

PACIFIC PETROLEUM GEOLOGIST

1960

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 "Some Non-Metallic Mineral Deposits in and near the Matanuska Valley"
 By Richard A. Eckhart
 "Geology of Water and Its Importance to our Industrial Civilization"
 By George B. Maxey
- May "Alaska" ?
 "Geologic Features of Surface Faulting in Recent Earthquakes" By Dr. Gordon B. Oakeshott
 "Cretaceous Stratigraphy of Northern California and Southern Oregon" By David Jones
 "Submarine Slump Deposits, West-Central Sacramento Valley" By Messrs. Robert Brown and Ernest Rich
- June "The Principles of Biostratigraphy" By Dr. Robert M. Kleinpell
 "The Geology and Oil Possibilities of the Santa Ynez Range and Topa Topa Mountains" By Dr. Tom Bailey
 "A Terrestrial Theory of Ice Ages" By Dr. William L. Donn
- July "Geomagnetic Surveys off the Coast of California" By Victor Vacquier
 "Continental Drift" By Bernardo Grossling
- August "Spanish Sahara" By Robert Dyk
- September "Interpretation of Size Frequency Distributions and Classification of Sediments"
 By Dr. D. J. Doeglas
- October "Walnut Grove Gas Field" By Michael R. Rector
 "Arbuckle Gas Field" Richard Vaughn
 "Sedimentological Studies of Recent and Old Sediments, A Comparison" By Dr. D. J. Doeglas
- November "Lower Tertiary of the Pacific Coast" By Boris Laiming
 "Liquefaction of Natural Gas" By Charles E. Smith
 "Geology along the Roman Wall, England" By Prof. W. H. Easton
 "Evidence for Strike-Slip Faulting in Alaska" By Bus Ivanhoe
 "Stratigraphy and Structural History of the Canadian Arctic Archipelago"
 By Edward A. Tozer
- December "The Franciscan Formation as an Example of Eugeosynclinal Sedimentation"
 By Dr. Edgar Bailey

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December "The Chile Earthquake of May, 1960" By David Leeds
"Geology of the Lower McKenzie Basin, N.W.T., Canada" By Walter Record

PACIFIC PETROLEUM GEOLOGIST

NEWS LETTER OF THE PACIFIC SECTION
AMERICAN ASSOCIATION OF PETROLEUM GEOLOGIST

ASSOCIATION ACTIVITIES

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January 1960

No. 1

DISTINGUISHED LECTURER

Dr. Erling Dorf, A.A.P.G. Distinguished Lecturer, will speak on "The Earth's Changing Climates" at a dinner meeting at Rodger Young Auditorium January 27 at 7:00 P.M. The subject is one which will undoubtedly be of interest to all, and members and wives are cordially invited to attend.

Dr. Dorf is Professor of Geology at Princeton University. His experience in paleobotany as well as his world-wide travels make him a recognized authority on his subject. He is a consultant for the Life Magazine series and book, "The World We Live In".

Reservation return cards will be mailed in the near future.

SAN JOAQUIN GEOLOGICAL SOCIETY

A very interesting and informative talk was presented by Gillman A. Hill to the San Joaquin Geological Society at the El Tejon Hotel in Bakersfield on Thursday, Dec. 10, 1959. Mr. Hill, an AAPG distinguished lecturer from the Petroleum Research Corp., Denver, talked on the subject of "Trap Barriers -- Hydrodynamic, Stratigraphic, Wettability." His presentation included slides and laboratory models showing the movement of fluids under various hydrodynamic conditions.

Abstract

The field mapping of formation-water pressures and salinities, together with theoretical and experimental research, has demonstrated that strong hydrodynamic gradients can be caused by differences in (a) water salinity, (b) oxidation-reduction potential, (c) temperature, and (d) topographic elevation. Significant differences in one or more of these parameters occur in almost every geologic province. Regional hydrodynamic maps constructed from accurate bottom-hole pressure data must be prepared in each area to determine if significant hydrodynamic or nearly hydrostatic conditions exist. Many areas having an essentially flat topography are found to have very strong hydrodynamic gradients.

The ability of a trap barrier to hold a substantial oil column is often primarily dependent upon the hydrodynamic pressure gradient. Reservoir pinchouts or terminations by facies change, cementation, unconformity, or faulting often have the capacity to trap, under hydrostatic conditions, only 5 to 50 feet of oil column before the capillary pressure exceeds the barrier entry pressure and causes oil to leak through the barrier. Under hydrodynamic conditions, this oil-holding capacity of a trap barrier may be (1) decreased almost to zero if the water flow is updip, or (2) increased to several hundred or a few thousand feet of oil column if the water flow is downdip.

For example, every 10-psi drop in pressure across the stratigraphic oil accumulation can increase (or decrease) the oil-holding capacity of the barrier by about 100 feet for a medium-gravity oil in brackish formation water. The velocity of water flow through typical stratigraphic-trap pinchouts necessary to cause this hydrodynamic control of stratigraphic oil entrapment is only about 1.0 to 0.01 inch per year. Fluid-flow models projected on the screen are used to demonstrate these hydrostatic and hydrodynamic-trapping capacities for stratigraphic-, unconformity-, and fault-trap barriers.

Most shales and other fine-grained sediments are normally water wet, and consequently any oil or gas from the adjacent reservoir rocks will not enter until the capillary pressure exceeds the entry pressure of these sediments. However, some shales are found to be preferentially oil wettable and will imbibe oil from adjacent reservoirs until either (a) the shales are nearly oil saturated, or (b) the reservoirs are barren of oil. Some gas provinces devoid of liquid hydrocarbons and other oil-lean areas may be the result of preferentially oil-wettable shales. Some research suggests that the clay-mineral exchangeable cations, which are in equilibrium with the formation waters, may substantially affect this wettability relationship. Calcium-magnesium-dominant waters would tend to make a shale oil wettable, and sodium-dominant waters would tend to make it water wet. The preferential wettability may vary throughout geologic history and thereby substantially affect the migration, accumulation, and preservation of oil.

The practical applications of these hydrodynamic and wettability factors to guide oil-exploration programs and to evaluate specific prospects are emphasized.

SACRAMENTO GEOLOGICAL SOCIETY

Two members of the University of California Radiation Laboratory (Livermore), Miss Nannette Jaffee and Mr. Milo Nordyke, presented timely and thought-provoking talks at the Society meeting of December 8.

The first talk, "Phenomenology of Underground Nuclear Explosions", was presented by Mr. Nordyke. Since 1952, eight nuclear explosions have been fired underground at the Atomic Energy Commission's Nevada Test Site. The explosions have varied in energy release from 55 tons to 19,000 tons of TNT equivalent (.055 to 19 Kilotons) and were carried out at depths varying from shallow burial (17 feet) to produce cratering to those depths at which no visible effects appeared on the surface (840 feet). The major experimental results as well as a description of the pre-shot and post-shot geology was summarized. It has been shown that underground detonations may be accomplished with no detectable release of radioactivity to the atmosphere or tunnel system.

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PACIFIC PETROLEUM GEOLOGIST

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NEXT DEADLINE: January 27, 1960

Based on the post-shot drilling, two drifts which have been driven through the region of the detonation point, and a calculational program, it has been possible to construct a description of the Rainier cavity (second explosion in series) at various times during the explosion. Initially the shot room was filled with a gas at 1,000,000°C and a pressure of 7 million atmospheres. After about 100 milliseconds, a 60 foot radius cavity had been produced, lined with 4 inches of molten rock. This cavity collapsed after an interval of about 30 seconds to 2 minutes with a chimney of broken rock 386 feet high being found. Based on these nuclear shots, a 1 kt detonation in tuff will produce 500 tons of fused rock and 120,000 tons of broken, permeable rock.

Miss Jaffe's presentation, "Plowshare Applications Related to Geology", touched on several of the possible applications of underground nuclear detonations. Included among these were harbor building experimentations, uses pertinent to the flow and control of groundwater, and applications directly related to oil recovery. A project (Operation Chariot), aimed at building a harbor on the west coast of Alaska north of the Arctic circle is currently under study. Miss Jaffe's comments concerning oil recovery were of particular interest to members of the petroleum fraternity.

Underground nuclear detonations appear to have at least three possible applications for the petroleum industry: (1) oil shale, (2) tar sands, (3) secondary recovery in conventional reservoir rocks.

The most valuable role that nuclear detonations may play in oil-shale exploitation is the breaking up of large quantities of the shale, and inducing a mass permeability in an otherwise impervious strata. In such a region, an in-situ recovery process may be feasible. The ideas under study are similar to those methods already employed in conventional reservoirs. Conversion of the

kerogen in the oil shale to shale oil starts at 225°C, is optimum at 500°C and is completed at 600°C. After a permeability has been created by a nuclear explosion, a combustion process which would convert the organic matter to oil would be initiated. Injected air would be used to drive the oil and gas mixture to recovery wells. Research is presently being carried on at the USBM Petroleum Research Center at Laramie, Wyoming, to determine to what extent oil may be recovered from shale which has been fractured by nuclear explosives.

The "Tar Sands" of Alberta, Canada, also present possibilities for the utilization of nuclear explosives. Here one would capitalize more upon the thermal properties of the detonation rather than its mechanical effects. It is not as important to induce a mass permeability in the oil sand formation as in the oil shale, since the sands have a natural permeability. Raising the temperature of the tar sand to 90°C renders the oil fluid enough to be pumpable. If the heat from a nuclear explosive can be efficiently utilized, an economic production of petroleum may be possible.

Finally, an underground nuclear detonation in the vicinity of a petroleum reservoir which has ceased to flow at a desirable rate, may effect an increased permeability, thereby making it vulnerable to secondary recovery. Such methods are well known in the petroleum industry and the only innovation would be the use of nuclear instead of chemical explosives, and the advantages which are attendant, such as economy of space in emplacement, and a greater concentration of heat and pressure.

INTERNATIONAL GEOLOGICAL CONGRESS

The Houston Geological Society is chartering a DC-8 jet (economy fare) from Houston to Amsterdam for 80 to 120 geologists attending the International Geological Congress in Copenhagen this summer. The flight is scheduled to leave on July 23rd from Houston for Amsterdam. The planned arrival, some three weeks before the meetings, is to allow time for sight-seeing on an individual basis. Roundtrip fare from Houston to Amsterdam will be about \$700.

Anyone interested in the flight and willing to leave from Houston should contact C. D. Speed, 711 Houston Club Building, Houston, for further details.

DIRECTORY TO BE REPRINTED

At a recent meeting of the Executive Committee it was decided to withdraw the newly issued 1960 Pacific Section Directory, and print a revised, corrected, and expanded volume at an early date. This action was taken in response to many comments pointing out omissions and errors in the present volume. It is planned to card the membership for corrections and additions, and to exchange the new edition for the present edition at no charge to those who have already purchased one.

NEW SACRAMENTO GEOLOGICAL SOCIETY OFFICERS

Two new officers were elected at the December meeting of the Sacramento Geological Society: Bill Adent (Consultant) Vice-President, and George Brown (Ohio) Treasurer.

NOTICE - CONTROVERSIAL ISSUES

The Executive Committee of the Pacific Section A.A.P.G. intends to poll the membership by card on a number of controversial issues which will be discussed at the annual business meeting during the National Convention at Atlantic City. The opinions of the membership, as expressed by this poll, will be forwarded to the respective district representatives so that they may adequately express the opinions of their electorate at this meeting. The Southwestern Federation of Geological Societies has taken similar action on the specific issue of professional registration as reported in the news item below, in an excerpt of a letter mailed to members of the Federation.

"Because of the recent interest in the question of registration or licensing of geologists, the Chairman of the Executive Committee of the Southwestern Federation of Geological Societies appointed a committee to study the need for registration. In their report this committee summarized opinions for and against licensing:

For Registration

1. Charlatans abound in the profession causing the public to be fleeced and causing competent Geologists to lose consulting jobs and fees.

2. The Profession of Geology is undergoing gradual erosion by Engineers due to the lack of an adequate Registration law.

3. Geologists are at a disadvantage when testifying before the Railroad Commission, State and Federal Courts, Congressional committees and other legislative bodies.

4. Doctors, Lawyers, Engineers, Architects, etc., have raised the general standing of their respective professions by the use of Registration laws.

5. Students studying in our colleges and universities would have a definite goal to work toward.

6. Nothing is enforceable without a State law, not even a code of ethics.

7. If all national organizations and all local societies could arrive at a mutually satisfactory draft of a "model law", then all States could have "reciprocal registration".

8. A code of ethics could be incorporated in the law so that unethical conduct could be controlled. It cannot be effectively controlled by the A.A.P.G.

9. An official seal, used with the signature of a Registered Geologist, could become a valuable asset in raising the general standing of the Profession in the eyes of the public.

10. Geologists have been forced to qualify and become Registered Engineers before they could legally accept certain types of work for which they were uniquely qualified.

Against Registration

1. There is no pressing need for Registration.

2. Every time the government (Federal or State) enters into our affairs in any way we lose something.

3. Registration could never be made uniform in all States. Engineers have tried for forty-five years and have not succeeded.

4. Geologists operating in several states would be faced with an intolerable burden of red tape in conforming to the changing pattern of regulations from state to state.

5. Certainly Engineers, Lawyers, Doctors, Architects, etc., are licensed but this is primarily for the protection of the public. Public health and welfare are not affected to any degree by Geologists.

6. We have been very fortunate in Texas in having a scrupulously honest Railroad Commission to control our affairs. Other states have not been so fortunate. Corruption and dishonesty have been commonplace. We don't have to travel far to find notable examples.

7. There would be no protection of minorities as provided for in our Federal Constitution.

8. There is a definite feeling that many geologists overcome their personal basic objections because they feel that such a law would offer them more job security and allow them to charge higher fees. This leans toward socialism and certainly does away with the rugged individualism that has been an integral part of the Profession of Geology.

9. The registration laws, in effect, would dictate to colleges and universities what they should teach.

10. The charlatans would continue to exist but they would just go underground or hide behind some registered Geologist for a very small fee.

11. In spite of everything the politicians could not be kept out of our affairs.

Committee Conclusions

1. There is a definite need for raising the professional standing of Geologists.

2. If this problem of Registration ever reaches the point where disunity and dissention will be created throughout the ranks of the Profession by the overzealous activity of some members, then more harm will have been done to the Profession than any possible good that would result from Registration. One possible solution to this "disunity problem" would be to strengthen and revitalize the A.A.P.G. and attempt to achieve the same end through the existing machinery of our National Organization."

CHRISTMAS DANCE

On Saturday, December 26, two hundred and forty-six holiday-spirited, fancy-footed members and guests danced to the music of Ivan Scott following a cocktail party which got things rolling in the proper direction.

This year's cocktail party was financed without requesting contributions and the following companies which contributed so generously last year were invited as guests:

Baker Oil Tools, Inc.
Baroid Well Logging
B. J. Service, Inc.
Economy Blueprint & Supply Co.
Fairchild Aerial Surveys, Inc.

Formation Logging Service Co.
 Geophysical Service, Inc.
 Johnston Testers, Inc.
 Lane-Wells Company
 Macco Corporation
 Mercury Oil Tool Co., Inc.
 Pacific Towboat & Salvage
 Petroleum Technologists, Inc.
 Rapid Blue Print Co.
 Read & Co.
 Robert H. Ray Co.
 Schlumberger
 Seismic Explorations, Inc.
 United Geophysical Corporation
 Welx, Inc.
 Western Geophysical Co.
 California Well Logging Co.
 Petroleum Information
 Seismograph Service Corporation

LOS ANGELES LUNCHEON MEETING

At the noon meeting on December 7th, Mr. James Bailey of Standard of California presented color slides of his travels through western Africa in a talk entitled "From the Congo to Timbuktu". Highlights of the program included interesting photographs taken along the Niger and Congo Rivers, the famed Stanley Falls, and scenes in Dakar, Timbuktu, and Leopoldville. A few of the many countries visited were French West Africa, Belgian Congo, Portuguese Guinea, French Guinea, Ghana, the Cameroons, and French Equatorial Africa.

Pictures taken in some of the oilfields were of particular interest, especially the French operations on the Nigerian delta. The French oil companies not only provide living accommodations in the field for the families of their personnel, but also allow a three month paid vacation in France for each year spent in Africa.

ALASKAN GEOLOGICAL SOCIETY

The Alaskan Geological Society met December 8 at the Loussac Library in Anchorage. Marshall G. Ayres (Standard of California) presented a well-illustrated and interesting paper entitled "Regional Geology of the Cook Inlet Area, Alaska".

ABSTRACT

The geologic history has been interpreted according to current hypotheses on mountain building. Surface studies and a literature survey constitute the basic data used in the interpretation.

The Cook Inlet area is geologically similar to both the western Pacific island arc system and the orogenic belts of western North America. Late Paleozoic to early Mesozoic eugeosynclinal sediments were deposited in linear troughs subparallel to the present southern coast of Alaska. In Early Jurassic time this area underwent a period of orogeny. The site of the Alaska Range was uplifted and subjected to volcanism and plutonism. The site of the Chugach and Kenai Ranges was concurrently downbuckled into a tectogene and intruded by plutonic rocks. Epeirogenic marine Mesozoic sediments and nonmarine Tertiary sediments were deposited in the intermontane basin between the Chugach Range and the Alaska Range. Minor volcanism and plutonism has continued to Recent time in the Alaska Range.

Post-orogenic deformation in areas extensively intruded by plutonic rocks has occurred by warping and faulting. This later faulting cuts across former orogenic trends in order to adjust to the new continental edge formed by the Early Jurassic orogeny. This trend is not recognizable in the southwestern Chugach Range because movements are taken up by folding and bedding plane shear in metamorphic rocks.

1961 NATIONAL CONVENTION

Gordon B. Oakeshott, General Chairman for the 1961 A.A.P.G. -S.E.P.M. Convention, is pleased to announce that Graham B. Moody has been appointed Technical Program Chairman. Theme for the San Francisco meeting will be "Circum-Pacific Exploration for Petroleum". Mr. Moody will soon be requesting papers falling under this theme.

CENTRAL CALIFORNIA OIL SCOUTS

The 1960 officers for the Central California Oil Scouts Association are as follows:

Dale Rodman, Ohio - President
 Pat Wright, Superior - Vice-President
 Jim Miller, Sunray - Secretary
 John Ray, Conservation Committee -
 Treasurer

PERSONAL ITEMS

Pam Exendine, with Richfield in Los Angeles, returned from a holiday visit to Oklahoma City reporting that air travel is great. Oklahoma is wet, and visas to get back into California are now issued without a court order.

Shirley is still waiting for an invitation to hunt shark's teeth with Joe Arndt, with Richfield in Long Beach. No, Joe, she won't go skin diving for them.

Les Brockett, with Richfield in Anchorage, returned to the southland for a holiday season vacation. Les can't get used to that bright light in the sky during the day, but he has thawed out somewhat.

The Ed Hall family of Union in Santa Paula spent the Christmas holidays in Sonora which, according to Ed, is the only place you can look for lost golf balls and gold nuggets at the same time.

Jerry Williams, Ohio in Ventura, and Don Hagen with Texaco in Santa Maria, spent their recent vacations skiing at Alta.

Friends of Dr. Max Birkhauser will be pleased to hear that he is feeling better after his recent sustained illness.

Western Gulf Los Angeles Exploration Department has moved from the Roosevelt to the Statler. Reportedly, the move was made at midnight, but whether this hour was chosen for reasons of security or poverty, is not known.

Howard Level of Union in Santa Paula, resumed his bowling practice while Roy Martin, Union's scout, was on vacation.

At Standard's Ventura office Christmas luncheon, Ed Dryden said he would settle for a blueberry muffin if he could have four bourbons. The Colonial House is reported to be considering closing its buffet luncheon after seeing Frank Smith put away the calories.

Loose change isn't safe in Union's Santa Paula office since coin collecting has taken over.

The white streak seen on the Santa Paula streets recently is Dick Lyon's, Union geologist, new white MG sports car.

Don Henricksen and Eric Lindvall of Richfield's Ojai office are finishing off the year on vacation. Eric is spending his vacation "sheing" in a winter resort.

The Ojai Chamber of Commerce had the skinniest Santa Claus on record this Christmas when Dale Duley of Richfield did the honors.

Rumor has it that, after an exhaustive study by Richfield's Bakersfield office, the stereoscope failed to disclose any hidden anomalies on Schlumberger's new 1960 calendar for August.

One of Shell's recent deportees from Ventura, Roy Cline, has found it necessary to join the L.A.A.C. No big city waist line for this spartan. Additional self-imposed punishment includes driving the freeways in a new MG.

Inspection of results of John Carter's recent quail hunt in the Paso Robles area revealed one extraordinary mutation. John's Shell friends at Ventura claim that the plucked body was so slender and powerful of leg that a restoration would resemble a road runner.

Ventura's east end kissing bandit has struck again. This time at a party thrown by Charley Booth of Shell. Suspects include none other than the host who professes ignorance of the whole affair.

Bill Zajic, geologist, is a newcomer to Sacramento. Bill, until recently in Denver, represents Snee and Eberly, Oil & Gas Producers, Uniontown, Pennsylvania.

Sarg Reynolds, consultant, recently returned to Sacramento from a 20-month tour of duty in Turkey where he directed Bolsa Chica's exploration program.

Members of Sacramento's oil fraternity enjoyed the party life during the festive Holiday Season. The Petroleum Wives held their annual Xmas dance on December 5 at the Elk's Club. Exploration Logging's gala was held on December 11 at the Del Norte Country Club. Lastly, John Evers (Evers' Drafting Service) hosted a New Year's Eve party.

Shortly after Bruce Brooks became the geological staff for Brazos Oil and Gas in Isleton, he decided he didn't favor the situation of having his home in Sacramento and his office in Isleton. Results..... sometime in January, Brazos will move its offices to downtown Sacramento.

C. V. Fulmer (Standard of California) has been transferred from Anchorage to Seattle effective December 1.

If anyone has noticed the early afternoon exodus of geologists from Richfield's Los Angeles office during the holiday season, it isn't a new work schedule. It's because all the bosses are away on vacation.

Walt Record, with Richfield in Los Angeles, wishes to thank all those who wrote him about statistical probabilities of matching for coffee. It hasn't helped. He is still losing. Maybe 1960 will be a good year, Walt.

John Loofbourow, Richfield's intrepid foreign explorer, now has a new chapeau which will take care of all emergencies in remote foreign areas. It includes a flag, compass, and title. No brandy flask.

Pearls Log Cabin adjacent to Richfield in Bakersfield, was burgled of \$900+ on Dec. 1. The proprietor said the reason he had so much money on hand was to cash Richfield pay checks.

Report for bachelors -- Lum Lovely, Union, Anchorage, reports that there is no longer a female shortage in Alaska. Don't wait, sign up now fellas.

Joe Parmenter who has been working with Geological Petroleum Corp. (Geopet) is now working on land acquisition for Brazos Oil & Gas Co.

It is said that Cutler Webster and Bob Nelson, Honolulu, Bakersfield, celebrated Christmas in a rather unusual fashion. For details consult a certain bespectacled deputy sheriff.

During the Richfield Geological Dept. Christmas party in Bakersfield a telegram was received from Warren Stoddard, who is sitting on a well in the Yakataga area of Alaska. It read "Merry Christmas from the Abominable Snowman." The rigors of the party must have been too much for Bob Wells, Jack Nisbet, Tom Brady and Milt Norton who all went on vacation immediately following the affair.

Ida Dobler, girl geologist - Standard, Bakersfield, finally traded in her 1901 Maxwell for a new Rambler with a built-in wolf whistle.

About 60 couples (performers all) attended the Standard Oil Christmas party in Bakersfield at the Elks Club.

John Thrailkill, Continental, Bakersfield, spent the Christmas holidays gliding down the smooth Colorado slopes among the quaking aspen.

Bob Herron, Signal, Bakersfield, went sailing Christmas weekend in a 29' Danish folkboat out of Los Alamitos Bay. He said the visibility was fabulous as he sailed around the Monterey drilling island. Some people just can't stay away from the oil business even on holidays.

Two members of Mobile Oil's Sacramento geological staff were recently transferred. Both Bob Beatie and Hal Dunn are now in Durango, however, Hal's stay there will only be temporary.

Bob Teitworth has resigned as geologist with Amerada in Rio Vista. Bob has accepted a position with Occidental Oil.

NURSERY NEWS

Richard and Marilyn Malloy wish to announce the birth of Annemarie on the 28th of December. Annemarie weighed 7 lbs., 3 oz. Congratulations Dick ----- just in time for tax exemptions.

Betty and Bruce Brooks welcomed Dinah Lee (number 3) on December 10. Dinah weighed 6 lbs., 10 oz.

Bruce Brooks of Brazos Oil & Gas Co., is the proud father of a new baby girl born Dec. 15, 1959. That makes it two girls and a boy for Bruce.

Hal Levin, Standard, Bakersfield, has a new boy in the family. Stephen was born in December.

Mr. & Mrs. Henry Dawson, Humble, Bakersfield, are the parents of a new baby boy named Craig. Craig arrived on Dec. 2, 1959.

Frank and Nancy Smith, Standard at Ventura, welcomed their third son, Brian Lee, into the family on December 7, 1959. He was a lightweight tipping the scales at 9 lbs., 8 oz.

CALENDAR

January 12, 1960: Tuesday, 7:45 P.M. Geological Society of Sacramento Meeting, Room 150, Personal Board Building, Sacramento. "Geology of the City of San Francisco and Vicinity", Dr. Julius Schloker, U.S.G.S., Menlo Park.

January 13, 1960: Wednesday, 6:30 P.M., Junior Group Society of Petroleum Engineers A.I.M.E., Dinner Meeting Michaels' Restaurant, Washington Blvd. and Santa Ana Freeway, Los Angeles. "Water Injection Operations, Wilmington Field", Mr. N. Van Wingen, Consultant and "Methods of Determining Water Injection Profiles in the Wilmington Field", Mr. William Sauer, Production Engineer, Long Beach Development Company.

January 14, 1960: Thursday Noon, S.E.G. Luncheon Meeting at location not yet announced, followed by tour of Techno Instrument Company, 6666 Lexington Avenue, Jim Cunningham, Manager.

January 18, 1960: Monday, 7:30 P.M., Paleontological Biostratigraphy Seminar, Room 56, Science and Engineering Building, Bakersfield College, Bakersfield, "California Cretaceous Microfossils and Stanford University Cretaceous Project", Dr. Joseph J. Graham, Stanford University.

January 25, 1960: Monday Noon, A.I.M.E., Petroleum Forum, Rodger Young Auditorium, 936 W. Washington Blvd., Los Angeles. Mr. John S. Bell, President of the Society of Petroleum Engineers of A.I.M.E. will discuss "The Contribution of the Petroleum Engineers to the Petroleum Industry."

January 27, 1960: Wednesday, 7:00 P.M., Joint A.A.P.G.-S.E.G. Dinner Meeting, Rodger Young Auditorium, 936 West Washington Blvd., Los Angeles. "The Earth's Changing Climates", Dr. Erling Dorf, A.A.P.G. Distinguished Lecturer.

January 29, 1960: Friday Noon, Joint S.E.G.-A.A.P.G. Luncheon Meeting, Rodger Young Auditorium, 936 West Washington Blvd., Los Angeles. "The Mohole Project", Mr. Willard Bascom, S.E.G. Distinguished Lecturer.

January 29, 1960: Friday, 6:30 P.M., San Joaquin Geophysical Society and San Joaquin Geological Society combined dinner meeting, El Tejon Hotel, Bakersfield, "The Mohole Project", Mr. Willard Bascom, S.E.G. Distinguished Lecturer.

January 29-30, 1960: Friday and Saturday, two-day conference on Fluids in Rocks at U.C.L.A., sponsored by Dept. of Geology, Dept. of Engineering, and University Extension. Information and registration forms may be obtained from Engineering Extension, University of California, Los Angeles 24 (BR 2-6161, Ext. 307).

February 11, 1960: Thursday, 3:30 P.M., Room 3656, U.C.L.A. Geology Building, "Glacial Geology of the Central Sierra Nevada", Dr. Joseph Berman, Occidental College.

February 15, 1960: Monday Noon, A.I.M.E. Luncheon Meeting, Rodger Young Auditorium, 936 West Washington Blvd., Los Angeles. "The Training of Technical Men for Management Positions", Mr. R. W. Doeman, Coordinator of Executive Development, General Petroleum Corp.

BIBLIOGRAPHY
OF RECENT PUBLICATIONU. S. GEOLOGICAL SURVEY

Bulletin 1082-C: Iron-ore resources of the U. S. including Alaska and Puerto Rico, 1955, by M. S. Carr and Carl E. Dutton \$.30

Bulletin 1106-C: Geophysical abstracts 178, July-September 1959 \$.40

Map I-288: Reconnaissance geologic map of the Unalakleet quadrangle, Alaska, by John T. Cass \$.75

Map I-298: Former shoreline features along the east side of San Francisco Bay, California, by Dorothy H. Radbruch \$.50

Map 203-B: Geographic map of Wadi Al Batin quadrangle, Kingdom of Saudi Arabia, by Richard A. Bramkamp and Leon F. Ramirez. \$1.00

Base map of Utah (1:500,000)..... \$1.00

Topographic map of Utah (1:500,000)..... \$2.00

Circular 416: Water-resources summary for southern California, 1958, by William C. Peterson free

Open file: Geologic map of the Inyokern quadrangle, California, by T. W. Dibblee... Inspection only

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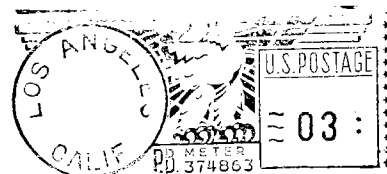
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MEMORIAL

George Clark Gester
1884 - 1959

George Clark Gester was stricken with virus pneumonia at his home in Berkeley on November 26, 1959.

Clark was born in Buffalo, New York, on June 16, 1884, and moved to California at an early age. He received the degree of Bachelor of Science in mining engineering and geology from the University of California in 1909. While at California he was elected to Sigma Xi, Theta Tau, and Phi Lambda Upsilon.

Clark's career was varied and colorful. He began his professional career doing land classification work for the Southern Pacific Company from 1909 to 1912. From 1912 to 1914 he served as chief development geologist for Kern Trading and Oil Company, a subsidiary of the Southern Pacific Company. He was a pioneer in foreign oil exploration serving as geologist for Standard Oil Company of New York from 1914 to 1916, working in Mexico, Colombia, Venezuela, India, and Egypt. In 1917 Clark returned to California where he joined Standard Oil Company of California. He became chief development geologist for that company in 1918. In 1920 he was appointed chief geologist serving in that capacity until 1943 when he was made consulting geologist for the company. Clark retired from Standard of California in 1949.

As chief geologist of Standard Oil Company of California he was in charge of all domestic and foreign exploration. Much of his time was spent on organization and supervision of foreign

exploratory activities which required trips to the Middle East, the Dutch East Indies, Egypt, India, Netherlands, Canada, Mexico, Central America, and South America.

He continued in geological work after retirement by contributing his services, on numerous projects, to the California Academy of Sciences and to the Division of Mines of California.

Clark joined the AAPG in 1920, was elected vice-president in 1921, president in 1927, and became an honorary member in 1949. He served at various times on the Constitution Committee, the General Committee, the Business Committee, the Research Committee, the Medal Award Committee, and as Trustee of the Research Fund.

He was also active in other organizations. Clark was a Fellow of the Geological Society of America and the California Academy of Sciences and a member of the Paleontological Society, the American Petroleum Institute and the American Institute of Mining and Metallurgical Engineers. A few years ago the AIME honored Clark by designating him a life member.

An outstanding characteristic was Clark's warm friendliness and his helpfulness to those who worked with him. He gave the initial practical training in oil finding to a host of young geologists who spread out over the world to become not only top-flight oil finders, but also voluntary goodwill ambassadors of the United States. Perhaps his greatest contribution to our profession was the inspiring assistance that he gave so freely to those embarking on their life work. His personal influence on the course of petroleum exploration has been augmented immeasurably by those men on whom he impressed his own high ideals.

He is survived by his widow, Helen, by three sons, George, William, and Harry, by six grandchildren, and by his brother Howell. A myriad of friends throughout the world will miss him sadly.

(This is a digest of a memorial written by Graham B. Moody and soon to be published in the Bulletin of the AAPG.)

SAN FRANCISCO CONVENTION 1962

The announcement of the "1961" national AAPG-SEPM convention in San Francisco in the last P.P.G. should have read 1962. Convention committee members feel that March 1962 is approaching fast enough, without setting the date forward a year. We recommend that you go to Denver in 1961 and see us in San Francisco in 1962.

L. A. (Alex) Tarbet, Standard Oil Company, has been asked by General Chairman Gordon Oakeshott to head field trip activities and preparation of a guidebook for 1962. Emphasis will be on the