift, Northern Coast Ranges, and the Eel River Basin. The price per guide book is $3.00.

Other available Geological Society of Sacramento guidebooks include:

1958; East Side Sacramento Valley - Mother Lode Area ($2.00).

1959; Coast Ranges, Livermore Valley to Hollister Area ($2.00).

Guidebooks can be obtained from Jack Kearns, Gulf Oil Co., P. O. Box 4195, Sacramento 21, California.

GEOLOGICAL SOCIETY OF SACRAMENTO

Two papers were presented at the Geological Society of Sacramento meeting on April 11, 1961. Both were timely, well-illustrated talks on geology in areas close to, or within, the area to be covered by the forthcoming field trip. Philip A. Lydon, California Division of Mines, Redding, spoke on "Sources of the Tuscan Formation in Northern California".

Abstract

The Upper Pliocene continental Tuscan formation unconformably overlies sedimentary rocks of the Upper Cretaceous Chico and Eocene Montgomery Creek formations east of the northern Sacramento Valley. In adjacent foothills, tuff breccias locally overlie tuffaceous "Tuscan-Tehama" sediments. In the higher foothills the Tuscan is overlain by flows of andesite and basalt; near the Valley, it is covered locally by gravels, terrace deposits, and alluvium.

The Tuscan formation consists of a thick sequence of tuff breccias & breccias with interlayered flows, sand, gravel, and tuff; gravel and sand are prominent constituents of the formation near the eastern margin of the Valley. The Nomlaki tuff member is exposed in foothills west of the Valley, near the base of Tehama formation (west-side Tuscan equivalent). A compact dacite tuff in the Tuscan east of Redding, previously thought to represent near-source material of the Nomlaki, has a source area different from Nomlaki-like tuff exposed several miles south. Garniss Curtis (p.c., Univ. Calif., 1960) has obtained a K-A age of 3.4 million years on the former tuff.

Previous investigators have assumed that the Tuscan originated from old volcanoes, subsequently buried by later flows, near or east of Lassen Peak. Recent mapping has revealed at least four sources of the Tuscan. T. A. Wilson (Univ. Calif.) is mapping one source area at Mineral, Lassen County. Other source areas are located near Butt Mountain, southwest of Chester; east of Whitmore; and west of Burney (?). Small fissure eruptions of auto-brecciated lava east of Red Bluff contributed minor amounts of material to the Tuscan.

The second speaker was A. L. O'Neill who presented a paper written in conjunction with R. C. Richter on "Slope Failures in Foliated Rocks of the Calaveras Group (Carboniferous)". Messrs. O'Neill and Richter are with the California Department of Water Resources in Sacramento.

Abstract

Slope failures occurred in foliated rocks during relocation of Highway 40A and Western Pacific Railroad around proposed Oroville Reservoir at Oroville, Butte County, California. The relocations pass through the foothills of the Sierra Nevada where a great portion of road grading is through strongly foliated metamorphic rocks of the Calaveras group of Carboniferous age.

The relocations will be modern roadways with numerous cuts and fills, some of which are in excess of 100 feet high. Design criteria called for numerous 3/4:1 cut slopes with benches through the metamorphic rocks. The rock, which in most cases is phyllite, proved to be strongly sheared and deeply weathered although the structure of the rock was usually apparent in weathered zones. First signs of pending slope failure was diagonal cracks that became evident along planes of foliation in surfaces of fresh cut slopes. The cracks enlarged, and before failure vertical displacement was always indicated when the upslope side of the crack dropped relative to the downslope side. Failure occurred primarily in cuts where strike of foliation was approximately parallel to the road alignment. Dip of foliation ranged between 30° on each side of vertical. Failures were most common on slopes where foliation dipped into the cut.

In general, slope failures were the result of weak, weathered materials cut at a steep angle; however, it is suggested that the foliated rocks rebounded along the planes of foliation after removal of large quantities of materials from large cuts. The rebound resulted in the cracks that made failure of the steep slopes inevitable. Corrective measures included flattening of slopes to 1 1/2:1 and, where water was involved, the installation of horizontal drains.

SAN JOAQUIN GEOLOGICAL SOCIETY

Seventy-five members of the Society heard two papers on the geology, exploration, development, and secondary recovery aspects of the Exeter-29D oil pool in the Midway-Sunset area at the monthly meeting held in the El Tejon Hotel in Bakersfield, April 4.

Mr. John Carson, geologist for Standard Oil Co. in Oildale, spoke on the geology and discovery of the oil pool. Mr. Wally Block, petroleum engineer for Standard in Taft, spoke on the development and secondary recovery aspects of the pool.

The papers were very interesting and well-illustrated. A complete story on the discovery, development and production of a modern oil and gas accumulation was presented.

COAST GEOLOGICAL SOCIETY

Mr. Robert N. Williams, Consultant Geologist, Santa Barbara, spoke before the monthly dinner meeting of the Coast Geological Society on Tuesday, April 4, 1961, on the topic, "A Geologist in Chile." Interesting features of the Geology and geography of the Tierra Del Fuego area of Chile were pointed out and discussed. Color slides and base maps were used by Mr. Williams in discussing his 18 month tour of duty as consultant to the Chilean government in 1958--1959.

DIRECTORY CHANGES

The following are changes of address for Pacific Section members from February 24, 1961, through March 29, 1961. This list includes only those members listed in the latest Directory:

NURSERY NEWS

Congratulations to the Brian Parks (Schlumberger) on the arrival of Julie Harriett, April 3rd.

Carl Helms, Jr. and wife Margaret are proud to announce the arrival of their third boy, John Edward, on April 11th. Weight: 9 lbs. 1/2 oz.

Jim Payne (Standard, Oildale) and wife Arlene welcomed their fourth child, John Gregory, on April 24th.

PERSONAL ITEMS

Joe Hathaway of the Iranian Oil Exploration and Producing Company communicates that he will be visiting Los Angeles in the fall, but in the interim, is enjoying the many interesting sights and delights of Iran.

Ann Whitton of Standard, La Habra, will be gone from the office for a month's vacation in Europe.

Some of Bob Lindblom's (Standard-Oildale) golfing friends received an unexpected and surprising bonus when they purchased him in the recent Petroleum Club Calcutta 36 hole golf tourney held during April at the Buena Vista course in Taft. Bob won 2nd place money in the second flight besides an electric razor with a net 134 score.

[redacted]

transferred from the barren wastelands [redacted] valley to the lush green paradise known as Ventura. Bill joins Jerry Williams in the search for that elusive brown liquid.

Bob Hickernell (Richfield paleontologist, Bakersfield) spent two working days fishing at Avila. He reported excellent luck - - that is, no fish. He hates to clean them.

The International Oil Sports group have temporarily abandoned their pursuits of Putt-Putt and bowling in an attempt to locate the whereabouts and doings of that world-famous consultant, Jean Senteur de Boue. Latest word has it that Dr. de Boue has been engaged in considerable undercover work.

Don Collins (Shell, Sacramento), recent transfer from Durango, Colorado, averted rather rough living conditions when he decided to follow a hunch. Don found that the home he was set to buy would be in the center of a freeway interchange in about four years.

F. Marshall McCoy, ex-geologist turned Insurance Representative, acquired Jean B. Senteur de Boue's name as a possible insurance candidate. However, after making an extensive canvas of the Gaviota area in search of de Boue, McCoy learned that he was still making deep dives in an attempt to recover the lost Navy Spyglass, 16 x 11, Mod. 43, off Platform Harry and crossed him off as a poor risk -- insurance wise.

Ron Heck, Sunray, Bakersfield, will be at the Mt. Hamilton, Nevada Ski Resort for an indefinite stay.

Harry Wiese (Schlumberger), formerly in Bakersfield, has been transferred to Sacramento.

Ralph Cahill (Texaco, Ventura) is giving serious thought to opening a "Jupiter Pluvius" prediction business!!! Seems that Ralph and family recently tested out new camping gear at Steckel Park and encountered the only rain of the season to date. Reports are circulating that the County and State are trying to contact Ralph concerning his newly acquired talents.

Near panic gripped the local dentists, doctors and merchants when it became known that the Karl Arleths (7 children), Ohio, Sacramento, were being transferred to Lafayette, Louisiana. Some of the tension was eased when rumors were confirmed that the George Rudkins (4 children, 2 cats, 2 goldfish, 8 guppies, and 2 turtles), Ohio, Bakersfield, were replacing the Arleths. The local economy is still wavering, however.

Frank Dubinsky (Standard, La Habra) is being transferred to Seattle. But for a breaking-in course he will spend the summer in Alaska. Tom Wright from Seattle will replace Frank in La Habra.

Gene Morse (Continental) recently joined the exodus from southern California to the Sacramento Valley.

Joe Arndt (Richfield, Long Beach) led a mixed group of Richfield personnel on an expedition to Baja California. Many interesting things were found - including fossils? Rumors have it that the trip would have been more of a success if Joe had remembered to bring the Cutty Sark. Those ads about Mott's Apple Juice just aren't true.

To Les Brockett (Richfield), recently transferred back to Los Angeles from Anchorage, the words of an old song best express his feelings as well as his present appearance. Namely - "The object of my affection (Southern California) is changing my complexion from white to rosy red".

NO-FIRE-SALE -- One well, slightly produced, reasonable terms. Contains nitrogen gas, slightly contaminated by methane. Inquire, Art Hawley (Consultant, Sacramento).

After Barney Barnard's (Richfield) experience at the convention in Denver, wherein most of his belongings mysteriously disappeared, it is reliably reported that Barney is shopping for a steel-bound trunk with a time-lock device for protection of his worldly goods.

CALENDAR

May 4, 1961: Thursday noon, Rodger Young Auditorium. Burdett R. Harrison, Crowell, Weedon and Co., will speak on "That Hole in Your Pocket".

May 8, 1960: Monday - Geological Society of Sacramento, 7:45 PM at California State Public Works Building, 1120 "N" Street. Speaker: Lewis L. Nettleton, AAPG Distinguished Lecturer, "Gravity and Magnetics for Geologists".

May 11-12, 1961: American Petroleum Institute, Division of Production, Pacific Coast District "Spring Meeting" at Biltmore Hotel, Los Angeles.

May 12-13, 1961: Pacific Section A.A.P.G., S.E.P.M. and S.E.G. Spring Meeting, Bakersfield.

May 13, 1961: Saturday, U.C.L.A., Geology Bldg., Room 2276, Symposium on "Current Graduate Research in the Geological Sciences". Papers will begin at 8:30 A.M. and will continue throughout the day. A banquet at 6:30 P.M. will feature Dr. Wm. W. Rubey who will talk on the "Geology of the Bannock-Absaroka Overthrust".

May 15, 1961: Los Angeles Geological Forum Meeting, Monday, 7:00 P.M., Mobil Auditorium, Mobil Oil Bldg., Los Angeles. Dr. Fred A. F. Berry, visiting Professor of Geology, Univ. of Calif., Berkely; Director, Petroleum Research Corp, Denver, will speak on "Anomalous Hydrodynamic and Geochemical Conditions: Their Influence on Hydrocarbon Accumulation".

May 15, 1961: Monday 4:00 P.M., Stanford University Journal Club, Room 320, Geology Corner. Coffee at 3:45 P.M. Peter W. Lipman, "Geology of the Eastern Trinity Alps, Calif."

May 17, 1961: Wednesday, 12:00 Noon, U.S.C. Campus, Room 104, Geology A Barracks, 855 W. 37th St., D. Garrett, "Origin and Nature of Saratoga Springs, California Dunes".

May 22, 1961: Tuesday, 4:00 P.M., Stanford University Journal Club, Room 320, Geology Corner Coffee at 3:45 P.M. Roland Brinkman, A.G.I. Lecturer, "Varisician Mountain Building in Central Europe".

May 26, 1961: Friday - NCPRT - SPA Annual barbecue. To be held at Green Valley Country Club, west of Fairfield and north of the Benicia "Y". Golf tournament begins at 10:00 A.M. Charcoal broiled steak dinner.

May 27-28, 1961: Geological Society of Sacramento field trip-for details see notice elsewhere in this issue.

May 29, 1961: Monday 4:00 P.M., Stanford University Journal Club, Room 320, Geology Corner. Coffee at 3:45 P.M. James W. Sides, "Geology of the Butte Mountains, White Pine County, Nevada". Gregory Mursky, "Pitchblende Mineralization at Great Bear Lake, Canada."

June 5, 1961: Monday, 4:00 P.M. Stanford University Journal Club, Room 320, Geology Corner. Coffee at 3:45 P.M. Peter W. Birkeland, "Pleistocene History of the Truckee River Valley, North of Lake Tahoe, California".

June 22, 1961: Thursday, Mining Branch, Southern California Section, A.I.M.E. at the Engineers' Club, Biltmore Hotel (Dinner 6:45, Cocktails 6:00). Authur Spaulding, Calif. State Board of Equalization, will speak on "Property Taxation and the Mineral Industry".

August 2-5, 1961: Wyoming Geological Association Sixteenth Annual Field Conference, a symposium on the Post-Cody and pre-Eocene stratigraphy of Wyoming. The field trip will cover portions of the Green River Basin, Rawlins Uplift, Wind River Basin and west flank of the Powder River Basin. Transportation will be by private car. Registration by mail will be available after May 1, 1961, from Wyoming Geological Association, P.O. Box 545, Casper, Wyoming.

BIBLIOGRAPHY OF RECENT PUBLICATIONS

U. S. BUREAU OF MINES (Distribution Section, Pittsburgh, 13, Penna.)

Report of Investigations 5713: Effects of Hydraulic fracturing in Oklahoma waterflood wells, by John P. Powell and Kenneth H. Johnston. 21 pages .....Free

Report of Investigations 5725: Ultimate composition of organic material in Green River Oil Shale, by John Ward Smith. 16 pages...Free

Information Circular 8011: Uranium mining in the Lukachukai Mountains, Apache County, Arizona, Kerr-McGee Oil Industries, Inc. by W. L. Dare. 30 pages.....Free

U. S. BUREAU OF MINES: (Sold by Government Printing Office, Washington, D.C.)

Information Circular 8017: Summary of Mining and petroleum laws of the world, prepared by Northcutt Ely. 215 pages.....$1.00

BOOKS

The sea off Southern California: A modern habitat of petroleum, by K. O. Emery. New York. John Wiley and Sons, Inc., 1960 p. 366; figs. 248 tables 31.

Beaches and Coasts, by C. A. M. King. London: Edward Arnold, Ltd. 1959. p. 403 figs. 149.$14.50

Fundamentals of Reservoir Engineering, by John C. Calhoun, Jr. 433 pages Oil and Gas Journal, Tulsa, Oklahoma.....$ 6.95

The Oil Century, (From the Drake Well to the Conservation Era) by J. Stanley Clark, 302 pages. Oil and Gas Journal, Tulsa, Oklahoma.....$ 3.95

Covered Wagon Geologists, by Charles N. Gould. 295 pages. Oil and Gas Journal, Tulsa, Oklahoma. .....$ 4.00

Oil Well Drilling Technology, by Arthur M. McCray and Frank W. Cole. 503 pages, Oil and Gas Journal, Tulsa, Oklahoma.....$ 9.95

The Natural Gas Industry, by Edward J. Neuner. 384 pages. Oil and Gas Journal, Tulsa, Oklahoma. .....$ 5.75

U.S. GEOLOGICAL SURVEY

Professional Paper 339: Tertiary and Quaternary gastropoda of Okinawa, by F. Stearns Macneil. $2.50

Professional Paper 373: Aerial photographs in geologic interpretations and mapping, by R. G. Ray.....$2.00

Professional Paper 303-D: Geology of the Shaviovik and Sagavanirktok River region, Alaska, by A. S. Keller, R. H. Morris and R. L. Detterman. $2.00

Bulletin 1058-I: Tofty Tin Belt, Manley Hot Springs district, Alaska, by R. G. Wayland.$1.00

Bulletin 1081-D: Stratigraphy and structure of the House Rock Valley area, Coconino County, Arizona, by J. D. Wells.....$ .75

Bulletin 1084-H: An evaluation of whole-order 1-order, and 1/3-order reporting in semiquantitative spectrochemical analysis, by P. R. Barnett. .....$ .15

Bulletin 1116-D: Geophysical abstracts, October-December 1960.....$ .40

Water Supply Paper 1491: Geology and groundwater features of the Butte Valley region, Siskiyou County, California, by P. R. Wood.....$2.00

Water Supply Paper 1539-B: Jet drilling in the Fairbanks area, Alaska by D. J. Cederstram and G. C. Tibbitts, Jr.....$ .15

Water Supply Paper 1535-C: Calculation and use of ion activity, by J. D. Hem.....$ .50

Circular 446: Ground water and the law, by H. E. Thomas - 8 pages.....Free

Open File: (Inspection Only)

TEI-779: Geologic investigations in support of project Chariot, Phase III, in the vicinity of Cape Thompson, northwestern Alaska-Preliminary report, by Reuben Kachadoorian, R. H. Campbell, G. W. Moore, D. W. Scholl, A. H. Lachenbruch, G. W. Greene, B. V. Marshall, D. F. Barnes, R. V. Allen, R. M. Waller, and M. J. Slaughter. (104 pages, 1 pl., 17 figs., 5 tables) Deposited: LA PIO.

TEI-771: Geology of the Michigan basin with reference to subsurface disposal of radioactive wastes, by Wallace de Witt, Jr. (100 pages, 20 figs.) Deposited: LA PIO

Utilization of gamma-ray logs by the U. S. Geological Survey, 1949-1953, by K. G. Bell, V. C. Rhoden, R. L. McDonald, and C. M. Bunker. (89 pages 24 figs., 1 table.) Deposited: LA PIO

STATE OF WASHINGTON GEOLOGICAL SURVEY, Olympia, 1960

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GEOLOGICAL SURVEY OF CANADA, Ottawa, 1960

Catalogue of Type Invertebrate fossils of the Geological Survey of Canada. Vol. 1, by Thomas E. Bolton pp. 215.....$2.50

Geological Interpretation of aeroradiometric data, by A. F. Gregory. Bulletin 66: pp 29. .....$ .50

The subsurface Gething and Bluesky formations of Northeastern British Columbia, by D. C. Pugh. Pp. 20; Paper 60-1:.....$ .50

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Geology of the Humbug Mountain State Park area, by J. G. Koch, W. R. Kaiser, and R. H. Dott, Jr., The ORE.-BIN, vol. 23, No. 3, March 1961.

AMERICAN JOURNAL OF SCIENCE, vol. 259, No. 4, April 1961.

The Independence Dike swarm in Eastern California, by James G. Moore and Clifford A. Hopson.

Some data bearing on the origin of Jamaican bauxite, by William C. Kelly

AMERICAN JOURNAL OF SCIENCE, vol. 259, No. 5, May 1961.

Diabasic and gabbroic intrusions in the Forst Mountain area, Southcentral Cascade Mountains, Washington, by Martin L. Stout.

Microstriations on polished pebbles, by Sheldon Judson and Ronald E. Barks.

Relationship between concentric longitudinal strain and concentric shearing strain during folding of homogeneous sheets of rocks, by Hans Ramberg.

SCIENCE, vol. 133, no. 3455, 17 March 1961.

Frozen Mammoths and modern geology, by W. R. Farrand.

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Geologic Time Scale, by J. L. Kulp.

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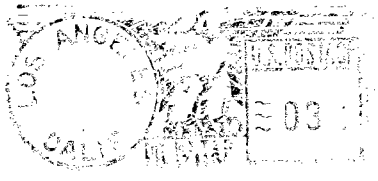

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PACIFIC PETROLEUM GEOLOGIST

NEWS LETTER OF THE PACIFIC SECTION
AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS

Volume 15 | June, 1961 | Number 6

ASSOCIATION ACTIVITIES

IN MEMORIAM

Funeral services were held in Santa Barbara on May 31 for Samuel G. Dolman.

Mr. Dolman graduated from Kansas University in 1910 and was employed as an inspector for the State Department of Oil and Gas from 1930 until his retirement in 1952. After his retirement he worked as a consulting geologist for several oil firms.

He was present at the major oil finds in Santa Barbara County. Among these were Elwood (1928), El Capitan (1930), Santa Maria (1940), and Cuyama (1948).

In January of this year 66 of Southern California's top oil men gave a banquet in his honor and presented him with a scroll praising him for his work as "engineer, geologist, administrator and humanist".

He leaves his widow Alice, and two sons, Willard and Samuel, Jr.

LOS ANGELES GEOLOGICAL FORUM MEETING

Dr. Fred A. F. Berry, visiting Professor of Geology, University of California, Berkeley and Director, Petroleum Research Corporation, Denver, spoke before the Los Angeles members of the A.A.P.G. Monday evening, May 15 at Rodger Young Auditorium. Dr. Berry's talk "Anomalous Hydrodynamic and Geochemical Conditions: Their Influence on Hydrocarbon Accumulation" was abstracted for publication in the April 1961 issue of the P.P.G.

LOS ANGELES LUNCHEON MEETING

"That Hole in Your Pocket" was the title of a talk presented to investment-minded geologists at the Los Angeles luncheon meeting Thursday, May 4th, at Rodger Young Auditorium. The timely and informative talk was given by Mr. Burdett R. Harrison, resident manager of Crowell, Weedon and Company members of the Pacific Coast Stock Exchange.

Abstract

"That Hole in Your Pocket", is not that little hole through which we might drop a coin on the sidewalk, and have to have our wives mend, but rather it is that hole in your pocket created by creeping insidious erosion of the buying power of our dollar, INFLATION. According to the Social Service Department in Washington today, 85 of 100 men and women reaching age 65 are forced to live on less than $40.00 per week. Further, out of 100 at age 65, only 2 are self-sustaining; 23 are still working and will have to work; 30 are dependent upon charity; and 45 have moved in with their relatives. These are the shocking financial facts of life today - 1961.

Let's examine the causes. Most of these good people have endeavored to save their money in banks, government bonds and, perhaps, life insurance with a guaranteed fixed return of anywhere from 2 to 4 per cent. Yet our Department of Commerce figures prove to us conclusively that our dollar has been losing its buying power at the average rate of 4 per cent per year. If this is true, how in the name of simple arithmetic can we expect to accumulate capital for retirement when the GUARANTEED LOSS on a $100 bond in 10 years is $17.22. Moreover, when the bond matures and you cash it, Uncle Sam says, "Son, you have made a profit and you will report this on your income tax."

The unfortunate fact is that a surprisingly large number of people have never acquired any form of "risk or equity investment" and seem perfectly content on the theory that they "know what their program will be worth in 15 or 20 years." I take issue with that person who knows what such a program will be worth, since he most likely has overlooked the eroding affect of inflation. For instance, $150 invested in 1939 as a fixed income situation with interested compounded at 3 1/2 per cent is worth $140 in buying power today, yet $150 invested in common stocks which make up the Dow-Jones averages would now be worth $670. Certainly, it is evident that a financial program consisting of solely "fixed dollars" has lost much ground during this period. The total accumulated savings including investment at interest, is now worth less capital in terms of what it will buy than was the original sum when it was first set aside. On the other hand, the same dollars invested in real estate or common stocks have moved against the tide of inflation and are now worth considerably more in buying power than in 1939.

I do not advocate the investment of all of one's capital in "risk investment", but rather, I believe that we should balance one risk with another. A dollar is only worth what it will buy. Therefore, at all times 1) defend yourself and your family against the possibility of failing prices with "fixed dollars" investment and savings accounts, savings bonds and life insurance; 2) let us insure the purchasing power of our savings during times of rising prices with "fluctuating dollars" or "risk investments" that offer possibilities of increasing value such as real estate or common stocks. Both types of investment involve risks. The first involves the risk that dollars may decline in value as they have since the Mesopotamian civilization, and the second involves the risk that investments may decline in value. The logical difference: the only way we can "sew up that hole in our pocket" is to balance one risk against the other and put some money to work, in some type of equity investment.

PACIFIC PETROLEUM GEOLOGIST

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San Joaquin	Ronald Heck
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Next Deadline

June 28, 1961

CONVENTION BALLOT RESULTS

Out of a total of 343 ballots cast, 89.8 per cent favored and 10.2 per cent voted against the issue. Pursuant to the results, the 1963 Convention will be held April 25-26.

1962 AAPG-SEPM NATIONAL CONVENTION

Mrs. Graham B. Moody has graciously accepted the chairmanship of the Ladies Entertainment Committee. Mrs. Moody is very able and energetic and has attended many national AAPG Conventions in the past.

SACRAMENTO GEOLOGICAL SOCIETY

Dr. L. L. Nettleton, Geophysical Associates International, AAPG Distinguished Lecturer, spoke before a joint meeting of the Geological Society of Sacramento and Sacramento Petroleum Association, 8 May 1961 on "Gravity and Magnetics for Geologists and Seismologists."

Abstract

To a great many petroleum exploration people the words "geophysics" and "seismograph" are almost synonymous and there is a tendency to forget that other methods have their uses in Petroleum exploration. While it is true that seismograph operations consume some 90 per cent of the total geophysical expenditures the other methods have a definite and useful place in the total exploration picture.

This talk reviews briefly the fundamental principles of gravity and magnetic methods and outlines the geological problems in which they are applicable.

The gravity method has had very wide application but the interpretation of results is still rather largely limited to outlining "anomalies" by inspecting or by some sort of numerical operation (such as a second derivative calculation), then running seismograph lines over the large proportion of the anomalies. Careful consideration of the fundamentals, particularly the geological factors involved in the sources of density contrasts, the application of quantitative factors, and the relation to other geophysical or geological data, can lead to great improvement in the utility of such surveys. This talk was illustrated with examples of various types of gravity anomalies and their interpretation. Also a brief outline of the possibilities and limitations of airbound gravity measurements was included.

The magnetic method and particularly its airbound variation can be very useful in general reconnaissance. Recent developments in instrumentation have lead to a degree of detail and dependability in the recordings which permits quantitative analysis of such surveys to a much higher degree than was possible from point to point measurements made on the ground. It is now possible to determine the thickness of the sedimentary section very reliably and in many areas to outline structural disturbances and locate faulting involving the basement rocks. Examples were illustrated showing applications of magnetic surveys to regional problems and to specific questions of geological interpretations such as basement involvement in thrust movement.

OTHER ANNOUCEMENTS

The 1961-62 officers of the Geological Society of Sacramento are:

President - Don Emerson (Univ. of Calif., Davis)
Vice President - Sarge Reynolds (Consultant)
Secretary - Don Scott (Dept. of Natural Resources)
Treasurer - Lowell Garrison (Gulf)

Copies of the 1961 G.S.S. Field Trip Guidebook (Oroville Damsite, Chico Creek, Marysville Buttes) at $3.50 per copy and reprints of the 1960 G.S.S. Field Trip Guidebook (Northwestern California) at $3.00 per copy are available from Lowell Garrison, Gulf Oil Company, P.O. Box 4195, Sacramento 21, California. Pre - 1960 Guidebooks are no longer available.

SENTEUR de BOUE ON CONVENTIONS, DATES AND THE RITES OF MINORITIES.

Editor's note: Because of difficulties encountered by J. S. de B. in the English language - (he has frequently been accused of double or even triple meaning) various friends have usually cooperated in reporting his professional activities for our pages. In this case the author has insisted that his contribution is published in his own words.

Mes Amis: Please permit that I apologize for my past opposition so frequent to the admirable plan for dating our affaires social and professional. (Ed: AAPG Pac. Section Meetings) I comprehend that by the recent ballot popular all objectionable people opportunely have expressed their desires (of nature to relate with our Section business). By conversation and by vote I have stated my emotions as to be opposed (for reasons of tradition) to the conventions of the Spring-Time. Now do I find two causes to open the eye and withdraw the objection.

Cause Primaire: I observe I vote with the total of only 32 members against this consumation while many hundreds show their favor. I object not to be of the minority but to be almost ALONE is regrettable. (However a minority of two with delightful differences between for social excitement is tres jolie!)

Point Deuxieme: Following the so educational technical session (Bakersfield) with the exciting contacts paleontologique, geophysique and geolo--gique then does one debauch (Ed: sic) to the gay Spring-time affaire social and accompany certain young fillies (Ed: "Jeune filles" ne'cest pas?) who have faithfully performed the registration all the busy day.

Ladies so pretty! So Dry! So appreciative when one admires the pretty and relieves the dry! I make spirited the conversation with Mlle Jeanie Reid (a veritable something - tres chic!) . I am informed my emotions are tragically confused. To be informed correctly I am most happy. I think.

To possess this opportunity for contact additional in affaires professional and social! To forsee this to occur each spring as section meeting and each fall the district meeting! What good fortune!

Now must I apologize for the stubborn objections of one stupid camel. I petition earnestly my friends to join Sentour de Boue in support amicable and enthusiastic for this splendid inovation.

Voluntarily I will serve each year to organize the young ladies of registration.

Vive the convention of Spring-time! Vive Bakersfield!

Jean Sentour de Boue (signed)

PERSONAL ITEMS

68 Standard Oilers, Oildale, took part in the Exploration and Land Department's annual spring stag barbecue at Kern River Golf Picnic grounds on May 27th. A golf tourney was held in the A.M. and flight winners included Don Laswell, Burt Amundson, Bud Warren and John Carson. George Starke took a "duffers trophy" with a gross of 128. The East won the softball game as usual and when John Carson bested Bill McKay in a pitcher's duel. Hitting and scoring honors for the visitors were shared by Harold Deane, Jim McKay and Doug Waterman. Final score 6-5. Horseshoe champs were Ken Brenna, Rod Huppi and Monty Montgomery. Charmers of the event included Bob Lindblom, Bill McKay, John Burr, Bill Lewis and Mort Polugar.

Charlie (Fat Sam) Booth, Shell, Ventura, on April 15, 1961, married Virginia Peterman of the Shell drafting department. Charlie reports that he'll be a poor man come next April 15th - after income tax returns and anniversary present!

Realtors have been doing a brisk business in the Bellevue area, east of Seattle. Shell men Jack Castano, Art Weller and Dick Story have purchased homes there.

Russell H. Greene, Jr. has been appointed Manager of Domestic Exploration for Signal Oil and Gas Co.

Norman Greeman, Shell, Ventura, recently resigned from the Shell Oil Company.

Humble has recently transferred Gene Burton, paleontologist, from their Houston, Texas office to Castaic. Welcome to the golden state, Gene!

Max Greene, Shell, Olympia, will spend another summer in Fairbanks.

Frank (Mum-C-Puffs) Yule, Mobil, Taft, was sporting a new look when recently observed at the Field Trip (AAPG) in Bakersfield. Frank's former friends of the Ventura Basin Area would be shocked to see the long curly tresses now adorning his "haid". Fellow workers in Taft report Frank has trouble contouring maps with his long hair to contend with!

There is a reported shortage of peat moss in the Bellevue area of Seattle. When last checked, there were eight bales stacked in the garage of Jack Castano of Shell, Seattle.

Bob Lindblom, Standard, Oildale, won the Men's Club First Flight Golf championship at the Kern River Golf Course with the final match going 19 holes.

Harry Browne, Union geologist, has recently returned after working for 4 1/2 years in San Jose, Costa Rica. He is temporarily working in Union's downtown office.

Richfield's transplanted Okie, Pam Exendine, the backbone of Richfield's downtown office for 12 years and recent secretary for the Pacific Petroleum Geologist, has finally begun her migration back towards the land of hush-puppies, black-eyed peas and prairie dog holes. She recently volunteered to ramrod Richfield's new spread in Midland, Texas area. She'll be joined in this venture by Mark Guinan, district geologist from Casper and Charlie Andrews, district scout from Salt Lake City. Their new address in Room 1230, Petroleum Life Building, Midland, Texas.

John Spangler, Standard, has been transferred to Seattle from Oildale, effective June 1st, to join the Alaska force.

Bob Liscomb, Shell, Salt Lake, will spend the summer camping, and examining outcrops north of the Brooks Range.

Brad Williams and Ernie Espenschied, Standard Southern Division, have both transferred to Standard's Seattle Office.

A relatively new hazard to geologists was encountered recently by Richfield's John Weise, Bob Blanc and Pete Hall. It seems that the power windows on their "field car" would go down but not up, resulting in a long cool ride, as windy as the conversation.

Bud Oakes, Union's bachelor geologist of Cutbank, Montana, apparently was so overwhelmed with the bright lights of Denver during the convention that his first evening in town he developed night blindness and was forced to retire immediately following supper the second night around.

Howard Level, Union, Santa Paula, got too close to the barber's chair and is currently sporting a "Yul Brynner" look! He claims its healthy for the scalp!

Art Huey (Signal) returned to the good old Hew Hess Hay after spending some time at London, Paris, Rome and Mena Abdulla.

Ed Gribi is leaving the Los Angeles rat-race for the peace and quiet of a consultant's job in King City. Ed will open his office at 229 Vivian St., King City on June 22nd. Until his departure, he can be reached at 2249 Estribo Drive, Rolling Hills, or by phone at TErminal 2-7815.

A. A. Carrey (ex-Long Beach Consultant) writes that he has been with Philippine Oil Development Co. Inc. in Manila since March 1959. He has drilled wells on Leyte, Panay, Cebu and Luzon Islands. Some non-commercial oil was produced from three separate areas on Cebu in 1959 and 1960.

Bob Reedy, formerly with Gulf Oil (Sacramento and Casper) is now with Signal Oil and Gas, working in the Sacramento Valley. Bob's new address is 2222 Watt Avenue, Sacramento 21, California, (IVanhoe 7-1570).

Ron (non-gambler) Ackley, Exploration Logging, Sacramento, just returned from a three week vacation in Arizona and Las Vegas.

Chucky Lundgren, 4 year old son of Charlie Lundgren, Exploration Logging, Sacramento was in the hospital for three days following an accident in which he was run over by a parked car released from gear by a playmate. Chucky is doing fine and will be okay.

Congratulations to Lowell Garrison, Gulf Oil, Field Trip Chairman, Geological Society of Sacramento, to the field trip leaders, and to all who participated in making the 1961 field trip the excellent success that it was.

Bill King and Floyd Claus, Shell, Bakersfield, were recent new arrivals to the Ventura scene and will be permanently assigned to the Ventura office.

Chuck Reynolds (Standard, La Habra) was recently transferred to the Ventura office.

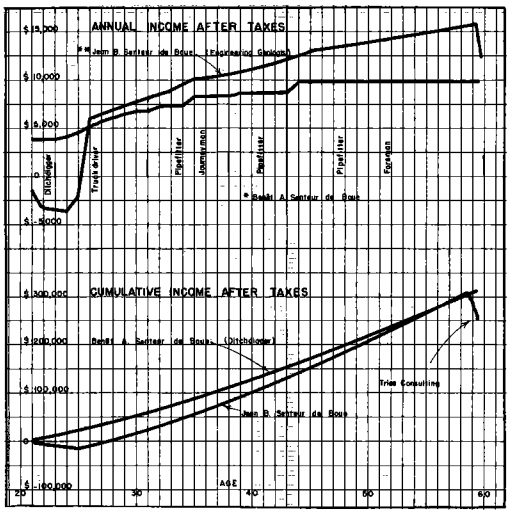
Bob Payne, Shell Operations Manager, and Wes Gerth, Manager of Shell's Umiat Hilton, headed for Alaska last month to prepare for the arrival of this summer's field parties. Bob reports that the new snow shovel was a much used tool this year.

At a recent get-together at Columbo's, Bus Ivanhoe was propounding the thought that the AAPG should have more dances since we now only have one during the Holiday Season. Just as Tom Baldwin was agreeing, a nearby waitress confronted the expres with this statement: "Oh, you like to dance? Now I know where I've seen you before. Don't you hang out at Myron's Ballroom down at 10th and Grand?" This was promptly answered in the affirmative by his colleagues. There seems to be no reason to doubt the accuracy of the waitress's observations OR WHY would Tom have blushed a bright purple?

Marvin Johnson, Shell, Ventura and Long Beach, will retire at the end of June 1961, after more than 25 years service with Shell's paleontological staff. Marvin plans to settle down in the Long Beach area.

In a hotly contested golf match, the Union northern area golfers, led by Chuck Cary, emerged triumphant over Standard. Perpetual trophy will remain in Union's Bakersfield office for another year -- out of reach of the vanquished captain, Bob Lindblom.

Jean B. Senteur de Boue has decided to make known to all his fellow geologists some of the facts of his financial review while waiting for the fog to lift along the Santa Barbara coast. His twin brother Benet, could not afford to go to college and has followed the route of a "blue-collar" worker. Jean had to borrow money at 5 per cent interest to go to college. In his 59th year, Jean tried consulting work with the unfortunate results shown.



* Schedule of labor rates in accordance with Southern California General Contractors and A.F. of L. Master Labor Agreement in effect October 1, 1958, minus 25 cents per hour for Union Dues.

** Average annual salary from the Joint Engineering Council for the year 1958.

Latest development in the Ohio roulette system goes like this: Hank Adams, Coalinga to Bakersfield; Fred Smith, Jr., Paso Robles to Bakersfield; John Maxwell, Paso Robles to Los Angeles; Bill Yerington, Coalinga to Ventura; Fred Knight, Bakersfield to Ohio's main office in Findlay, Ohio; and Doug Hargrove, Oklahoma to Bakersfield, replacing Fred Knight as District Geologist.

Cutler Webster, Honolulu, Bakersfield, invites interested and intrepid souls to join the Kern County Soaring Society and be endowed with free sailplane lessons.

Continental has moved Ed Johnson from Ventura to Bakersfield -- a growing community.

Rumors have it that Bob Lindblom may be searching for employment if he doesn't shape up the Standard Oil golf team and produce a few winning years.

Sig Hamann, Shell, Ventura, Shell's terror of the fairways, recently scored in the low 70's (9-holes) at the recent Shell golf tournament. Gene Johnson, Shell scout, Ventura, also turned in a terrific score (aided by about 5 gallons of Kick-a-poo joy juice) - Gene was so exhausted by his effort that he managed to sleep through the barbecue that followed the tournament.

Recent Superior transferee to Bakersfield, easy come, easy go Joe Kennedy, leaves soon for Tripoli, Libya.

CHANGE OF ADDRESS

Mail for the Pacific Section, including the Pacific Petroleum Geologist, should be sent to P.O. Box 17486, Foy Station, Los Angeles 17, Calif.

NATIONAL A.A.P.G. FINANCES

In common with most enterprises, A.A.P.G. operating costs have risen somewhat faster than income in recent years. The Association is not facing any sort of crisis, but the facts set forth in the report of the Secretary-Treasurer should be of interest to the membership. It is suggested that you read this report in the July issue of the Bulletin.

1961 CONVENTION PROGRAMS

Copies of the 132-page program of the 1961 Annual Meeting in Denver are available. The cost of the program will depend on shipping charges from Tulsa plus the cost of local mailing and should not exceed 25 cents per copy. Those interested in obtaining a program should indicate same to Robert O. Patterson, Pacific-Oil Well Logging, Inc., 714 W. Olympic Blvd., Los Angeles 15. Calif.

NEW ADDRESSES

The following are changes of address for Pacific Section members not listed in the latest Directory:

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NURSERY NEWS

Jack and Mary Richgets, Standard Oil, are the proud parents of a son, Chris, born May 2, 1961; and weighing 9 lbs, 8 ozs.

Bob and Pat Blaisdell, Standard, welcomed a daughter, Sheryl Lynn, born May 4, 1961, and weighing 8 lbs, 3 ozs.

The Walter Howes (Shell, Sacramento) welcomed Mark Kenneth, 7 lbs. 9 oz. into the family, May 9th. This gives the Howes a full house with 3 girls and 2 boys.

CALENDAR

June 7, 1961: Wednesday evening, 6:30 P.M., Coast Geological Society monthly dinner meeting, Wagon Wheel Restaurant, Oxnard, "Anomalous Hydrodynamic and Geochemical Conditions and Their Effect on Oil Accumulation", by Fred A. F. Berry, visiting professor, University of California.

June 22, 1961: Thursday, Mining Branch, Southern California Section, A.I.M.E. at the Engineers' Club, Biltmore Hotel (Cocktails 6:00, Dinner 6:45). Authur Spaulding, Calif. State Board of Equalization, will speak on "Property Taxation and the Mineral Industry".

August 2-5, 1961: Wyoming Geological Association Sixteenth Annual Field Conference, a symposium on the post-Cody and pre-Eocene stratigraphy of Wyoming. The field trip will cover portions of the Green River Basin, Rawlins Uplift, Wind River Basin and west flank of the Powder River Basin. Transportation will be by private car. Registration by mail is available from Wyoming Geological Association, P.O. Box 545, Casper, Wyoming.

Sept. 14-16, 1961: The Kansas Geological Society will hold its 26th Annual Field Conference along the Mississippi River in eastern Missouri and western Illinois. The conference will study rocks of middle Ordovician to early Pennsylvanian age along the river between Hannibal and St. Louis. For further information, write to Orvie L. Howell, Field Trip Chairman, Kansas Geological Society, Lario Oil & Gas Co., 301 South Market, Wichita, Kansas.

BIBLIOGRAPHY OF RECENT PUBLICATIONS

U. S. GEOLOGICAL SURVEY, Bulletin 1098-B.
Geochemical prospecting abstracts, January 1955-June 1957, By E. L. Markward.....$ .35

Bulletin 1115: Bibliography of North American geology, 1958, By R. R. King and others....$2.00

Bulletin 1084-I: A spectrochemical method for the semiquantitative analysis of rocks, minerals, and ores, By A. T. Myers, R. G. Havens, and P. J. Dunton.....$ .15

Bulletin 1089-B: Geology of the Rogers Lake and Kramer quadrangles, California, By T. W. Dibblee, Jr.....$1.25

Bulletin 1100: Uranium and other metals in Crude Oils. Contains:

Chapter A, Methods of analysis for uranium and other metals in crude oils, with data on reliability by C. A. Horr, A. T. Myers and P. J. Dunton, And

Chapter B, Distribution of uranium and other metals in crude oils, by H. J. Hyden.....$1.00

Water Supply Paper 1369-B: Energy losses associated with abrupt enlargements in pipes, with special reference to the influence of boundary roughness, By C. E. Kindsvater.....$ .25

Water Supply Paper 1498-A: Flume studies using medium sand (0.45mm), by D. B. Simons, E. V. Richardson, and M. L. Albertson.....$ .30

Water Supply Paper 1535-D: Calcium carbonate saturation in ground water, from routine analyses, By William Back.....$ .45

Water Supply Paper 1593: Simplified methods for computing total sediment discharge with the modified Einstein procedure, by B. R. Colby and D. W. Hubbell.....$1.75

Water Supply Paper 1640: Quantity and quality of surface waters of Alaska 1959.....$ .50

Topographic Instructions of the U.S.G.S. Book 3, Chapter 3C3: Photogrammetric rectification .....$ .40

MF 238: Reconnaissance geologic map of parts of the San Pedro and Aravaipa Valleys, South-Central Arizona, by S. C. Creasey, E. D. Jackson and R. A. Gulbrandsen.....$ .50

MF 196: Preliminary geologic map of the Paria Plateau SE Quadrangle, Coconino County, Arizona, by Richard G. Petersen.....$ .50

Open File Reports: (Inspection Only)

Geology of the Katalla District, Gulf of Alaska Tertiary Province, Alaska, by D. J. Miller

Geology of the Yakataga District, Gulf of Alaska Tertiary Province, Alaska, by D. J. Miller

Geology of the Malaspina District, Gulf of Alaska Tertiary Province, Alaska by, D. J. Miller

Geology of the Yakutat District, Gulf of Alaska Tertiary Province, Alaska by, D. J. Miller

Geology of the Lituya District, Gulf of Alaska Tertiary Province, Alaska by, D. J. Miller

CALIFORNIA DIVISION OF MINES AND GEOLOGY, Special report 66: An annotated bibliography of California Cretaceous Microfossils, by Joseph J. Graham..$1.00

NEVADA BUREAU OF MINES(Reno, Nevada), Bulletin 54, Geology and Mineral Resources of Elko County, Nevada, by A. E. Granger, M. M. Bell, G. C. Simmons, and Florence Lee.....$2.50

U. S. GEOLOGICAL SURVEY, Circular 437:
Progress in the application of landform analysis in studies of semiarid erosion, by S. A. Schumm and R. F. Hadley. 14 p.....Free

OIL AND GAS JOURNAL, vol. 59, no. 18, May 1, 1961

AAPG President advocates licensing of geologists

Teamwork speeds Alaska exploration operation, by Peter B. Bike

Push-button pipelining, 5 years later, by Fred S. Jones

Electronic gasoline and midbarrel blender, by Arthur F. Stribley, Jr., M. W. Adcock, and J. F. Hannaman.

Reservoir Engineering 35: How to estimate oil in place, by E. T. Guerrero

Oil-well pumping, part 39: Prime movers: Electric-motor drive, by Joseph Zaba

OIL AND GAS JOURNAL, vol. 59, no. 19, May 8, 1961

Gas storage capacity climbs, by Robert B. Bizal

Continuous-core drilling rig, by Homer I. Henderson

Oil-well pumping: 40: Design of beam-pumping installation, by Joseph Zaba

Radioactivity surveying, by William D. Crews

OIL AND GAS JOURNAL, vol. 59, no. 20, May 15, 1961

Downhole shock absorber saves drilling time and equipment, by George Shawver

OIL AND GAS JOURNAL, vol. 59, no. 21, May 22, 1961

Petrochemical construction is skyrocketing, by Robert B. Bizal

New Ton-mile tables extend wire-line life, by R. G. Dull

Oil-well pumping: 42, Multizone rod pumping, by Joseph Zaba

CALIFORNIA OIL WORLD, second issue, vol. 54, no. 8, April 1961

Mo' about the Mohole, by Richard Sneddon

GEOTIMES, vol. 5, no. 8, May-June 1961

Preliminary Mohole Project drilling successful

Economic developement in Africa and its mineral resources, by R. A. Woodtli.

WORLD OIL, vol. 152, no. 6, May 1961

Geothermal gradients now known in greater detail by P. L. Moses

Five ways to reduce well costs, by Robert L. Parker

Controlled filtration rate improves cement squeezing, by H. J. Beach, T. B. O'Brien, and W. C. Goins, Jr.

How to design aluminum pellet fracturing jobs, by T. K. Perkins, L. R. Kern, and R. E. Wyant.

How to prevent differential sticking of drill pipe, by E. L. Haden and G. R. Welch

Recognizing and evaluating stock tank vapor recovery applications, by R. E. Weldon, Jr.

WORLD OIL, vol. 152, no. 5, April 1961

Engineer-type licensing won't help geologists, by Roy H. Guess

Facies studies can reconstruct oil-forming environments, by Orville L. Bandy

Photogeologic leads can be deceptive, by Victor C. Miller

How to analyze reflection data in permafrost areas, by Robert A. Boulware

How to analyze strand lines from heavy minerals, facies data, by E. W. Biederman, Jr.

How to predict sand erosion perforating performance, by Robert W. Brown, and Jack L. Loper

How Secretary Udall views oil and gas.

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Aspects of the Geology of Texas: A symposium pp. 117.....$2.00

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Contact metasomatic iron deposits of California by Carl A. Lamey

Middle America Trench: Topography and Structure, by Robert L. Fisher

Middle America Trench: Seismic-refraction studies, by George G. Shor, Jr., and Robert L. Fisher

Marine to nonmarine transition of sediments across Little Sycamore Beach, California, by Emanuel Azmon.

JOURNAL SEDIMENTARY PETROLOGY, vol. 30, no. 4, December 1960

Heavy minerals in Lower Tertiary formations in the Santa Cruz Mountians, California, by Alexander J. Beveridge.

Mounting heavy mineral grains, by Dev. D. Sarin

The term Graywacke, by F. J. Pettijohn

Some features of modern beach sediments, by Joseph M. Trefethen and Robert L. Dow

JOURNAL SEDIMENTARY PETROLOGY, vol. 30, no. 3, September 1960

Pleistocene algal pinnacles at Searles Lake, California, by David W. Scholl

Shallow water ripple mark varieties, by William F. Tanner

Method for mounting silt-size heavy minerals for identifcation by liquid immersion, by Charles W. Spencer

Computed sediment grain surface areas, by George Shumway and Kim Igelman

Texture and mineralogy of the recent sands of the Gulf Coast, by K. Jinghwa Hsu

Ocean basin ages and amounts of original sediments, by Edwin L. Hamilton

U.S. BUREAU OF MINES: (Distribution Section, 4800 Forbes Ave., Pittsburgh 13, Penn.)

Report of Investigations 5788: Oil-well logging with model equipment: Tests on noninvaded thin beds with sheilded electrodes, by C. I. Pierce, R. B. Lowe, and J. Pasini, III.....Free

Report of Investigations 5785: Reservoir performance of partly depleted oil reservoirs during complete gas repressuring and gas cycling, by Alton B. Cook, R. H. Coulter, Jr., G. B. Spencer and F. Sam Johnson.....Free

INTERNATIONAL GEOLOGY REVIEW, vol. 3, no. 1, January 1961

Experimental studies of combustion in oil sands, by A. B. Sheinman and A. I. Sergeev. Translated by Royer and Roger, Inc.

Certain relationships in the composition of crude oil, by A. F. Dobryansky and others. Translated by Royer and Roger, Inc.

INTERNATIONAL GEOLOGY REVIEW, vol. 3, no. 2, February 1961

Climate and oil genesis, by L. A. Nazarkin. Translated by Royer and Roger, Inc.

PETROLEUM ENGINEER, Drilling and Production, vol. 33, No. 4, April 1961.

Modern well completion series: Part II: Chemical treatment for well stimulation, by Francis N. Harris.

Gas engines or electric motors, by John M. Stevenson.

242 Deep wells added in 1960, by Ernestine Adams.

Australia - Best place to have an oil well, by J. M. Rayner.

PETROLEUM WEEK, vol. 12, No. 4, January 27, 1961. Study indicates oil is forming today.

PETROLEUM ENGINEER, Drilling and Producing. No. 3, vol. 33, March 1961.

Modern well completion series: Permanent-type, multiple and tubingless completions, by T. A. Huber abd C. B. Corley, Jr.

Chromates stabilize shale control muds at high temperatures, by Walter J. Weiss, John S. Brukner and Clarence O. Walker.

Deep drilling increased 6 percent in 1960, by Ernestine Adams.

CALIFORNIA UNIVERSITY PUBLICATIONS, GEOLOGICAL SCIENCES, (Berkeley & Los Angeles, 1960)

Stratigraphy and paleontology of the Permian Nosoni and Dekkas Formations (Bollibokka Group). By A. H. Coogan. vol. 36, No. 5.....$1.75

A survey of various Late Cenozoic vertebrate faunas of the Panhandle of Texas. Part III. Felidae, by D. E. Savage. vol. 36, no. 6...$ .75

Volcanic history of the Guatemalan Highlands, by Howel Williams, vol. 38, No. 1.....$2.00

ECONOMIC GEOLOGY, Bulletin, vol. 56, no. 1, January-February 1961.

Tephroite in California Manganese deposits, by D. F. Hewett, C. W. Chesterman, and B. W. Troxel.

Placer cassiterite of the "Manley Tin Belt," Alaska, by K. W. Stanley.

ECONOMIC GEOLOGY, Bulletin, vol. 56, No. 2, March-April 1961.

Uranium mineralization at the Midnite Mine, Spokane, Washington, by Jonathan Barrington and Paul F. Kerr.

JOURNAL OF GEOLOGY, vol. 69, No. 2, March 1961.

Geologic interpretation of grain-size distribution measurements of Colorado Plateau Sedimentary rocks, by Robert A. Cadigan.

Some rates of regional erosion, by H. W. Menard.

Absolute dating of deep-sea cores by the Pa 231/Th230 method, by J. N. Rosholt, C. Emilliani, J. Geiss, F. F. Koczy, and P. J. Wangersky.

Conjugate joint sets of small dihedral angle, by William R. Muehlberger.

SCIENCE, vol. 133, no. 3456, 24 March 1961.

Coesite from Wabar Crater, near Al Hadida, Arabia, by E. C. T. Chao, J. J. Fahey and Janet Littler.

SCIENCE, vol. 133, no. 3458, 7 April 1961.

Interior of the moon, by Gordon J. F. MacDonald.

Radioactive dating of Tertiary plant-bearing deposits, by Glenn E. Rouse and W. H. Mathews.

JOURNAL OF GEOPHYSICAL RESEARCH, vol. 66, No. 4, April 1961.

Erodibility of some California wildland soils related to their metallic cation exchange capacity, by James R. Wallis and Lee J. Stevan.

Heat flow from a differentiated earth, by Sydney P. Clark, Jr.

Paleomagnetic study of the Sudbury Basin, by Peter J. Hood.

Earth currents of deep internal origin, by P. H. Roberts and F. J. Lowes.

Seismic profiles in Northwestern Utah: Pilot Range and Grouse Creek Range area, by Joseph W. Berg, Jr., Kenneth L. Cook, Harry D. Narans, Jr., and Richard J. Leamer.

GEOTIMES, vol. 5, no. 7, April 1961.

From geological data to aquifer analog models, by R. W. Stallman.

The relationship of geologists and engineers in planning public works projects, by Harvey O. Banks.

GEOLOGICAL SOCIETY OF AMERICA, Bulletin, vol. 72, No. 4, April 1961.

The stratigraphic panorama (an inquiry into the bases for age determination and age classification of the earth's rock strata), by Hollis D. Hedberg.

Limnology and amino-acid content of some lake deposits in Minnesota, Montana, Nevada, and Louisiana, by Frederick M. Swain.

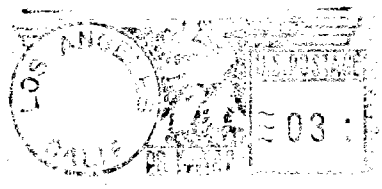
Lunar features and lunar problems, by L. W. LeRoy.

Algodones Dunes of southeastern California, by Robert N. Norris and Kenneth S. Norris.

Knoop hardness numbers for 127 opaque minerals, by Forbes Robertson.

Rubidium-strontium ages of some basement rocks from Arizona and northwestern Mexico, by Bruno J. Giletti and Paul E. Damon.

PACIFIC PETROLEUM GEOLOGIST
PACIFIC SECTION, A.A.P.G.
P.O. BOX 17486, FOY STATION
LOS ANGELES 17, CALIFORNIA
Volume 15 Number 6



Fred R. Neumann GA
381 E. Fourth Street
Chico, California

Form 3547 Requested

PACIFIC PETROLEUM GEOLOGIST

NEWS LETTER OF THE PACIFIC SECTION
AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS

Volume 15 | July, 1961 | Number 7

ASSOCIATION ACTIVITIES

COMMITTEE ON LATERAL FAULTING

The Pacific Section of the A.A.P.G. has decided to form a Committee for the study of Lateral Faulting in California and has named Dick Walters as Chairman. The purpose of the Committee will be:

1. To compile all available objective data on the subject.
2. To encourage further basic studies of critical problems.
3. To sponsor field trips providing first-hand views of important areas.

It is hoped that the Committee will start on these projects in the early fall. The Chairman would like any suggestions, comments, or advice which Association members might like to offer, including names of people who would be willing to work enthusiastically to further the aims of the Committee. Please address all such comments to Dick Walters, c/o Humble Oil and Refining Company, Box 997, Chico, California.

Further information about the plans and progress of the Committee will appear in future issues of the P.P.G.

1963 CONVENTION

Arrangements have been made to hold the 1963 Convention of the Pacific Section at the Biltmore Hotel in Los Angeles. In accordance with the results of the April ballot, the convention will be held on Thursday and Friday, April 25, 26.

LOS ANGELES LUNCHEON MEETING

"Landscapes of Northeastern Brazil" was the subject of a very interesting and beautifully illustrated talk given by Dr. Cordell Durrell, professor of geology, U.C.L.A., at Rodger Young Auditorium on June 1st. Dr. Durrell spent 1958 and 1959 in Brazil as a visiting professor at the University of Bahia in Salvador, where he gave the first advanced classes in geology.

Listeners were taken on a tour of the geological and cultural features in and about Salvador, across the semi-arid back country of Bahia and northward to the tropical coastal city of Recife. The physiographic and geological features of the Precambrian Brazilian shield were discussed, and mention was made of some of the sedimentary basins including a basin north of Salvador from which 15 fields produce 80,000 barrels per day from the Lower Cretaceous.

Dr. Durrell emphasized that his purpose in going to Brazil was to help the Brazilians toward a sound footing in geology so that they could eventually take over the development of their own natural resources without having to forever rely so heavily on the experience of other countries.

ALASKA AFFILIATION

The Alaska Geological Society has passed a unanimous vote in favor of affiliation with the Pacific Section. The Society consists of approximately 67 members, twenty-five of whom are also Pacific Section members.

COAST GEOLOGICAL SOCIETY

Dr. Fred A. F. Berry, Visiting Professor of Geology, University of California, addressed the Coast Geological Society on June 7, 1961, at the Wagon Wheel restaurant in Oxnard. The title of his talk was "Anomalous Hydrodynamic and Geochemical Conditions; Their Effect on Oil Accumulation". The talk was accompanied by slides and blackboard illustrations. An abstract of the presentation appeared in the April, 1961, issue of the P.P.G.

CONSTITUTION

PACIFIC SECTION OF THE AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS

Adopted September 1924
Amended November 1939
Amended October 1943
Amended November 1944
Amended November 1951
Amended October 1952
Amended November 1953
Amended November 1954
Amended April 1955
Amended July 1957
Amended October 1959
Amended November 1959
Amended November 1960
Amended January 1961

ARTICLE I — Name

This organization whose area of interest comprises the Pacific coastal region (Amended January 1961) shall be known as "Pacific Section of the American Association of Petroleum Geologists" and it is hereinafter referred to as "this Section".

ARTICLE II — Object

Sec. 1 The object of this Section shall be to provide for discussion of subjects and problems coming within the scope of the profession and, by such intercourse, to promote the advancement and aims of The American Association of Petroleum Geologists as set forth in its Constitution and by-laws.

Sec. 2 The Pacific Section is a non-profit organization, and no portion of the net earnings inures to the benefit of any private individual or member. (Amended Nov. 1959)

Next Deadline

July 27, 1961

ARTICLE III Membership

Sec. 1 Any member, associate or Junior (Amended Nov. 1951) of the American Association of Petroleum Geologists in good standing shall be eligible to membership in this section. (Amended January 1961).

Sec. 2 Payment of annual dues of this Section by any person qualified as in Section 1 above, shall be deemed to be a declaration of membership in this Section and shall be known as an active member of this Section. (Amended July 1957).

The Executive Committee may honor the accomplishments of one or more members each year by designating an "Honorary Life Member". An Honorary Life Member shall be exempt from all future dues. (Amended November 1960).

Sec. 3 Other persons not members of The American Association of Petroleum Geologists who are interested in the activities of this section, upon payment of annual dues and subject to their acceptance by the Executive Committee, may become subscribers. Subscribers shall not have the right to vote but may otherwise participate in the activities of this section. (Amended November 1960).

ARTICLE IV Officers

Sec. 1 The officers of this Section shall be a President, a Vice-President, a Secretary and Treasurer. During the absence of the President, the Vice-President shall assume his duties. The duties of these officers shall be those customary for their respective offices. They shall assume these duties immediately following the meeting at which they are elected as hereinafter provided. Their term in office shall be for one year or until their respective successors are elected.

Sec. 2 There shall be an Executive Committee consisting of the President, Vice-President, Secretary, Treasurer, Retiring President, Editor of the Pacific Petroleum Geologist (Amended November 1953), one member selected by the San Joaquin Geological Society, one member selected by the Coast Geological Society (Amended April 1955), and one member selected by the Sacramento Petroleum Association (Amended January 1961).

ARTICLE V Funds

Sec. 1 The dues of this Section shall be $3.50 (Amended April 1955 and November 13, 1959) per year, due and payable in advance.

Sec. 2 The funds of this Section shall be deposited to the credit of Pacific Section of the American Association of Petroleum Geologists in any (Amended November 1954) federally insured depository selected by the Treasurer but not to exceed the limit insured by the Federal Deposit Insurance Corporation. Whenever necessary, the President shall certify to the authority of the Treasurer in administering such account by providing the depository bank with a notice of the Treasurer's election and with a true copy of this constitution.

The Treasurer shall have authority to issue checks against the bank account so established, on his sole signature, but in the event of his absence or incapacity to act due either to sickness or death, 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 which event the identity and authority of the President and circumstance relating to the absence or incapacity of the Treasurer shall be certified to by the Executive Committee if so required by the depository.

ARTICLE VI Meetings

Sec. 1 Pacific Section meetings shall be held annually or at other times on call of the President. (Amended November 1960).

Sec. 2 The time and place of Pacific Section Business Meetings shall be determined by the Executive Committee. (Amended November 1960).

ARTICLE VII Elections

Sec. 1 The President of the Pacific Section of The American Association of Petroleum Geologists, with the approval of the Executive Committee, shall appoint a nominating committee at least three months prior to the Business Meeting of the Pacific Section, consisting of five (5) members, two (2) of whom shall be past officers of the Pacific Section. The nominating committee shall select two (2) candidates for each of the following offices: (1) President, (2) Vice-President, (3) Secretary, and (4) Treasurer. The slate of candidates shall be announced in the Pacific Petroleum Geologist at least one month prior to the election. Additional nominations may be made by a written petition of twenty-five or more members of the Pacific Section in good standing, received by the Secretary within two weeks following the publication of the nominating committee slate of candidates. Voting shall be by mailed ballot. The Secretary shall set a date for counting ballots and shall mail ballots to all members not less than two weeks prior to this date. (Amended November 1960).

Sec. 2 In matters pertaining solely to the business of this Section, all active (Amended July 1957) members of the Section may vote. In matters pertaining to the official business and the selection of business representatives or other officers of The American Association of Petroleum Geologists only active members of the Association shall be qualified to vote.

Sec. 3 This constitution may be amended by two-thirds vote of all members present and voting at any Business Meeting which has been announced in the Pacific Petroleum Geologist two months in advance. (Amended November 1960).

NEW ADDRESSES

The following are changes of address for those Pacific Section members listed in the latest Directory.

ABBOTT, WARD O.
Shell Oil Co.
1008 W. Sixth St.
Los Angeles 54, Calif.

ADAMS, C. F.
3401 Balmoral Drive
Apt. 3
Sacramento 21, Calif.

ADAMS, HENRY J.
The Ohio Oil Co.
P. O. Box 193
Bakersfield, Calif.

ADVENT, WILLIAM A.
Room 1112
926 "J" Building
Sacramento, Calif.

BEALL, JOHN M.
Box 1114
Newport, Oregon

BERNT, DANIEL M., JR.
250 E. Pacific Coast Highway
Wilmington, Calif.

BICKEL, ROBERT S.
11269½ Morrison
North Hollywood, Calif.

BICKMORE, DAVID K.
P. O. Box 463
Santa Maria, Calif.

BROCKETT, LESTER D.
Richfield Oil Corp.
555 S. Flower St.
Los Angeles 17, Calif.

BROWN, GEORGE EARL
The Ohio Oil Co.
P. O. Box 6036
Sacramento, Calif.

BROWNING, JOHN L.
Shell Oil Co.
P. O. Box 999
Bakersfield, Calif.

BUCHANAN, R. A.
c/o Wm. Ross Cabeen & Assoc.
945 Petroleum Club Bldg.
Denver 2, Colo.

BURNS, RUSSELL W.
Union Oil Co. of Calif.
709 8th Avenue West
Calgary, Alberta, Canada

CANUT, A. L.
E. B. Hall & Co.
P. O. Box 125
Wilmington, Calif.

CARTER, JOHN O.
Shell Oil Co.
1055 Dexter Horton Bldg.
Seattle 4, Wash.

CASTLE, WILLIAM G.
Richfield Oil Corp.
P. O. Box 97
Ojai, Calif.

CASTRO, M. J.
Shell Oil Co.
15836 Cobblestone Road
La Mirada, Calif.

CLASSEN, WILLARD J., JR.
Standard Oil Co. of Calif.
2366 Eastlake, East
Seattle 2, Wash.

CRONIN, JOHN F.
5 Fernald Dr.
Cambridge 38, Mass.

DAVIS, EUGENE L.
411 Flint Ave.
Long Beach 14, Calif.

DEJARNETT, PRESLEY
Oasis Oil Co. of Libya
P. O. Box 510
Tripoli, Libya
North Africa

DeLAPP, RICHARD E.
7824 Kitty Hawk
Los Angeles 45, Calif.

DOHLEN, HOWARD G.
Cal. Pan Am Well Logging Co.
18245 Regina
Torrance, Calif.

DORRANCE, JAMES R.
1240 E. Crown St.
Glendora, Calif.

DUDLEY, PAUL H.
4224 Locust Ave.
Long Beach 7, Calif.

ELLIS, WESLEY E.
540 Hera St.
San Dimas, Calif.

ENGEL, NOEL W.
The Superior Oil Co.
P. O. Box 600
Denver 1, Colorado

ERICKSON, ROBERT C.
Standard Oil Co. of Calif.
P. O. Box 5278
Oildale, Calif.

ERNST, JOSEPH
1722 "J" St.
Sacramento 14, Calif.

FAZIO, PATRICK J.
McCulloch Oil Expl. Co.
5965 W. 98th St.
Los Angeles 45, Calif.

FINCH, VINCENT W.
11426 S.E. 196
Renton, Wash.

GARRISON, LOWELL E.
Western Gulf Oil Co.
P. O. Box 4195
Sacramento 21, Calif.

GERE, WILLARD C.
U. S. Geological Survey
443 Federal Bldg.
Salt Lake City 1, Utah

GOTH, WILLIAM C.
c/o Union Oil Co.
112 E. 4th St.
Roswell, New Mexico

GRAY, KENNETH O.
Naval Civil Engineering Lab.
Port Hueneme, Calif.

GREENE, MALCOM B.
Suite 1055 Dexter Horton Bldg.
Seattle 4, Wash.

GRIBI, EDWARD A., JR.
229 Vivian St.
King City, Calif.

HACKEL, OTTO
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P. O. Box 968
Bakersfield, Calif.

HALL, EDWARD A.
1003 Main St.
Santa Paula, Calif.

HANEGAN, GUY L.
38986 Ocotillo Drive
Palmdale, Calif.

JAGER, MICHAEL B.
306 Cedar Street
Newport Beach, Calif.

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Division of Earth Sciences
College of Mineral Industries
Pennsylvania State University
University Park, Pennsylvania

JOHNSON, RAYMOND L.
6523 So. Broadway
Whittier, Calif.

JOHNSTON, IAN McKAY
Texaco, Inc.
P. O. Box 252
New Orleans, Louisiana

KELLEY, H. ALLEN
1835 Huntington Drive
So. Pasadena, Calif.

KINGSLEY, JOHN
Humble Oil & Gas Co.
Monterey Division
550 S. Flower St.
Los Angeles 17, Calif.

KOCH, HEINRICH L.
1841 Highland Oaks
Arcadia, Calif.

LATKER, MARK
4205 Elzevir Road
Woodland Hills, Calif.

LAVERY, JOHN P., Jr.
Route 2, Box 434
Bakersfield, Calif.

LEVEL, HOWARD R.
1003 Main St.
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LOCKE, J. WALKER
301 Calvin St.
Taft, Calif.

LUNDGREN, CHARLES E.
1411 Chestnut Place
Davis, Calif.

MAYER, EDWARD
Monterey Oil Co.
Route 5, Box 475
Bakersfield, Calif.

McFALL, C. CAREW
3330 Cecil St.
San Jose, Calif.

McLEAN, THOMAS C.
Pacific Lighting Gas Supply Co.
720 W. 8th St.
Los Angeles 17, Calif.

McMICHAEL, LAWRENCE B.
P. O. Box 5278
Oildale, Calif.

MERRILL, WILLIAM R.
San Jose Oil Co.
413 Shurdut Bldg.
Intramuros
Manila, Philippine Islands

MILLER, R. RICHARD
Continental Oil Co.
2836 W. 8th St.
Los Angeles 5, Calif.

MINSHALL, FRANK
1030 Rosita Dr.
Glendale 8, Calif.

MONTZ, W. J.
Shell Oil Co.
1008 W. 6th St.
Los Angeles 54, Calif.

PRICE, MAURICE C.
P. O. Box 737
Olympia, Washington.

RAEL, JOSE I.
1501 So. Taylor St.
Amarillo, Texas

RICCIO, JOSEPH F.
15749 E. Lemon Drive
Whittier, Calif.

ROGERS, CARL P.
Texaco, Inc.
2505 State
Olympia, Wash.

RUSSELL, WILLIAM C.
B P Exploration Co. (Alaska) Inc.
535 7th Avenue, S.W.
Calgary, Alberta, Canada

SARAD, ALEX G.
Tidewater Oil Co.
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Humble Oil & Refining Co.
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Sunray Mid-Continent Oil Co.
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Sunray Mid-Continent Oil Co.
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Apartado 548
Las Palmas, Gran Canaria, Spain

WAGNER, CARROLL M.
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Los Angeles 5, Calif.

WATERMAN, DOUGLAS R.
P. O. Box 5278
Oildale, Calif.

WEBSTER, CUTLER
3107 Linden Ave.
Bakersfield, Calif.

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Shell Oil Co.
1008 W. Sixth St.
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The Ohio Oil Co.
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The following are changes of address for those Pacific Section members not listed in the latest Directory.

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D'OLIER, WILLIAM L.
10 Kilgore Lane
San Anselmo, Calif.

DUCE, JAMES TERRY
1100 Sacramento St.
San Francisco 8, Calif.

DUDLEY, DALE H.
Richfield Sahara Petroleum Co.
Apartado 49
Puerto de la Luz
Las Palmas de Gran Canaria, Spain

FIELDER, R. RICHARD
1700 Madrone Lane
Davis, Calif.

HARRIS, RICHARD C.
c/o M. Kadinsky
315 Riverside Dr.
New York 25, N. Y.

KNIGHT, RAYMOND L.
P. O. Box 1176
Bakersfield, Calif.

KNOX, LOUIS
1113 Meridian Ave.
So. Pasadena, Calif.

LIVELY, JOHN R.
66 South "P" St.
Livermore, Calif.

McCOY, MARSHALL
16 Rosecrans Ave.
Manhattan Beach, Calif.

McELROY RANCH CO.
P. O. Box 1176
Bakersfield, Calif.

PATTY, DUNCAN V.
Tejon Ranch Co.
P. O. Box 1560
Bakersfield, Calif.

SANDERS, RICHARD J.
25 Emerson St.
Denver 18, Colorado

WILSON, L. KENNETH
400 Montgomery St.
San Francisco 4, Calif.

PERSONAL ITEMS

Schlumberger, Sacramento has had lots of activity recently. Bill Strong, formerly employed by the above is now working for Aerojet General, Sacramento. Henry Wiese, a recent transfer from Bakersfield, has been promoted to senior sales engineer. Howard Cagel, has been out of service for a month following an appendectomy. Howard has recovered and is now vacationing in Texas. Schlumberger welcomes a new engineer--Bill Creel, his wife, Ruth, daughter Sandra and a son, Bill--from Long Beach.

A new addition to the Texaco, Bakersfield office is Jack Pigg, a recent graduate of the University of Oregon.

During the last heat wave in Bakersfield a hot falcon(?) flapped into Jim O'Neal's backyard suffering from too much sun. Birdman Cutler Webster was summoned and Bismarck, named for his cheerful countenance, now perches in the Webster backyard. Cutler is currently searching for a book or person to coach him in the fine points of falconry.

Dorman Graves, Southland Royalty, Sacramento, recently returned from a well sitting vacation in Eureka, California, with a bit of advice: "Don't turn your back on the waves while studying beach geology--particularly when wearing street clothes!"

Dick Vivion, Humble, Olympia, Washington, and Pete Smith, Humble, Los Amgeles, have been sharing Charlie Guion's duties in Sacramento, while Charlie has been busy burning his fingers on hot baby bottles.

Highlights of the Union, Bakersfield, annual Exploration Department Sierra outing were Herb Harry and Bill Sax, Ed Borlgin and Jerry Willey's late arrival in a company Sherman tank; Bob Carlson's Friday angling for the fish eaters; and Dick Stewart's fireside readings of the Kernville Gazette. Poker honors were shared by Chuck Cary and Wayne Rodgers.

On their recent trip to Alaska, Les Brockett and Harry Jamison with Richfield in Los Angeles, ran into an old and esteemed friend. In the midnight sun, Ralph Rudeen with Shell in Seattle, was morosely shambling down the street in Fairbanks preparing himself for another lovely vacation on the North Slope. Les and Harry report that Ralph was disgustingly sober for a man who should have been drowning his sorrows.

Alan Hershy, sporting a plastic neckpiece, the result of a Ridge Route ruckus, is back in Shell's Bakersfield Paleo Department after doing time in Los Angeles.

John Curran, distinguished consultant from Santa Barbara, with his extinguished crew Pete (Ka-Boom) Hall entered the sailboat races at Coronada recently. John and crew were last seen drifting down the bay yodeling, playing the accordian and drinking schnapps while the rest of the fleet sailed by.

Dale Duley, Richfield, Spanish Sahara, and family have recently moved to modern quarters in Ciudad Jardin, Grand Canaries. He reports that he is now living like all the other "filthy rich" Americans.

R. D. (Pat) Patterson, Bakersfield, is retiring after 35 years of service in Shell's geology department.

Don Henriksen and his wife, Marilyn, Richfield, Spanish Sahara, were last seen touring Europe on vacation in their newly acquired Jaguar--sans Maurice.

VACATION HIGHLIGHTS: John Kilkenny, Union, is off to the land of aloha for a brief vacation. Sam Tate, Humble, is vacationing in Texas. Bill Castle, Richfield, was last seen in the vicinity of Tucson at a family reunion. Gene Johnson, Shell, announces he will vacation "at home, away from phone, on the Sloan". Verne Rutherford, Union, is reliving the Battle of Gettysburg and is presently preparing the 2nd Gettysburg address. This time a geological dissertation. Hal Reade, Richfield, has just returned from his annual grain count at Balboa Island.

The following changes are announced for Humble Oil and Refining Company's Los Angeles area (formerly California area) Exploration Department as a result of a reorganization and merger of the Monterey Division of Humble effective July 1, 1961;

Mr. J. R. Jackson, Jr. - Area Exploration Manager
Mr. R. M. Touring - Area Geologist, formerly District Geologist in Eugene, Oregon.

In connection with these changes, Humble is opening a field exploration office in Bakersfield at 218 Bernard Street, effective August 1, 1961. with the following personnel:

District Geologist - Mr. Tod P. Harding
Geologists: Mr. C. V. Bird
Mr. T. H. Sisk, Jr.
Mr. J. W. Smith
District Geophysicist - Mr. D. S. Masterman
District Scout - Mr. Henry F. Dawson

Mr. Harding will be District Subsurface Geologist in charge and contact representative for the Company.

In addition, Mr. Frank S. Palen will move from Los Angeles to Humble's district production offices at Edison as District Production Geologist. Mr. Don. A. Rogers, who has been in Chico, will be transferred to Long Beach as District Production Geologist together with Mr. Bill Emerson, formerly of the Monterey Division.

Mr. Robert D. Ottman, who has been in the Los Angeles office, will be transferred to Chico as District Subsurface Geologist.

Mr. Tom A Baldwin, formerly with the Monterey Division, will be District Subsurface Geologist in charge of Humble's offshore geology.

Mr. Bob Black and Mr. John Kingsley, formerly with the Monterey Division will be transferred to the Corpus Christi, Texas, area and the Los Angeles area offices respectively.

Jim Lamb, Creole Oil, Venezuela, revisited the scenes of his misspent youth in Richfield's Bakersfield Paleo department. He arrived with a new car, purchased in New Orleans, equipped with Texas plates and included a tour of the Grand Canyon while enroute to California.

John Wells, Bob Erickson and Case Bowman, Standard, along with Henry Adams, Fred Smith, Jr., and Tom Roy, Ohio, were observed trading interviews, between the acts last month with "the girls in the swing", and "the girls in the gin bath" at Bakersfield's Hotel Padre bar.

Bob Scott, Signal, is back in Los Angeles via Bermuda for a short vacation. Fortunately (?) his vacation coincided with the recent flareup of six-gun activity in Venezuela. Local friends are somewhat concerned since Bob will be "going down for the third time".

Dick Atchison, Ohio, Bakersfield, is still mumbling about Texas electing a Republican to the U. S. Senate. Big Dick fondly remembers Texas as a place where Republicans were like rabbits--you shot them before they had a chance to multiply.

Richfield, playing their annual game of musical icebergs has come up with the following: Milt Norton has just returned from a month's work in Alaska, John Leverson is still there and Fred Sierveld is ready to go.

Otto Hackel and associates swimmingly opened their new office in Bakersfield with an amply supplied wine party.

Doug Traxler, Signal, recently spent a warm week of vacation in Central Nevada scouting the recent drilling and testing activity at the Beowawe Geysers. Reports have it that the slot machines were as cold as the testing was hot.

Frank Noble, Union, Bakersfield, has been transferred to the Gulf Coast Area.

Swiss Holmes, Shell, Sacramento, has been considering the Metrecal plan since the sprained his ankle while on vacation. A small pebble gave way, Swiss???

The Western Venezuela Geological Society is still congregating at Maracaibo. Plans are being finalized for a field trip into the western Venezuela Andes just south of Lake Maracaibo this September.

Bud Oakes, Union, Cutbank, Montana, recently announced his intentions of foregoing the blissful state of bachelorhood to marry Barbara Louise Lindusky of St. Paul, Minnesota on July 15. Bud and Barbara met and collided while schussing the ski slopes of Glacier National Park.

The Exploration Logging Group, Sacramento, punched a hole in the bottom of their boat while water skiing. Someone rocked the boat.

Shell, Sacramento, has a new paleontologist, Jim Hendricks from Bakersfield.

Jerry Williams (Ohio, Ventura) recently participated in a float trip down the Colorado River from Blythe to Yuma. Jerry and five friends escorted FOURTEEN (count 'em) nubile females down the river, introducing them to the wonders of nature. Jerry says that, for some reason or other, very little fishing was done.

Bakersfield Mobil men, Dave Martin and Q. Moore have returned from a vacation at the Company E-Log school in Durango, Colorado where the fishing is good the temperature is not 113°.

Jerry "Haplophragmoides" Marrall, Union Paleontologist, was "outraged" while waiting to be fed at the Spring Picnic. After several dozen colleagues had bucked the line ahead of him, he nearly lost his head when Stan Wissler waltzed by him with two sizzling steaks on his plate. Thanks to a continuous supply of beer, Jerry managed to placate his churning stomach long enough to survive the wait.

Otto Hackel, Roy W. Turner and William W. Whitley have resigned from Intex Oil Company to engage in independent consulting work. Otto Hackle was formerly Manager of Exploration, Roy Turner and Bill Whitley were District Geologists in California and the Rocky Mountains, respectively. The Association will have offices at 1414 "Q" Street, Bakersfield, California; mailing address: P.O. Box 968; telephone: FAirview 5-4682, and at 401 Patterson Bldg., 1706 Welton Street, Denver 2, Colorado; telephone: ALpine 5-9911.

Brodrick F. Dunlap, contract landman, will office with the group and will make has headquarters for Petroleum Land Service in Bakersfield.

James L. O'Neill, former Cheif Geologist for Oceanic Oil Company, with a background of geological experience in the majority of the oil provinces of the Western United States, will also be affiliated with the organization at the Bakersfield address.

F. R. Rosenlieb, recently Assistant Treasurer and Cheif Accountant of Intex Oil Company will have his office with the association in Bakersfield and will provide accounting services as well as income tax consultations.

The group will be known as "Otto Hackel and Associates" and petroleum consulting services will be available in geology, land and accounting.

NURSERY NEWS

Congratulations to the Charlie Guions, Humble Sacramento, for the new little scout, Richard Joseph, born June 15, weighing in at 7lbs, 13 oz.

Congratulations to the Roland Bains, Texaco, Sacramento, on the arrival of Lawrence Patrick, June 7--a real heavy weight at 9 lbs, 10 oz. This makes number five for the Bains, 4 boys and 1 girl.

Buzz and Marilyn Welsh, Sunray, Bakersfield, happily welcomed their first child, Jennifer Ellen, born June 23, and weighing 4 lbs, 8 oz.

CALENDAR

August 2-5,1961: Wyoming Geological Association Sixteenth Annual Field Conference, a symposium on the post-Cody and pre-Eocene stratigraphy of Wyoming. The field trip will cover portions of the Green River Basin. Transportation will be by private car. Registration by mail is available from Wyoming Geological Association, P.O. Box 545, Casper, Wyoming.

September 6-8, 1961: Rocky Mountain Association of Geologists annual Field Conference, a study of the lower and middle Paleozoic section in the Salida, Monarch, Ouray, Silverton and Durango areas, Colorado. Technical session will be held the night of September 6, in Salida, Colorado. Transportation will be by private car. Further information may be obtained from Denzil W. Bergman, Conference Chairman, 1600 Ogden Street, Denver 5, Colorado.

September 14-16: Kansas Geological Society will hold its 26th Annual Field Conference along the Mississippi River in eastern Missouri and western Illinois. The Conference will study rocks of middle Ordovician to early Pennsylvanian age along the river between Hannibal and St. Louis. For further information, write to Orvie L. Howell, Field Trip Chairman, Kansas Geological Society, Lario Oil and Gas Co., 301 South Market, Wichita, Kansas.

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Water Supply Paper 1369-C: Surges in natural stream channels, by S. E. Rantz.....15

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Water Supply Paper 1459-H: Microbiologic factors in the solution and transport of iron, by E. T. Oborn and J. D. Hem.....15

Professional Paper 387-A: Bontanical evidence of the modern history of Nisqually Glacier, Washington, by R. S. Sigafoos and E. L. Hendricks..25

Bulletin 1091: Investigations of some clay deposits in Washington and Idaho, by J. W. Hosterman, V. E. Scheid, V. T. Allen and I. G. Sohn...$2.75

Bulletin 1146-A: Geophysical Abstracts 184, January-March 1961.....40

Circular 443: Availability of ground water in the Gallup area, New Mexico, by S. W. West. 21 pages.....Free

Circular 445: Occurence of minor elements in water, by W. H. Durum and Joseph Haffty, 11 pages .....Free

Circular 450: Sonic depth sounder for laboratory and field use, by E. V. Richardson, D. B. Simons, and G. J. Posakony. 7 pages.....Free

Hydrologic Investigations Atlas HA-42: Conservation of floodwater at White Sands Missile Range, Dona Ana County, New Mexico, by E. H. Herrick 50

Map MF 79: Geological map of the Bouquet Reservoir quadrangle, Los Angeles County, California by T. W. Dibblee, Jr.....50

Map I-321: Geologic map of the Hagemeister Island quadrangle, by J. M. Hoare and W. L. Coonrad $1.00

Open File Reports:

TEI-772: Interim report on geologic investigations of the U12e tunnel system, Nevada Test Site, Nye County, Nevada, by F. A. McKeown and D. D. Dickey. 16 pages, 8 figs. Inspection only

TEI-778: Gamma-radioactivity investigations at the Nevada Test Site, Nye and Lincoln Counties, Nevada, by Carl M. Bunker. 95 pg. 52 figs. 2 tables. Inspection only.

Prof. Paper 373: Aerial Photographs in geologic interpretations and mapping, by R. G. Ray..$2.00

U. S. BUREAU OF MINES (4800 Forbes Ave., Pittsburgh 13, Penna.)

Information Circular 8023: The Soviet Seven-Year plan (1959-65) for oil, by Donald J. Frendzel. .....Free

Report of Investigation 5736: Chemical analysis and electrical resistivity of selected California oilfield waters, by David M. Gullikson, W. Hodge Caraway and George L. Gates.....Free

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Special Publication 8: Index, Journal of Paleontology, vol. 1-25, 1927-1951: Part 1: subject-author index, Michael S. Chappars & Barbara Bloom; Part II: genus-species index, by Hans E. Thalmann and Wolf Mayne.....Members: $6.50

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THE PETROLEUM ENGINEER (Drilling and Producing) vol. 33, no. 6, June 1961,

Project Mohole: Phase 2

API Standardizes fracturing equipment tests

Horizontal fractures do affect ultimate recovery, by Bobby L. Landrum and Paul B. Crawford.

AMERICAN MINERALOGIST, vol. 47, no. 3 and 4 (parts 1 and 2) March-April 1961

Crestmore, past and present, by Joseph Murdoch

Composition of aluminian ludwigite from Crestmore, California, by W. T. Schaller and A. C. Vlisidis.

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Some factors concerning the nature and origin of glauconite, by John Hower

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Chemically cleaning process equipment, by H. C. Bozeman and Paul A. Finn.

How to reduce drilling costs-II: How pipe and hole size affect drilling hydraulics, by Preston L. Moore.

Rigs will be busy in Alaska this summer, by Frank J. Gardner

Panhandle gas hunt sets hot pace, by B. E. Barby

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New Devonian and Mississippian formations in De Long Mountians, northern Alaska, by Edward G. Sable and Thomas Dutro, Jr.

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Stratigraphic evidence for tectonic and current control of Upper Devonian reef sedimentation, Duhamel area, Alberta, Canada, by John M. Anrichuk

Geological factors influencing porosity estimates from velocity logs, by Roberto Sarmiento.

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Oil and Gas Investigations 22. Preliminary regional structural contour map on top of Mississippian rocks in Kansas, by D. F. Merriam (scale 1"/10 miles)

Oil and Gas Investigations 23. Preliminary regional structural contour map on top of "Hunton" (Silurian-Devonian) rocks in Kansas, by D. F. Merriam and T. E. Kelly. Map scale 1"/10 miles.

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Exploration geophysics: A review, by Frederick E. Romberg.

GEOLOGICAL SOCIETY OF AMERICA, 419 West 117 St., New York 27, New York

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How to engineer an in situ combustion project, by T. W. Nelson and J. S. McNeil
Drillings no problem in Tierra Del Fuego (Argentine Republic) by Ed McGhee
Alaskan unit gets first test.

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You can skip over terrain hazards with airborne geophysical surveying, by L. Q. Gaither and W. G. Egerton.
Use the right log, W. B. Bleakley.
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Poor muds mean high drilling costs, by Jack Marsee and R. J. Duran

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How Venezuela sees its oil future
Drillers probe deep in Arkoma basin, by John C. McCaslin
Town-lot wildcat scheduled in Los Angeles
A formula for oil finding, by Edward A. Koester.

OIL AND GAS JOURNAL, vol. 59, no. 26, June 26, 1961.
Pipeline costs: Installation and equipment, by John P. O'Donnell
Good practices are the key to success in oil-finding, by Edward A. Koester. (Part II)
Outlying areas dim luster of Denver basin, by Frank J. Gardner

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PACIFIC PETROLEUM GEOLOGIST
PACIFIC SECTION. A.A.P.G.
P.O. BOX 17486. FOY STATION
LOS ANGELES 17. CALIFORNIA
Volume 15 **Number 7**

DA

Richard L. Hester
Pauley Petroleum, Inc.
10000 Santa Monica Boulevard
Los Angeles 25, Calif.

Form 3547 Requested

PACIFIC PETROLEUM GEOLOGIST

NEWS LETTER OF THE PACIFIC SECTION
AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS

Volume 15 | August, 1961 | Number 8

ASSOCIATION ACTIVITIES

BAKERSFIELD GUIDEBOOK CORRECTIONS

Corrections for geologic map of San Emigdio Mountains by T. W. Dibblee, Jr., in Guidebook for S.E.P.M. - S.E.G. - A.A.P.G. Annual Spring field trip, May 12-13, 1961 are listed below. At the request of many members who were unable to correct their copies at the dinner meeting in Bakersfield, Mr. Dibblee has graciously provided a list of corrections for publication.

1. Tts 3 1/2 mi. N. 75° W. of CAPITOLA field should be Tps.
2. Tt 3 1/2 mi. N. 80° W. of CAPITOLA field should be Tp.
3. Tps 1/3 mi. N. 25° W. of CAPITOLA field should be Tts.
4. Unmarked exposure 1 mi. SE of CAPITOLA field should be labeled Tt.
5. Tps 1 3/4 mi. S. 30° E. of CAPITOLA field should be Tts.
6. Tps 3/4 mi. N. 45° E. of TEXAS P.U.P. - 1 well should be Tts.
7. Dashed contact between Tts and Tt to south on Pioneer anticline should continue through TEXAS P.U.P. - 1 well.
8. Unmarked exposure east of eastern Qtu on Pioneer anticline should be labeled Tts and Tt, with contact (between Tts on NW, Tt on SE) through second "2" of "22" (dip), and contact between Tt and Tm to southeast through NE corner of sec. 34, T. 11 N., R. 23 W.
9. Tt 1 1/2 mi. SE of BARDEEN-Ramsey 1 well should be Tp.
10. Leader from "gr" south of Cienega Canyon should extend only beyond nearest fault and not beyond second nearest fault of San Andreas fault zone.
11. Contact ("with D and U") 1/2 mi. south of San Andreas fault zone south of Cienega Canyon should be a fault contact as far SE as "the" landslide (Qls) shown, and as a contact (not a stream as incorrectly shown) east of the landslide.
12. Unmarked exposure (crossed by road) 3 7/8 mi. S. 35° W. of RICHFIELD Ramsey 1 well should be labeled Tsl.
13. San Emigdio Mountain (7,495') should be 2 1/2 mi. N. 75° W. of incorrect location shown.
14. Unmarked exposure along south fringe of Wheeler Ridge and South of Tpg should be labeled Qtu.
15. Tpg of Windgap area should be Qtu.
16. Windgap oil field should not extend into south half of secs. 35 and 36, T. 11 N., R. 20 W.
17. Segment of road 1 1/2 mi. west of STOP (1) should be in alluvium (Qal) about 1 mi. west of STOP (1) and not in Maricopa shale (Tm).

COAST GEOLOGICAL SOCIETY

One of the most successful summer barbecues in recent history was held at the Lagamarsinos' Ranch in Ojai, on Saturday, July 22, 1961. A group of approximately 40 geologists, wives, sweethearts, girlfriends, and just plain friends swam, played various games including that infamous one, "Bocce Ball," and capped off the events with an excellent barbecued steak dinner. When the dust had settled all were happy and perhaps a little bleary-eyed.

SPECIAL JOINT MEETING

A special joint meeting sponsored by TEMPO, the University of California, Santa Barbara, and the Santa Barbara Museum of Natural History was held at the Museum auditorium in Santa Barbara on Monday evening, July 17, 1961. Guest speaker was Dr. Pierre St. Amand, Geologist and Geophysicist, Naval Ordnance Test Station, China Lake, California, who spoke on the "CHILEAN EARTHQUAKE - 1960." Dr. Amand showed an excellent set of color slides taken both before and after the major earthquake in southern Chile. A discussion of the geology, geography and cultural aspects of the country accompanied the most lucid slides.

ROCKY MOUNTAIN FIELD TRIP

The Rocky Mountain Association of Geologists will hold its 1961 Annual Field Trip beginning Wednesday September 6 and ending Friday, September 8. The trip will cover portions of southwestern Colorado including the areas around Salida, Gunnison, Black Canyon, Montrose, Ouray (Sept. 7th) and Durango (Sept. 8th). A short technical meeting will be held in the Salida High School Auditorium at 8:00 PM, Sept. 6th.

Transportation will be by private car caravan. The registration fee ($32.00) includes a guidebook (Sold separately for $10.00) and all meals on Thursday and Friday, but does not include the Wednesday night meal in Salida or the cost of accomodations. Registration forms and additional information may be obtained from Registration Committee, RMAG, P.O. Box 95, Denver 1, Colorado.

SACRAMENTO GUIDEBOOK

Copies of the 1961 Geological Society of Sacramento Field Trip Guidebook, "Oroville Damsite, Chico Creek, and Marysville Buttes" , $3.50 a copy, and reprints of the 1960 G.S.S. Field Trip Guidebook, "Northwestern California", $3.00 a copy, are available from Lowell Garrison, GULF Oil Company, P. O. 4195, Sacramento 21, California.

Next Deadline
August 30, 1961

MINERALS OF CALIFORNIA SUPPLEMENT

The latest "Supplement to Minerals of California", now available, brings up to date one of the Division's most popular books. This useful pamphlet, as well as the bulletin, "Minerals of California", was compiled by Professors Joseph Murdock of the University of California at Los Angeles and Robert W. Webb of the University of California at Santa Barbara. It constitutes additions to California mineral localities from January 1, 1955 through December 31, 1957.

Three new previously unknown minerals were found in California during the 3-year period, 1955-1957. The three are galeite, gerstleyite, and nekoite; in addition 23 mineral species were reported in California for the first time.

Uranium and rare-earth minerals have multiplied in their reported frequency. Autunite was reported from five localities in three counties in Bulletin 173; it is now known from 25 localities in 10 counties. Carnotite was unreported in "Minerals of California"; it is now known from 14 localities in 9 counties. At least 15 of the minerals new to California are radio-active rare-earth minerals.

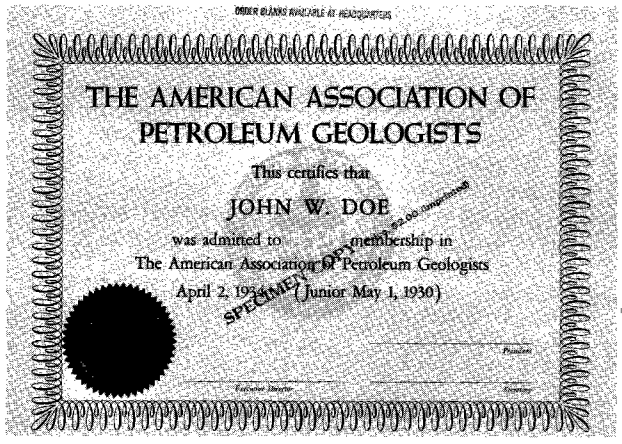
Mineral collectors, mineralogists--both amateur and professional--as well as "rockhounds" of all ilk will need this basic source book in their personal libraries.

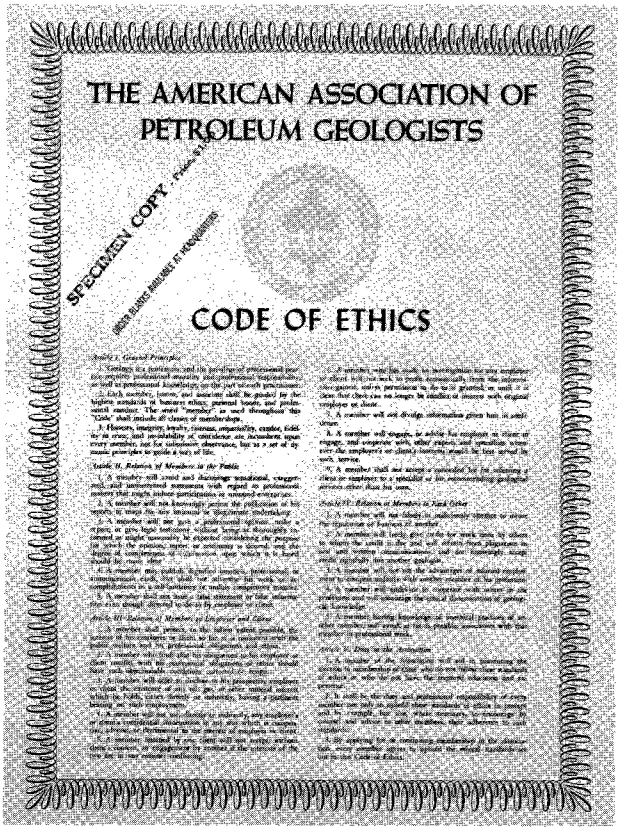
Paper-bound, in convenient six-by nine-inch size, the "Supplement" contains 46 pages; it is priced at $1.00 plus tax. The pamphlet may be ordered from the California Division of Mines offices in the Ferry Building, San Francisco 11, California.

AAPG CERTIFICATES

Membership Certificates and Code of Ethics (see illustrations) are now available from AAPG Headquarters, Box 979, Tulsa 1, Oklahoma. The Membership Certificate, measuring approximately 9" x 12", will be imprinted with the member's name, class of membership and the date of attaining that class. If desired, the original class of membership and date may be included. Your copy may be obtained by sending $2.00 to the above address. Include your name, as you wish it imprinted, and indicate whether or not you desire to have your original class of membership and date shown.

A copy of the Code of Ethics, measuring approximately 12" x 16", is also available at a cost of $1.00.





PERSONAL ITEMS

Ed Gribi (Consultant, King City) has acquired one of those new-fangled phone numbers. Anyone desiring to try it out can call (408) 385-5207. The parenthetical numbers are the Area Code.

Ray Johnson, Standard, Seattle, took over Hans Vendenberge's scouting duties in Sacramento, while Hans was vacationing in the Victoria, British Columbia Area. All this moving around would have been avoided if Hans had also permitted Ray to take his vacation for him.

Bob Hindle (Sunray, Newhall) has been transferred to the wild and wooly state of Wyoming - Casper to be exact. Bruce Cottman will replace Bob at Newhall.

John Thrailkill has left Continental in Bakersfield to attend Princeton for his Ph.D.

Dave Calloway has taken up the cudgel for Great Basins. He will keep his residence in Bakersfield.

The Standard Oiler Softball Team playing in the Bakersfield "B" League has dropped 5 out of 7. Rumors are that Manager, Mort Polugar is in danger of being replaced.

Pete Hall (Richfield - Ojai) of "Vino-Roco" fame, was seen at the Coast Geological Society barbecue playing a mean game of "Bocce Ball".

Dick Lownes (Union-Los Angeles) has submitted his resignation as geologist.

Jim Vernon (Texaco-Ventura) has resigned and plans to return to college this fall for graduate work in oceanography.

Don Scanlin (Union-Santa Paula) reportedly was seen staggering out of the "Hungry Eye" up San Francisco way - must have been a good vacation.

Bob Paschall (Signal-Los Angeles) was seen to squirm and groan slightly at the recent talk in Santa Barbara on the Chilean Earthquake, 1960, when the subject of strike-slip faults was mentioned - the San Gabriel fault was never like this, eh Bob???

Those erstwhile rock-knockers, Carroll ("Hillary") Hoyt (Mobil-Los Angeles) and Bob ("Tensing") Yates (Shell-Ventura) are planning another safari to the wilds of the Sierras - wild stories will be rampant after this expedition!

Bud Oakes (Union-Cutbank, Montana and formerly at Santa Fe Springs) was seen squiring his new bride throughout southern California - when last seen they were speeding toward the Golden Gate and hence back to the disturbed belt country.

Harry "Eagle Scout" Jamison, intrepid Richfield Geologist, having volunteered to take his wife and six - count them - children on a two weeks camping expedition into the San Bernardino Mountains, took the easy way out at the onset of mechanical troubles in his vintage coupe. Unexplainable radiator noises-vaguely reminiscent of firecrackers - convinced his wife that they would never make the campsite - so they returned home the same day, unpacked the car and kids and Harry spent the balance of his vacation on the beach at Newport - which he had really intended to do anyway.

Recent events at Union in Bakersfield include the transfer of Chuck Cary from the Paleontological to the Geological Department and Gerald Fawcett has announced that he is leaving Union and geology. Gerald will take a vacation to do a little marble gathering and then---------?

Standard Oil Transfer Department: Oscar Weser, Stratigrapher emeritus, and Harry Nagle, raconteur entrepreneur, and part-time geologist, have shifted rock piles and cigar bands respectively to the Ventura office and, in accord with the fair trade laws, Ralph Newton is transferred to La Habra. Tom Wright flew south with the 707's from Seattle to join the L.A. Basin Confusion Club, T. J. Newbill, Post-Commander. Doug Waterman goes from Oildale to La Habra and Ernie Espenschied from La Habra northward.

RUMOR'S OF THE LUNCHEON CROWD AT COLOMBO'S: Tom Baldwin is sporting a neat 165 lbs. and threatening to go to 155 lbs. - at Colombo's?! Frank Parker has discovered an enforced diet - his advice to friends (and enemies) who DON'T want to eat is order Lasagna on Fridays! The waitresses just don't get around to bringing it. Jean B. Senteur de Boue, noting one slight inconsistency in the previously mentioned diet which gives one all the more time to drink beer, eat buttered rolls, mootch pieces of pizza, etc., stated that after tallying up the "minor-accessories" calories consumed on the enforced diet more were stowed away than when promptly served. Doug Traxler's lament to the waiter bringing the filled water glasses goes like this! "What do ya bring them for - they just clutter up the table and provide cold water to be spilled through cracks in the table - and run down into your shoes, etc."

New techniques in golf handicapping (by age rather than previous score) allowed Dick Clawson (42) to beat out Bob Knapp (30) in the recent Dig and Divot Parade.

Be it known by these presents that the Bakersfield Standard Oil Golf Team is practicing this summer to lower scores and raise handicaps in preparation for the fall tournament with the Cary-led Union pack.

Roger Mastin, University of Kentucky graduate, and Al Edgerton, UCLA graduate, are currently undergoing engineer training in Schlumberger's Sacramento office.

Rumors are circulating that Walt Howe, Shell, Sacramento, is in training for the 1964 Olympic Bicycle Marathon. Reliable reports have confirmed Walt's daily ride to work is a one-way distance of approximately eight miles.

Bob Hindle (Sunray, Newhall) leaves this month for Casper where he will be Senior Geologist. Bob has already sold his mansion in Hollywood and purchased a house in Casper, thereby setting a company record for speed and making everyone else look bad. Picking up exploitation activities at Newhall plus those in Bakersfield will be Bruce Coltman, recently of Denver, who will now reside in Bakersfield.

Ken Fox (Union-Tulsa and formerly at Durango Colo., and Santa Paula, California) recently resigned from the company to return to college for graduate work.

Anyone wishing to learn about ravens should contact John Lawrence with Shell in Alaska.

Shell geologist Ralph Rudeen, Bob Liscomb, Joe Dixon, Stan Schindler, Sig Snelson, and John Castano have returned to Alaska to continue field work and do the snow dance after a short break in the states.

Standard geologists John Spangler and Bob McMullin were last seen near Talkeetna, Alaska. We understand the fishing is good and the bar there is better than at Lake Chelatna.

NURSERY NEWS

Kathy Ann Reed, 6 lbs., 14 oz., was born July 24 to Doann and Billy K. Reed, Standard Geologist, La Habra. This birth date is shared with such notables as Simon Bolivar, Julius Casear, E. C. (Kootenai) H. Lammers and other great geologists of the past.

A boy, William Mark, weighing 7 lbs., 3 oz. was born on July 5 to Nancy and Bill Paynor, Richfield, Ojai. This is their first child.

The Jack Weldons, Shell, Sacramento, are the proud parents of a new son, John Harlan, born July 11, weighing in at 6 lbs., 13 oz.

The Joe Jones', Southland Royalty, Sacramento, welcomed Marcella Marie into the family June 30. Marcella weighed six lbs., 4 oz.

CALENDAR

September 6-8, 1961: Rocky Mountain Association of Geologist annual field conference, a study of the lower and middle Paleozoic section in the Salida, Monarch, Ouray, Silverton and Durango areas, Colorado. Technical session will be held the night of September 6, in Salida, Colorado. Transportation will be by private car. Further information may be obtained from Denzil W. Bergman, Conference Chairman, 1600 Ogden Street, Denver 5, Colorado.

September 14-16: Kansas Geological Society will hold its 26th Annual Field Conference along the Mississippi River in eastern Missouri and Western Illinois. The Conference will study rocks of middle Ordovician to early Pennsylvanian age along the river between Hannibal and St. Louis. For further information, write to Orvie L. Howell, Field Trip Chairman, Kansas Geological Society, Lario Oil and Gas Co., 301 South Market, Wichita, Kansas.

BIBLIOGRAPHY OF RECENT PUBLICATIONS

U.S. BUREAU OF MINES, (Distribution Section, 4800 Forbes Ave., Pittsburgh, Pennsylvania)

Report of Investigations 5794: Cleaning trials on subbituminous coal containing bentonitic clay from Lewis and Thurston Counties, Washington, by H. F. Yancey and M. R. Geer Free

Report of Investigations 5921: Energy production and consumption in the United States: An Analytical study based on 1954 data, By Perry D. Teitelbaum Free

Petroleum Products Survey No. 20, Motor gasoline Winter 1960-61 , by O. C. Blade Free

U.S. GEOLOGICAL SURVEY

Professional Paper 386-A: Temperature rise within radioactive liquid wastes injected into deep formations, by H. E. Skibitske $ .15

Professional Paper 411-A: A solution of the differential equation of longitudinal dispersion in porous media, by Akio Ogata and R. B. Banks $ .15

Professional Paper 411-B: Transverse diffusion in saturated isotropic granular media, by Akio Ogata $ .15

Professional Paper 387-A: Botanical evidence of the modern history of Nisqually Glacier, Washington, by R. S. Sigafoos and E. L. Hendricks $ .25

Bulletin 1058-H: Geology of part of the Craig C-2 quadrangle and adjoining area, Prince of Wales Island, southeastern Alaska, by C. L. Sainsbury $1.00

Bulletin 1070-C: Distribution of Uranium in rocks and minerals of Mesozoic batholiths in Western United States, by E. S. Larsen, Jr., and David Gottfried $ .20

Bulletin 1084-K: Beryllium content of American coals, by Taisia Stadnichenko, Peter Zubovic and N. B. Sheffey $ .70

Bulletin 1091: Investigations of some clay deposits in Washington and Idaho, by J. W. Hosterman V. E. Scheid, V. T. Allen and I. G. Sohn $2.75

Bulletin 1146-A: Geophysical abstracts 184, January-March 1961 $ .40

Water Supply Paper 1498-D: Effect of depth of flow on discharge of bed material, by B. R. Colby $ .15

Water Supply Paper 1539-I: Evaluation of bank storage along the Columbia River between Richland and China Bar, Washington, by R. C. Newcomb and S. G. Brown $ .15

Water Supply Paper 1539-R: Selected bibliography on evaporation and transpiration, by T. W. Robinson and A. I. Johnson $ .15

Water Supply Paper 1610-A: Waterpower resources of the Bradley River Basin, Kenai Peninsula, Alaska, By F. A. Johnson $ .50

Circular 443: Availability of ground water in the Gallup Area, New Mexico, by S. W. West 21 pp. Free

Circular 445: Occurrence of minor elements in Water, by W. H. Durum and Joseph Haffty 11 pp. Free

Circular 448: Reports and maps of the Geological Survey released only in the open files, 1960. 15 pages. Free

Map MF 159: Reconnaissance geologic map of the Cedar Mountains, Grant and Luna Counties, New Mexico, by C. S. Bromfield abd C. T. Wrucke $ .50

Map I-206-B: Geographic map of the Wadi Ar Rimah quadrangle, Kingdom of Saudi Arabia, by R. A. Bramkamp, L. F. Ramirez and G. F. Brown $1.00

Map-I-209-A: Geologic map of the Central Persian Gulf quadrangle, Kingdom of Saudi Arabia, by R, A, Bramkamp, and L. F. Ramirez $1.00

Open File: Potential waterpower of Lake Chakachamna, Alaska, by Bruce L. Jackson - Inspection only

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CALIFORNIA DIVISION OF MINES AND GEOLOGY

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CALIFORNIA DIVISION OF WATER RESOURCES

Bulletin 93: Saline water demineralization and nuclear energy in the California water plan. 1960 145 pages.

IDAHO BUREAU OF MINES AND GEOLOGY

Bulletin no. 16: Guidebook to the geology of the Coeur d'Alene mining district, by A. Campbell. 1961

WASHINGTON STATE UNIVERSITY, Pullman, Washington

Research Report no. 61/9-17: Geochemical and resistivity prospecting methods - a field investigation in Pend Oreille County, Washington, by J. Crosby. 1961. 206 pages.

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

Publication no. 67: Oceanography. Invited lectures presented at the International Oceanography Congress held in New York, 31 August - 12 September 1959, M. Sears, editor. 1961. 654 Pages.

OIL AND GAS JOURNAL, vol. 59, no. 28, July 10, 1961

Geophysical exploration declines for fourth consecutive year

Make the most of those electrical logs if you want to find strat traps, by Daniel A. Busch

San Juan drillers tap pennsy pay with new discovery, by John C. McCaslin

What's needed offshore, by Alden J. Laborde

Platform "Hilda" is a versatile performer

Project Mohole: Full of promise for oil, by Ed McGhee

World-wide offshore drillers optimistic, by Paul Swain

OIL AND GAS JOURNAL, vol. 59, no. 29, July 17, 1961

Gravity-magnetics can be an effective exploration tool, by R. A. Geyer

Slim holes can cut hard-rock drilling costs, by Frank M. Pool

Here are 15 tips on protecting pipelines, by Leo J. Crowder

OIL AND GAS JOURNAL, vol. 59, no. 30, July 24, 1961

How sand grains tell Shell where to drill next

To fish or not fish; that is the question, by George W. Perry and Robert W. Ruhe, Jr.

Rock sample loss can cost geologists dearly, by Edman R. Zink

First report on field performance in recovering attic oil, by L. O. Franklin, W. A. Koederitz, and Donald Walker

Latest Sacramento Valley discovery may start new drilling play

PETROLEUM ENGINEER, Vol. 33, No. 7, July 1961

How to locate reservoir limits, by J. E. Cornett

Salt Content changes compressibility of reservoir brines, by Dr. Giordano Long and Dr. Gianluigi Chierici

Revised method interprets electric logs in oil-wet rocks, by Dr. S. J. Pirson and Charles D. Fraser

Modern well completion series: Hydraulic facturing. Part 13, by Willard E. Hassebroek and Calvin D. Saunders

WORLD OIL, Vol. 152, no. 7, June 1961

What's the Free World offshore oil and gas outlook.

In Offshore Louisiana, some commercial oil, gas indigenous to Pleistocene, by Donald I. Andrews and Jack C. Stipe.

Project Mohole demonstrates deep water drilling techniques, by Gilbert M. Wilson

How to evaluate pipe stresses when drilling from a floating vessel, by Edward R. Lind

New concentric tubing workover rig cuts remedial costs offshore, by R. W. Scott

How to operate offshore production by remote control, by Sam H/ Miller, and Allen C. Bradham

Major exploration boom is in prospect for Australia, by R. C. Sprigg

GEOLOGICAL SOCIETY OF AMERICA BULLETIN, vol. 72, no. 7, July 1961.

Origin and development of the Three Forks Basin, Montana, by G. D. Robinson

Mohr construction in the analysis of large geologic strain, by W. F. Brace

Stratigraphic classification of coals and coal-bearing sediments, by Hollis D. Hedberg

Early Mesozoic wind patterns as suggested by dune bedding in the Botucatu sandstone of Brazil and Uruguay by Joao Jose Bigarella and Riad Salamuni

Age measurements from a part of the Brazilian Sheild, by Norman Herz, P. M. Hurley, W. H. Pinson and H. W. Fairbairn

OIL AND GAS JOURNAL, vol. 59, no. 27, July 3, 1961

Water-flood watchdog

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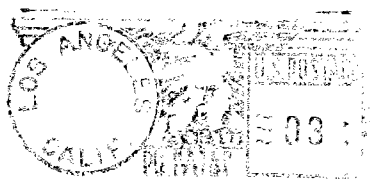
Volume 15 Number 8



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PACIFIC PETROLEUM GEOLOGIST

NEWS LETTER OF THE PACIFIC SECTION
AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS

Volume 15 | September, 1961 | Number 9

ASSOCIATION ACTIVITIES

FALL MEETING

The Branner Club proposes to sponsor, in co-operation with A.A.P.G. - S.E.G. - S.E.P.M., Pacific Sections, a one day meeting this fall, probably November 17th. Plans are still in the formative stages. So far the bare bones of the proposal are about as follows:

DATE: November 17, 1961.

PLACE: Cal-Tech or possibly U.C.L.A. or S.C.

TIME: Nine AM - Noon. 1:30 PM - 4:30 PM and probably in the evening an informal dinner with wives invited and a less technical talk.

THEME: Geologic time including radioactive dating, time of diastrophism, time of oil migration and accumulation, or other papers of broad geological interest. A few papers are already available, more are needed and are warmly sol--icited. Anyone with an incipient paper in this category or knowing of someone that can be prod-ded into preparing one is requested to inform John S. Shelton, U.S. Geological Survey, Associated Colleges, Claremont, Ph. NAtional 6-8511, ext. 2952, or Frank S. Parker, Signal Oil & Gas Company, Los Angeles, Ph. HUntley 2-0722, ext. 382.

Further announcements will be forthcoming as plans and program are developed.

SEG ELECTS NEW OFFICERS

Dr. J. P. Woods, current President of SEG, has announced the election of officers for 1961-62. The new President will be Dr. L. Y. Faust, Tulsa. Dr. Milton B. Dobrin, a recent arrival in California from Calgary, will be First Vice-President. Dr. Dobrin is Chief Geophysicist for United Geophysical Corp. in Pasadena. Dr. Stanley H. Ward, consulting geophysicist and Associate Professor of Mineral Exploration at the University of California, Berkeley, will be Vice-President. Other new officers include: R. Maxey Pinson, Midland, Secretary-Treasurer; and R. B. Rice, Littleton, Colorado, Editor. The new officers will be installed at the Society's 31st Annual International Meeting in Denver on November 5-9, 1961.

SAN JOAQUIN GEOLOGICAL SOCIETY

For their first meeting of the 1961-62 season the San Joaquin Geological Society will have as guest speaker Assemblyman Joseph C. Shell, a senior member of the Manufacturing, Oil and Mining Industry Committee for the State of California. Assemblyman Shell will give his experienced view concerning "Recent Legislative Sessions and their influence on the Oil and Gas Industry in California". The meeting will begin at 6:30 P.M. with cocktails, dinner at 7:30 P.M. Place: Hotel El Tejon, Bakersfield. Date: October 4, 1961.

SACRAMENTO PETROLEUM ASSOCIATION

Jack Skeehan, Drilling and Contracting Consultant, spoke before the Sacramento Petroleum Association, August 9th, on "The Contractor's Survival Kit".

The Sacramento Petroleum Association hopes to schedule one or two short talks a month during the Winter season on subjects both related and unrelated to the petroleum industry. Timing prevents program announcements in the Pacific Petroleum Geologist; however, efforts will be made to publicize these talks in other petroleum news media.

UNIVERSITY OF OREGON

The big news at the University of Oregon Geology Department is our move to a new building situated to the south of the Science Building at the corner of 13th and University Streets. We are leaving Condon Hall - named for Oregon's pioneer geologist - and our home since the building was built.

Dr. Lloyd Staples, Head of the Department, has just returned from a year's sabbatical study of zeolites and other minerals in Mexico. He had a Guggenheim grant for this study.

Dr. Walter Youngquist has just published an "Annotated Lexicon of Tertiary Stratigraphic Units in Western Oregon and Washington."

Dr. Ewart M. Baldwin is mapping in the southern part of the Coos Bay Coal Field for the Conservation Branch of the U.S. Geological Survey. He directed this year's Geology Summer Camp held partly at Charleston in the Coos Bay area and in part at Agness Oregon in the Port Orford area. Fourteen students attended. The section is largely Tertiary at Coos Bay and predominantly Mesozoic at Agness. The area along the Rogue River was mapped as a project.

Professor James Stovall is busy with his large and popular classes in general geology. He taught in the summer school program and then toured eastern Oregon.

Dr. Ernest Lund has gone to Karachi, Pakistan where he is a Fulbright Scholar in the Geology Department at the University of Karachi. His place will be taken by Dr. William Purdom, who also taught this last year in place of Dr. Staples. Dr. Purdom is in Alaska this summer with Shell Oil Company.

Dr. Vernon McMath is currently working on the geology of a part of the Taylorsville area of California. He spent some of the summer visiting graduate students in their thesis areas.

Dr. Allen Kays, a new member of the faculty in geochemistry, came to us from Washington University in St. Louis. He assisted in the summer camp and later assisted Dr. Baldwin in the Coos Bay mapping project.

PACIFIC PETROLEUM GEOLOGIST

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Next Deadline

September 28, 1961

Dr. J. Arnold Shotwell, vertebrate paleontologist, is the latest to join our Department. He has been associated with the University for some time as Director of the Museum of Natural History but is now also part time in the Department. He spent the summer searching for fossil vertebrates in the Skull Springs area in southeastern Oregon.

We have just completed a busy and successful year and are eagerly awaiting our move to much more adequate quarters. The number of students enrolled as majors remains about the same, but there is a shift toward graduate work.

UNIVERSITY OF CALIFORNIA LOS ANGELES

During the past year, the Department of Geology, UCLA, has graduated the following members: Ph.D. degrees were awarded to Donald Lee Lamar, with a thesis entitled "Strucural Evolution of the northern margin of the Los Angeles Basin", and to John William Richard Walker, with a thesis entitled "Geology of the Jackfish - Middleton area, District of Thunder Bay, Ontario, Canada". A total of 11 AB degrees, 6 MA degrees and 2 Ph.D. degrees were awarded.

K. D. Watson is entering his second year as chairman of the Department. C. A. Nelson will be on sabbatical leave pursuing an investigation of Eocambrian Sparagmite series of Scandinavia. From July 1 to December 31, 1961, George Tunnell will be on sabbatical and plans to visit lead and zinc mines in Missouri, Kansas and Oklahoma and phosphate mines in Florida.

The Institute of Geophysics with which the Department of Geology is closely associated now includes a staff of David Griggs, George C. Kennedy, Leon Knopoff, Gordon J. F. MacDonald, and Louis B. Slichter.

The UCLA Geology Summer Field Camp was held for the third year near Pismo Beach. It was attended by nine students under the direction of C. A. Hall and C. A. Corbato. Through the cooperation of the officials of the California State Polytechnic College at San Luis Obispo, arrangements were made to feed and quarter the entire summer field group in the Cal-Poly dormitories. The geologic emphasis was again on the numerous mappable facies changes in Miocene rocks and the complex of folded rocks between the West and East Huasna faults (Nipomo Quad., San Luis Obispo and Santa Barbara counties). Rocks from Jurassic to late Miocene and Recent were studied. Some time was spent doing plane table mapping and field trips were made in the Santa Maria basin.

For the third summer the Department administered an NSF Undergraduate Research Participation Program. Seven students spent the summer in British Columbia in a continuation of the investigation begun two years ago on the structural and geochemical relations on the Western margin of the Coast Range batholith under the direction of Donald Carlisle. Two undergraduates also obtained support from NSF-URP funds to study stratigraphic and structural problems in the Great Basin under the direction of E. L. Winterer.

Members of the Staff, their fields of interest and current projects are listed below:

AXELROD, Daniel I., Ph.D. (Calif., Berkeley): Paleobotany and evolution: Evolution of psilophyte paleoflora; evolution of angiosperms; age and origin of deserts; evolution of insular floras; Miocene and Pliocene floras of W. North America; Tertiary forests as a measure of altitude; criteria for age analysis of Tertiary floras; history of Madro-Tertiary geoflora; fossil forests and their bearing on continental drift.

CARLISLE, Donald, Ph.D. (Wisconsin): Mineral deposits and mineral economics: Structural geochemical relationships of west margin of Coast Range batholith, B.C.; origin of pillow breccias; structural studies in central Nevada; mineral economic theory.

CHRISTIE, John M., Ph.D., (Edinburgh): Structural Geology and Structural Petrology: Geology and structural analysis of areas of deformed rocks in southern California; analysis of fabric data from experimentally and naturally deformed quartz; study of the Moine thrust; northwest Highlands, Scotland.

CORBATO, Charles E., Ph.D., (Calif., Los Angeles): Geophysics and physical geology: Glacial gravimetry (Blue Glacier, Mt. Olympus, Washington); gravity relationships in the San Fernando Valley, California; density modelling and regional gravity variations in southern California.

CROWELL, John C., Ph.D., (Calif., Los Angeles): General geology: tectonics of southern California; major faults; interpretation of features of sedimentary rocks; structural geology.

DURRELL, Cordell, Ph.D., (Calif., Berkeley): Petrology, structural geology, regional geology: Geologic studies of the northern Sierra Nevada and the Santa Monica Mountains, California.

ERNST, W. Gary, Ph.D., (Johns Hopkins): Observational, theoretical and experimental chemical petrology: metamorphosed Franciscan rocks of central Coast Ranges, California; experimental study of the phase relationships of the alkali amphiboles and of the compositional system MgO-NaOH-H$_2$O.

HALL, Clarence A., Jr., Ph.D., (Stanford): Cenozoic paleontology and stratigraphy: Paloecologic studies such as the use of molluscan assemblages to determine past marine climates; biostatistical and evolutionary studies of marine invertebrate populations; Coast Range Geology, California.

LANE, N. Gary, Ph.D., (Kansas): Paleontology and stratigraphy: Study of middle and upper Paleozoic invertebrate paleontology and stratigraphy of California and Nevada and their relationships to more distant areas; studies of camerate crinoids.

LOEBLICH, Helen Tappan, Ph.D., (Chicago): Micropaleontology: Foraminifera of the Pleistocene; classification of the Rhizopoda; planktonic foraminifera of the mid-Cretaceous; various problems related to foraminifera.

NELSON, Clemens A., Ph.D., (Minnesota): Stratigraphy and paleontology: Cambrian and pre-Cambrian stratigraphy; Cambrian trilobite paleontology; geology of eastern California and Great Basin area.

OERTEL, Gerhard, Dr. rer. nat. (Bonn): Structural geology: Anisotrophy of solid bodies during deformation; geometry of complex and of curved lineation fabrics; structures of plutonic rocks; model experiments.

POPENOE, Willis P., Ph.D., (Calif. Inst. of Technology): Invertebrate paleontology: Cretaceous fauna of northern California; correlation of Cretaceous sediments of the Pacific Coast and their molluscan fauna.

PUTNAM, William C., Ph.D., (Calif. Inst. of Technology): Geomorphology: Glacial succession in the east-central Sierra Nevada; relationships between volcanic activity and the development of lacustrine features in the Great Basin; coastal morphology.

ROSENFELD, John L., Ph.D., (Harvard): Petrology: Geology of areas of metamorphic rocks in western New England; rotated porphyroblasts and large geologic structures; origins of metamorphic fabrics and structures; use of piezobirefringence around inclusions in minerals for pressure-temperature measurement; phase petrology.

RUBEY, William W., D. Sc., (Yale): Structural geology, geomorphology, sedimentation and geochemistry: Areal studies in Western Wyoming; abnormal fluid pressure during geosynclinal sedimentation; origin of continental rocks; over-thrust faults, their worldwide occurence, and their origin; chemical compositions of sedimentary rocks of the northern Great Plains and Rockies.

SHREVE, Ronald L., Ph.D., (Calif. Inst. of Technology): Physical geology, glaciology, and geophysics: Geology and mechanics of Blackhawk landslide, Lucerne Valley, California; statistical theory of drainage networks; internal velocity and temperature fields of Blue Glacier, Washington; structure of Austerdals Glacier, Norway; instrumentation of glacier research; theory of regelation.

TING, William S., Ph.D., (Glasgow): Geomorphology, geography, taxonomy, and palynology: Palynological study of the Pliocene and Pleistocene floras in California.

TUNNELL, George, Ph.D., (Harvard): Mineralogy: Physical chemistry of ore-forming solutions; theory of chemical thermodynamics; crystallography; x-ray determination of atomic arrangements of minerals.

WATSON, Kenneth D., Ph.D., (Princeton): Petrology and economic geology: Petrology of Pliocene mafic and ultramafic intrusives of Arizona and New Mexico and their inclusions; kimberlites and lamprophyres of North America; banded structures in massive sulfide deposits.

WETHERILL, George W., Ph.D., (Chicago): Geochronology, isotope geology, geophysics: Theoretical and experimental study of diffusion of radioactive and radiogenic isotopes in minerals; geochronology of Fennoscandian Shield, Washington-Baltimore area, pre-cambrian of Missouri and Oklahoma, and portions of the Canadian Shield; thermal conductivity and the nature of the Mohorovici discontinuity; seismic investigations of crustal structure in Maryland.

WINTERER, Edward L., Ph.D., (California, Los Angeles): Stratigraphy and sedimentary petrology: Stratigraphic and structural studies in Great Basin, California Coast Range, and Transverse Ranges of southern California; genesis of muddy conglomerates and breccias.

UNIVERSITY OF CALIFORNIA
SANTA BARBARA

The geology department starts its second year on its own after separating from chemistry and physics, with 40 undergraduate majors, a graduate program in the mill, and with several new faculty. Our library holdings were given a big boost in the generous gift by the late Dr. W. S. W. Kew, of his library. Known as the "Kew Geological Collections," it augments our holdings such that we are ready for graduate study leading to masters degrees, a first step toward more advanced work.

Five graduates completed their A.B. degrees with the summer camp, which is operated for Santa Barbara by the Berkeley Campus, as part of their regular summer field program. This is the second year of formal arrangement and Berkeley seems well satisfied with our student performance. Graduates are entering graduate schools for further training.

The faculty is widely scattered. Bob Norris, department chairman and associate professor, received a Fulbright for New Zealand, and has left for fifteen months of research and travel. Headquarters for his research will be the New Zealand Oceanographic Station at Wellington. Replacing Norris as Chairman during his absence is Bob Webb, whose other administrative duties continue to hamper his geological activities; however, a three-year supplement to "Minerals of California" with Joe Murdock of U.C.L.A. has just been published (July 1961) by the State Division of Mines.

Dick Fisher spent the entire summer in eastern Oregon, working in the John Day, where he is especially interested in the history of tuffaceous and other volcanic-fragmental sedimentary rocks. These studies are extensions of work begun with Ray Wilcox of the U.S.G.S.

Don Weaver was chosen to participate in the International Field Institute for Summer 1961, sponsored by the American Geological Institute and the National Science Foundation. Arriving in London on June 30, the group of 20 geologists and paleontologists toured the British Isles from Wales to Scotland, and Northern Ireland, with the program completed by August 16. Subseqently, Don Joined Don Savage of the Berkeley Campus in Paris for a few days in the Paris Basin Tertiary.

V. L. Vanderhoof, Director of the Santa Barbara Museum, and Research Associate in the department, was involved in extensive museum programs for most of the summer. Several visiting scientists were entertained in Santa Barbara by Van, on behalf of both the Museum and the University.

Dr. John E. Allen, Professor of Geology and head of the department at Portland State University, Oregon, was visiting professor in our summer session. An accellerated program for outstanding high school juniors involved geology courses this summer, and John did an outstanding job of stimulating their interest in geoscience.

New staff for 1961-1962, include: Dr. Henry R. Aldrich as visiting professor replacing Bob Norris Henry is known for his outstanding conduct of Geological Society of America affairs over more than twenty-five years. We are lucky to have gained his services during Bob Norris' absence.

Dr. William S. Wise joins us after completion of his Ph. D. at Johns Hopkins. Bill's earlier degrees are from Stanford and we are pleased that he decided to return to the west coast. He will conduct courses in petrology and structure.

A curator has also been appointed. David Doerner, one of our own graduates in geology, fills this post.

Mr. Frank Kilmer, currently studying some Cretaceous stratigraphic and paleontologic problems in Baja California, joins the department for 1961-1962. He is working on his doctorate at Berkeley under Wyatt Durham.

FRESNO STATE COLLEGE

The Geology Department, after frequent inspections of the building progress of its new quarters, at last saw them completed and moved into them in mid-May, the last of the college departments to occupy the new campus. The situation in former rooms, occupied by the department for several decades and lately under lease from Fresno City College, had become an increasing hardship on both staff and students all of whom had to shuttle 7 miles back and forth to attend or hold classes on both campuses. All are now rid of the malady (schizocampia) that had arizen from this, and all are pleased with the new rooms and equipment which will enhance our teaching program.

During several weeks of packing specimens and equipment, and three days of moving it all, not a single one of our classes or labs was missed. Settling and shaking things down now proceeds and will continue in autumn.

The staff consists of 4 members: C. N. Beard is vacationing abroad; E. G. Cserna conducted the summer field course near Casper, Wyo., for our majors, with several students also from Idaho State College; S. Mack taught summer school on campus; G. M. Stanley has been settling department things in the new location.

We have graduated 8 geology majors this summer and 1 last February, of whom: 5 are on the Dean's Honor List; 5 or 6 are going on to graduate school, 3 of these having appointments to scholarships or teaching assistantships; 2 go with the U.S. Marine Corps.

PERSONAL ITEMS

While everyone else was getting out of town on vacation, Tom Wilson and family wheeled into Bakersfield on leave from Ohio's Anchorage Office.

Joe Ernst, Texaco, Sacramento, is reported as having alerted the offshore seismic crews in the Humboldt country to be on the lookout for one of his zorries, lost during an air mattress ride down the Mattole River.

At a recent Standard Oil - Richfield Meeting in Anchorage, Marshall Ayres, Standard geologist, alienated several members of the group by virtue of being the only one served a steak at a salmon-feed luncheon. Marsh tried vainly to convince his erstwhile friends that this was due to an ulcerous condition and not because of his friendship with the waitress.

George Starkey, Standard, Bakersfield, suffered the experience of having his rear car seat torn to shreds by a bad bruin who was working while George was vacationing in Mineral King area.

Congratulations to Willy Cunningham, Brazos, Sacramento, who recently celebrated his reaching the half-century mark.

The Ultimate in cooperation between drilling crews and well sitting geologists was achieved recently at a coastal Santa Barbara wildcat well. After Senteur de Boue thoroughly and painstakingly explained to the derrickman how to furl the bedsheet panic flag to the gin-pole, two of our AAPG Executive Committee members shoved off on a sailing mission. Of course, due to the earth's curvature and a 278' above MLLW elevation of the panic flag, sailing was limited to a 22 nautical mile range (so Jean's unfurled signal could be answered tout de suite) - also assuming a clear day. From the looks of the sunburns sported by our heros, it must have been clear most of the time.

George Rudkin, five years with Ohio in Bakersfield, has moved to Sacramento as Area Geologist. He replaces Karl Arleth, who has been transferred to Louisiana.

Bob McConville, Signal, Calgary, recently was unable to make contact with the Bob Kellys (Conoco, Los Angeles) at a campground in the Jackson Hole country. However, farther down the line, Bob reports that Everett Pease (Sunray-Denver) is becoming acclimatized to the high altitudes of the Denver area.

Garnett Pessel, recent MS graduate from Caltech has been hired by Richfield to work out of their Anchorage office. Garnett has been a member of Richfield's summer field crew in southeast Alaska.

Shell scout Earl David, Northwest Division, ended a twenty-five year wait for a daughter, when he recently traveled from the north country to Grass Valley, California, to see his son's wedding.

After spending the field season in Alaska for Texaco, Walt Harris has returned to find himself transferred from Bakersfield to Los Angeles.

The Union paleo lab has been moved, lock, stock and Bob Beckwith, from Bakersfield to Compton. Former paleontologists Chuck Gary and Al Almgren were switched to geology and remained in Bakersfield.

Mort Polugar's contract as manager has been renewed since the Standard softball team won the consolation pennant in the Kern County Soft Ball Open Series.

Wes Bruer (Rheem,Bakersfield) recently sold his "old" car, bought a bicycle with the money, and now plys the highways earlier in the morning on the way to work.

Milton Norton, Richfield, Bakersfield, is currently in Anchorage in his second Alaskan tour of duty this summer. Milt is apparently one of those people who has to see it twice to believe it. Other Richfielders who have returned after a three month stint in the north country are Walter Scott, Ojai, and John Leverson, Bakersfield.

Honolulu scout Hollis Bertrand won 50 dollars and a new spinning reel besides catching three hungry sea gulls while fishing off the Ventura Oil Scouts Association's charter boat. All at Honolulu gave Hollis a rousing welcome upon his return - especially those who had paid in advance to make the trip, then didn't go and found their money non-returnable.

Howard Stark (Richfield), Doug Traxler (Signal), Dick Stewart and Jack Van Amringe (Union), and their wives were recently guests of Bob Tassenbrock at the Long Beach Petroleum Club Annual Luau. Long experienced buffet gourmets, the fellows quickly discarded small salad plates for large platters in order to adequately sample the 50-odd Hawaiian delicacies.

NURSERY NEWS

Born to John and Shirley Sprague - Mobil, Bakersfield - August 3, 1961, James Robert Sprague, weighing in at 7 lbs. 9 oz.

CALENDAR

October 2, 1961: Monday evening, 7:30 P.M., Science and Engineering Bldg., Room 56, Bakersfield College, Mr. Robert Dill (U.S. Navy Electronics Lab) "Submarine Geology of Coast of France".

October 4, 1961: Wednesday evening, cocktails 6:30 P.M., Hotel El Tejon, Bakersfield, Joseph C. Shell (Assemblyman, 58th District), "Recent Legislative Sessions and their Influence on the Oil and Gas Industry in California".

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U.S. GEOLOGICAL SURVEY

Professional Paper 402-A: Mechanism of gravity drainage and its relation to specific yield of uniform sands, By W. O. Smith.....$ .20

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Bulletin 1116-E: Index to Geophysical Abstracts, 180-183, 1960.....$ .25

Bulletin 1121-H: Paleozoic and Cenozoic rocks in the Alpine-Nutrioso area, Apache County, Arizona, by C. T. Wrucke.....$ .15

Water Supply Paper 1539-C: Ground-water reconnaissance of Winnemucca Lake Valley, Pershing and Washoe Counties, Nevada, by C. P. Zones. .....$ .45

Water Supply Paper 1545-A: Microtime measurements in aquifer tests on open-hole artesian wells, by Granville G. Wyrick and Edwin O. Floyd. .....$ .15

Water Supply Paper 1581: Ground-water potentialities in the Crescent Valley, Eureka and Lander Counties, Nevada, by C. P. Zones....$ .50

Water Supply Paper 1591-A: Urban growth and the water regimen, by John Savini and J. C. Kammerer.....$ .50

Circular 447: Selected sources of information on U. S. and world energy resources: An annotated bibliography, by James Trumbull. 8 pp. .....Free

Map MF 160: Reconnaissance geologic map of part of the Southern Peloncillo Mountains, Hidalgo County, New Mexico, by C. T. Wrucke and C. S. Bromfield.....$ .50

Open File: (Inspection Only)

TEI-757: Geological reconnaissance of the Topopah Spring and Timber Mountain quadrangles, Nye County, Nevada, by P. P. Orkild and J. S. Pomeroy. 20 Pages, 2 figs. 1 table.

Geologic map of Tippipah Spring quadrangle, Nye County, Nevada, by P. P. Orkild. 1 map, with explanation and cross-sections.

Geologic map of Oak Spring quadrangle, Nye County, Nevada, by Harley Barnes, F. N. Houser, and F. G. Poole. 1 map with explanation.

Preliminary geologic map of the coastal part of the Malibu quadrangles, Los Angeles County, California, by J. E. Schoellhamer and R. F. Yerkes.

Test-well drilling, San Nicholas Island, California by R. W. Page. 26 pp., 2 figs.

SCIENCE, vol. 133, no. 3465, 26 May 1961.

Some problems of vertebrate paleontology; by G. G. Simpson

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Winter thermal radiation studies in Yellowstone Park, by D. M. Gates.

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Resistivity at low temperatures, by J. S. Dugdale.

Dating desert ground water, by Leland Thatcher, Meyer Rubin and Glen F. Brown.

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Ice Alloys: For arctic operations ice and snow can be improved as structural materials by appropriate alloying, by W. D. Kingery.

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Significance of some fossil wood from California by C. G. Higgins.

SCIENCE, vol. 134, no. 3478, 25 August 1961.

Report on Russia: Geochemistry and politics, by K. B. Krauskopf.

Authigenic dolomite in modern carbonate sediments along the Southern Coast of Florida, by W. H. Taft.

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Where the Russian gas industry is headed, by William R. Connole (Part I)
Good drilling practices are cutting high drilling costs in Alberta foothills, by J. J. Sullivan.
How sulfur and gravity affect crude-oil value, by W. L. Nelson.

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Get true resistivity from induction logs, by R. H. Lindley and C. R. Davis.
Canadian Report Section.
Are the tar sands now competitive?

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Old oil fields never die, by Frank J. Gardner.
Gulf Coast girds for new era in oil hunting, by Frank J. Gardner.
Soviet gas pattern is much like ours (Part III), by William R. Connole.
Getting small volumes from mud pumps, by Walter E. Liljestrand.

OIL AND GAS JOURNAL, vol. 59, no. 35, August 28, 1961
Where Russian Gas is headed: (PartIV) Will Europe come to depend on Russian natural gas, by William R. Connole.
Santa Ana: Mexico's No. 2 Field? by Carl Lawrence.
Water layer speeds heavy-crude flow, by M. E. Charles.
New town-lot wildcat program is scheduled for Los Angeles.
California's Grimes Gas Area gets its fourth field, by Carl J. Lawrence.
Gravity meters uncover new reefs in Michigan, by Graig Ferris.

JOURNAL OF GEOPHYSICAL RESEARCH, vol. 66, no. 8, August 1961.
Gravity measurements over the southern Rocky Mountain Trench area of British Columbia, by G. D. Garland and E. R. Kanasewich, and Thomas L. Thompson.
Abstracts of the papers presented at the Forty-second Annual meeting, American Geophysical Union, Washington, D.C., April 18-21, 1961.

AMERICAN ASSOCIATION PETOLEUM GEOLOGISTS, vol. 45 no. 7, July 1961.
Attributes of the geologic profession, by Ben H. Parker.
Role of a specialist, by William M. Furnish.
Years ahead for exploration, by J. P. Woods.
Impact of Soviet oil, by Ira H. Cram.
1960 developments in foreign petroleum fields (including Mexico, South America and Caribbean, Europe, Africa, Middle and Far East and Southwest Pacific).

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Electric log interpretation in exploring for stratigraphic traps in shaly sands, by Ted Off.

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The use of oxygen isotopes in high-temperature geological thermometry, by Robert N. Clayton and Samuel Epstein.

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Structural geology of the Beartooth Mountains, Montana and Wyoming, by Richard M. Foose, Donald U. Wise and George S. Garbanini.
Cenozoic stratigraphy and structural geology, northwest Yellowstone National Park, Wyoming and Montana, by Charles W. Brown.
Horizontal displacement on the floor of the northeastern Pacific Ocean, by Victor Vacquier, Arthur D. Raff, and Robert E. Warren.
Magnetic survey off the west coast of North America, 32°N. latitude to 42°N. latitude, by Ronald G. Mason and Arthur D. Raff.
Magnetic survey off the west coast of North America, 40°N. latitude to 52° N. latitude, by Arthur D. Raff and Ronald G. Mason.

PACIFIC PETROLEUM GEOLOGIST
PACIFIC SECTION, A.A.P.G.
P.O. BOX 17486, FOY STATION
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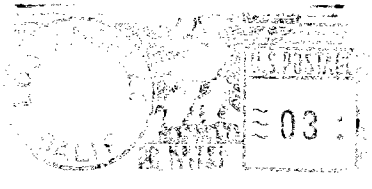
Volume 15 Number 9



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PACIFIC PETROLEUM GEOLOGIST

NEWS LETTER OF THE PACIFIC SECTION
AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS

Volume 15 | October, 1961 | Number 10

ASSOCIATION ACTIVITIES

FALL MEETING PLANS REVISED

Plans for a proposed joint fall meeting of the Branner Club and A.A.P.G. - S.E.G. - S.E.P.M. have been, perforce, substantially revised. Conflicts with plans and meetings of other groups eliminated some papers believed to be available and time seemed too short to develop an adequate program of papers for the contemplated meetings.

However, a regular meeting of the Branner Club will be held and members and their wives, of A.A.P.G. S.E.G. - S.E.P.M., are most cordially invited.

Dr. Kenneth Emery will present a paper, "Rate of Deposition of California Basin Sediments Based upon Radiocarbon Dating." This paper stems from a joint research project in which determinations were made on 180 core samples from offshore Southern California. For the information of those not having attended Branner Club meetings, papers are usually geared to the interest of laymen (wives) while still retaining scientific accuracy and substance.

This will be a dinner meeting starting promptly at 6:45 P.M., November 7, at the Athenaeum, Cal Tech Campus, California Street and Hill Avenue, Pasadena. Dinner, $3.25. Reservations should be made by November 1, with Lucy Birdsall, RI 9-4711, Ext. 1255, Rm 1031, 215 W. Seventh Street, Los Angeles. There will be no other announcement or card to A.A.P.G. - S.E.G. - S.E.P.M. The usual Branner Club notices will be sent.

A.A.P.G. 1962 OFFICER NOMINATIONS

The Nominating Committee of the A.A.P.G. has announced the selection of the following candidates for office in 1962:

President:
Leo R. Newfarmer (Shell, Houston)
Robert E. Rettger (Sun, Dallas)

Vice-President:
Orlo E. Childs (Phillips, Denver)
John A. Downing (Link, Downing, Cooke and Co. Ltd., Calgary)
John M. Hills (Consultant, Midland)

Secretary-Treasurer:
Jackson M. Barton (Northern Nat. Gas Prod. Co., Omaha)
Robert E. King (American Overseas Petroleum Ltd., New York)
Irving T. Schwade (Richfield, Los Angeles)

Editor:
Grover E. Murray (La. State Univ., Baton Rouge)

Balloting will be by mail and the winners will take office on March 29, 1962, at the close of the 47th annual meeting of the Association, to be held in the Civic Auditorium, San Francisco.

IN MEMORIAM

News has been received informing us of the death on July 15, of Gordon Cole, Bakersfield geological consultant, after an illness of several months. On behalf of the Society, we extend to his family our deepest sympathy.

Gordon was a native Californian who, after graduation from high school in 1926, began his geological career as a draftsman for Standard Oil of California. In 1930, he entered Texas University and after an interim job with the U. S. Mint in San Francisco, he received his A.B. degree in Mineral Sciences from Stanford in 1936. Returning to Standard Oil, he worked both in Bakersfield and Coalinga until 1939, when he left for a year of foreign geological work in India and Egypt. After a year of graduate work at Stanford, he joined the geological staff of Union Pacific Railroad in Los Angeles, where he served for a dozen years before entering the field of consulting geology.

Surviving Gordon are his widow, Frances, of Bakersfield and a son, Dana, of San Francisco.

SACRAMENTO PETROLEUM ASSOCIATION

Mr. Tom Ralph, Security Documentation Specialist, Aerojet General Corporation, spoke before the Sacramento Petroleum Association, September 20th, on "Aerojet's Role in the Minuteman". Mr. Ralph's talk, accompanied by a film, touched on the development, present status, and operational date of this important missile. The relative inexpensiveness, the simplicity of operation, plus near invulnerability gives Minuteman a top priority in the United States' missile arsenal.

The Sacramento Petroleum Association and the Sacramento Geological Society will hold a joint meeting on Tuesday evening, October 10th. This meeting will be in the form of a seminar and discussion covering the occurrence of Nitrogen in natural gases of northern California. The geological, legal, economic and other phases of this Nitrogen occurrence will be discussed at this meeting. All interested parties are invited to make contributions to this seminar.

The meeting will be held at Scheidel's Bavaria, 2764 Fulton Avenue, Sacramento, California. Cocktail Hour at 6:00 P.M., Dinner at 7:00 P.M., $3.50 per person. Reservations should be made as soon as possible with Mr. Basil (Swiss) Holmes, Shell Oil Company, 1912 "I" Street, Sacramento, California.

JADE REPORT REPRINTED

"Nephrite jade and associated rocks of the San Martin region, Monterey County, California" (Special Report 10 A) has been reprinted and is available at all California Division of Mines offices for 25 cents plus tax. This highly popular booklet describes the sea cove near Willow Creek which has gained worldwide recognition for its abundant jade pebbles.

PACIFIC PETROLEUM GEOLOGIST

Published monthly by the Pacific Section, American Association of Petroleum Geologists. Address communications to the Pacific Petroleum Geologist, P.O. Box 17486, Foy Station, Los Angeles 17, California.

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San Joaquin	Ronald Heck
Membership Secretary	Gene Moore

Next Deadline

October 31, 1961

CHRISTMAS DINNER DANCE

The Christmas Dinner Dance will be held at the Huntington Sheraton Hotel on Saturday, December 16, 1961. John Frick, Dance Chairman, will announce further details in a forthcoming issue of the PPG. The Fall Convention Dance will not be held this year.

LOS ANGELES LUNCHEON MEETING

"Oil Operations in Iran" was the subject of an interesting and well illustrated talk given by Mr. James M. McNeill, consulting petroleum engineer, at Rodger Young Auditorium Thursday, September 7th. Mr. McNeill described various oil fields of the Middle East where he worked a number of years in connection with Consortium, the seven company group operating in the area.

A general discussion of the geology of the oil fields was given including a brief discussion of their history and geographic relations. Descriptions were given of the main producing zones of the region as well as the areal extent of many of the fields. Methods of operation in the Iranian oil fields were described.

ENGINEERING COURSE OFFERED

The University of California Extension is again offering its course "Petroleum Drilling, Production and Engineering" (x410), starting on Thursday, September 21 at 7:00 PM in the Extension Building, 813 S. Hill St., Los Angeles. This course is recommended for geologists and others in the oil industry desiring to increase their knowledge of the exploration, development and production phases of the petroleum industry. Three units of University credit will be granted and the cost is $40.00. Prior enrollment is not required. For further information, call MAdison 9-4111, ext. 2654.

LOS ANGELES GEOLOGICAL FORUM MEETING

It was "Number Mechanics Night" at the evening geological forum meeting held at the Mobil Auditorium on September 18. Los Angeles members of the A.A.P.G. heard three most interesting and informative talks given by Dr. Rod Jenkins, I.B.M., Los angeles, Mr. Clark Edgecomb, Schlumberger, Houston and Mr. Robert O. Patterson, Pacific-Oil Well Logging, Los Angeles, on the recently growing use of the electronic computer as a time saver and a useful tool for the geologist.

Dr. Jenkins began the discussion "Computers and Geology" with a short movie on the history of the electronic computer and its use in handling logical concepts. It was pointed out that the functions of the computer include the indexing, classifying and storing all the available information, a statement of what the process needs to know, and the simulation of real situations, i.e. determination of probable effects of any given situation. Further, computers may be used in the next five or ten years in ways not now anticipated.

At present the geologist may use computers to store and classify the many types of data available to him. This requires that all data must be systematically collected and recorded in standard form. Also, computers are being used for geophysical and well-logging analysis, as well as for automatic mapping and contouring.

Ultimately Dr. Jenkins feels that computers will be used to solve big problems, including handling of qualitative problems in areas where risk is involved.

Following Dr. Jenkins, Mr. Clark Edgecomb gave a very convincing account of why "The Hand is not Quicker than the IBM."

Abstract

Well logs in the future may be recorded directly on magnetic tape in the field as the log is run -- then by feeding this tape into a digital computer, a quick and accurate log analysis can be achieved.

Prototype equipment has already been built for the experimental digital recording of well logs on magnetic tape at the same time that the regular film recording is made. The apparatus has been used for the experimental field recording of dipmeter tape logs which were subsequently computed by means of an IBM 704 computer.

Oil industry engineers and geologists have long been intrigued with the idea of analyzing well logs by use of digital computers; however, early experiments showed that getting the data from the logs into the computer required too much time. An important step has been made by Schlumberger with the announcement of the use of magnetic tape to record the well log readings in the field, because these tapes can be fed into the computer without further clerical effort.

"It can be foreseen that when digital tape recording becomes available for general field use, a whole new realm of possibilities will be opened up for the processing of other well logs through computations which hitherto were not feasible because they were too laborious and time consuming."

A paper covering the details of this new process will be presented at the 36th Annual Fall Meeting of the Society of Petroleum Engineers in Dallas on October 8-11, 1961. Authors are Schlumberger Well

Surveying Corporation engineers -- J. H. Moran, M. A. Coufleau, G. K. Miller, and J. P. Timmons, Ridgefield, Connecticut. This paper will be available through the AIME.

Mr. Patterson concluded the discussions with a most interesting presentation entitled "Mud Logging and the Non-Computing Computer."

Abstract

MUD LOGGING AND THE NON-COMPUTING COMPUTER

The oil industry continues to be one of the most aggressive in putting the computer to work. In the areas of accounting, data processing, technical problem solving, management planning, and information storage it utilizes the computer in many ways. These uses fall into three broad categories: 1) Ultra-fast slide rule for simple computations, 2) Highly accurate labor saving device for solving complicated formulae, 3) Fast and convenient method for storage and recall of data.

The purpose of this paper is to explain a new application that could be much more useful to geologists, which is: "To have the computer follow a pre-conceived logical program". This program sets up a maze or network of possible solutions to a problem. Data is fed into the computer and the computer works its way through the program, choosing conclusions that are correct with respect to the basic data. The computer then prints these pre-conceived conclusions as a series of English sentences on the output sheet.

The important steps to work out in the development of such a program is the flow chart. In its development you must try to express your English statement in a mathematical way. This is done in the following manner (Fig. #1)

DID THE BLENDOR GAS READING INCREASE 300% OR MORE?

LET GBLEIN = BLENDOR GAS IN ZONE

LET GBLEAB = BLENDOR GAS ABOVE ZONE

NO. 1 CAN NOW BE WRITTEN:

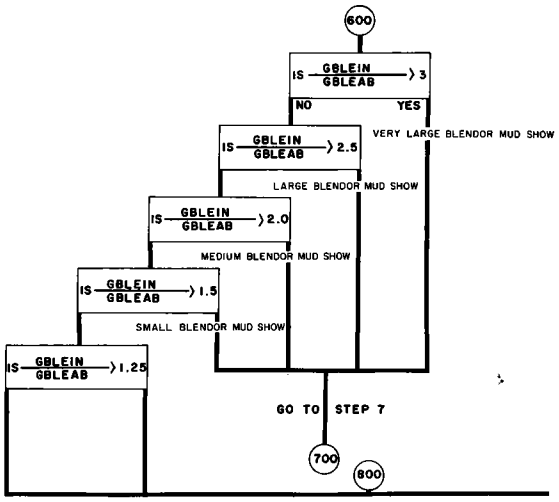
IS $\frac{\text{GBLEIN}}{\text{GBLEAB}}$ 3 OR GREATER?

OR

IS $\frac{\text{GBLEIN}}{\text{GBLEAB}}$ >3

Start with the question "Did the Blendor Gas Reading increase 300 per cent or more?" Since you must compare the Blendor Gas reading with what it had been, you can let the code word "GBLEIN" mean "Blendor Gas in Zone" and "GBLEAB" mean "Blendor Gas Above Zone" The question can then be phrased as at the bottom of Fig. #1 - "Is GBLEIN when divided by GBLEAB greater than 3?" This is a good flow chart statement. The answer to this question is either "Yes" or "No". If it is "Yes" you may wish to have the computer write a conclusion such as "Very Large Blendor Mud Show". If the answer is "no" the program might then ask, "Is the increase greater than 250 per cent?"

Fig. #2 shows a portion of a flow chart in which these questions appear. By using boxes and lines to develop a pattern of reasoning with the conclusions that can be made entered in the appropriate places, a completely logical program can be developed.



It is a relatively simple matter to transfer this reasoning to computer language and develop the program. The Pacific-Oil Well Logging program includes the English statements that could normally be made with respect to the values and inter-relationships of all the data of the mud log.

It is felt that such a computer program offers the following advantages:

1) Translates curves and their inter-relations into English statements.
2) Gives the well sitter an excellent check list of the important values in a zone.
3) Provides a dispassionate appraisal of the zone.
4) Is an excellent basis for comparing one zone with another.
5) Keeps the logging evaluation in understandable form in the well file.
6) Provides the framework for personalizing the experience factor in a field or area.

It is recommended that everyone consider the computer to help solve some of your own logical problems. Draw up your flowcharts and give them to computer experts in your company or within the computer industry for programming. The computer will handle a great number of cases in a very short time and will use the logic of your program to solve each problem.

COAST GEOLOGICAL SOCIETY

At a dinner meeting on September 12th, the Coast Geological Society heard an informative talk and movie on drilling to the Moho. The history of the Mohole Program and its mechanical aspects were discussed by A. J. Field, Executive Vice President of Global Marine Exploration Company. Global Marine is the owner of Cuss I, the drilling barge from which operations took place. Rodger Alexander, District Geologist for Standard Oil in Ventura, presented an evaluation of prepared by W. R. Riedel, geological data, from the preliminary phases of the Mohole Project. Mr. Riedel's summary is reprinted below:

The preliminary phase of the Mohole Project of the National Academy of Sciences - National Research Council, carried out in March and April of 1961, comprised two series of test drillings; first

in 3109 feet of water 18 miles off La Jolla, and then in 11,700 feet of water about 40 miles east of the southeast end of Guadalupe Island (at 28° 58'N, 117° 28'W). The drilling program, under the direction of Willard Bascom of the AMSOC Committee, was accomplished by Global Marine Exploration Co.'s drilling barge CUSS I, unanchored and maintaining its position above the holes dynamically in relation to a series of taut wire buoys carrying radar reflectors and sonar pingers.

Preliminary reports have been prepared by E.H. Horton on the drilling operations, by D. L. Inman, F. P. Shepard and Associates on the cores from the La Jolla site, by W. R. Riedel, H. S. Ladd, J. I. Tracey, Jr., and M. N. Bramlette on the sediment cores from the Guadalupe site, by C. G. and A. E. J. Engel on the basalt obtained and by J. I. McLelland on the logging operations. These reports are soon to be published by the A.A.P.G; the following summary abstracts some of the principal results set forth in the preliminary reports:

The practice drilling at the La Jolla site was in probably post-Tertiary beds forming a "levee" bordering the Valley-like extension of the La Jolla Submarine Canyon. The valley is cut about 250 feet deep in a thick submarine fan in the San Diego Trough, and the drilling penetrated the beds of the fan.

Drilling at the Guadalupe site penetrated 550-570 feet of unconsolidated sediments before entering basalt (about 44 feet of which was penetrated in Hole EM 7). The sediments are for the most part greenish gray clays rich in siliceous and calcareous pelagic microfossils - diatoms, radiolarians, coccolithophorids and foraminifera - with indications of considerable amounts of pyroclastic sand, particularly in the upper part of the section, and fragments of pumice at scattered intervals.

The entire sedimentary section sampled appears to be late Tertiary in age, with the topmost sample possibly Pliocene and those immediatly above the basalt late or perhaps middle Miocene. The preliminary age determinations are based on coccolithophorids (M.N.B.) and radiolarians (W.R.R.): more detailed reports on these and other microfossil groups, as well as other components of the core, are being prepared by a number of workers.

The greenish gray color of the sediments is in marked contrast to the highly oxidized character of typical pelagic clay, as is the lack of alteration of the vitric pyroclastic material. Both features seem to reflect a rate of accumulation more rapid than usual for pelagic clays. Estimates suggest that the rate of accumulation was several times the 1 mm. per thousand years considered near average for Pacific pelagic clays. The sediment therefore seems best considered as hemipelagic, although deposited some 50 miles out from the continental slope.

Chemical analyses indicate that compared with the Hawaiian and plateau basalts, the Mohole basalt is relatively high in CaO and in the ratio Fe_2O_3/FeO. The high ratio of Fe_2O_3/FeO and the abundant total water reflect the emplacement of the basalt in watery muds at or near the interface with ocean water.

OREGON STATE UNIVERSITY

W. D. Wilkinson and J. R. Snook, accompanied by 14 undergraduate and 3 graduate students, moved into the field for the undergraduate summer field training course. Camp was established at Mitchell, Oregon, at the center of the interesting Cretaceous and Tertiary areas of central Oregon.

Other members of the staff continued their various research projects. G. S. Koch spent the period mapping copper deposits in Permian and Triassic rocks of northeastern Oregon for the State Department of Geology and Mineral Industries. Koch also found time to prepare an article for the "Ore-Bin" describing the discovery of gold on the lowest level of the Buffalo Mine, Grant County, Oregon's only producing lode mine.

I. S. Allison worked on a monographic manuscript "Pluvial Fort Rock Lake, Lake County, Oregon," which is practically in final draft form.

William H. Taubeneck spent the summer doing field work in the Wallowa Mountains, Northeastern Oregon." Emphasis during the 1961 field season was on the Wallowa batholith and satellitic stocks.

David A. Bostwick was engaged in paleontological studies supported by the State Department of Geology and Mineral Industries. He collected extensively from Triassic and Permian rocks of northeastern Oregon. He is currently engaged in study of late Permian fusulinids of Central and eastern Oregon.

Jon C. Cummings has completed a paper on the stratigraphy of the north Santa Cruz Mountians of California. During the latter part of the summer he devoted his time to correlating material on the estuarine and marine sediments of Coos Bay, Oregon.

This accounts for the activities of the staff as it was constituted at the beginning of the summer. Of importance to the Department of Geology is the addition to our staff of Dr. Keith Oles who terminated his work with the Union Oil Company and has joined the staff of Oregon State University. We are particularly pleased to have Keith Oles on the staff where he will teach stratigraphy to graduates and students as well as one of the basic courses in general geology.

Several graduate students have been engaged in field work as partial training for various advanced degrees. Mr. McKnight is working on the Cretaceous of Central Oregon. Mr. Lukanuski is engaged in a mapping project involving the Tertiary of Central Oregon, and Mr. Jerry Glenn has been working on the Pleistocene history of the northern part of the Willamette Valley. All of these problems are progressing well.

The Department was fortunate in being able to engage Dr. Ross Ellis of the University of Washington staff to develop and teach the various courses being offered during the summer session on the campus for secondary and elementary school teachers. His work was of particular significance because through it there will be an introduction of earth sciences in the high schools and elementary schools of the state. We were extremely pleased with his efforts during the summer.

From the statements above it is evident that all members of the staff have been actively engaged in a variety of research problems out of which some publications should appear dealing with various facets of the geology of the state of Oregon.

UNIVERSITY OF CALIFORNIA RIVERSIDE

The Department of Geology at UCR continues to flourish. Highlights of the past year include a move of the Department into greatly enlarged and well equipped new quarters, the initiation of a program of work leading to an MA degree in Geology, the ex-

pansion of the academic staff to five and a continued growth in quantity and quality of students.

The program of graduate study got off to a fine start in September with the enrollment of twelve well qualified students from nearly that many Colleges and Universities from all parts of the country. Interests among these men range from experimental geochemistry of ore-forming solutions through prospecting geophysics to invertebrate paleontology.

Enrollment of undergraduate geology majors is remaining steady at 25, and the quality of these students is at a record peak. The traditional ability of UCR undergraduates to pass the U.S.G.S. GS-5 and 7 Civil Service Examination was continued this past year, with three Seniors and one Junior landing jobs with the Survey as Summer Field Assistants. These men all plan to work for advanced degrees before going to work full time. Other June graduates have found professional positions ranging from one with I.B.M. as an "Industry Penetration Representative" to another with the Peace Corps as a field geologist in Tanganyika.

F. W. Dickson, Chairman of the Department, continues his laboratory and field investigations of metal-sulfide solution geochemistry and igneous intrusion petrogenesis with the support of generous grants from The National Science Foundation.

G. P. Eaton spent the summer field mapping in Connecticut where he is completing structural and petrologic studies of metamorphic rock problems for the State of Connecticut. Also, his work on the distribution and thickness of recent and ancient volcanic ash falls as a guide to high-altitude wind directions in the geologic past is ready for publication.

T. H. McCulloh returned in July from a year of research on the rocks and structures of the central Po Basin and their gravitational effects. His work there was supported by a Fellowship from the Guggenheim Foundation and was facilitated by generous cooperation from AGIP Mineraria, the Geological group of the Italian National Oil Semi-Monopoly, E.N.I., headed by Italy's colorful "Oil Boss", Enrico Mattei. McCulloh is continuing investigations of structure, petrophysics, and gravity interpretation in Southern California Tertiary Basins with financial support from the Research Corp.

M. A. Murphy, resettled after two years of work with Petrobras in Bahia, Brazil, is completing work on the Stratigraphy and Molluscan Paleontology of the Lower Cretaceous rocks of the west side of the Sacramento Valley near Ono, with support from a National Science Foundation Grant. In cooperation with G. P. Eaton, and with the assistance of two undergraduate students, he is also investigating the suballuvial topography and ground water conditions of the Perris Plain southeast of Riverside by gravity and resistivity measurements correlated with drillhole data.

R. H. Tedford again spent the summer in Australia with R. A. Stirton collecting late Tertiary and Quaternary Marsupial Fossils under the auspicies of a Grant from the National Science Foundation. His stratigraphic and paleontological research on the lower Pliocene Ricardo formation of the Mojave Desert, California, continues. Tedford's two-year affiliation with the Department became permanent in July with the expansion of the staff of the Department to five. The acquisition by the Department of the outstanding Ray Alf collection of western U.S. vertebrate fossils will enable Tedford to guide students interested in his specialty.

Despite the gloomy outlook expressed by many geologists in a world apparently glutted with oil, the staff and students of our Department are confident and optimistic. Good men, well trained, are <u>always</u> in demand!

DEPARTMENT OF PALEONTOLOGY
UNIVERSITY OF CALIFORNIA, BERKELEY

The Department and Museum are now housed in the new Earth Sciences Building, which is located at the north edge of Astronomy Hill and between the North Gate and the Main Library. Paleontology occupies the ground floor, the first floor and some rooms on the 2nd floor. The vertebrate and some of the invertebrate collections are arranged on the ground floor, the remaining large invertebrates and plants are on the 1st floor and the foraminifers are on the 2nd floor. Some materials are still housed elsewhere.

F. R. Sullivan, M. O. Woodburne, and V. A. Zullo were appointed Graduate Research Paleontologists for the academic year 1960-61. Thirty-four graduate students are enrolled for the fall semester. This fall we are sponsoring lectures and seminars by Dr. Wm. G. Chalenor, Department of Botany, University College, London; Dr. Alfred Traverse, Shell Development Company, Houston, Texas; and Dr. Donald R. Whitehead, Department of Biology, Williams College, Massachusetts.

Beginning July 1, Zach M. Arnold assumed his duties as Associate Director of the Museum and was reappointed Vice-Chairman of the Department. He administered the move to our new quarters during the summer. His research in miliolid cultures will soon result in a manuscript for the press, and he is also trying to domesticate a discorbid rotalid from Moss Beach for study of variation in pure-line cultures. A manuscript on special techniques for working with micro-fossils will be included in a book on techniques edited by B. Kummel.

Wm. B. N. Berry continued his work in conjunction with the U.S.G.S. on Ordovician and Silurian graptolite faunas in the Great Basin and in Maine. More progress was made on an analysis and description of the middle Ordovician graptolite faunas from the Oslo area, Norway, this will be part of a summary of middle Ordovician faunas and stratigraphy of that area directed by Prof. Leif Stromer, University of Oslo. Research is continuing on Ordovician and Silurian graptolites from Canada. Field work in eastern New York in Trenton black shales produced an abundance of graptolites, the earliest decapod crustacean remains, and other fossils. Papers published include one on graptolite distribution and biogeography and others on graptolites from Maine and New York.

Charles L. Camp (emeritus) saw the publication of the 5th Bibliography of Fossil Vertebrates. In August a plaque of Dr. Camp (made by Wm. G. Huff) was dedicated to him at the Ichthyosaur State Park, Inyo County, Nevada, in recognition of his work in developing the site as an educational feature.

Ralph W. Chaney (emeritus) is continuing his research on floras in Japan.

J. Wyatt Durham spent June and July in Chiapas, Mexico, directing field work on the paleontology and stratigraphy of the Tertiary amber-bearing sedimentary rocks in the Simojoval area. This work was financed by the N.S.F. and is being done as a cooperative project with the Department of Entomology of the Berkeley campus. Large fossil collec-

tions were made. Research with V. A. Zullo on echinoids and a teredo from the Oligocene of Washington has been completed. This is the first fossil teredo from the Pacific Coast in which the pallets have been described. The Holectypoid echinoid section for the treatise on Invertebrate paleontology (with Carol D. Wagner) is nearing completion. Studies on the marine "Pliocene" of northern California and southwestern Oregon are continuing. Dr. Durham also participated in a symposium on Biogeography of the Tropical Pacific, Pacific Science Congress in Honolulu.

Wayne L. Fry spent six weeks on field work in southern British Columbia collecting Tertiary plants for the Geological Survey of Canada. Particular emphasis was given to a Miocene flora dominated by scrub oaks and other plants of a dry environment. One week in the Petrified National Monument, Arizona, produced unusual Triassic petrifications for sectioning.

Joseph T. Gregory has continued his studies on late Triassic vertebrates. Two articles on the phytosaurs have been completed and additional materials have been collected from the Redonda formation near Tucumcari, New Mexico. He also has been studying an unusual paleoniscoid fish from early Devonian of New York. The vertebrate materials collected by C. L. Camp and J. W. Cosgriff from the early Triassic Blina shale of Western Australia have been prepared. About ten different labyrinthodont amphibians and some fishes are represented.

Gideon T. James who finished his dissertation on the paleontology and nonmarine stratigraphy of the Cuyama Valley Badlands, California, has been appointed Instructor in the Department and Curator of higher vertebrates in the museum to assume the duties of D. E. Savage while the latter is on leave. James' dissertation, which includes the "Geology, Stratigraphy, Paleoecology, and the systematics on Rodentia Insectivora and Chiroptera," is nearly ready for the press. His research on the other mammals will continue.

Robert M. Kleinpell has continued in his efforts to ready the manuscripts by himself and his graduate students for the press. Those in press: Oligocene Biostratigraphy of the Santa Barbara Embayment, California. Pt. I: Foraminiferal faunas from the Gaviota Alegria formations, and their correlatives in the West Coast Ranges, (with D. W. Weaver). Pt. II: Mollusca from the Turritella variata zone, and their chronologic and biogeographic significance, (with D. W. Weaver). Papers being edited: Foraminifera from the type section of the San Lorenzo formation, Santa Cruz Mountains, California, (by F. R. Sullivan). Eocene Foraminifera from west of Refugio Pass, California, (by D. W. Weaver). Upper Eocene Foraminifera from southwestern Santa Ynez Mountains, California, (by W. R. Weaver). Lower Tertiary Foraminifera from the Media Agua Creek drainage area, Kern County, California, (by V. S. Mallory). Lower Tertiary Foraminifera from the Santa Susana Shale of California, (by J. L. Browning and A. W. Grier). Published: Foraminifera from the Sacate formation south of Refugio Pass, Santa Barbara County, California, (by Gordon R. Hornaday).

A. H. Miller was on the Australian expedition last summer. The previous fossil bird collection of about 150 specimens from Pleistocene and Tertiary faunas was increased about one-third. A large series of living bird skeletons was taken for comparative material. A paper on an extinct cassowary has been submitted to the Australian Museum, Sydney, for publication.

Joseph H. Peck, Jr., has borne most of the responsibility for day to day details of our move to the new building and has had little time for anything else. Thanks to his able managing the collections were transferred with a minimum of confusion and are now in far better order than they have been for many years.

D. E. Savage is in France on a N.S.F. Research project to study the vertebrate paleontology and nonmarine stratigraphy in the areas of the type paleocene and Eocene.

R. A. Stirton and R. H. Tedford (Riverside Campus) continued their field work on the vertebrate paleontology and continental stratigraphy in the Great Artesian Basin east of Lake Eyre, South Australia. Much has been added to our knowledge, especially on the mammals.

Samuel P. Welles has in press a memoir on Cretaceous plesiosaurs and a paper on a pliosaur from Texas. The latter is the first record of the genus Polyptychodon in North America. He is now engaged in writing a report on the Meteor Crater capitosaurs (with J. W. Cosgriff). During the summer he collected an elasmosaur plesiosaur in Montana.

Wm. A. Clemens who received his Ph.D. in 1960 has been appointed to a position in the Museum and Department of Zoology, University of Kansas. F. H. Kilmer has accepted a temporary appointment in the Department of Geology at the Santa Barbara Campus.

UNIVERSITY OF WASHINGTON

This fall Hoover Mackin will be a visiting Professor at the University of Texas. Peter Misch spent several weeks in Europe early this summer before returning to work on his Northern Cascades mapping project. He is about to submit some quadrangle maps to the state for publication. Dr. John Adams has been added to the staff for the fall quarter only to replace Dr. Mackin. Stan Mallory and Harry Wheeler spent much of the summer in reconnaissance work on the Tertiary of Oregon, Washington and northern California. Dr. Barksdale is preparing a paper on the structure and stratigraphy of the Methow Valley area in north-central Washington. Dr. Ross Ellis spent the summer teaching at Oregon State under the NSF program for teachers.

The geology field course was given again last spring by Bates McKee. Nine students took the course, which was held in the Paskenta area of northern California in April and the Carlton area of the Methow Valley in May.

DIVISION OF MINES

Dr. Rodger H. Chapman has recently joined the staff of the California State Division of Mines and Geology where he will be in charge of a new geophysical research program. This project will include, among others, the compilation of geophysical anomaly maps of the state, based on data from private and public sources, and a determination of the usefulness of geophysical methods of prospecting for such specific mineral commodities as chromite. Dr. Chapman holds a Ph.D. in geophysics from the University of Wisconsin.

Dr. James R. McNitt, staff geologist, participated in the United Nations Conference on New Sources of Energy, held in Rome last August, Dr. McNitt presented a paper entitled "Geology of the Geysers Thermal area, California". Although other thermal areas in the United States are under development, California has the only producing geothermal power plant.

AN APPEAL FOR CORES AND PRESERVATION OF CORE DATA

The efficiency of wireline logging devices and mud-logging services, especially in the detection of gas, has evidently been improved to the point in recent years where, very few cores are taken. This position may perhaps be defended on the basis of detecting oil and gas in a particular well which is of course of primary importance. Unfortunately vast amounts of lithologic data which would be of great significance in exploration are never seen by human eyes.

This period of increasing reliance on logging services has coincided with the realization of the abundance of turbidites in the California stratigraphic section and the many useful current indicators which they contain. Outcrop studies of turbidites have shown the potentialities of establishing patterns of sand distribution in areas previously considered geologically finished. Continuation of these studies into the subsurface must be based on cores. The appeal herewith is twofold: (1) take more cores, and (2) record more useful data in core descriptions.

Taking cores for data for future exploration is a must for the large companies with a planned exploration program. Perhaps the one-shot independent could justify not taking cores, though even he might develop his field more efficiently had he taken a few cores in the discovery well. A single core may give sufficient data on the attitude of the strata to verify dipmeter results. There are, of course, many reasons for taking cores in addition to turbidite studies and dipmeter verification.

A few companies have evidently instructed their geologists to record syngenetic structures in their core descriptions, and this data is useful in determining the presence of turbidites. However, the writer has yet to see in a core description any reference to a preferred orientation of any of these features. This may be partly or wholly because of a lack of standard system of frame of reference into which to fit the data. The following suggestion is offered to encourage preservation of oriented data:

Ordinarily in a core both the normal bedding and the oriented structures (cross-bedding, ripple marks, groove casts, flow marks, load deformation, imbrication, grain orientation, charcoal flake orientation, etc.) may be seen in the same chunk of core. In the absence of knowledge as to the true direction of dip, let us assume (and so state) that it is the reference point. The bearing of the other structures (direction of dip of cross-bedding, direction of linear features) can then be measured with a protractor and stated as "x" degrees to the right or left of the direction of dip of the strata (ODODOS). Oriented cores, dipmeter, or subsequent drilling may establish the direction of dip of strata in the cores some time after the cores are described. The syngenetic structures can then be locked into their proper position in space where they may be of great use in establishing sand patterns and refining paleogeography.

Harold H. Sullwold, Jr.

PERSONAL ITEMS

Jim McDonald and Earl Madsen (Humble, Chico) each got a deer on the opening week-end of the season. Abe Phillips, also of Humble, got a shot at one, but missed the brass ring. That many deer in one area could mean only one thing: Humble personnel are hunting in Bidwell Park, downtown Chico.

John Loofbourow (Richfield, Los Angeles) received the Golden Tee and Golf Ball from Bill Horsely (Richfield, Bakersfield) at the recent Scout Bar BQ as a prize for being the only person at the tournament who didn't ask what Bill's score was.

Charlie Guion (Humble, Sacramento) recently underwent surgery on his right foot. The size of the incision necessitated a skin graft from his side. Charlie says his only problem is that he has to scratch his foot whenever his side itches.

Ed Gribi, Consultant and Rocky Mountain Expert living in King City, was recently in Smogville to meet with Dick Hammond of Barlow, Hammond and Haun, Billings, Montana. Ed took great delight in reporting to the Beer and Pizza group at Columbo's how the other half dines on the Via La Cienega.

The Los Amigos Dance Club is pleased to announce that it will hold its first dance of the season on October 27 in the Venetian Room of the Huntington-Sheraton Hotel, Pasadena. For years this group has met at the Oakmont Country Club, but now is looking forward to the change of surroundings and expects to have a grand evening. Officers for the year are as follows: Dwight Vedder, President, Nick van Wingen, Vice-President, Virginia Whitaker, Secretary-Treasurer, and Curt Johnson, Dance Chairman.

Jack Kearns (Gulf, Sacramento) has been transferred temporarily to the GARDEN SPA OF THE SAN JOAQUIN, THE TRAVELER'S MECCA OF THE GREAT VALLEY, THE BOLL WEEVIL'S MANNA -- Bakersfield. Jack, you'll appreciate that 5° temperature difference by the time you return north.

Margaret Cox, formerly a palynologist for Richfield in Long Beach, is now in the Geological Department of Pauley Petroleum, Inc.

F. Hugh Wilson, formerly head of exploration in Tidewater's Western Division, has recently been appointed Chief Geologist of the Foreign Division. He replaces Robert Dyke who has resigned.

Elizabeth Maaskant, daughter of Adrian Maaskant (Shell, Sacramento) is in the Hague, Netherlands, for a year, where she will work for Shell as a secretary. Adrian was involved with the travel experience of his life when the plane he was on, bound for Los Angeles, was forced to return to Sacramento because of engine trouble.

Texaco has a new geologist, Doug Manske, a June graduate of Oregon State. Doug's assignment is yet to be announced.

Two new Standard Oilers are Robert Barnes, geologist in Ventura, and Jim Wilcoxon, paleontologist in the La Habra Laboratory.

Howard "rah rah" Level is back in College, oogiling, sweet young coeds and working towards a teaching credential. Howard plans to teach high school science next year.

Roland Bain (Texaco, Sacramento) qualifies for the Houdini award for the month. Seems like Roland helped pack his father-in-law's station wagon -- luggage on top. One slight miscalculation -- the car was loaded inside the garage and the garage door was too low. Roland's solution? He ambled off to work the next morning, leaving his father-in-law the task of unloading and then repacking the station wagon outside the garage.

Appropriate gifts were bestowed on Hal Rader and E. C. H. Lammers at the recent Standard Oil Exploration Department picnic. The former received a nearly complete set of dominoes (the double 1, 2, 3, 4, and 6). The theory being that these dies were most consistently in his possession. Also, by limiting him to five dominoes, it will prevent him from over-drawing. Lammers received a special Pullman towel to commemorate his 100,000th mile on the Lark.

Vern Jones (Exploration Logging, Sacramento) was off on another business trip to Europe, travelling to Ireland, England, France, Spain and the Canary Islands in approximately four weeks time.

The westerly breezes have wafted back to La Habra their own Malahini - Robert Knapp, the original Hawaiian Red Eye.

Rumors of submarine volcanic activity recently led that Explorer's Explorer, Jean B. Senteur de Boue, to a personal check of the ocean floor location of the Moholito in the Guadalupe trough, using personally-developed SCUBA gear. He reports the BSO (Basalt Shut-Off) okay. In typical "Far Out" experimentation, he found that the use of compressed whiskey fumes instead of air completely eliminated the deadly "raptures of the deep". However, there were more subtle post-inhalation phenomena.

A. E. L. Morris, peripatetic manager of Exploration for Pauley Petroleum, Inc., has just returned from an extended stay in Libya and Turkey. When asked how one gets to Libya these days, Tony just smiles and says "You have to go through London, Paris and Rome". Whatever he was doing there must have involved hard labor, because he appears to have lost about 20 pounds.

Ted Ellsworth has just recently been appointed head of the newly-formed Domestic Offshore Section of GSI. Ted will be assisted in the west coast area by Ernie A. Kiesler and by Marvin Gontarek in the Gulf coast area.

Now that Jim Trotter is working for Danes and Moore (consultants in applied earth science-primarily engineering applications), Los Angeles, he has finally found oil. The discovery was made while drilling shallow borings on a pipeline river-crossing job west of Buellton. Jim won't disclose the exact location, but fears that his "oil sand" may have been created by a leaky oil transmission line, long since removed.

Manny Castro has recently resigned from Shell Oil Co. and is currently looking for business opportunities in Southern California area.

Bob Yates, Shell, Ventura, is temporarily working in Utah.

Howard Kinzey, Long time Shell geologist in Washington, has been transferred to California after a summer in Alaska.

Persons involved in Shell's mass exodus from Olympia to Seattle were Grant Valentine, John Griffiths, Conrad Howard, John Carter, Maxine Patrick, Gene Fields, Ed Harris, and Barney Sellers.

Dana Braislin, Union, and staff have moved into offices recently vacated by Shell in Olympia, Washington.

All Shell men have returned to Seattle from Alaska except field geologists "Big John" Castano and "Little John" Lawrence, who will continue to follow the rapidly descending snowline to the sea in the Anchorage area.

Joe Dixon, Shell geologist, Seattle, is on the move again; after spending last spring in Texas and the summer in Alaska, has headed south to California for the winter.

Don Scanlin is the sole survivor of a once booming Union Oil Co. Santa Paula Office. Ed Hall is house hunting in Los Angeles but doggedly refuses to admit he has been permanently transferred.

NURSERY NEWS

James Hilary Newton was born September 22, 1961, to Ralph and Patricia Newton (Standard, La Habra). James weighed 5 1/2 lbs. and is the Newton's fourth child.

John and Ginger Wilson (Standard, La Habra) welcomed their fourth child, Douglas Harrison Wilson, on August 23, 1961. Douglas weighed 8 lbs., 15 ozs.

CALENDAR

October 9, 1961: Monday, 4:00 P.M., Stanford, Room 320, Geology Bldg. "Malacological Research, Gulf of California", Dr. A. Myra Keen. Coffee at 3:40 P.M.

October 10, 1961: Tuesday Evening, 7:30 P.M., Wagon Wheel Restaurant, Oxnard. Ted Off (Ojai Oil Co.) will speak on "Tidal Currents and Sand Bars".

October 11, 1961: Wednesday Noon, U.S.C., Geology "A", Room 104, 855 W. 37th St. "Geology of U.S.C. Field Camp area in East-Central Nevada", Ray Hunnicutt. Free parking can be arranged by calling RI 8-2311, ext. 387.

October 16, 1961: Monday, 4:00 P.M., Stanford, Room 320, Geology Bldg. "Recent Developments in Geochronology", Dr. Adolph Knopf. Coffee at 3:40PM.

October 23, 1961: Monday, 4:00 P.M., Stanford, Room 320, Geology Bldg. "Landslides of the 1960 Earthquakes in Chile", Dr. Stanley Nelson Davis, and "Journal Review", Mr. Peter Lipman. Coffee at 3:40 P.M.

October 25, 1961: Wednesday Noon, U.S.C., Geology "A", Room 104, 855 W. 37th St. "Petroleum Exploration in Northern Alaska, Summer of 1961", James Patton. Free parking can be arranged by calling RI 8-2311, ext. 387.

October 30, 1961: Monday, 4:00 P.M., Stanford, Room 320, Geology Bldg. "Hydrogeology, San Francisquito Basin, Stanford, California," Mr. Daniel Sokol and "Journal Review", Mr. M. Clark Blake. Coffee at 3:40 P.M.

November 1-3, 1961: Fourth Annual Meeting of Southwestern Federation of Geological Societies and Regional Meeting of Southwestern Section of A.A.P.G. in El Paso, Texas. A symposium on "The Sedimentary and Tectonic Framework of Northern Mexico and South-

western United States." For program and information, write to Roswell Geological Society, P.O. Box 1171, Roswell, New Mexico.

November 7, 1961: Tuesday evening, Branner Club, Althenaeum, Cal. Tech. Dinner at 6:45 P.M. and a talk by K. O. Emery entitled "Rate of Deposition of California Basin Sediments Based upon Radiocarbon Dating". For reservations, call Lucy Birdsall, U.S.-G.S., Los Angeles RI 9-4711, Ext. 1255.

November 8, 1961: Wednesday Noon, U.S.C., Geology "A", Room 104, 855 W. 37th St. "Geomorpology and Economic Aspects of the Danakil Depression, Ethiopia" (Illustrated with Motion Pictures), Derek Harris. Free Parking can be arranged by calling RI 8-2311, ext. 387.

November 22, 1961: Wednesday Noon, U.S.C., Geology "A", Room 104, 855 W. 37th St. "Geologic Framework of the Philippine Archipelago". Kelvin Rodolfo. Free parking can be arranged by calling RI 8-2311 ext. 387.

BIBLIOGRAPHY OF RECENT PUBLICATIONS

U. S. GEOLOGICAL SURVEY PUBLICATIONS

Professional Paper 303-C: Geology of the Utokok-Corwin region, Northwestern Alaska, by R. M. Chapman and E. G. Sable. (Part 3: Exploration of Naval Petroleum Reserve No. 4, adjacent areas, Northern Alaska, 1944-53.).....$7.25

Professional Paper 305-K: Core tests and test wells, Barrow area, Alaska, by F. R. Collins, with a section on temperature measurement studies, by M. C. Brewer.....$ 2.25

Bulletin 1136: Coal reserves of the United States-A progress report, January 1, 1960, by Paul Averitt.....$ .50

Water Supply Paper 1589: Geology and the availability of water in the lower Bonita Creek area, Graham County, Arizona, by L. A. Heindl and R. A. McCullogh.....$ .50

Water Supply Paper 1495-E: Ground water in the western part of the Cow Creek and Soldier Creek grazing units, Malheur County, Oregon, by R. C. Newcomb.....$ .15

Circular 453: Evaluation of equipment for measurement of water level in wells of small diameter, by Eugene Shuter and A. I. Johnson. 12 pages .....Free

Publications of the Geological Survey, "Third Supplement to Edition of May 1958.".....Free

Maps:

Map I-330: Geology of the Moses Lake North Quadrangle, Washington, by Maurice J. Grolier and Bruce L. Foxworthy.....$ .75

CQ 158: Geology of the Poverty Bay Quadrangle, Washington, by Howard H. Waldron.....$1.00

OM 204: Geologic map of the Lower Umpqua River area, Oregon, by Ewart M. Baldwin.....$ .75

MF 80: Preliminary geologic map of Lyon, Douglas, Ormsby and part of Washoe Counties, Nevada, by James G. Moore.....$ .50

OPEN FILE REPORTS: (Note: Available only for inspection)

TEI-781: Records of wells, test holes, and springs in the Nevada Test Site and surrounding area, by J. E. Moore. 22 pages, 1 fig.

TEI-787: Hydrologic significance of six core holes in carbonate rocks of the Nevada Test Site, by S. L. Schoff and I. J. Winograd. 97 pp., 4 fig.

TEI-788: Water Wells in Frenchman and Yucca Valleys, Nevada Test Site, Nye County, Nevada, by J. W. Hood. 58 pp., 13 figs.

Structure and stratigraphy of the Pybus-Gambier area, Alaska, by R. A. Loney. 200 pp., 5 pl., 56 figs. (Anchorage Only)

Preliminary geologic map of the coastal part of the Malibu Beach quadrangle, Los Angeles County, California, by J. E. Schoellhamer and R. F. Yerkes. 1 map and 1 explanation sheet.

Land subsidence in the Los Banos-Kettleman City area, 1957-59, compiled by R. E. Miller. 1 map.

Preliminary geology along the lower Yukon River, Alaska, by J. M. Hoare. 1 map.

Some aspects of younger Precambrian geology in southern Arizona, by A. F. Shride. 387 pp., 16 figs. 5 tables.

Geology of the Renton, Auburn, and Black Diamond quadrangle, Washington, by D. R. Mullineaux. 202 pp., 3 pl., 16 figs.

TEI-784: Geologic aspects of the November 1960 high explosives tests at the Project Chariot site, northwestern Alaska, by Reuben Kachadoorian. 15 pp., 1 pl., 4 figs., 1 table.

TEI-792: Lithologic logs of three exploration core holes, U15b area, Climax Stock, Nevada Test site, Nye County, Nevada, by F. N. Houser. 67 pp., 1 fig. 1 table.

WORLD OIL, vol 153, no. 4, September 1961

Small diameter well completions (Part 2: Casing programs and primary cementing equipment) by R. W. Scott.

High aeromagnetic accuracy provides detailed coverage, by W. P. Jenny

Mathematical probability is an oil-search tool, by John P. Dowds

"Suitcase seismic" records obtained from 4,000 feet.

Newest offshore vessel to drill at any depth.

New hydrocarbon extraction unit designed for small, rich gas streams, by J. L. Horton.

High-pressure CO_2 treatments boost production, by G. M. Henry and R. S. Frost

Drilling continues to improve.

New discoveries spur Nebraska activity.

OIL AND GAS JOURNAL, vol. 59, no. 36, September 4, 1961.

Special report on Petrochemicals:

Petrochemical building continues at high level, by Hugh S. Pylant. 1961 Survey of Petrochemical plants in the U.S., by Robert S. Bizal. New Survey of Petrochemical plants outside the U. S. by Robert B. Bizal. Synthetic rubber - big and still growing. Arkoma Basin - full of gas - and headaches for drillers, by W. B. Bleakley

OIL AND GAS JOURNAL, vol 59, no. 37, September 11, 1961.

Wyoming Wildcatting pays off, by John C. McCaslin

Better drilling practices speed California drilling, by B. M. Bumgardner

OIL AND GAS JOURNAL, vol. 59, no. 38, September 18, 1961.

Fluid and propping-agent injection schedule for high-capacity fractures, by B.B. McGlothlin and J. L. Huitt, and J. W. Jennings.

Here's how South American exploration varied in 1960.

Kentucky map makers will lay it bare in biggest program in U. S. History, by Frank J. Gardner.

Trailer rig completes a well a day, by James E. Armstrong.

The Carla Story: Advance planning cut the toll.

THE JOURNAL OF GEOLOGY, vol 69, no. 5, September 1961

Measurements of the properties of sediments, by John C. Griffiths

Vredefort ring structure: Meteorite impact scar?, by Robert S. Dietz

THE GEOLOGICAL SOCIETY OF AMERICA BULLETIN, vol. 72, no. 9, September 1961.

Origin of the Gulf of California, by Warren Hamilton

Stratigraphy of the Ashford area, southern Cascades, Washington, by Richard V. Fisher

Consolidation of sediments, by Barry Voight

Origin of a salt-water lens in permafrost at Kotzebue, Alaska, by D. J. Cederstrom

Role of fluid pressure in mechanics of overthrust faulting: Discussion, by Francis Birch

Role of fluid pressure in mechanics of overthrust faulting. I. Mechanics of fluid-filled porous solid and its application to overthrust faulting: Reply to discussion by Francis Birch, by M. King Hubbert and William R. Rubey.

WESTERN OIL AND REFINING, vol. 58, no. 8, August 1961

Contracting problems in the Sacramento Valley, by V. R. Coats, Jr.

Hot time in the oil patch, by Bill Rintoul

UNIVERSITY OF ARIZONA, (University of Arizona Press, Tucson)

What is Geology, Edited by F. W. Galbraith (Studies in geology, vol. I.)

STATE OF NEVADA, (Dept. of Conservation and Natural Resources, Carson City.)

Ground-water resources-Reconnaissance Series, Report 3: Ground-water appraisal of Long Valley, White Pine and Elko Counties, Nevada, by Thomas E. Eakin (Prepared cooperatively by the U.S.G.S.).$1.00

STATE OF WASHINGTON, DIVISION OF MINES AND GEOLOGY (Dept. of Conservation, 335 General Administration Building, Olympia, Washington)

Geological map of Washington. (Scale 1:500,00, 51 by 76 inches, either flat in a tube or folded in an envelope).....$ 3.00

BOOKS

Authigenic minerals in sedimentary rocks, by G. I. Teodorovich (Translated by Western Scientists), 120 pages. Consultants Bureau, 227 W. 17th St., New York 11, New York.....$22.50

Origin of oil and oil deposits, by M. E. Al'tovski, Z. I. Kusnetsova, and B. M. Shvets (Translated by Western Scientists) 107 pages. Consultants Bureau, 227 W. 17th Street., New York 11, New York $17.50

Igneous and metamorphic petrology, Second edition, by Francis J. Turner and John Verhoogen, University of California, Berkeley. 694 pages. Published by McGraw-Hill Book Co., Inc. 330 W. 42nd St., New York 36, New York.....$12.00

Photogeology, by Victor C. Miller (Miller & Associates, Inc., Denver, Colorado, Ready in September 1961) McGraw-Hill Book Co., Inc. 330 W. 42nd St. New York 36, New York

E. W. Hilgard, and the Birth of modern soil science, by Professor Hans Jenny. 144 pages, 1 photograph, 2 figs. Farallon Publications, Box 564, Berkeley, California.....$ 2.00

A hole in the bottom of the sea: the story of the Mohole Project. By W. Bascom 352 pages. Doubleday, New York

ECONOMIC GEOLOGY, vol. 56, no. 5, August 1961.

Beryllium-bearing tuff in the Thomas Range, Juab County, Utah, by Mortimer H. Staatz and Wallace R. Griffitts

A comparison of analytical methods used in geochemical prospecting for copper, by L. C. Huff, T. G. Lovering, H. W. Lakin and A. T. Myers.

Geology and origin of mineralized breccia pipes in Copper Basin, Arizona, by W. P. Johnston and J. David Lowell.

GEOTIMES, vol. 6, no. 2, Sept. 1961

The goal of Project VELA, by Charles C. Bates

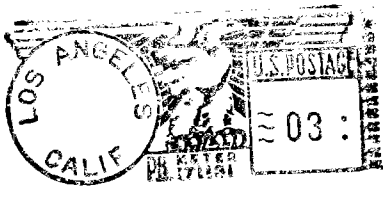
Tektites: A world-wide geological investigation, by Virgil E. Barnes

Antarctic geologic studies on Northern Palmer Peninsula, by Martin Halpern

Natural resources of the U.S.S.R., by Pyotr Y. Antropov.

The lunar surface, by Roy G. Brereton

PACIFIC PETROLEUM GEOLOGIST
PACIFIC SECTION, A.A.P.G.
P.O. BOX 17486, FOY STATION
LOS ANGELES 17, CALIFORNIA
Volume 15 Number 10



DA

Richard L. Hester
Pauley Petroleum, Inc.
10000 Santa Monica Boulevard
Los Angeles 25, Calif.

Form 3547 Requested

PACIFIC PETROLEUM GEOLOGIST

NEWS LETTER OF THE PACIFIC SECTION
AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS

Volume 15 | November, 1961 | Number 11

ASSOCIATION ACTIVITIES

PACIFIC SECTION NOMINATIONS

Tom Baldwin, Chairman of the Nominating Committee, has announced the following candidates for Pacific Section A.A.P.G., offices for 1962-63:

President:	Richard (Dick) Haines Aden Hughes
Vice President:	Bob Knapp Spence Fine
Secretary:	John Elliott Richard (Dick) Stewart
Treasurer:	John Fackler E. R. (Bob) Orwig

Your attention is called to Article 7, Section 1 of the Pacific Section Constitution which reads as follows:

> "The slate of candidates shall be announced in the Pacific Petroleum Geologist at least one month prior to the election. Additional nominations may be made by a written petition of 25 or more members of the Pacific Section in good standing, received by the Secretary within two weeks following the publication of the Nominating Committee slate of candidates."

FALL MEETING, PACIFIC SECTION, SEPM

The Pacific Section of the SEPM will hold its Fall Meeting at the Hacienda Motel in Bakersfield on November 10th. Cocktails will be served at 6:30 and dinner at 7:30.

Mr. Joseph Curray, Scripps Institute of Oceanography, will speak on "Sedimentation and Oceanography along the Mainland Side of the Gulf of California". There will also be a short business meeting and election of officers. AAPG and SEG members are invited, Reservations are not necessary.

HOLIDAY DINNER DANCE

The Eleventh Annual Holiday Dinner Dance sponsored by the Pacific Sections of the A.A.P.G., S.E.G., and S.E.P.M. will be held Saturday, December 16, 1961, in the Ballroom of the Huntington-Sheraton Hotel in Pasadena.

The traditional complimentary cocktail hour will be held as usual and music for dinner and dancing will be provided by Ivan Scott and his orchestra.

Reservation cards will be mailed to the Pacific Section members approximately December 1, which will give the additional information on the arrangements. Attendance definitely will be limited this year since the Ballroom at the Huntington-Sheraton is not as large as the Oakmont Country Club where the previous dances have been held.

CONVENTION FIELD TRIPS

Six field trips are planned for your enjoyment and education during the 1962 meeting in San Francisco. Emphasis will be on the stratigraphy and structure of known and potential petroleum producing areas of northern California, but some trips will include the San Andreas fault in areas north and south of San Francisco, the Mother Lode Gold District along the western foothills of the Sierra Nevada, and the geology and geomorphology of Yosemite Valley. We urge all members of the geologic profession to participate in at least one of the following trips.

Trip No. 1, March 24-25. A two-day trip to the Sacramento Valley will feature the surface and subsurface geology of the Cretaceous and Tertiary gas-producing formations of northern California with the particular emphasis on the stratigraphic and structural controls of gas accumulation.

Trip No. 2, March 26. One-day trip south from San Francisco through the redwood-studded Santa Cruz Mountains to Monterey, the first capital City of California, will feature the stratigraphy of an abnormally thick marine Tertiary sequence that has produced oil locally in structurally complex areas. Exposures that are typical of the Monterey shale will be visited.

Trip No. 3, March 28. A one-day trip northward from San Francisco to the Point Reyes Peninsula will follow the San Andreas fault zone and point up the structural and stratigraphic differences on the opposite sides of the fault.

Trip No. 4, March 30-31st. A two-day trip will traverse the Coast Ranges and northern part of the San Joaquin Valley, a prolific oil and gas producing structural basin, and visit some typical exposures of Mesozoic and Paleozoic metamorphic rocks of the Mother Lode Gold Belt and granitic rocks in Yosemite Valley.

Trip No. 5, March 29. One-day trip to the San Francisco Peninsula will visit excellent outcrops of Western California's ubiquitous Franciscan formation and all the younger Tertiary rocks that overlie the many rock types of the Franciscan. The problems related to engineering geology in a major urban area will be emphasized. See USGS "Geology of San Francisco North Quad."

Trip No. 6, March 30. One-day trip to the North side of Mt. Diablo will offer an exceptional opportunity to collect Late Cretaceous Foraminifera. Coast Range Eocene and Cretaceous formations will be observed en route to the collecting area.

PACIFIC PETROLEUM GEOLOGIST

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Los Angeles	John Van Amringe
Northwest	M. B. Greene
Sacramento	George Brown
San Francisco	David Pfeiffer
San Joaquin	Gordon J. Welsh
Membership Secretary	Gene Moore

Next Deadline

November 30, 1961

Two Guidebooks ("Geologic Guidebook to Gas and Oil Fields of Northern California" and "Guide to Yosemite Valley".) covering the regions traversed by the Field Trips will be published by the California Division of Mines. For field trip reservations and information regarding all costs and accomodations please write to: Parke D. Snavely, Jr. U.S. Geological Survey, 345 Middlefield Road, Menlo Park, California.

COAST GEOLOGICAL SOCIETY

Dr. V. Brown Monnett, A.A.P.G. Distinguished Lecturer from the University of Oklahoma, addressed the Coast Geological Society at the Pierpont Inn in Ventura on October 25, 1961. Dr. Monnett spoke on "The Status of Geological Education in the United States Today".

Abstract

The demands being made today of schools offering degrees in geology are to deliver a "dedicated" young college graduate with a working knowledge of mathematics, physics, chemistry, and engineering, and the ability to present clearly and concisely the results of his work either orally or in writing. In addition he should have a good comprehension of the basic concepts of geology, a good background in the areas of social science and the humanities, and be personally acceptable.

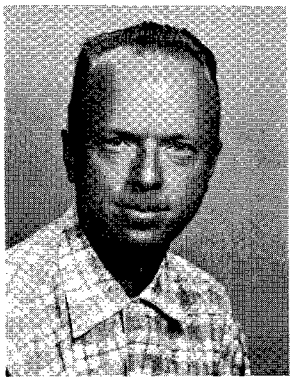
The response to these demands by geology departments varies greatly. A questionnaire was sent to 100 academic departments covering most of the United States. The responses indicate additional classwork in English Composition and social studies is now required in many departments. Departmental expansion includes more work in geophysics, geochemistry, sedimentation and ground water geology.

The employment situation, and to a lesser extent, the additional coursework requirements, have had three major effects:

(1) a four year program is no longer considered adequate for geology students.
(2) the number of students choosing geology for their vocation has greatly decreased, and
(3) as a general rule, the best students are entering other fields.

The emphasis on graduate work and the reduced number of students in undergraduate courses have enabled many departments to expand their graduate programs and research activities during the past three years. However, the tremendous drop in the number of undergraduate majors is beginning to affect some of these expanded programs. There will be an insufficient number of capable graduates to support all of these graduate schools in the next few years. Even this year, a number of graduating Seniors had their choice of several Graduate Fellowships and Assistantships.

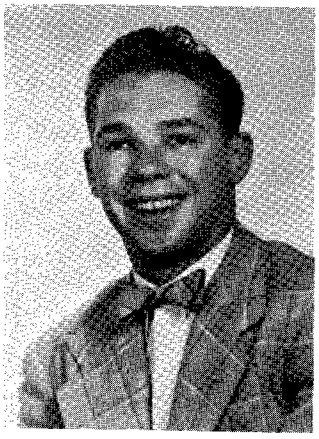
Corrective measures for the situation which we are rapidly approaching are not easily defined. It is apparent we can learn from the other sciences, for desirable positions for the recent recipients of the Bachelor's Degree in Zoology, Botany, Physics, Chemistry and Mathematics have been meager for many years. Graduate work in these fields is essential, and yet today there are more undergraduates in these sciences than at any time in history. Obviously, the first step in the recovery of geology as a major university curriculum which attracts a fair share of the more intelligent students is the general recognition that employment prerequisites in geology are no different from those in other sciences. The four-year program offers a broad education which is superior to many fields of academic work. If an individual desires to become a capable, up-to-date, biologist, chemist, physicist or employed geologist, he must spend from one to three years in graduate studies.



IN MEMORIAM

On August 8, 1961, Joseph Harold Merrow died from a heart attack. He was born in Newton, Kansas, on March 13, 1923 and graduated from San Bernardino High School in 1940. After serving in the U.S. Navy as Radioman for more than five years, he entered the University of California, Berkeley. He received his B.A. in Geology in 1950 and worked as a junior geologist in a tin mine at Catavi, Bolivia, for a year and a half. He joined Shell in 1952 and worked in Salt Lake, Alaska, Ventura, Bakersfield and Coalinga.

He is survived by his wife, Velma, and his son, Frank, age nine.



IN MEMORIAM

Frank Yule, his wife Dolores, and their three children, Janice, Scott and Barbara died together in an automobile crash near Taft on September 17th. The tragic death of Frank and his family was no ordinary disaster. Their rare combination of friendliness, humor, vitality, and intellect is gone, but will remain a cherished memory.

Frank's years were productive and enjoyable ones. Born in 1926 in Oshkosh, Wisconsin, he attended high school there, and then served as a U.S. Navy radarman in World War II. Following the war Frank enrolled at the University of Wisconsin, where he received a degree in geology in 1950. Coming to California, he worked a short time for Peters Logging Company before joining the staff of General Petroleum Corporation (now Mobil Oil Company).

Apart from his family, Frank's three great loves were geology, politics, and golf. He contributed materially to his company's interests in the exploration and development of the Saticoy and Fillmore oilfields. He served for five years on the Committee for Statistics on Exploration and Development. He was elected to the office of Treasurer and of Vice-President in the Coast Geological Society. He was always ready with a helping hand for any Association field trip or social function.

In the field of politics, Frank backed his convictions with nights and weekends of demanding precinct work. His zest and enthusiasm influenced his neighbors to greater participation in political affairs.

On the golf course he was the scourge of California geologists, and a consistent prize winner at the Pacific Section tournament. The caliber of Frank's golfing is attested to by his once tying the Montalvo course record with a round of 62. This sort of accomplishment was typical of Frank -- achieving in his spare time a goal that others would be happy to attain in full time.

Frank and Dolores were completely devoted to their family and to one another. Exquisite handcrafts, record collecting, Community Chest and Girl Scout work are but a few of the enterprises they shared together. Dolores was the ideal complement for Frank. Her quiet charm and temperament furnished the proper balance for his unbounded energy and enthusism. They were a wonderful team and a wonderful family, and no one who knew them will ever be able to redeem their loss.

LOS ANGELES GEOLOGICAL FORUM MEETING

Los Angeles members of the A.A.P.G. heard interesting and enlightening talks on both on-shore and off-shore geology at the evening geological forum meeting held at the Mobil Auditorium, October 16. A description of the Kettleman Hills area was presented by Mr. Hy Seiden, Bakersfield consultant. This talk was followed by an excellent movie released by Global Marine Exploration Company on "Experimental Deep Water Drilling, Project Mohole". The film was narrated by Dr. William R. Reidel of Scripps Institute, La Jolla. Dr. Reidel then gave an informative account of the "Sediments Recovered by the Mohole Project and their Relation to other Pacific Ocean Sediments". An abstract of this talk was published in the October issue of the P.P.G. (pp. 3-4)

Abstract

THE KETTLEMAN HILLS AREA

The Kettleman Hills are a series of three elongate en echelon domes located on the west side of the San Joaquin Valley. They stretch for a distance of fifty miles and consist of North Dome, Middle Dome, and South Dome; the latter is believed to be continuous with the Lost Hills structure.

The discovery at North Dome was made by the Milham Exploration Company, "Elliot" No. 1, Section 2, 22-17 on November 7, 1928 from the Temblor Formation. This discovery set off a flurry of activity drilling, leasing, land deals, mergers and law suits. Production was subsequently established in the Vaqueros and in the Eocene McAdams sands. Cumulative production to January 1, 1961 was 427,495,000 barrels of oil and 2,456,375 MMcf of gas. Ultimate reserves have been estimated at over 2 billion barrels of oil and astronomical volumes of gas. (Gester & Galloway, 1933).

Middle Dome, the smallest structure, has been of lesser importance while South Dome - Lost Hills, the largest structure, has been disappointingly barren in the horizons that produce at North Dome.

The Kettleman Hills are comparatively recent structures, deriving most of their relief from the mid-pleistocene orogeny that produced most of the structures in the San Joaquin Valley. The vast accumulations in the lower Eocene and Miocene at North Dome seem at first glance anomalous, but can be explained when the regoinal history and stratigraphy is examined. This is the main purpose of this paper.

In the early Eocene the Kettleman Hills were structurally low, but probably within the zone of oil accumulation in the Gatchell-McAdams sands of the Coalinga-Kettleman area. By late Eocene, the basin shifted south and oil re-migrated to the northeast shelf area, but still within the North Dome and Middle Dome zone of accumulation. In the early and middle Miocene, the basin continued to shift southward, with North Dome and Middle Dome within the vast accumulations in the Temblor. Regional updip accumulations were maintained until the mid-Pleistocene structures were superimposed and oil accumulations localized in the structures. Part of South Dome - Lost Hills may have been in the area of accumulation as late as the early Miocene, but in subsequent basins, its position was too low and the oil was drained from the area before it could be trapped by folding. The South Dome - Lost Hills fold is somewhat older than North Dome and Middle Dome, and depending on stratigraphy, contemporaneous faulting and/or time of folding, the north plunge of South Dome could be productive.

Future possibilities exist in the area. Fractured Kreyenhagen shale on North Dome is a very good candidate for production on North Dome, as it produces now at Middle Dome. In addition, the northeast flank of North Dome with its thickening lower Eocene and lower Miocene sections coupled with the complex stratigraphy of the area provides an excellent, albeit expensive, area for exploration.

IRVING T. SCHWADE

PRESIDENT, PACIFIC SECTION, A.A.P.G.

Irving T. (Irv) Schwade, our energetic and capable president of the Pacific Section of the A.A.P.G. has an enviable background of geologic experience, not only in oil, but in mining as well.

He was born in Brooklyn, New York, March 4, 1911. He received his B.S. and M.S. at Northwestern and also attended the universities of Oklahoma and Illinois. He was an assistant geologist with the Illinois Geological Survey 1935-36 and also worked with the U.S.G.S. for a short time. From 1936 to 1939 he was in the Philippines as a mining geologist and superintendent of a gold mine operation.

In 1939 Irv returned to the Illinois Geological Survey as a geologist. Then in 1941, he went to Peru for the Cerro de Pasco Corporation as district geologist and lived in the high Andes until 1943.

The oil industry and Richfield claimed him in 1943 when he accepted a position in Midland, Texas where he did subsurface work, scouting, and sat on wells. He also reminisces about having run a plane table survey singlehanded! Irv became district geologist in Ventura in 1948 and participated in the "rediscovery" and development of the Ojai-Timber Canyon area. In 1950 he was transferred to Bakersfield as division geologist, thus supervising exploration in the Cuyama boom days, and the discovery and drilling of Wheeler Ridge and Los Lobos.

Irv made the trek south to the home office in Los Angeles in 1954, and has remained to the present time, rising to the position of Regional Exploration Manager. He now supervises exploration for Richfield in the United States except for the West Coast and Alaska. Since 1953 he has supervised exploration in Peru, making enough business trips there to maintain his fluent mastery of Spanish.

Irv is vitally interested in A.A.P.G. national affairs, having served on the 1952 convention, 1958-59 business, 1959 employment counseling, and 1959 membership advisory committees and is now chairman of the 1960-61 membership qualifications committee. Irv will be a candidate for Secretary-Treasurer of the National A.A.P.G. for 1962-63.

Irv and his lovely wife, Jessica, were married in 1936 and have two sons. Irving, Jr. 22, is now with the armed services in Frankfurt, Germany, where Jessie and Irv plan to visit this November on an extended tour through Europe. Their other son, Steve 20, attends Valley College at the present time.

Irv's hobbies are principally fishing and working with his sons on their autos. In addition to his professional capabilities Irv is a great handyman - not hesitating to repair such as his swiming pool filter, cars, or household appliances. We wish him every success in the forthcoming national A.A.P.G. election, because we know he will do a fine job, as usual.

DEPARTMENTAL NEWS - USC

Last year the Geology Department at USC graduated 3 people with the A.B. degree; 8 with the B.S.; 10 assorted Masters and 1 Ph.D. This year we have 23 undergraduate majors and 43 graduate students. The unusual USC 136 unit B.S. degree grows in popularity because of continuous demand for holders of this undergraduate degree. Departmental talks on alternate Wednesday noons are underway again this year. Persons wishing annoucements of this and other USC functions can obtain the bimonthly announcement by calling the Department at RI 8-2311, Ext. 387.

A complete list of all graduate theses and dissertations in geology is available to anyone wishing it. This list brings up to date the list distributed at the ENGS meeting in Ely last summer. Price lists of microfilm copies are indicated. Direct color prints of maps can be arranged for at the Reference Desk at Doheny Library.

Although the new $2 million Biological Sciences Research Center and $2.2 million Engineering Center at USC will not provide special space for the Department, they augment greatly the facilities for geology students who invariably take elective work in one or another of these areas.

ORVILLE L. BANDY has been completing an environmental analysis of forams from the Tecolote Tunnel sponsored by the NSF. He gave a paper at the SEPM in Bakersfield last spring and one on principles of paleoecology at the API meeting in Denver. Orville is also working on planktonic correlations for the Cenozoic under a grant from Shell Development Co. He is on sabbatical leave this semester while completing these various projects.

THOMAS CLEMENTS, Chairman, spent most of the summer in a continuation of the search begun in 1956 for the source of Mexican jade. Most of the time was devoted to a locality in Guerrero and one in Oaxaca.

Many false leads were followed, no matter how fantastic a story might be. Finally, on a visit to a place previously seen and thought to look promising in southern Oaxaca, material was found that passed the field tests for jadeite. This awaits confirmation by means of the petrographic microscope and chemical analysis.

Bob McConville, Signal, the only Calgary-to-Caracas commuter now extant, recently passed through Los Angeles on his monthly run.

Standard's Valley Golfers, paced by Bob Lindblom, are still looking for a win over the Union Cary led pack. They recently locked horns at Kern River and were overjoyed at a tie.

Bob Hindle, Sunray, recently transferred from Newhall to Casper, Wyoming as Senior Geologist, has now been promoted to District Geologist.

Bill Gold and Cal Thompson of Standard Oil were "weighed out" prior to their departure to San Francisco for a month's stay on the expense account. So far the only word from them has been in the form of steak juice and martini drippings on the menus they have sent back.

Jean B. Senteur De Boue has abandoned his deep sea studies of BSO (Basalt Shut Off) tests and is at present concentrating on working up a play on the West flank of Kettleman Hills which, according to a recent inside tip, is THE place to look.

Mike Duggin, recently of UCLA, has been mobilized by Mobil in Bakersfield.

Ed Goodrich, a Mobil alumnus turned operator, is presently drilling his own well, "Goodrich-Hudson #1", at Cienega Anticline.

Les Herndon, scout for Continental, Bakersfield, attended a land management course at the University of Oklahoma in Norman.

A field of 110 golfers competed at the annual oil scouts barbecue held on the Kern County course. Some 237 steaks were consumed along with an untabulated gallonage of tap foam following the day's golfing. Big winners (at golf) were:

1st Low Gross - Max Ermacoff (Richfield) 77
2nd Low Gross - Tie: Bob Lindblom (Standard) 78
Bob Teitsworth (Occidental) -78
3rd Low Gross - Hardee Story (Rep. Supply) 79
1st Low Net - Duane Leetzow (KCL) 65
2nd Low Net - L. McCarthy (KCL) 67
3rd Low Net - Tie: Frank Taylor 71
Jim Blom (Standard) 71

Booby Prize: Willard Brooks (KCL) 130. John Loofbourow (Richfield) received a golf ball and tee for not asking the judges where he placed. Ken Jensen (123) received, for his maiden golfing attempt, a large bottle of insect repellent to help "get the bugs out of his game".

Warren Gillies of Texaco has been transferred from Bakersfield to Ventura and Walt Harris goes to Los Angeles from Bakersfield.

Bruce Robinson (KCL, Bakersfield) has formed a Citizens Survival Committee. Somebody must be interested in surviving because membership grew from 3 to over 100 in only four weeks.

Ron Heck has left Sunray in Bakersfield to work for Pauley Petroleum Corporation in Los Angeles.

Marlene Hyde, Richfield Anaheim was married to Ben Shuford also of Anaheim at a small family service, on Saturday, October 28, 1961.

Dick Darrow has been transferred from the Los Angeles area to Standard's Oildale office as Sacramento District Geologist.

Fred Sierveld has just returned from the bleakness of Alaska to receive his reward from Richfield in the form of an office done up in warm decorator colors.

E.C.H. "Doc" Lammers of Standard Oil has been given the temporary assignment of Assistant to the Vice President of California Research. "Doc" has been wined and dined with farewell parties and special gifts such as a "Do-it-yourself gravity kit". The one problem with the new assignment is, "How will Doc make railroad connections between La Habra, South America and the Canary Islands?"

The Central California Oil Scouts Association (Bakersfield) announces that they will host the Pacific Coast Oil Scouts and Landman's Association annual meeting, Friday December 1st, at the Bakersfield PARTY CENTER. After an informal luncheon, the afternoon program will summarize the year's discoveries and drilling progress in California. An early evening cocktail hour will precede the dinner party. There will be a special door prize consisting of one enameled steel NO DOPE HOLE sign donated by a new California competitor recently arrived from the mid-Continent. All geologists are invited. Contact any member of CCOSA for reservations.

Standard Oil has two new geologists working in Ventura; namely Harry Hansen and Bob Barnes.

The Ed Gribi-Frank Parker philosophy utilized for a personal financial advantage at Columbo's has been completly neutralized by a recently inaugurated "dollar averaging" system - more commonly called "dutch treat".

Honolulu Oil Corporation, like the moa and the dodo, is no more. But extinction was sufficienty slow to allow Tidewater to receive a transfer of healthy Honolulu genes. To remain in Bakersfield with Tidewater are Hollis Bertrand (scout), Wayne Estill, Rod Nahama, Cutler Webster (geologists), and Wally Matjasic (geophysicist). Art Richards (geologist) will transfer to Ventura. Presently on their own with unannounced plans are Tom Folsom (former landman), Lowell Redwine (former District Geologist), and John Thomson (geologist). Tom Llewellyn (former Division Manager of Exploration) has had his plans made for him. The U.S. Naval Reserve recalled him to active duty November 1st.

Gerald T. Raydon, ex-Standard geologist, writes that he has graduated from U.S.C. Law School and is now associated with William P. Blair in the practice of oil and gas law in Los Angeles.

The rank and file of Standard Oil has been depleted by one member - Don Hembre. He has left Smogville to go to work for Franco-Western in the cold, clear air of Denver, Colorado.

"I've won", shouted Rex Brittingham, Ventura College Geology Instructor, at a recent Coastal Society meeting whiskey raffle. "This is the first damn bottle in years". After the meeting Rex proceeded to the parking lot, accidentally knocked the bottle from his pocket and broke it into a thousand pieces.

Arch Warne, Richfield, a student of the geology of the Bakersfield Middle Miocene Sharkstooth beds, has unearthed his largest specimen yet - a well preserved 6" Carcharodon tooth. According to the estimates of some shark authorities it's one time owner could claim the length of 150 feet. This, according to Arch, figures out at 42,688 cubic feet of shark meat with a displacement of 1334 tons.

Tom is also Editor of THE COMPASS, which is published by the national honorary geological fraternity, Sigma Gamma Epsilon. He is a member of the Board of Directors of the Death Valley '49ers and a member of the Qualifications Board of Engineering Geologists for the City of Los Angeles.

The Cordilleran Section, GSA will meet on the USC campus April 16-18, 1962 and Tom is General Chairman of the meeting.

GREGORY A. DAVIS joined the Department this fall as Assistant Professor, having just received his Ph.D. from Cal at Berkeley. He received his B.S. and M.S. degrees from Stanford in 1956 and 1957. Greg's dissertation is entitled, "Structure and petrology of pre-Cretaceous igneous and metamorphic rocks in the Trinity Alps, Klamath Mountains, California". Greg grew up in Oregon, is married, and has a brand new son, His principal courses at USC will be in structural geology and field.

THEODORE DOWNS, as Visiting Adjunct Professor, combines the teaching of vertebrate paleontology at USC with his work at the L.A. County Museum. Ted recently assumed his new position as head of the Earth Science Division at the County Museum. The NSF and County are combining funds to build an additional 7616 sq. ft. of floor space for the vertebrate collections at the Museum. Ted continues research on middle Pleistocene faunas under another NSF grant, and reported on his work at the GSA meeting at San Diego.

WILLIAM H. EASTON taught the field course in Nevada last summer. In June, Bill conducted a field conference for the Eastern Nevada Geological Association on problems of correlation of the upper Paleozoic rocks of the Ely region. A general talk to 80 registrants preceded two days of field examination of the Devonian to Permian succession. The middle portion of the summer was spent around Great Lakes on a GSA grant verifying the provenance of some corals described by a French visitor over a hundred years ago. After a bit of boating in New England and the Chesapeake Bay, he checked on some localities in New Mexico from which Jules Marcou collected the types of several Carboniferous species, also a century ago.

K. O. EMERY spent most of the summer working on his report on the Dead Sea, completing field work done on his sabbatical leave in 1959. Two weeks of July were devoted to a typical sailor's holiday, for he floated down the Colorado River on a raft to examine Precambrian sandstone for turbidity current sole markings. In August he presented a paper at the Tenth Pacific Science Congress in Honolulu, and also found time during the three weeks of sessions to study wave patterns from the air in order to infer their influence upon beach erosion.

I. R. KAPLAN continues to teach Geochemistry for the Geology Department at USC. Ian received his Ph.D. in September from USC, with research entitled, "Sulfur Isotope Fractionations during Microbiological Transformations in the Laboratory and in Marine Sediments". Ian is now mainly employed at Cal Tech as research scientist with the title of Biogeochemist.

JOHN F. MANN, JR. continues on the staff as Visiting Associate Lecturer in addition to conducting his own consulting service in ground water. John is now author of the section on wells in the Encyclopaedia Brittanica. He gave a paper on safe yields at the Amer. Soc. Civil Engineers in Phoenix, and addressed the Colorado River Water Users Assoc., in Las Vegas on the Mexican Delta, and contributed to the Sacramento meeting of the Calif. Assoc. Engineering Geologists.

RICHARD H. MERRIAM served on the Committee of Construction Materials for the Division of Engineering Geology of the GSA. Dick has been appointed Liason Representative for the Division of Engineering Geology for the Cordilleran Section's meetings in 1961 and 1962.

ROBERT E. STEVENSON completed his oceanographic and meteorologic report on "The Summer Environment of the Yorkshire Coast, England" for the Office of Naval Research. This was the culmination of a grant he received to work in Bridlington, England, in 1959 and 1960. The bulk of the summer was spent working on the final report to the State Water Pollution Control Board. This investigation is concerned with the effect of sewer outfalls on marine organisms and, coupled with it, the nature of bottom sediment and topography of the southern California coast. Bob has accepted a position with the Marine Station of Texas A&M at Galveston, commencing early this winter.

RICHARD O. STONE attended a conference at Vicksburg, Mississippi on Military Terrain Analysis in the first portion of the summer and presented a paper. The remainder of the summer was devoted to working on a research grant from the U.S. Army Corps of Engineers, Waterways Experiment Station. The project involves the mapping and classification of microrelief features in arid regions and devising a purely quantitative system for expressing these features.

PERSONAL ITEMS

Ed Bien, Richfield, and his wife Daisy recently returned from a National Park vacation, having visited Yosemite, Craters of the Moon, Yellowstone, Grand Teton, Zion, Grand Canyon, and Lake Mesa, via the Volkswagon route - camping all the way. Ed, whom we assume is still working for Richfield and not for the Department of Interior, has multitudinous colored slides, half of which are of geological phenomena.

The recent "Nitrogen" seminar in Sacramento was attended by Barney Barnard, Sten Carlson, John Levorson and Bill Horsely - all of Richfield in Bakersfield. The return trip, via the company's "Twin Beech" was minus Barnard who turned up at the office two days later in a Hertz rental - said he had been scouting.

In an intra-company golf tourney, which saw Standard's Bakersfield team defeat El Segundo Refinery, Bob Lindblom and Don Laswell won low net prizes.

Recent transfers to Shell's Bakersfield office include Ralph Hawkins, after nine years in Ventura, and Howard Kinzey from Washington.

Overheard at a recent Board of Directors' meeting of a California major: "But sir, we must take it easy with these periodic layoffs or we won't have enough employees for a good old fashioned purge".

Pete Patterson, formerly with Texaco, Sacramento, is now with the US Department of Agriculture, Soils Conservation Branch, in Portland, Oregon.

Shell, Sacramento, has two new transfers, Bill "T-Willy" King, and Ken Erskine, both from Ventura.

Paul Day, Gulf, Sacramento, has returned to the gas country after a summer of field mapping in Oregon.

Sam Brown, formerly with Texaco, Sacramento, is working for Butte Gas and Oil Company, Oakland.

Horace Harrington, Superior, seen recently in Denver by Bill Winter, is reported to have arrived at a balance, of sorts. As the work grows grimmer, Horace gets trimmer.

Bob Herron and Jack West, Signal, Bakersfield, have been transferred to Los Angeles. At present Jack is trying to decide whether commuting from Bakersfield is quicker than using the Long Beach freeway.

It is rumored that Harry "Commodore Pounce" Nagle (Standard, Ventura), driving east on vacation, went down with his Packard while fording the Mississippi.

Dr. Lim Tjhiang In (Caltex, Sumatra) is concluding a four-month training tour with Standard in Ventura. Lim and his wife, Rhea, will return home by way of London, Paris, Rome, etc., carrying with them best wishes from envious new friends in Ventura.

Not all of the oil companies are abandoning Ventura. Texaco has bucked the trend by transferring Warren Gillies from Bakersfield and Jess Parsons from Los Angeles.

Leaving Standard in Bakersfield is Burt Amundson who will attend the University of California for an education in Business Administration. Also, leaving the same office will be Bill Blaze to work with Bill Adent in Sacramento as a consultant.

Strange things have been happening in Standard's Ventura office since Cal Thompson left for San Francisco. It seems that Ed Dryden has to do his own work now.

NURSERY NEWS

Warren Addicott (Mobil, Bakersfield) and his wife Sue happily received a son, Eric Oliver, 6 lbs., 7 ozs., born September 18th.

Ralph and Frances Cahill (Texaco, Ventura) are proud to annouce the arrival of James William, 9 lbs., 12 oz.

Ed and Joy Miller, Ohio Oil in Bakersfield, greeted their fourth son, Jeffery James, born October 13th.

Dick and Barbara Lyon, Union, Anchorage, recently welcomed Steven Kyle to their household. Steven was born September 23rd and weighed 6 lbs., 6 1/2 ozs. Steven's arrival was heralded by the following: "We're adopting - he's adapting".

Nancy and Hal Reade, Richfield, Bakersfield, welcomed a brother for their little girl, Susan, on August 11th. Bruce Bradley weighed in at 6 lbs., 13 ozs.

Warren and Barbara Gillies, Texaco, added a 7 lb., 2 oz. girl, Sharon Kathleen, to their family on September 11th.

John and Ginny Jacobson, Standard, Bakersfield, fast approaching the right number for a good basketball team cheered home 7 lb., 7 oz. Peter W. on September 1, 1961.

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CALENDAR

November 14, 1961: Tuesday evening, Hotel El Tejon, Bakersfield, cocktails 6:30 P.M., dinner 7:30 P.M. Kenneth Krammes, consulting geologist will speak on "A Brief Report on the People and Geology of Southeast Turkey".

November 14, 1961: Tuesday evening, California State Public Works Building, 1120 "N" Street, Sacramento, 7:45 P.M. Charles Higgins (Univ. Calif., Berkeley) will speak on "Inheritance of Stream Pattern from Buried Structure" and "Groundwater of the Acropolis, Greece".

November 20, 1961: Monday, Stanford, Geology Bldg., Room 320. Coffee: 3:40 P.M., Program: 4:00 P.M. "Mesozoic Stratigraphy and Structure, Southern Pine Nut Range, Nevada" by Mr. Don Noble. Journal Review: Mr. Peter Stauffer.

November 22, 1961: Wednesday Noon, U.S.C., Geology "A", Room 104, 855 W. 37th St. "Geologic Framework of the Philippine Archipelago", Kelvin Rodolfo. Free Parking can be arranged by calling RI 8-2311, ext. 387.

November 27, 1961: Monday, Stanford, Geology Bldg., Room 320. Coffee: 3:40 P.M., Program: 4:00 P.M. "Structural Geology of the Central Spring Mountains" by Mr. Don Secor. Journal Review: Mr. Carl Peterson.

December 7, 1961: Wednesday Noon, U.S.C., Geology "A", Room 104, 855 W. 37th St. "A Voyage Down the Colorado River - a Geologist's Interpretation", Dr. K. O. Emery. Free Parking can be arranged by calling RI 8-2311, ext. 387.

December 12, 1961: Tuesday evening, Hotel El Tejon, Bakersfield, cocktails 6:30 P.M., dinner 7:30 P.M. Stewart Chuber and William Edmondson will speak on "Upper Mesozoic Geology of the Sacramento Valley".

December 12, 1961: Tuesday evening, California State Public Works building, 1120 "N" Street, Sacramento, 7:45 P.M. Howell Williams (Univ. Calif., Berkley) will speak on a subject to be announced.

December 13, 1961: Wednesday noon, U.S.C., Geology "A", Room 104, 855 W. 37th St. "Geology and Mineral Resources of Ghana, West Africa", Godfried Kesse. Free parking can be arranged by calling RI 8-2311, ext. 387.

January 10, 1962: Wednesday Noon, U.S.C., Geology "A", Room 104, 855 W. 37th St. "The Marine Geology and Oceanography of Hudson Bay, Canada", Robert Leslie. Free Parking can be arranged by calling RI 8-2311, ext. 387.

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Report of Investigations 5821: Energy production and consumption in the United States: An analytical study based on 1954 data, by Perry D. Teitelbaum. 145 pages.....Free

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Professional Paper 303-C: Geology of the Utokok-Corwin region, Northwestern Alaska, by R. M. Chapman and E. G. Sable. (Part 3: Exploration of Naval Petroleum Reserve No. 4, and adjacent areas, Northern Alaska, 1944-53) NOTE: correction of price.....$3.75

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Professional Paper 424-B: Geological Survey Research 1961, Short papers in the geologic and hydrologic sciences, Articles 1-146.....$2.50

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Water Supply Paper 1475-C: Geology in relation to availability of water along the south rim, Grand Canyon National Park, Arizona, by D. G. Metzger. .....$ .65

Water Supply Paper 1497: Geologic features and ground-water storage capacity of the Sacramento Valley, California, by F. H. Olmsted and G. H. Davis. $2.50

Water Supply Paper 1523: Quality of surface waters of the United States, 1957, Parts 9-14: Colorado River Basin to Pacific Slope basins in Oregon and lower Columbia River Basin.....$1.75

Water Supply Paper 1714: Surface water supply of the United States, 1960, Part 10: The Great Basin. $1.00

Water Supply Paper 1716: Surface water supply of the United States, 1960, Part 12: Pacific Slope basins in Washington and upper Columbia River Basin. $1.25

Maps:

Map I-342: Geologic map and cross sections of the Anchorage (D-2) quadrangle and northeasternmost part of the Anchorage (D-3) quadrangle, Alaska, by Arthur Grantz.....$ .50

Map I-344: Preliminary geologic map of the southwestern part of New Mexico, by Carle H. Dane and George O. Bachman.....$1.25

Map MF-159: Reconnassance geologic map of the Cedar Mountains, Grant and Luna Counties, New Mexico, by C. S. Bromfield and C. T. Wrucke.....$ .50

Map GP-307: Aeroradioactivity of the Hanford Plant Area, Washington and Oregon, by Robert G. Schmidt.....$ .50

OPEN FILE REPORTS (Available for Inspection Only)

TEI-793: Geologic reconnaissance of granitic intrusive masses at Gold Meadows, Tem Piute, and Trappman's Camp, Lincoln and Nye Counties, Nevada, and comparison with the Climax stock at the Nevada Test Site, by F. N. Houser, R. E. Davis, and W. L. Emerick, 15 p. 1 fig. 2 tables.

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CALIFORNIA DIVISION OF HIGHWAYS

Bank and shore protection in California highway practice, November 1960.

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The lower Cretaceous Trinity aquifers, McLennan County, Texas, by Harold D. Holloway. (Bulletin No. 1, Baylor Geological Studies, 1961).....$1.00

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Significance of some fossil wood from California, by C. G. Higgins.

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Granitic formations in the east-central Sierra Nevada near Bishop, California, by Paul C. Bateman.

Rate of slope erosion in the White Mountains, California, by Val LaMarche.

Rate of fluid pressure in overthrust faulting: A discussion, by Walter L. Moore.

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Silicified Turbellaria from Calico Mountains nodules, by W. Dwight Pierce.

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Engineering the Hassi Messaoud Field, by E. J. Jocquel

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Estimating deep well deliverability, by Paul B. Crawford.

Aluminum flowline passes test, by William R. Lambert

Sizing beam pumping units made easy, by A. J. Otte

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Is California's oil future off shore? by Bill Rintoul

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Stratigraphic and lithologic variations in the Columbia River Basalt, By A. C. Waters

Maps of Cenozoic depositional provinces, Western United States, by Franklyn B. Van Houten

Permo-Triassic diastrophism in the Western Cordilleran region, by R. H. Dott, Jr.

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Regional magnetic data show prospective trends, (Part 2), by W. R. Jenny

Engineering practices report No. 4: Part 3: Casing running and cementing practices. Small diameter well completions, by R. W. Scott

What operators learned from Hurricane Carla

Middle East seeks bigger role in oil company operations, by Don E. Lambert

OIL AND GAS JOURNAL, vol. 59, no. 40, October 2, 1961

How to get more from drill collars, by H. M. Rollins

Nonlubricated compressors prove their worth, by P. J. Chandler

Faster, more accurate R.V.P. measurements, by T. J. Puzniak and James Eppolito

Why drill collars are used and sometimes fail

Oklahoma's Blaine County is new Anadarko basin hot spot, by john C. McCaslin

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Mobil discovers how to identify oil source beds

Using geophysics in field development, by Peter B. Bike

A Briton looks at U.S. oil, by Dr. Paul H. Frankel

Pipeline across the Mediterranean, a mathematical analysis, by Oscar Wolfe

Study promises to end fatigue failures

New rig combines portability, winterizing features, by Ed McGhee

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Special report: Instrumentation and control in refining, by Gerald L. Farrar

Gas turbine scores in air drilling, by Peter B. Bike

Simulation program recognizes all pertinent factors, by W. A. Zama

Colombia exploration takes upswing, By John C. McCaslin

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VELA seismic equipment opens new oil-hunting horizons, by Lawrence R. DeBell

Completing Ellenburger wells for maximum production and life, by Steven Gerolde and H. B. Wofford

Holding ponds are effective in waste-water treatment, by Troy D. Dorris, B. J. Copeland, and Donald Patterson

Parallel plates boost efficiency in gravity oil separation, by J. Cornelissen

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PACIFIC PETROLEUM GEOLOGIST
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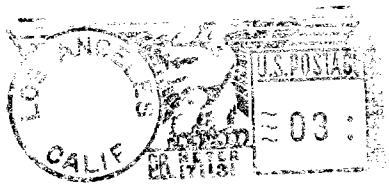

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PACIFIC PETROLEUM GEOLOGIST

NEWS LETTER OF THE PACIFIC SECTION
AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS

Volume 15 | December, 1961 | Number 12

ASSOCIATION ACTIVITIES

ANNUAL HOLIDAY DINNER DANCE

The Eleventh Annual Holiday Dinner Dance sponsored by the Pacific Sections of the A.A.P.G., S.E.G, and S.E.P.M. will be held Saturday, December 16, 1961 in the Ballroom of the Huntington-Sheraton Hotel in Pasadena.

The traditional complimentary cocktail hour will be held from 7:00 to 8:30 P.M. Dinner will be served from 8:30 to 9:15 P.M. Music for dinner and dancing will be provided by Ivan Scott and his Orchestra.

Reservation cards have been mailed to the membership and those who desire to attend should respond promptly by returning the card with check to Jack Shepard, Texaco, Inc., Room 800, 3350 Wilshire Blvd. Los Angeles, California. Make checks payable to Pacific Section, A.A.P.G. Tickets will be mailed for reservations received through December 11, 1961; others will be at the door the night of the party.

Tables can accomodate groups of 12. One person should make table reservations for his entire group. The donation is $17.00 per couple.

NEW ADDRESS FOR USGS, SALT LAKE

The Mining Branch and the Oil and Gas Leasing Branch of the Conservation Division, U.S.G.S., have moved to new offices in the Empire Building at 231 E. 4th Street, South, Salt Lake City, Utah. The Mining Branch is in Room 420 (DA 8-2911, ext. 430) and the Oil and Gas Leasing Branch is in Room 416 (DA 8-2911, ext. 433).

ALASKA GEOLOGICAL SOCIETY

New Officers for the 1961-1962 term were elected at the first fall meeting of the Alaska Geological Society on October 12, 1961. They include:

President	Gerald Ganapole (Texaco)
Vice President	Margaret I. Erwin (USGS)
Secretary	Richard A. Eckhart(Sunray Mid-Continent)
Treasurer	Wayne C. Davidson (49th State Petroleum Report)

At the October 12 meeting Chuck Kirschner (Standard) gave a paper on the Geology of Trinity Islands, Alaska.

During November the Society held two meetings. On November 9, John Zehnder (BP Exploration) gave a very interesting talk on Exploration in the Territory of Papua, New Guinea. Mr. Zehnder illustrated his talk with both slides and movies. Of particular interest was his discussion of the discovery of a native tribe who had never seen white men nor heard of civilization.

On November 22, the Society held a special meeting to hear Dr. Leonid Smirnow give a paper on "Oil Basins of U.S.S.R.". Dr. Smirnow is a consulting geologist from New York.

DIVISION OF MINES AND GEOLOGY

Ian Campbell, State Geologist and Chief of the Division of Mines and Geology, has been elected president of the Mineralogical Society of America. He was chosen at the annual meeting of that society in Cincinnati in October of this year. He succeeds Dr. E. F. Osborn, vice-president of Pennsylvania State University. Dr. Campbell, who has been Chief of the Division of Mines and Geology since 1959, resides in San Francisco, where the Division maintains its headquarters office. Francis J. Turner, Professor of Geology at the University of California at Berkeley, was elected to a three-year term as councilor of the society.

COMMITTEE ON LATERAL FAULTING

The Lateral Fault Study Group, sponsored by the Pacific Section, has now made a start toward its first modest objective of assembling all known data on California's major faults. It is only fitting, considering the subject, that progress to date may be measured in inches per year. The group, to avoid controversy, is going about its business obliquely, and does not contemplate any major vertical or horizontal moves.

Chairman Richard Walters states that the Group's immediate objective is to compile an annotated fault bibliography. The bibliography will have two main subdivisions--one will consist of abstracts of significant articles, and the other will be a detailed index to areas and subject matter.

The Study Group needs help from 40 or 50 geologists on the job of reading and abstracting articles. Volunteers are the best kind of help, in a labor of love such as the one at hand. Anyone who would like to assist in abstracting may make himself known to Robert Paschall, Signal Oil & Gas Company, and chairman of the Bibliography Committee. Requests to abstract particular articles will be honored whereever possible.

Please hurry. One of those faults might move again, and make the whole project obsolete.

COAST GEOLOGICAL SOCIETY

New officers for the Coast Geological Society are as follows:

President:	K. D. Hall (Richfield)
Vice-President:	J. M. Saunders (Tidewater)
Secretary:	Sig Hamann (Shell)
Treasurer:	Ed Dryden (Standard)

Next Deadline

December 29, 1961

NORTHWEST GEOLOGICAL SOCIETY

The Northwest Geological Society met October 25, and the following officers were elected for 1961-1962, effective immediately:

President: Dick Vivion
Humble Oil Company
Governor Hotel
Olympia, Washington

Secretary: Ross Ellis
Department of Geology
University of Washington
Seattle 5, Washington

Treasurer: Dee Molenaar
State Division of Water Resources
Olympia, Washington

SAN JOAQUIN GEOLOGICAL SOCIETY

New officers of the San Joaquin Valley Geological Society for 1962 are:

President: Richard A. Vaughan
Occidental Petroleum Corp.
5000 Stockdale Highway
Bakersfield (Tel: FA 7-7351)

Vice-President: Thomas J. Brady
Richfield Oil Corp.
P. O. Box 147
Bakersfield (Tel: TE 1-1600)

Secretary-Treasurer:
Stanley E. (Ed) Karp
Kern Oil Co. of Calif., Ltd.
P. O. Box 248
Oildale (Tel: EX 9-1766)

PACIFIC SECTION, SEPM

The Pacific Section, SEPM held its Annual Dinner Meeting at the Hacienda Motel, Bakersfield, on Friday evening, November 10. New officers elected are: Dr. Joseph J. Graham, President; Keith Berry, Secretary-Treasurer; and Richard L. Pierce, Vice-President.

Dr. Joseph R. Curry (Scripps) presented an excellent account of his current studies of the sedimentation along the Costa de Nayarit on the mainland side of the Gulf of California.

Abstract

Beach Ridges of the Costa de Nayarit, Mexico

The Pacific Ocean - mainland west coast of Mexico between Mazatlan, Sinaloa, and Puerto Vallarta, Jalisco, is being investigated as a part of the Scripps Institution of Oceanography study of the geology, biology, chemistry, and oceanography of the Gulf of California. This study deals primarily with the Holocene sediments of the continental shelf and coastal plain.

The Costa de Nayarit is the deltaic coastline of the Rio Grande de Santiago. The coastal plain consists of a strand plain of hundreds of parallel beach ridges overlying alluvium predating the Holocene transgression. Superficially these ridges resemble the "cheniers" or abandoned beach ridges of southwestern Louisiana, but they are more numerous, more regular and continuous, and genetically quite different. The Louisiana cheniers are thought to have been formed by alternating periods of high and low rates of deposition: during the periods of high rate of deposition, mud flats were built seaward into the Gulf; during the periods of lower rate of deposition, wave action winnowed some of this previously unsorted material and formed beach ridges in short periods of erosional transgression. The Mexican beach ridges , on the other hand, were formed during continuous depositional regression by successive accretion of offshore bars to the coastline. As each offshore bar was in turn built upward, it captured the wave action, became the new beach, and isolated the former beach. Sampling in this area by auger holes and shallow drilling has shown that the sand body is probably continuous overlying the pretransgressive alluvium and deltaic deposits, and that modern alluvial muds have filled in the depression in the upper surface.

Sampling, sounding and bottom penetrating echo sounding surveys offshore on the adjacent continental shelf have shown that the outer half of this shelf is predominately covered with shelly sands relict from conditions of lowered sea level: the basal sands of the Holocene transgression. On the inner half of the shelf these basal sands are covered with a thin blanket of Holocene shelf facies muds, probably deposited during the latter part of the transgression and subsequent period of stable sea level.

This study, supported by the American Petroleum Institute, the Office of Naval Research, and the Scripps Institution, will be completed in the next year. Additional sampling and sounding will be done on the shelf, and drilling and leveling will be done on land. Textural, mineralogical, and biological studies are being made on the sample material.

LOS ANGELES FORUM MEETING

Cenozoic Basins in the Mojave Desert

T. W. Dibblee, Jr., U.S.G.S.

Abstract

The geology of the Mojave Desert region has been mapped by the U.S. Geological Survey since 1952. A comprehensive report on the western part (west of Randsburg, Barstow, and Apple Valley) is in preparation for publication, and a gravity survey map by D. R. Mabey of this part is published. Geologic maps of most of the 15-minute quadrangles of this part are published. Geologic mapping of the south central Mojave Desert is in progress. Ground water surveys of parts of the Mojave desert also are in progress.

The Mojave Desert is an undrained alluviated plain that contains isolated hills and low mountains, and is bounded on the southwest by the San Bernardino, San Gabriel, and other mountain ranges formed along the San Andreas fault zone, and on the north by the Tehachapi, El Paso and other mountains formed along the Garlock fault zone. There is no eastern border, although the Colorado River and Nevada line have been arbitrarily used. The alluviated areas contain several undrained dry lakes or playas, but in general the alluviated fill surface slopes gradually from 3,000-4,000 foot altitudes along the base of the southwest and northwest bordering mountains to nearly sea level at the Colorado River. The higher mountains within and nearly throughout the desert rise to crests of roughly 5,000 feet.

The rocks of the Mojave desert and its bordering mountains may be grouped into the following three divisions: a) pre-Tertiary crystalline rocks; b) Tertiary sedimentary and volcanic rocks; and, c) Quaternary sediments and local basalt flows.

The crystalline rocks are metamorphic schists, gneisses (pre-Cambrian/), meta-sedimentary rocks, (Paleozoic), and meta-volcanic rocks, (Mesozoic) , intruded by plutonic rocks ranging from granite to diorite-gabbro (Mesozoic), of which quartz monzonite is the most widespread.

In the western Mojave Desert region and adjacent mountains, the Tertiary rocks are divided into the following general units in ascending order, together with maximum thicknesses: a) marine sandstone and shale ("Martinez" formation), 7,000 feet, Paleocene to Eocene, exposed only in San Gabriel Mountains; b) stream-laid sediments, 6,000 feet, Paleocene to Eocene, exposed only in El Paso and Tehachapi Mountains; c) non-marine sedimentary, pyroclastic and volcanic rocks, 3,000 feet, Oligocene to middle Miocene; d) non-marine sedimentary and local volcanic rocks, 5,500 feet, upper Miocene, with marine sandstone and shale ("Santa Margarita") facies at extreme west end of desert; e) non-marine sedimentary rocks, 3,000 feet, Pliocene, in south and western parts, non-marine sedimentary and volcanic rocks, 5,000 feet, Pliocene, in northern parts. Each of these units are in most places separated by an unconformity. The Miocene and Pliocene sediments range from fanglomerates to lacustrine shales. The volcanic rocks range from rhyolite to basalt, are both intrusive and extrusive.

The Quaternary sediments, which range from fanglomerates to clays, are derived from the bordering mountains and mountains within the desert. These sediments fill the desert plain to depths of several thousand feet.

The Tertiary formations are much deformed along borders of the basins, especially along major faults. They are generally compressed into east-trending folds along right lateral northwest-trending faults and along the Garlock fault zone. Quaternary formations are deformed likewise, but to a much less degree.

Data from the geologic mapping, gravity survey, and test holes indicate the existence of several large sedimentary basins or downwarps filled with Tertiary and Quaternary deposits in the western Mojave Desert. These basins are mostly in the lower or alluviated parts of the desert, but remnants of some are in the mountains within it and even in the mountains that border it. These basins are separated by intervening areas of pre-Tertiary rocks.

The basins are as follows, from north to south and west to east; 1) basin in mountains northeast of Tehachapi, now elevated, with 8,000 feet of formations synclinally folded; 2) basin north of El Paso Mountains, 12,000 feet of formations tilted northwest; 3) basin, possible extension of 2), into alluviated valley of Koehn Lake south of El Paso Mountains between branches of Garlock fault, filled to depth of 10,000 feet or more; 4) basin in west Antelope Valley, elongated eastward, centered about ten miles west of Lancaster, filled to depth of about 10,000 feet; 5) basin in east Antelope Valley, elongated north of east, centered near Lancaster, filled to depth of about 10,000 feet; 6) basin north and east of Boron, elongated east and southeast, filled to depths of about 5,000 feet, disrupted into several local "lows"; 7) small basin elongated southeast, centered ten miles northeast of Boron; 8) basin in Harper Valley and hills northeast, elongated south of east, centered ten miles northwest of Barstow, filled to depth of about 6,000 feet; 9) basin under alluviated plain north of Cajon Pass, elongated eastward, centered near Hesperia, filled to depth of about 10,000 feet, western part in vicinity of Valyermo and offset by right lateral movement on San Andreas fault.

These basins are filled with middle and/or upper Tertiary formations, several with Quaternary units. Basins 1) and 2) contain the early Tertiary non-marine unit; basin 9) the lower Tertiary marine unit; and basin 4) the marine upper Miocene facies.

A number of test holes have been drilled for oil or gas in the western Mojave Desert, most of them inadvertently into the basins listed above. No seeps of gas or oil are known to occur in this region. Oil shows have been reported from several test holes, but have never been verified. The deepest hole, near Cajon Pass, struck pre-Tertiary basement at 6,800 feet. A hole drilled at Rosamond Lake and another west of Koehn Lake failed to reach basement at 5,000 feet. Most other test holes were drilled to depths of 3,000 feet or less. Nearly all the test holes drilled for oil or gas were drilled with little or no knowledge of the geology of this region, and no cores were taken.

At least one closed anticline exists and possible favorable structural and stratigraphic conditions might be found by geophysical work and core drilling. If these could be found, especially in the basins that contain marine formations, they might contain gas if not oil.

The basins of non-marine formations are unfavorable for oil and gas, but one of these, basin 6), contains the world's largest and richest deposit of sodium borate north of Boron, in Pliocene lake beds associated with basalt. This deposit has been mined since 1927. These beds also contain deposits of

calcium borate as revealed by numerous shallow test holes. The largest of these deposits is seven miles east of Boron. None of the calcium-borated deposits are mined, but form a substantial reserve. Drilling on Harper Lake revealed no borates, and the other basins are untested.

Structural Evolution of the Northern Margin Of the Los Angeles Basin

Donald L. Lamar, Rand Corp.

Abstract

The Santa Monica fault system consists of several northeast to east-west-trending faults which parallel the northern edge of the Los Angeles Basin. The distribution of thickness, facies, paleocurrent directions, and the electric log characteristics of the Mohnian portions of the Puente and Modelo formations reveals that a total of at least 7 miles of post-Mohnian left-lateral strike-slip has occurred on the faults in Santa Monica fault system. Data on the pre-Mohnian rocks, as reflected in the inferred pre-Mohnian and Puente formation geology, the distribution of basement rocks, and the Sespe formation, fit this conclusion and indicate at least 6 miles of pre-Mohnian slip. Structural and petrologic data on the younger rocks suggest that very little strike-slip has occurred on the Santa Monica fault system since the early Pliocene.

The Whittier fault system consists of several northwest to west-northwest-trending faults which parallel the northeast margin of the basin and intersect the Santa Monica fault system in the area studied in detail at the north edge of the basin between the San Rafael Hills and the Los Angeles Civic Center. The Santa Monica and Whittier fault systems fan out as the area of intersection is approached. This structural pattern is what would be expected in the area of intersection of left and right-lateral fault systems that have been active contemporaneously. The distribution of paleocene and Mohnian sediments and middle Miocene volcanic rocks in relation to the Whittier fault system may be explained by 19 miles of right-lateral strike-slip. The structural relations and data on the lower Pliocene rocks suggest that much of this movement occurred before the early Pliocene.

The Santa Monica and Whittier fault system are regional features that extend far beyond the Los Angeles Basin. The available data indicate that the present northern margin of the Los Angeles Basin was formed in the latest Mohnian-early Pliocene interval, contemporaneous with major lateral movement on the Santa Monica and Whittier fault system.

LOS ANGELES LUNCHEON MEETING

At a joint A.A.P.G. - S.E.G. luncheon at Rodger Young Auditorium on November 2nd, Dr. Milton B. Dobrin chief geophysicist with United Geophysical Company presented an informative account of "Problems in Seismic Exploration of the North Slope, Alaska".

The north slope of Alaska is an area where the seismograph has proved itself as an effective tool in exploring for oil and gas. Except in the disturbed belt near the Brooks Range and in gravel of river bottoms, record quality is good, and structures are large enough, especially in the southern part of the area, for the seismograph to give adequate resolution.

The principal problems which are encountered there have to do with the interpretation of results. Most of these problems are associated with the permafrost layer. Velocities thru permanently frozen ground are faster than normal, and since this layer is as much as 1000 to 1500' deep in areas of continuous permafrost, there may be a considerable effect. However over the large portions of the area where the layer stays relatively constant in thickness, it gives rise to few difficulties. Where the thickness varies, as under lakes where oftentimes little or no permafrost has formed, or in areas of discontinuous or sporadic permafrost, it is necessary to correct for wedging effects resulting from the high velocity in the permafrost compared with the unfrozen underlying material.

It is interesting to note that a flat-lying zone of high velocities exists in the north slope area at about 2,000 feet where the rocks are known to be strongly dipping. This has been interpreted as fossil permafrost possibly associated with earlier climates. It could affect results and lead to misinterpretation especially in areas of low dip.

By proper use of all geological and geophysical data, particularly first break information, it is usually possible to correct for these anomalies in a satisfactory way. Most of the problems in the area are operational rather than interpretational; however, the availability of helicopters, portable instruments, air drills and improved transport should guarantee that operational difficulties encountered and solved during the years 1947 to 1953 can be handled even more easily and economically today.

SCRIPPS INSTITUTION OF OCEANOGRAPHY

The first expedition to the Indian Ocean on our vessel the ARGO was completed in April 1961. During six months of this voyage geology played an important part. Extensive areas in the south Indian Ocean were explored and on the way back new information was obtained on the East Pacific Rise under the leadership of Dr. M. W. Menard. The heat flow on the Rise proved to be high and unlike the Mid-Atlantic Ridge no median valley was found.

During the summer an expedition on the Spencer F. Baird went to Japan obtaining new information on the westward continuation of the Mendocino Escarpment relative to magnetic anomalies. While in Japan, Francis P. Shepard had the ship for three weeks exploring the submarine canyons in the Tokyo area with the cooperation of the Japanese fisheries vessel Umitaka-Maru. Among other things obtained were photographs of well developed ripple marks on the floor of a canyon.

George G. Shor, Jr., on the Hugh M. Smith conducted extensive geophysical measurements off the coast of British Columbia and the Gulf of Alaska, finding among other things a buried trough off British Columbia.

During the year two brief expeditions were made to the Sahul Shelf off northwest Australia under the leadership of Tj. H. van Andel and Joseph R. Curry using Australian ships. They collected extensive samples finding predominantly calcareous sediments in the offshore areas and terrigenous near shore.

William R. Riedel continued his explorations taking cores in several parts of the Pacific and has obtained more information about the Tertiary deposits that underlie thin coverings of more recent sediments.

The exploration of Gulf of California has continued and preliminary results will be presented by several members of the staff in March of 1962 at an A.P.I. Committee meeting. Cooperative work between Joseph R. Curry of Scripps and David G. Moore of U. S. Navy Electronics Laboratory led to the determination of thickness of sediment underlying portions of the continental shelf south of Mazatlan.

The test drillings of Mohole were conducted with the cooperation of many of the staff members of Scripps Institution. William R. Riedel has been in charge of the disposition of the cores and their study. Core samples in the deep water near Guadalupe Island have been studied by Drs. M. N. Bramlette, A. E. Engel, and Riedel. The cores from the hole in San Diego trough were studied by Drs. Bramlette, D. L. Inman, and Shepard.

UNIVERSITY OF CALIFORNIA, BERKELEY
GEOLOGY DEPARTMENT

Late last spring and during the summer the Geology Department completed its move from Bacon Hall to the new Earth Sciences Building located at North Gate. Sid Jenkins '39, retired colonel U.S.M.C. and now administrative assistant in the Department, directed the operation very efficiently, and the Department is now well settled and in practically full operation in the new quarters. The building is also the new home of the Departments of Paleontology and Geography and of a combined Branch Library for the Earth Sciences. Bacon Hall has been demolished.

Several old friends and colleagues were lost during the summer and fall. Norman Hinds died of a heart attack early in July, and "Tucky" Taliaferro was killed instantly in an auto collision on November 16 almost as this report was being written. Tucky's tragic accident also involved his wife, Ann, but we were able to report that she was seriously injured but is in reasonably good physical condition. For any who wish to contact Mrs. Taliaferro, the family address is 160 Alderwood, Walnut Creek. Just ten days prior to Tucky's death, Parker D. Trask, Professor of Geological Engineering, died suddenly at home of a heart attack.

The normal activities of the Department continued as usual during the last year, with the addition of extensive preparations for moving. Summer camp was held, as it has been for three years, on Westgard Pass in the White Mountains under supervision of Professors Gilbert and Christensen. Students from the Geology Departments at Santa Barbara, Davis, and Long Beach State College joined those from Berkeley at the camp, and we hope this joint effort will continue.

Field research for advanced degrees was under way by graduate students last summer in British Columbia and Alberta where several of our Canadian graduate students are working on projects for the Geological Survey of Canada. Six candidates for the master's degree were working on structural-stratigraphic theses in southern Montana; others are working in west central Nevada, and in the vicinity of the Bay Area. Ted McKee is completing a Ph.D. thesis on the Magruder Mountains area in Esmeralda County, Nevada, and Mitchell Reynolds is begining a Ph.D. thesis in the Grapevine Mountains. Rich Moiola and Paul Robinson are engaged in Ph.D. thesis research in and around the northern Silver Peak Range, Nevada. Bill Romey and Mike Holdaway are completing theses dealing with the bedrock geology of the Klamath Mountains south of Etna, and Greg Davis, now on the staff at U.S.C., completed a thesis in the Trinity Mountains last June. Jim Case is completing a thesis on the Oakland East and Briones Valley quadrangles. Hal Gluskoter is working in the Bolinas quadrangle, chiefly on Franciscan structure and petrology, and Bill Crawford is studying the Franciscan metamorphics near the mouth of the Russian River. Brent Dalrymple has begun a study of the Plio-Pleistocene uplift of the Sierra Nevada involving detailed stratigraphy and dating of late Tertiary and Pleistocene volcanic rocks by the Potassium-Argon method. Last June, Myron Best completed a detailed study of bedrock structure in the Mariposa area. Two Ph.D. theses dealing with more remote areas were also completed last June - A. R. McBirney on the Central Guatamalan highland and Robert Loney on the structure and stratigraphy of part of Admiralty Island, southeast Alaska. Dr. McBirney is expected to join the University staff at LaJolla.

An active program of geochemical research is being supervised by Professors Fyfe and Meyer and will be considerably augmented with new facilities available in the Earth Sciences Building. Several graduate students are engaged exclusively in this research, and all graduate students in "hard rock" petrology participate in it somewhat. Professor Hay in his studies of diagenesis also makes considerable use of the geochemical facilities. Professor Verhoogen is continuing his studies of earth magnetism and paleomagnetism and several students are working toward the Ph.D. in this field.

The program in seismology under Professor Byerly continues as usual but with much improved quarters. Under construction now is an underground vault (tunnel) to house the seismometers off the central campus. The vault will be located in Strawberry Canyon behind the Botanical Gardens. Ultimately a building for exclusive use of the Seismographic Stations staff will be located there also, but for the present the staff will remain on the Central campus.

Fred A. F. Berry, formerly of Petroleum Research Corporation in Denver, has been appointed to the Departmental staff and will teach the geology of petroleum and subsurface water and paleogeology, at both graduate and undergraduate levels. Clyde Wahrhaftig, formerly of the Alaska Branch of the U.S. Geological Survey, has joined the staff to handle teaching and research in geomorphology. Jack Evernden spent the fall of 1960 at the Australian National University, helping with the start of a potassium-argon dating program for Australian rocks. Garniss Curtis studied the geology of the Oldivai Gorge site of early man in Africa during the spring and returned with samples for further potassium-argon dating. This fall he has been ill with hepatitis and is now in the slow recovery stage. During the fall of 1960, Professor Byerly was on leave in Cambridge, England, and was replaced in Berkeley for that period by Jerry Eaton, seismologist for the U. S. Geological Survey. During the spring of 1961, Professor Verhoogen won a Guggenheim Fellowship for geophysical studies at Cambridge University, England. Howel Williams has continued his Guatamalan studies and has managed a trip to central America at least once a year. Professor L. E. Weiss spent the summer in the field near Isabella studying the structural petrology of part of the Kernville Series. Professor Hay continued his study of the petrology and stratigraphy of the John Day beds in central Oregon. Professor Meyer rejoined Anaconda Copper Co. in Butte, Montana, for the summer. Professors Pabst and Turner actively continue their mineralogical researches at Berkeley.

STANFORD UNIVERSITY

Enrollment in the School of Mineral Sciences this year shows significant changes when compared with last years figures. The total enrollment is almost unchanged. However, enrollment in geology is down, but enrollment in mineral engineering has shown a major increase. A comparison of the two academic years is shown below.

	1960-61	1961-62
Geology		
Undergraduate	24	17
Graduate	49	46
Geophysics		
Undergraduate	9	12
Graduate	9	9
Mineral Engineering		
Undergraduate	2	2
Graduate	4	14
Petroleum Engineering		
Undergraduate	14	11
Graduate	9	9
	120	121

Activities of the faculty of the School of Mineral Sciences are listed below:

ELIOT BLACKWELDER, Emeritus Professor of Geology, has recently published a biographical memoir of Bailey Willis in the National Academy of Sciences. He is also continuing the study of certain desert processes and is preparing manuscripts for publication dealing with these studies.

ROBERT R. COMPTON has been engaged in a study of the sequence and history of the igneous and metamorphic rocks that form the structural core of the Santa Lucia Range. He reports that these rocks have many petrographic characteristics of the highest rate Precambrian metamorphic terrains; yet age determination indicates that these rocks are Mesozoic in age, perhaps having been formed in the Cretaceous Period. He has recently completed a book on field geology which is being published soon by John Wiley and Sons of New York.

WELTON J. CROOK, Emeritus Professor of Metallurgical Engineering, has been engaged in consulting work in aircraft metallurgy.

STANLEY N. DAVIS, Associate Professor of Geology, has recently returned from Santiago, Chile, after a one-and-a-half year tour of duty as visiting professor of geology at the Escuela de Geologia at the Universidad de Chile. He and Professor Hans Thalmann were supported by the International Cooperation Administration of the U.S. State Department. In addition to teaching courses in geology, these two men also engaged in raising the level of the Escuela de Geologia and bringing its curriculum up to modern standards.

JOSEPH J. GRAHAM, Professor of Geology, is currently engaged in a study of Upper Cretaceous Foraminifera of California. He has recently published a paper entitled, "New Evidence for the Age of the G-1 Zone in the Cushman Foraminiferal Transactions of Research," July 1961.

JOHN W. HARBAUGH, associate professor of geology, in conjunction with William H. Taft, was recently awarded a National Science Foundation grant of $23,500. for study of dolomite in modern carbonate sediments.

A. MYRA KEEN, associate professor, has been engaged in the study of mollusks on Espiritu Santo Island in the Gulf of California adjacent to the peninsula of Baja California, Mexico.

PHILIP H. KUENEN, who served as visiting professor of geology, at Stanford during the fall quarter, received the Geological Society of America's Penrose Medal on November 3 at the Society's annual meeting in Cincinnati, Ohio. Professor Kuenen, who is regularly Professor of Geology at the University of Groningen,Netherlands, is world renowned for his studies of marine sediments. His name is closely linked with turbidity currents as a process by which sediments are deposited. However, his studies on coral reefs, submarine canyons, and the physics of depositional processes are also well known. He is the author of the well known books Marine Geology and Realms of Water.

EDWARD C. LYNCH, Assistant Professor of Petroleum Engineering, served as a consultant in reservoir engineering to the Standard Oil Company of California at Taft, California during the summer of 1961. He is currently engaged in a study of multiple pressure transients in non-homogeneous systems. His book dealing with the fundamentals of well logging is being published by Harper and Bros. of New York.

KONRAD B. KRAUSKOPF, Professor of Geochemistry, is currently engaged in collecting data and making calculations for the volume entitled, "Geochemistry of Ore Deposits," which is to be published as part of a series entitled, "Data of Geochemistry" by the U. S. Geological Survey. During the past year he spent seven months in Europe studying thermodynamics at the University of Gottingen, Germany. While in Europe, he spent three weeks in Russia, where he toured widely and and was able to converse with a number of Russian scientists including Russian geochemists. A resume of his observations pertaining to the political views of Russian scientists was published in SCIENCE, Vol. 132, Aug. 25, 1961, and was later publicized in the newspapers.

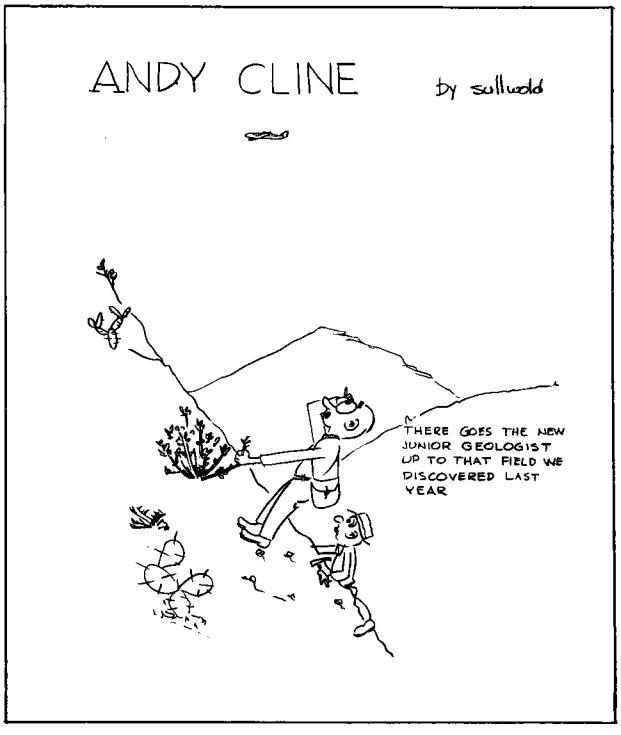
SULLIVAN MARSDEN, Associate Professor of Petroleum Engineering, is currently working on stream potential of foams in porous media and capillary tubes. He recently spoke to the Rotary Club of Medford, Oregon on "Drilling for Petroleum."

FRANK MILLER, professor of petroleum engineering, presented a paper at the 32nd Annual California Regional Meeting at Bakersfield, California, November 2-3, 1961, entitled Engineering Training --The University Viewpoint.

BENJAMIN M. PAGE, executive head of the Department of Geology, during the summer spent considerable time working on the structural geological features of the Stillwater Range, Nevada. At this locality he is investigating the late Jurassic folding and thrusting that were followed by volcanism in the Tertiary.

CHARLES F. PARK, Jr., Dean of the School of Mineral Sciences, is working, in conjunction with Roy A. MacDiarmid of Tulane University, in preparing a new treatise on ore deposits.

PAUL REITAN, assistant professor of minerology, spent part of the summer studying advanced techniques in spectrography at Pennsylvania State University. He is currently making a series of improvements in the geology department's spectrograph to improve its precision.



PERSONAL ITEMS

Lowell Redwine, former district geologist for Honolulu Oil Corporation, Western Division, entered the practice of consulting geology on October 18, upon the sale of the company on this date. Since 1937, his explorational activities have been in all of the oil and gas producing basins of California, including the offshore, and more recently, in the Great Basin and adjoining areas of Oregon and Washington. He will continue such activities in these and other areas as a consultant operating from 2907 Truxtun Avenue, Bakersfield, California, Phone FAirview 4-0724.

Dave Engstrom, Standard, La Habra, rode out one of the worst storms to hit the Santa Barbara coast in years aboard the Cuss #1 and its shoreboat, Cathead. Did you ever ride a roller coaster for 24 hours free of charge?

Carl Arleth, Standard, San Francisco, is in his 2nd month at Mills Memorial Hospital in San Mateo with a bad back. And according to Carl, the worst part of the whole thing was missing his 40th reunion at Stanford, which included the Big Game with the Indians coming out winners. Because of Carl's illness, Hal Rader from La Habra was able to spend one glorious week in San Francisco enjoying the bright lights of the big city as filler-in for Carl's regular filler-inner.

Bill Gold Standard LaHabra, has packed his mucklucks, snowshoes, red flannels and Brooks Bros. suit and left the sunny southland for temporary duty at Ice Bay, Alaska. It is rumored that in the meantime the group in LaHabra has taken up a collection to give Bill a TEMPORARY membership in the Los Angeles Playboy Key Club.

Walter Record, Richfield's Division Exploration Supervisor of Canada, has announced his resignation effective the end of this year, in order to take on the position of Assistant Manager, Iricon Agency, in London, England. Walt's new position will take him on extensive trips to the Middle East and often back to various parts of the United States.

New changes in Union's domestic exploration staff are as follows:

Marshall Mason, Jr. - Geological Coordinator
Layton Stanton - Exploration Supervisor for the Cenozoic
George Feister - Exploration Supervisor for the Mesozoic
Robert Clarke - Exploration Supervisor for the Paleozoic

All of the above were here in Los Angeles except Bob Clarke, who has transferred from Midland, Texas.

Hal Fothergill, Union, Durango, was recently here in Los Angeles doing his Christmas shopping. He was last seen loaded with bundles and headed for Las Vegas, where, it is understood, he hoped to recoup his losses.

Is it true big Bob Knapp is opening a Yuletide Lodge at Gorman, California?

Don McGee of Standard Oil and his wife Joan recently arrived in LaHabra from Bolivia, South America, where Don worked for Bolivacal, a Standard Oil subsidiary. They and their two dogs will reside in La Mirada.

Bob Levorsen, Standard, and family have been transferred from Bolivia, South America to Standard Oil's Southern Division office in La Habra. Bob will assume the position of Geological Supervisor. The Levorsen family will reside in Fullerton, where they are now anxiously awaiting the arrival of their 27 foot sailboat, which is being shipped up from Trinidad.

Martha Jane Gallagher (Kern Oil Co., Los Angeles) and Patrick Henry Zabel (Marquhardt Corp., Van Nuys) were married on Saturday, December 2nd at 3:30 P.M. The services were held in the newly-completed Congregational Church of Northridge and were followed by a reception at the church. Mr. and Mrs. Zabel will honeymoon in Mexico.

Russ Simonson (Ohio, Los Angeles) has returned from a two-month stay at the University of Pittsburgh where he completed an intensive course in "Management Problems for Executives".

Les Brockett, Richfield, Los Angeles, has just returned from an extended jaunt to the southern Hemisphere, which included stop-offs at Tahiti, Surfers Paradise, Queensland, Auckland, New Zealand, and Honolulu. According to Les, the adjustment to the everyday working world is rather difficult after such a lengthy visit to an area where business comes second to pleasure.

Jess Parker, Division Seismologist for Shell in Bakersfield, has a decided limp and only a few days ago discarded his cane. He claims he was spiked during one of the lunchtime office vollyball games.

Standard in Bakersfield held its Exploration Department's "Turkey Golf Tourney" at Kern River on the Saturday before Thanksgiving. Of a total of 32 golfers, winners included:

Don Laswell and Bob Lindblom (1st flight)
Bud Sage and Keith Berry (2nd flight)
Marty O'Keefe and Bob Kropschott (3rd flight)
Bill Hovy and Bob Goff (4th flight)

Rod Nahama, recently with Tidewater via its absorption of Honolulu, resigned to join the geological staff of Sunray-Mid-Continent in Bakersfield.

John Eke, alumnus of the University of Washington, has joined the Texaco's Bakersfield Exploration Staff as Junior Geologist.

Union Oil people (Bakersfield) are grieving over the loss of a certain secretary to Tidewater. Enthusiasm has so waned that even the monthly golf match with Standard has lapsed.

Mobil Oil has closed its Bakersfield Exploration Office. Aware that something was in the wind, employees were, nevertheless, shocked at the extent of the action. Of the geologists involved, this much is tentatively known: Warren Addicott to transfer to Durango, Colo. Rod Colvin to become production geologist at Taft. Dave Martin and Mike Duggin to transfer to offshore operations in Los Angeles. Jim Alkire to be attached to Mobil's Alaska group. Don Frames, refusing transfer to Midland, is to resign. Revisions, retractions, and news of other people involved will be forthcoming. Petroleum geologists, nowadays, had better trade their pick and hand lens for a house trailer.

We wish Cynthia, wife of Mike Maxwell (McCulloch, Los Angeles) a speedy recovery from her recent gall bladder operation.

Jack Miller (Shell-Bakersfield) showed up the day after Thanksgiving with his right hand stitched and swathed in bandages. His story has it that his Dachshund, Rudy, accidentally snagged him with a tooth while playing in the yard. This is playing???

Bill Winham, retired Standard geologist, has returned to live in Bakersfield. Bill must have heard Del Webbs' commercials on "Kern City.....near Los Angeles in sun splashed Kern County".

Dana Detrick, of Shell's Bakersfield office, came home from Palo Alto all smiles. This was in no small measure due to Stanford's favorable experience against the Bears at Dana's alma mater on the last Saturday in November.

CALENDAR

December 12, 1961: Tuesday evening, Hotel El Tejon, Bakersfield, cocktails 6:30 P.M., dinner 7:30 P.M. Stewart Chuber and William Edmondson will speak on "Upper Mesozoic Geology of the Sacramento Valley".

December 12, 1961: Tuesday evening, California State Public Works Building, 1120 "N" Street, Sacramento, 7:45 P.M. Howell Williams (Univ. Calif., Berkeley) will speak on subject to be announced.

December 13, 1961: Wednesday noon, U.S.C., Geology "A", Room 104, 855 W. 37th St. "Geology and Mineral Resources of Ghana, West Africa", Godfried Kesse. Free Parking can be arranged by calling RI 8-2311, ext. 387.

December 16, 1961: Annual Holiday Dinner Dance, for details, see article on first page.

December 18, 1961: Monday Evening, Mobil Auditorium, Mobil Building, Los Angeles, 7:00 P.M. The Los Angeles Geological Forum Meeting will be addressed by Dr. John C. Crowell (UCLA) on "The San Andreas Fault in Southern California". Following Dr. Crowell, Mr. Robert H. Paschall (Signal) will propose "Ten Unanswered Questions Regarding the San Andreas Fault". Further lively discussion is invited.

January 10, 1962: Wednesday Noon, U.S.C., Geology "A", Room 104, 855 W. 37th Street. "The Marine Geology and Oceanography of Hudson Bay, Canada", Robert Leslie. Free parking can be arranged by calling RI 8-2311, ext. 387.

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Professional Paper 391-A: Chemical analyses for selected minor elements in Pierre Shale, by L. F. Rader and F. S. Grimaldi.....$ .40

Professional Paper 424-A: Synopsis of geologic and hydrologic results, by members of the Geologic and Water Resources Divisions.....$ 1.50

Professional Paper 424-C: Short papers in the geologic and hydrologic sciences, Articles 147-292, by members of the Geologic and Water Resources Divisions.....$ 2.75

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Bulletin 1028-T: Geologic reconnaissance of Frosty Peak Volcano and vicinity, Alaska, by H. H. Waldron.....$ .75

Bulletin 1108-A: Geology of the Mount McKinley quadrangle, Alaska, by John C. Reed, Jr....$.1.00

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Theory of folding of stratified viscoelastic media and its implications in tectonics and orogenesis, by M. A. Boit.

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Combined geophysical prospecting system by helicopter, by Roger H. Pemberton

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Genesis of uranium belts of the Colorado Plateau, by E. A. Noble. (Report Pt. 15. Genetic problems of uranium and thorium deposits.)
Comparison of bauxite deposits of Europe with those in the U.S.A., by Victor T. Allen. (Report Pt. 16. Genetic problems of ores.)
Geology and petroleum possibilities of Alaska, by Raymond M. Thompson. (Report Pt. 11, regional and structural problems in oil geology.)
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Photogeology-a quick, economical tool for oil hunters, by Thomas E. Kelly.
Pan Am hits in Persian Gulf.
Long Beach may lease offshore plum.
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New mud for high-temperature wells, by Fred Chisholm, Robert W. Ruhe, Jr., and William J. Murchison

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Young Wyoming field is state's third-largest producer.

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