PACIFIC PETROLEUM GEOLOGIST

1956

January "Geologic Reconnaissance of a Portion of the Eastern California Area" By Robert L. Johnston

February "Italy-The Future Oil Reservoir of Europe" By Darl H. Savit
"Structure & Stratigraphy of the San Joaquin Hills, San Juan Capistrano Area" By J. G. Vedder
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June "A Southern California Geologist Looks at Switzerland" By John S. Shelton

July "A Diving Geologist Views the Continental Shelf" By Edwin C. Buffington
"Development of Petroleum Reservoirs in Fractured Rocks of the Monterey Formation" By A. T. Anderson

August "Reconnaissance Geology of the Eastern California Desert Area" By R. L. Johnston

September "Systematic Ground Photography" By L. W. LeRoy

October "The Habitat of Oil in the Los Angeles Basin" By W. F. Barbat

November "20th International Geologic Congress"
"Geology of the Late Paleozoic Horsehoe Atoll, West Texas" By Donald A. Myers

December "History of the Trinity River Project" Dr. William Gardner
"Wind Abrasion by Particles in Suspension" By Dr. Charles Higgins
"The 1955 Eruption of Kilauea Volcano, Hawaii" Dr. Gordon H. MacDonald

PACIFIC PETROLEUM GEOLOGIST

NEWS LETTER OF THE PACIFIC SECTION AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS

Vol. 10 January 1956 No. 1

ASSOCIATION ACTIVITIES

SAN JOAQUIN GEOLOGICAL SOCIETY

On Tuesday, December 6, the San Joaquin Geological Society held it's monthly Dinner Meeting at the Hotel El Tejon. Robert L. Johnston, Western Gulf Oil Company, gave a very interesting talk on a " Geologic Reconnaissance of a Portion of the Eastern California Area". That portion of eastern California bounded on the west by Owens Valley and the San Andreas fault and reaching from the Inyo Mountains on the north to a point in the vicinity of Barstow on the south was included in Mr. Johnston's paper.

Physiographically the area falls into two natural provinces separated by the east-west trending Garlock fault. North of the Garlock fault the ranges exhibit a strong north-northeasterly lineament that is well developed further north in Nevada. South of the Garlock fault the surface relief is cut up into a random pattern of irregular smaller ranges.

The stratigraphic section consists of rocks only rarely encountered by the petroleum geologists working the Coast Range series. Four lithologically related rock divisions are found in the area. From the oldest to the youngest they are:

1. Archean of early pre-Cambrian age.
2. Pahrump of late pre-Cambrian age.
3. Paleozoic (including the Triassic of lower Mesozoic).
4. Tertiary.

Only small segments of this stratigraphic section are exposed in any one part of eastern California.

The basement rock, the Archean, is composed of highly metamorphosed marbles, schists, quartzites and gneissic material of an unknown thickness. Cores of several of the larger ranges are composed of this early pre-Cambrian material.

A strong unconformity separates the Archean from the overlying late pre-Cambrian or Pahrump series. Three formational members are generally assigned to the Pahrump; the Crystal Springs, Beck Springs and Kingston Peak. Composed predominantly of shallow water sediments showing cross-bedding,ripple marks and mud cracks, the Pahrump series is surprisingly little metamorphosed and resembles quite closely the general features of the overlying Paleozoic system.

A considerable thickness of clastics and carbonates assigned to the overlying Paleozoic system is separated from the Pahrump by another major unconformity. The base of the Paleozoic or Cambrian has not been established as yet, although most field workers are inclined to consider the light buff,limy,dolomite, the Noonday dolomite, as the basal member of this system. It forms perhaps the best lithologic marker in the eastern California area and appears to be readily correlative with the Reed Springs dolomite found farther north in the Inyo Mountain section. The overlying Johnny, Sterling quartzite and Wood Canyon formations of the Death Valley area comprise the remainder of the generally accepted lower Cambrian series. In the Inyo Mountains the correlative members are composed of the Deep Springs, Campito sandstone and the Silver Peak. Diagnostic fossils appear for the first time in the upper portion of the Wood Canyon and Silver Peak formations with the presence of the widely spread Olenellus. Middle Cambrian has been identified in the Nopah range as consisting of the Cadiz, Bonanza King and Corn Field Springs formations where the red-brown coloration of the Cadiz is in striking contrast to the light and dark banding in the dolomites of the Bonanza King and Corn Field Springs formations. The widespread Nopah formation marks the occurrence of the upper Cambrian section and is easily distinguished by the alternating smoky and creamy grey dolomites.

Ordovician rocks comprise one of the most easily recognized units in the area, being composed of the buff to pinkish Pogonip lime at the base and the overlying light grey Eureka quartzite which is in turn overlain by the dark grey Ely Springs dolomite. The overlying Devonian consists of the massive Hidden Valley dolomite and the strikingly banded limestone and dolomites of the Lost Burro formation. A considerable thickness of Mississippian lime is exposed throughout parts of the Death Valley area and the Inyo Mountain Range, forming bold cliff faces and canyon walls. The overlying Pennsylvanian resembles the Mississippian lithology being composed of massive to thin bedded, grey to buff limestone with local occurrences of coarse conglomerates. A rather surprisingly thick sequence of Permian is found locally developed in certain sections of the southern Panamint Range and Red Rock Canyon area.

The transition from the Paleozoic to the Mesozoic does not indicate a pronounced unconformity since the contact between beds of Permian and Triassic age along the east face of the Inyo Range gives evidence of no appreciable break.

A profound unconformity exists everywhere between the Tertiary section and the underlying older rock. The Tertiary itself seems to be divisible into two general units, the older being composed of more highly altered, more decomposed, more folded and faulted sediments and volcanics. Since definite dating of the Tertiary section is only possible in a few spot localities, the older Tertiary class is generally considered to range from Eocene through lower Miocene.

Late Tertiary sediments are characterized by being less altered and generally composed of more fine-grained lake bed material. The associated volcanic material is commonly seen as black, resistant basaltic interbeds or as soft, light grey tuffaceous deposits.

Two schools of thought are encountered in explaining the structural pattern of the area. One proposes the linear and blocky form of the ranges to be a result of normal faulting from tensional forces, while the other school believes the present land forms are superimposed on strong broad folds resulting from intense compressional forces.

COASTAL GEOLOGIC SOCIETY

On December 13th, Mr. D.B. Flynn of General Petroleum Corporation, addressed the monthly dinner meeting of the Coast Geologic Society held at the Montecito Country Club. His subject was "A Resume of Oil Exploration in Nevada". Mr. Flynn recently returned from Nevada after approximately two years as resident geologist for General Petroleum in Elko.

Mr. Flynn first gave a brief generalized picture of the geology and stratigraphy in Nevada with a chart showing the various formation nomenclatures in use for the Paleozoic rocks.

Earliest known exploration for hydrocarbons was probably undertaken in the Fallon area with some small gas production being found at very shallow depths from Tertiary rocks. No commercial quantities were ever produced, however. The exploration work from this beginning to the present day was traced and illustrated with charts showing the amount and types of exploration used by the major companies in Nevada.

In discussing Shell's recent discovery and development work in Railroad Valley, Mr. Flynn pointed out that though Shell has three producing wells about 2000' apart, they are producing from three different reservoirs. The "discovery well" is producing from Tertiary volcanics. The second well drilled is producing from Tertiary limestones and shales and the third successful well is producing from Paleozoic limestone. Despite the difference in the reservoirs, the great similarity of the oil in these three wells was noted. Several other wells drilled by Shell in this general area found no production at all.

Colored slides showing some of the geologic and geographic features of Nevada were presented at the end of the talk.

BAKERSFIELD PETROLEUM CLUB

Plans are being completed to form a Petroleum Club in Bakersfield. Temporary and permanent sites for the club are being selected and membership plans and club policies will be announced in the near future.

LOS ANGELES LUNCHEON MEETING

The monthly Luncheon Meeting was held at the Rodger Young Auditorium on December 1st, 1955. The speaker for the meeting was Dr. John McGill, Engineering Geology Branch, U.S.G.S.

Dr. McGill gave an illustrated talk on "Geology and the Residential Building Site". Two of the most serious problems encountered by the average citizen who chooses, develops and maintains a home site in southern California are erosion by surface runoff and slope instability. Both problems are fundamentally geological with weak and deformed rocks, high tectonic activity and semi-arid climate. The problems have been greatly aggravated since World War II because man-made changes in the natural setting, particularly by the unprecedented development of residential subdivisions in hilly and mountainous terrain. Unfortunately the real and potential dangers are not generally appreciated. The near-drought conditions of the pastten years have fostered a false sense of security among many contractors, realtors and buyers. The flood of 1952, though severely damaging, was minor by comparison with the floods of 1938, 1934, 1916, 1914 and 1891. Major floods are certain to occur in the future; their effects could well be disastrous for thousands of home owners.

The degree of erosion by surface runoff is related to the steepness and origin of the slope and to the nature of the underlying earth materials. Slopes of artificial fill embankments are byfar the most vulnerable. Cuts in surficial materials are more easily eroded than cuts in bedrock, and natural slopes generally are the most durable. Uncontrolled drainage is not only a serious problem in its own right, but almost always is a major cause of slope instability. Unstable natural slopes are widespread in the high palisades and deep narrow canyons adjacent to the northern shores of Santa Monica Bay. Stability of cut slopes varies with the lithology and structure of the rocks. The most common and troublesome failures are bedding-plane slides involving cuts in clay shales.

In the examination of a residential building site the advice of a specialist is helpful but usually not essential. Probably ninety percent of the geological troubles encountered on home sites could be anticipated by a geologist who possesses a general background, some experience in applied geology and a generous helping of common sense.

NORTHWEST GEOLOGICAL SOCIETY

The Northwest Geological Society held its monthly meeting in Olympia, Washington on December 19th. Mr. Frank Elrod, the northwestern representative of Jack Ammann Photogrammetric Engineers, Inc., presented a color movie entitled "A New Look for Oil". This film gave an interesting demonstration of the application of aerial photography to structural geological mapping through the services of Geophoto, Inc.. Slides showing the various types of equipment and instruments used by the company, from the actual photography itself to the construction of controlled mosaics, base maps, and topographic maps, were also shown.

PACIFIC SECTION MEMBERS

All members of the Pacific Section who have not paid dues for 1956 are requested to do so at once. Payment of the yearly dues of $2.50 entitles each member to purchase one copy of the Directory for $1.00 instead of the regular price of $3.00. Make checks payable to AAPG, Pacific Section, and send to Everett Pease, c/o Sunray Mid-Continent Oil Co., 714 W. Olympic Blvd., Los Angeles 15.

OFFICIAL PUBLICATIONS

The chairman of sales of official publications of the Pacific Section AAPG would like to announce that the 1951 publication of the South Sacramento Valley crossection is no longer available.

Cross-sections still available are:

Los Angeles Basin
West Ventura Basin (including Channel Is.)
East Ventura Basin
Salinas Valley
North Sacramento Valley (1954)

CALIFORNIA GEOLOGIC MAP

Eight sheets of the new geologic map of California are now available in preliminary form. The eight sheets include: Death Valley, Long Beach, San Luis Obispo, Bakersfield, Los Angeles, Trona, Santa Maria, and Santa Ana. The scale is 1:250,000, on a topographic base prepared by the U.S. Corps of Engineers and the Geological Survey. Each sheet covers 1° Latitude and 2° Longitude and measures approximately 24" by 48". Each sheet is priced at $1.00 plus tax and is currently on sale at any California Division of Mines office.

PERSONAL ITEMS

A mass exodus to the San Francisco Bay region by many Ventura geologists was noted over the christmas holidays: Mike Jager of Richfield in Ojai spent Christmas in Berkeley; Bob Nesbit of MJM&M and Eric Phillips of Western Gulf, both of Ventura, managed to get to Walnut Grove and back over the holidays. Don Hendrickson, Richfield in Ojai, was not so successful, however - - his planned Christmas in Stockton was literally washed-out when the bilge pump and propeller on his car failed in high seas.

Bill (web-footed) Hughes of Texas Company in Santa Maria, managed to swim back to Santa Maria after a tour of duty in the Bay area. He claims an aqua-lung was part of his field equipment.

Hal Fothergill, Union in Santa Maria, has taken to wearing even more brilliant ties than usual since Union made their recent discovery near Boulder Creek. Santa Maria geologists are holding their breath for fear of another discovery, as Hal's ties can be classed as loud enough to silence an air raid siren. Maybe it's a case of the "tie that blinds".

General Petroleum's gift to the musical world, Rod Colvin of Santa Maria has been the featured vocalist at various church and social functions in and around Santa Maria lately. If you can promise him a good meal, we are sure Rod can be persuaded to perform for any worthwhile occasion.

Ken Myron, Texas Company in Santa Maria, recently spent a pleasant vacation golfing in Pheonix, Arizona.

Otto Hackel, Intex, Ventura, is currently vacationing in the Carmel-Monterey area.

Frank Wang, Western Gulf, Ventura, spent a busy two weeks vacationing in the East, including a stop in Cleveland for the Nuclear Congress, plus stops in Chicago, Pittsburgh, Cincinatti, with Christmas spent in New York. We are indebted to some kind soul from Miami who is reported to have helped finance Frank's return to Ventura.

Christmas parties for various geologic staffs in the Ventura area have been reported to have been howling successes. Richfield's Ojai staff and Standard's Ojai staff shared the Oaks Hotel facilities last week with no reported ill affects. Tidewater's geologic staff held their Christmas "Donnybrook" at the Officer's Club in Port Hueneme.

The petroleum group in Sacramento were well partied before Christmas with the Carl Helms' having an open house on Sunday, December 18th, and the A. H. Masarin's giving a cocktail party at the Del Paso Country Club on December 23, 1955.

Joy and Manuel Castro, Shell of Ventura, were recent guests of Las Vegas for a few days. We understand that it was so profitable for Manny that he isn't even going to try putting it on his expense account.

Ed Borglin, exploitation geologist for Union's Santa Fe Springs office has moved to Bakersfield.

Jack Barr, Standard Oil, has left Bakersfield for Seattle. He started north the Friday before Christmas, and his friends hope he rigged up the schnorkle tube on his MG sportcar before entering the flood areas.

Ed Marks, recently with International Petroleum in Peru has joined the Bakersfield Paleo department for Union.

Roy Miley, Texas Company in Santa Paula, apparently was offended by a recent note in the Pacific Section Newsletter which alleged that Roy took no part in any athletic endeavor. We stand corrected. Roy played a set of tennis recently.

Dick Stewart, Union Oil, Santa Paula, got caught in the floods in the Santa Cruz area during his vacation, but the weather was so miserable he decided it wasn't worth using as an excuse for not returning to work, so he is now back in Santa Paula.

Continental Oil Co. has a new geological trainee in their Bakersfield office. He is Richard A. Rodgers from Houston, Texas. He says he likes California just fine. Now isn't that nice of a Texan to say that?

Bob McConville, Signal Oil & Gas Co., Bakersfield, completed a triumphant football season by picking the most winning teams for the big games and won a new Ainsworth-Brunton compass from Earl Price & Co.

Union's E. Wilkinson has transferred from the Santa Maria office to the Bakersfield scouting department.

Merle Vance has joined the Land Department of the Western Gulf Oil Company in Sacramento. Merle formerly worked for the Union Oil Company in the Bakersfield area.

Doug Thamer has joined Bill Bauer in the Sacramento Office of The Texas Company. This will only be a winter assignment for Doug as come Spring it will be back to the hills of Nevada.

Ed Miller, Ohio, Ventura, is spending his vacation by his fireside, hoping the stork hurries with the usual. Seems all he can think of is that $600 tax deduction for 1955 slipping away from him.

The Northern California Petroleum Round Table staged a stag cocktail party for the petroleum industry on December 20th at Scheidel's Restaurant in Sacramento. Bill McEachin and Swiss Holmes were co-chairmen for the affair. Approximately 60 men attended the get-together.

The Sacramento Valley was well represented at the recent meeting of the California Oil Scouts and Landmen's Association meeting in Bakersfield. Tom Wilson of Brazos and Swiss Holmes were appointed to act as representatives for Northern California for the coming year.

The oil companies were very lucky in the small amount of damage done to producing fields and drilling wells by the recent floods in the Sacramento Valley area. Brazos moved their rig off of the Brent No. 5 because of the danger of flooding. As a safety precaution, the Brazos gas wells on the south side of the Sacramento River were all shut in. Three of the wells in the greatest flood threatened area were disconnected so if surface installations were lost, the wells would not be damaged. The levees were soaked but held in the area of the gas fields.

Standard's geologist Al B. Scouler was recently awarded a large purple heart award for shrapnel wounds received in "operation woodsearch". It seems he was splitting wood and a piece of steel from the wedge or sledge pierced his shin bone.

Humble Oil and Refining Company found it necessary to shut down operations on the Parrott Investment Co. B-5 well because of high water as the area around the well was flooded.

Charley Guion, Humble scout, was returning from Chico Friday and was one of the last cars to cross over the Feather River on the Nicolaus Bridge before the bridge was washed out.

Superior's Bakersfield office has oil exploration whipped this year. At a recent Christmas party, Horace Harrington was presented with a genuine willow stick divining rod complete with a compass and horn which sounds automatically when over oil.

Jean D. Sentaur de Boue, Bakersfield consultant, has just completed a monograph of Miocene Invertibrate Paleontology of the Mt. Goddard quadrangle area. This paper is to be published by the Universite de Lyon, France, and will be available about next Bastille day.

Bill Bauer traveled to Lodi on Friday the 23rd of December. It took Bill over 2 hours to travel the 36 miles. The water was over the highway for at least 10 miles of this distance.

Wally Taylor has been added to the Standard force in the Sacramento Valley. Wally will be taking over from Alan Johnston. Wally formerly worked in the development section in the Los Angeles Basin area.

The Petroleum Wives Christmas Dance at Danisio's in Sacramento was a great success with approximately 30 couples in attendance. The committee is to be congratulated for such a successful dance.

Jim Eke of the Union's Bakersfield Paleo department has been transferred to Santa Maria.

Ralph Arnold has just published a unique history of Pasadena, California. It consists of a compilation of over one hundred autobiographies of pioneers who lived in Pasadena prior to 1900. An article on the geology of Pasadena by Arnold is also included. The book, which is issued by A. H. Cawston, publisher, consists of 471 printed pages and 30 plates of pictures of early Pasadena people and scenes.

Bright-eyed Bob Paschall, or shall we say "Sleepy" Bob Paschall is the new hero of the Coast Geologic Society. Bob is the only man in the organization that has the ability to stand up and take a bow, while he and the rest of this year's officers are being introduced, then sit down and one minute later, jump up and demand of the new president, Otto Hackel, that he introduce the incoming officers. We like to think that Bob has his mind on geology, but those in the know claim that Bob has become very publicity conscious these days.

John H. Beach, Manager of Exploration, and H.V. Church, Jr., Chief Geologist for Oceanic Oil Co. are leaving to form a partnership with Ainsley Bell, formerly overseas Manager of Drilling for Drilling and Exploration Co.

The Beach, Church and Bell organization will continue in the petroleum exploration business with offices at their present location, 3120 18th St., Bakersfield, Phone FAirview 7-3021.

They will be retained by Oceanic Oil Co. to continue, for the present, to handle the projects initiated by them for Oceanic.

Ruth and Dan Sullivan, Conoco's Bakersfield District Geologist just recently toured Mexico - by train, of all things from Laredo, Texas to Mexico City and back. Anyone interested in an inexpensive vacation contact him, and he says the train ride was terrific.

Dick Palmer, geologist for the Texas Co., Bakersfield, has been transferred to the Division Office in Los Angeles.

D. M. "Mack" Robinson, geologist with the Alaska district of Shell Oil Company in Seattle, is in critical condition in the Sun Valley Hospital, San Fernando, California. He was found unconscious, apparently from carbon monoxide poisoning, in a motel on December 20th while on vacation. After being unconscious for about three days he is slowly starting to improve; however, he is still on the critical list.

Layton Stanton has taken over duties as coordinator of the Rocky Mountains and Canada for the Union Oil Company. By mid-summer, Layton should be a good one to consult on airline schedules between Los Angeles and Calgary, Denver, Billings and Casper.

W. G. Castle, chief spy for Richfield in the Coastal area, is being assigned to Richfield's offic in the upper Ojai effective February 1st. Anyone wanting to buy a nice large house in San Fernando contact Mr. Castle.

George Lutz, Shell in Ventura, who was recently on temporary duty in Elma, Washington, is being transferred to Salt Lake City. If you're lucky, George, you may get to live in the next house you buy.....

Tex Leverett is being transferred from Santa Paula to Los Angeles to replace Harvey Lee as Chief Scout. Harvey will be Executive Assistant to the Vice-President. Jumping Joe Dockweiler, Union, Bakersfield, will replace Tex at Santa Paula.

Bob Spaulding, formerly District Geologist for Shell in Durango, Colorado, has been transferred to the Los Angeles office as Senior Geologist. Bob will replace H.J. Buddenhagen who has retired to his ranch on the Rogue River near Grants Pass, Oregon. Good fishing, Bud.

Russ Simonson, Ohio Oil Co., has been appointed Division Geologist replacing Bob Kurtz who will be on special assignment.

A.S. Holston has been transferred to the San Francisco office as Divisional Geologist for Tide Water Associated Oil Co. He has been replaced as District Geologist, Ventura, by H.M. Whaley.

Pat N. Glover, Shell, Long Beach, has been transferred to The Hague for a six month tour of duty. Bring back lots of pictures, Pat!

Rex Grivetti, Texas Company, Santa Paula, is spending a scintillating vacation moving into his new home in Ventura.

Tom Benson, Texas Company in Santa Maria, is vacationing in the mountains somewhere near Portland, Oregon. Seems Tom has designed some very brilliant light which permits him to ski night and day now.

NURSERY NEWS

To Cathay and Tom O'Neill of Shell Oil in Ventura, a son, Thomas Steven, born December 27th. Weight 5 lbs., 2 ozs.

The official name for the youngest Cate, born November 30th, is Randall Stuart Cate. Tom reports that he is growing like a weed. Do you mean Randall is growing like a weed, or that you are??

The Richard W. Vivions, Richfield, Bakersfield, are proud to announce the arrival of their 4th boy, Scott Douglas, born December 12th and weighing in at 8 lbs., 4 oz.

Conoco's Howard and Genevieve Semler, Bakersfield, welcomed No. 2 daughter Noreen Carol, 7 lbs., 13 oz. into their home on December 17th.

Kenneth S. Bishop, geologist with Continental Oil Co. in Olympia, Washington, and his wife, Patricia, have a new daughter, Karen Lee, born December 9th and weighing in at 9 lbs. 13 ozs.

The Texas Co. in Bakersfield has recently announced two new members of the diaper set: Andrew William, 7 lbs., 6-1/2 oz. arrived December 6th at the home of Jim and Margaret Learmont; and Ivan and Gloria Scherb were pleased to greet their first little girl, a redhead, Marie Lillian, 6 lbs., 12 oz. on November 30th.

BIBLIOGRAPHY OF RECENT PUBLICATIONS

SCIENTIFIC PUBLICATIONS- JOURNALS AND BULLETINS

United States Geological Survey

"Characteristic Jurassic Mollusks of Northern Alaska" R.W. Imlay, Professional Paper 274-D

"Geologic Investigations of Proposed Power Sites at Cooper, Grant, Ptarmigan, Cresent Lakes, Alaska" Bulletin 1031-A

"Pacific Slope Basin in California in 1953

"Surface Water Supply of Pacific Slope Basin in California in 1953" Part 11 Water Supply Paper 1285

Many new Quadrangle Sheets are now available for San Bernardino and Los Angeles Counties. U.S.G.S. new office address: Rm. 803, Post Office and Court House Bldg., Los Angeles.

Division of Mines, State of California

Eight sheets of new California Map are now available: Death Valley, Long Beach, San Luis Obispo, Bakersfield, Los Angeles, Trona, Santa Maria, and Santa Ana.

TRADE JOURNALS AND MISCELLANEOUS MAGAZINES

Oil and Gas Journal, November 14, 1955

"Why Was My Well Dry?" pp 143-159

Oil and Gas Journal, November 28, 1955

"Cambrian Pools Are Many Splendored Things", Frank J. Gardner, pp147

Journal of Petroleum Technology, December, 1955

"Oil Production-A Continuing Problem", John R. Suman, pp 10-12

"First Pacific Coast Permanent Drilling Island Modified to Allow Drilling of 70 Wells", E.E. Pyles, pp 13-16

CALENDAR

January 9, 1956: Mon., 7:30-9:30 p.m., Bakersfield Paleontologists Biostratigraphy Seminar, Harvey Auditorium Bldg., Visual Aids Section, Bakersfield College. "Use of Sedimentary Current Structures in Working Out a Paleographic Story" by John C. Crowell, U.C.L.A.

January 10, 1956: Tues., 7:30 p.m., The Coast Geological Society Dinner Meeting, Montecito Country Club, Santa Barbara, California. "The Oxnard Oil Field" by Mr. Robert Erickson, Standard Oil Company.

January 10, 1956: Tues., 7:30 p.m., Sacramento Geological Society, Board Room, Public Works Building, 1120 "N" Street, Sacramento, California. "Differential Thermal Analysis, The Correlative Tool Where Other Methods Fails" by Mr, George B. Mangold, Petroleum Engineers Assoc. Inc. of Pasadena and "Pictorial Tour of the Interior of Alaska" by Mr. E. R. Orwig, General Petroleum Corp.

January 12, 1956: Thurs., 6:30 p.m., Los Angeles Basin AIME Jr. Petroleum Group, Turf Club, Lakewood Blvd. and Anaheim-Telegraph Road, Los Angeles. "Oil Loans" by Mr. R. L. Hock, Vice-President, Citizens National Trust and Savings Bank and "Oil Securities" by Mr. L. Young, Investment Broker, Lester-Ryons and Co.

January 16, 1956: Mon., 7:00 p.m., AAPG Pacific Section Geological Forum, General Petroleum Auditorium, Los Angeles. "Structure and Stratigraphy of the San Joaquin Hills" by Mr. J. G. Vedder, U.S.G.S.

January 17, 1956: Tues., 8:00 p.m., Long Beach Chapter A.P.I., Shell Recreation Hall, Hill St. and Obispo Ave., Long Beach, Calif. "Prospecting for Oil on the Ocean Floor" by Mr. George Shumway, Geological Diving Consultants. Mr. Ronnie Cortes, Chemist, Experimental Laboratory of Shell Oil Co. Refinery, will give a demostration of the items produced in the petrochemical field, entitled "Magic Barrel".

January 23, 1956: Mon., 6:00 p.m., Northwest Geological Society Meeting, Portland, Oregon. "Uranium in Oregon" by Mr. Hollis Dole, Director, Oregon Department of Geology and Mineral Industries. (Location of meeting to be announced)

January 23, 1956: Mon., 12:00 noon, AIME Petroleum Technology Group, Rodger Young Auditorium, 936 W. Washington Blvd., Los Angeles. "Displacement Logging" by Mr. R. K. (Tex) Hamilton, Division Manager, Halliburton Oil Well Cementing Co. $2.25 including tax, tip and parking.

February 2, 1956: Thurs., 12:00 noon, Pacific Section AAPG, Luncheon Meeting, Rodger Young Auditorium, 936 W. Washington Blvd., Los Angeles. "Pegmatitie Gems in Southern California" by Dr. Richard H. Jahns, Professor of Geology, Cal. Tech. $2.00 including tax, tip and parking.

February 6, 1956: Mon, 7:30-9:30 p.m., Bakersfield Paleontologists Biostratigraphy Seminar, Harvey Auditorium Building, Visual Aids Section, Bakersfield College. "Stratigraphic Significance of Mixed Biofacies" by Mr. J. W. Valentine, University of California.

February 7, 1956: Tues., 6:30 p.m., San Joaquin Geological Society Dinner Meeting, Hotel El Tejon, Bakersfield, "Eocene Symposium" by Richard B. Palmer, The Texas Co. and Jim Bigelow, Western Gulf Corp. Mr. Robert B. Hutcheson, Superior Oil Co. will act as moderator.

February 7, 1956: Tues., 6:30 p.m., AIME San Joaquin Valley Chapter Dinner Meeting, Stockdale Country Club, Bakersfield. Speaker and subject to be announced.

February 10, 1956: Fri., 8:00 p.m., The Petroleum Wives Club of Sacramento is sponsoring an informal Valentine's Dance at the Capitol City Motorcycle Club House in Sacramento.

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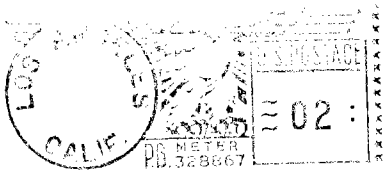

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Form 3547 Requested

PACIFIC PETROLEUM GEOLOGIST

NEWS LETTER OF THE PACIFIC SECTION
AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS

Vol. 10 February 1956 No. 2

ASSOCIATION ACTIVITIES

LOS ANGELES LUNCHEON MEETING

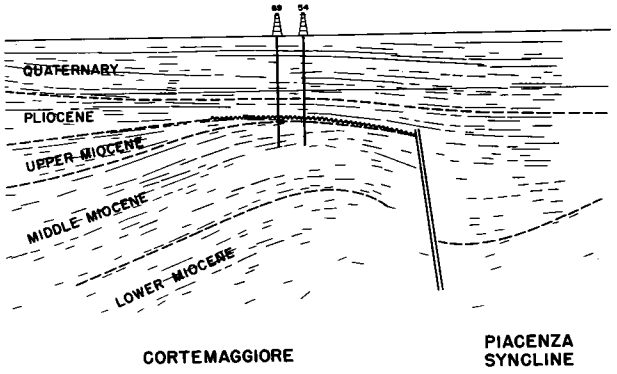
Carl H. Savit, Chief Mathematician of Western Geophysical Company, presented a very interesting talk to the A.A.P.G. monthly Luncheon Meeting held at the Rodger Young Auditorium, January 5, 1956. Mr. Savit spoke on "Italy-The Future Oil Reservoir of Europe".

More than two thousand years after the first commercial oil production in Italy, that nation is on the threshold to becoming a major oil producer. Developments in the year 1955 portend the conversion of Italy into the chief oil producer of free Europe.

Commercial production from seeps and hand-dug pits in several sections of Italy started in Roman times, was intensified in Renaissance times and continued to the late 19th century. Modern oil production began about 1866 with the world's "second" drilled producing oil well near Tocco in Abruzzi. The first commercial production of any consequence was brought in in 1882 for 50 b/d at Salsomaggiore in the province of Parma.

Major exploration programs got under way after 1923 when the Italian Government entered the picture. The government oil company, AGIP, began gravimetric surveys in the Po Valley and drilled some 30 wildcats on locations determined from these closely controlled surveys (some 90,000 stations in an area of 16,000 sq. km. supplemented by magnetic, electrical, and seismic refraction data). The net result was one marginally commercial gas field. An additional small gas field was brought in by private interests in the 1930's.

INDEX MAP OF RECENT ITALIAN DISCOVERIES



NORTH-SOUTH SEISMIC CROSS SECTION OF CORTEMAGGIORE

Reflection seismic work in the Po Valley began in 1940, was interrupted by the war and resumed in 1946. By 1948, drilling had resumed in earnest and resulted in eight important gas fields being discovered from the first eight seismic structures tested. Major gas production has resulted from the development program in the Po Valley. Only one oil field of any importance, Cortemaggiore, has been found to date in that region. Production is approximately 3,000 b/d of 60° gravity oil.

The fields of the Po Valley produce from porous Pliocene-Upper Miocene sands in well defined anticlines, with axes generally trending northwest-southeast. Quaternary sediments unconformably overlie the Pliocene over much of the valley. In much of the area the Pliocene, in turn, unconformably overlies the Miocene sediments. Surface indication of producing structure is invariably absent.

The past year has seen an abrupt shift of interest to the areas of Abruzzi and Marche on the central Adriatic coast and to Sicily. The Gulf field at Ragusa in Sicily is currently producing 6,000 b/d of 19° gravity crude with reserves estimated at about 157,000,000 bbl. A gas discovery in the past few weeks in the same region promises further commercial development.

Petrosud's Cigno #1 in Abruzzi was brought in with production of 35-40° crude from fractured Miocene limestone at 500 m. early in 1955. September brought a rash of discoveries in the same area. SOMICEM (a government company) brought in Valle Copa #1 within sight of the Cigno discovery from 500 m., also in Miocene lime. The two discoveries are separate fields. Within two days after the Valle Copa announcement Petrosud announced Cigno #2 producing from 2,300 m. from what is reported to be Jurassic lime and SOMICEM announced the Casal Bordino discovery some 60 km. to the southeast producing from the lower Cretaceous at 3,000 m.

All of these wells are shut down pending passage of a new petroleum law. Production test figures are not available at this time. All available information indicates, however, that the four discoveries represent major fields of light crudes.

The highly folded and faulted overthrusts of the Appennines are extremely complex. This complexity extends to the Young Tertiary fore deep

along the Adriatic coast which contains at least two major overthrust sheets. Both surface geology and seismic interpretation are further complicated by gravitational sliding of shale formations and overlying limestones from the highlands. Sliding has involved masses of sediments ranging in size from the very small to blocks several miles in extent. Sliding continues to the present time. Problems of seismic exploration in Italy are many, ranging from the extremely dense culture to shot hole drilling problems in the coarse limestone gravels of the river valleys. While the Central Po Valley is almost identical in geology and operational conditions to the central valley of California, the rest of Italy offers many unique and intriguing conditions calling for the most modern equipment and for ingenuity and perseverance in interpretative technique.

The presence of major oil accumulations in many areas and in various parts of the geologic section of Italy together with an abundance of structural traps offers promise of a great future for an oil producing industry in the land of the Romans.

SAN JOAQUIN A.I.M.E.

The San Joaquin Chapter of the A.I.M.E. will hold a dance on Friday, March 2, 1956 at the Bakersfield Country Club. The affair will be semi-formal with admission at $7.50 per couple. Cocktail hour at 8:30 p.m. and dancing to begin at 9:00 p.m. A breakfast will be served at 1:00 a.m. Tickets can be obtained from Lev. Sacre, Carl Leidecker, Herb White, Doug Taylor and Army Kane.

NORTHERN CALIFORNIA GUIDE BOOKS

The Northern California Geological Society has a few remaining copies of the Capay-Wilbur Springs Guide Book and the Mt. Diablo Syllabus which sell for $2.50 and $1.50 respectively. Anyone interested in the purchase of these guide books please contact Mr. Hershell Driver at the Standard Oil Company, 225 Bush Street, San Francisco 20.

LOS ANGELES FORUM MEETING

On Monday, January 16, the Los Angeles Geological Forum met in the General Petroleum Auditorium. The speaker for the evening was Mr. J. G. Vedder, U.S.G.S., Claremont, California, who gave an excellent talk on "Structure and Stratigraphy of the San Joaquin Hills, San Juan Capistrano Area".

The San Joaquin Hills-San Juan Capistrano area lies at the southeast margin of the Los Angeles Basin and includes a roughly triangular area extending from the mouth of the Santa Ana River down the coast to San Clemente and thence north to the Santa Ana Mountains foothills east of El Toro Marine Air Station.

The major structural features are the complexly faulted anticline of the San Joaquin Hills proper and the Capistrano syncline to the east. Three large faults occur within the area. A large zone paralleling the coast from Newport Lagoon to Laguna Beach has been named the Pelican Hill fault zone. A large middle Miocene fault in the San Joaquin Hills proper which also trends in a northwest direction has been called the Shady Canyon fault. The Cristianitos fault parallels the east margin of the area.

The stratigraphic sequence in the San Joaquin Hills area ranges in age from Paleocene to late Pleistocene and is composed of a series of marine and non-marine sedimentary rocks which are, in part, cut by igneous intrusive rocks.

Both the Silverado formation of Paleocene age and the Santiago formation of Eocene age crop out in an up-faulted block extending along Shady Canyon to Sand Canyon Reservoir at the north margin of the hills. Each of these formations contains both marine and non-marine strata.

The non-marine Sespe formation conformably overlies the Santiago formation. The contact is gradational. No fossils have been found in the Sespe, but it presumably ranges in age from late Eocene to early Miocene.

Conformably overlying the non-marine Sespe formation is the marine Vaqueros formation which in turn is overlain by the Topanga formation. The contact is gradational. In the northwest portion of the San Joaquin Hills the Topanga has been subdivided into three units. Southeast of Laguna Canyon the Topanga formation has not been subdivided. All rocks younger than the lower unit of the Topanga formation contain varying quantities of Catalina schist debris indicating a western source area for at least part of these sediments. The Topanga thins rapidly from west to east.

A series of middle Miocene dikes, sills and flows occur in the San Joaquin Hills proper. These igneous rocks may be separated into three types: diabase dikes and sills, andesite flow breccias, and shallow andesite sills and dikes.

The San Onofre breccia unconformably overlies the Topanga formation and is locally contemporaneous with the upper part of the Topanga. Two types of San Onofre occur in the San Joaquin Hills: the non-marine breccia with an earthy matrix and shallow marine breccias with a sandy matrix. The upper portion of the San Onofre is locally interbedded with Monterey shale indicating contemporaneous deposition.

Unconformably overlying the older rocks along the west margin of the Capistrano syncline is the Monterey shale. The Monterey also occurs along the coast between Newport Lagoon and Laguna Beach and along the east margin of the map. The Monterey shale grades laterally into Puente-type lithology in the subsurface west of Newport Lagoon and in outcrop at the northeast margin of the area. The Monterey shale ranges in age from middle to late Miocene.

The Capistrano formation unconformably overlies the San Onofre breccia and Monterey shale along the west flank of the Capistrano syncline and is also present in the central and eastern portions of the

Capistrano syncline. Mudstones and siltstones closely resembling the Capistrano occur at El Morro Bay and Newport Lagoon. The Capistrano formation ranges in age from late Miocene to early Pliocene.

In the central part of the Capistrano syncline, marine and non-marine sediments unconformably overlying the Capistrano formation and the Monterey shale are mapped as the Niguel formation. The Niguel is of Pliocene age. Undifferentiated Pliocene sands in Newport Lagoon area may be related to the Niguel formation.

Marine and non-marine Pleistocene terrace deposits rest unconformably on the older rocks throughout the San Joaquin Hills, San Juan Capistrano area.

SACRAMENTO GEOLOGICAL SOCIETY

The Sacramento Geological Society held its first meeting of the new year, January 10th. The program consisted of a talk by Geo. B. Mangold of Petroleum Engineering Associates, Inc., Pasadena, on Differential Thermal Analysis (D.T.A.). Treating D.T.A. as a correlative tool where other methods fail, Mr. Mangold felt that in areas where electric log and foraminiferal markers are poor or non-existent, a worthwhile contribution to the geologic picture could be made by D.T.A. provided,of course, that good D.T.A. markers exist.

The second half of the program was most interesting also. E.R."Bob"Orwig, Project Geologist in charge of General Petroleum Corporation's Alaskan activity, presented a "Pictorial Tour of Interior Alaska". This talk, well illustrated with colored movies and slides, impressed all with the rigors, beauty and vastness of the Alaskan scene. The speaker noted in closing that the area covered by the G.P. field party during the summer of 1955 was roughly equal in square miles to the State of California.

The December meeting of the Sacramento Geological Society was held on the 13th. Five speakers gave very interesting short talks,as follows:

Anatole Safanov of the Brazos Oil & Gas Company gave a very interesting talk on "The River Island Sand". Mr. Safanov presented a picture of a stream eroding a channel into the Capay shale in the River Island area. This channel was later filled by sands and clays of which one of the larger bodies is called the River Island sand.

Mr. Clair Holdridge, a geologist with the U.S. Army Corps of Engineers gave a summary of the geologic papers given at the G.S.A. Convention in New Orleans that pertained to engineering geology.

Mr. Ray Tabor of the Bridge Department of the Division of Highways of the State of California gave an interesting paper titled "San Francisco Skyway Exploration". The paper dealt with the geologic problems in building the elevated roadways and bridge approaches in the San Francisco area. Sections of the Bay and adjoining area were shown to illustrate some of the problems.

Mr. Robert T. Bean of the Department of Water Resources of the State of California gave a paper titled "Proposed Ground Water Basin Definitions". The paper gave a revised definition of what is a ground water basin and defined the different parts of a ground water basin.

A. Leonard of the Ground Water Division of the U.S.G.S. gave a paper titled "Water Quality in Relation to Geology in Selected Basins in Siskiyou County". The paper brought out that the minerals dissolved in the ground water exists in two forms, ionic and colloidal. They have been able to predict what type of rock was in a stream's drainage area by analyzing the water. Examples - Magnesium rich waters found in areas of Serpentine rock, Calcium rich water in Limestone areas.

SAN JOAQUIN GEOLOGICAL SOCIETY

The San Joaquin Geological Society had, as its guest speaker for the January meeting, Mr. Victor Vacquier, President of the Section of Terrestrial Magnetism of the American Geophysical Union. Mr. Vacquier delivered a very interesting speach on "Geophysical Prospecting by Induced Electrical Polarization".

A sand reservoir rock contaminated with clay has peculiar electrical properties when saturated with water. These have been studied in connection with interpretation of self potential oil well logs. One property, namely, the polarizability by direct current has escaped notice although in 1920 C. Schlumberger did call attention to a phenomenon he called "provoked polarization". Since a necessary condition for its appearance is that the ground be wet, induced polarization might be indicative of the presence of ground water a few hundred feet down.

In the basic field experiment, direct current introduced into the ground by two point electrodes is interrupted and a decay of potential is observed between two other electrodes for several minutes after the collapse of the primary current. This polarization depends on the presence of fresh water in porous formations contaminated with clay minerals. Laboratory experiments suggest that cation exchange in the clay fraction is responsible for most of the effect. Field experiments with 3KW. power in several test areas show that occurrences of ground water in quantities sufficient for irrigation can be detected in alluvium at a depth of 400 feet. In conjunction with apparent resistivity, which is obtained as a by-product, induced polarization offers the possibility of detecting both vertical and horizontal discontinuities in water bearing formations.

A.A.P.G. NATIONAL CONVENTION

The A.A.P.G. National Convention will be held this year in Chicago from April 23 to April 26. Mr. Homer Steiny, Transportation Chairman,advises those who plan to go that there will be both train and air transportation conveniently available. The train trip will be on the City of Los Angeles, leaving Friday afternoon,April 20th, at 4:30 P.M., and arriving in Chicago,Sunday,April 22, at 11:00 A.M. Homer advises travelers to detail their return so that there will be transportation and Pullman space available both ways, prior to leaving Los Angeles.

To those who prefer to fly, the flight will be on United's "The Hollywood",Flight 732, leaving Los Angeles Sunday,April 22, at 8:45 A.M. and arriving in Chicago the same day at 4:10 P.M. Chicago time.

The train trip is being handled through:
Charles F. Hallsman,General Agent
Union Pacific Railroad
Trinity 9211,Ext.280

The air flight is being handled through:
Miss Margaret Erwin
United Air Lines
Madison 6-0431

Further information can be had from Homer Steiny, 580 N. New Hampshire, Los Angeles,4,Calif. phone: Normandy 1-4314

PACIFIC SECTION DUES

To those of you who have not yet paid your 1956 Pacific Section dues....This is the last issue that will be sent until your dues are paid. Will you paid-up members please not loan your copies to the remaining un-paid members.

S.E.P.M. FIELD TRIP

The SEPM will sponsor a field trip on February 18 to Liveoak Canyon in order to examine Tejon strata in the type area. Cars will assemble at 10:00 A.M. where a black top road meets the east side of Highway 99 at a point 1.2 miles north of Grapevine Cafe at the foot of the Grapevine grade. Lunch must be brought, but coffee and doughnuts will be provided by Sigma Gamma Epsilon at USC. A fee of $1.00 will be charged each person and will cover the cost of the field guide and the refreshments. The trip will disband by 4:00 P.M.

SALE OF OFFICIAL PUBLICATIONS

Sales of official publications are being handled by Miss Joan Baldwin, Shell Oil Co., 1008 W. 6th Street, Los Angeles,54,. Miss Baldwin wishes to announce that she still has Directories on hand as well as Cross-sections of Los Angeles Basin, West Ventura Basin, East Ventura Basin, Salinas Valley, and North Sacramento Valley. The Cross-sections are on sale for $1.00(plus $.10 mailing costs)each. The entire set would be $5.50. Directories are $1.00 for the first copy to payed-up members and $3.00 each for additional copies. Non-members may also purchase Directories at $3.00 per copy.

Guide Books of the March, 1952 Field Trips are also still available in limited quantity and may be obtained from Mr. Everett Pease, Treasurer, c/o Sunray Oil Co., 714 W. Olympic Blvd., Los Angeles. The price for the Guide Book is $6.00 if obtained in person and $6.50 if ordered by mail. Since the Pacific Section membership has been increasing at the rate of approximately 150 members each year,it is possible that the remaining stock of Guide Books will not last long. The Guide Book covers many of the Oil Fields of Southern California and is the latest published information on many of the fields.

PERSONAL ITEMS

Tide Water Associated in Los Angeles announces the following assignments:

Stan Siegfus- Supervisor of Special Projects
J.M. Saunders - Assistant to Stan Siegfus
Clyde Cotton- Area Geologist for the L.A. Basin.

A recent group of transfers for Shell Oil involve Ventura people:

Art Brown has been transferred to Ventura from Salt Lake City as Shell's new Division Manager, replacing Bill Bates who went to Los Angeles as assistant to the Vice-President.

Bob Eddy replaces Art Brown in Salt Lake City as Division Engineer.

Jim Arthur, for many years the top authority on the Ventura Avenue Field, has been transferred to Los Angeles on a special project assignment. Jack Fillman has replaced Jim Arthur as Division Engineer in Ventura.

Mr. Ed McDowd, Shell Oil, is resting nicely at Veteran's Hospital after suffering a heart attack.

As of the 31st of January, Lowell Satin, Standard Oil Co.,Los Angeles, will be in the Air Force. He will be stationed in Texas.

Bob Paschall of Hancock Oil in Ventura, local politician and civic "hot shot" was appointed, by the mayor of Ventura, commissioner to fill a vacancy on the Ventura City Planning Commission.

D. B. Flynn, General Petroleum in Ventura, has been seen wearing a long face these days. His only souvenir of his Nevada days, a small vial of Shell's oil from Railroad Valley, was passed around for an exhibit at a talk recently given by Dan at the Coast Geologic Society dinner meeting. The vial was not returned. Anyone knowing of the whereabouts of said vial, please contact Mr. Flynn -- no questions asked.

We are happy to report that Bill Saunders of Intex in Ventura is back at work after a three-week siege of pneumonia.

D. M. "Mack" Robinson, of Shell's Alaska Division, is greatly improved and is taking life easy in Corona, California, after a session in the hospital from an accidental asphyxiation.

Jim Dowden, geologist for Lion Oil Company in Portland, Oregon, is being transferred to Albuquerque, New Mexico, as district geologist.

Stan Carlson, Richfield of Bakersfield, is deep in the throes of new home construction.

Jim O'Flynn, Richfield, has returned to Bakersfield after a quick look at Peru only to pack his Brunton and family for a journey south.

Bob Maynard, Sunray, Bakersfield, was recently observed shoveling dirt on the shoulder of Highway 99. Bob has compiled some interesting data re. the flash point of leaking antifreeze on exhaust manifolds of jeeps.

Lee Freeman,Texas Co.,Santa Paula, was walking down the street the other day,smoking a cigaret, and while on the way intended to mail some letters. After he stopped by the mail box he continued walking and was quite surprised to find the letters still in his hand. You guessed it.. When the postal employe finally got the box open there were only a few letters scortched and no real damage done. Rex Grivetti must be working his boys pretty hard.

Tony Morris,Consultant,is now enjoying the sights in Bogata,Columbia. Combined with last years stint in Peru, Tony is rapidly becoming a South American expert.

Bob Herron and Bob Nesbit, MJM&M in Ventura, have severed their associations with MJM&M. Future plans of both are unknown at present.

John Loofbourow of Richfield Oil Company is now making a geological reconnaissance in Bolivia, Peru and Chili.

Joe Dockwiller (Union Oil) has moved his family and boat from Bakersfield to Ventura.

Art Weller, Shell in Ventura, has just finished moving into his new house in Ventura's East end.

Tom Benson, Texas Company, Santa Maria, is presently converting his Austin Healy 100 from the conventional internal combustion drive to the peddle drive mode. Recent mechanical difficulties with the "car that you wear" resulted in this drastic conversion.

Ralph Hawkins, Shell in Ventura, has just been returned to Ventura by San Francisco after three days of disrupting San Francisco's tranquility.

Friends of Joe Ernst, Texas Company, Santa Maria, will be happy to hear that Joe has recently acquired a new home in Santa Maria. Yard work will now be the major activity of the Ernst family. Bring shovels when visiting at 321 West Agnes.

Paul Day, Western Gulf, Santa Maria, has been swimming to work at this new location in Palo Alto. The Day's have been shopping for miniature aqua lung and fins for their expected dependent.

Iliff Anderson, Western Gulf, Santa Maria, has received his instrument rating and is now qualified to fly "blind".

William F. Hubbard of Ohio's Casper office has been transferred to the Los Angeles office.

T. J. Pujol, Tidewater, is a recent transferree to Ventura from Bakersfield. He will be in charge of the research group for Tidewater in the Ventura area.

M. J. Kappeler, Tidewater, Ventura, has been designated exploitation geologist in the Ventura area.

D. B. Lansing, Tidewater, Ventura, has replaced Jack Kappeler as area geologist.

R. D. Hoffman, Tidewater, Ventura, has been shifted from Ventura Avenue exploitation geologist to the research group for the Ventura area.

Ken Lautenschlager, Standard, lately from Santa Maria, recently made his professional musical debut at the famed Shaw's of Santa Maria on his new bass fiddle. Results were a prompt transfer to Bakersfield. The new Dodge station wagon Ken is supporting is designed to facilitate the transportation of the bass's bow.

Bob Dott, Humble Oil, Eugene, Oregon, and Frank Palen, Humble's Los Angeles office, are going into military service.

"Buzz" Welsh, Sunray, Bakersfield, is back at work following a spur of the moment appendectomy.

Marshall Ayres and his Mrs., Standard, Bakersfield, were about to leave his office to sign purchase papers for a new home in College Heights when he was notified of his transfer to Salinas effective February 1!

The Humble Oil Company announces the following transfers in their scouting department:
Sam Tate, Los Angeles to Ventura
Hal Haun, Ventura to Sacramento
Charles Guion, Sacramento to Los Angeles
They also wish to announce two new geologists:
Howard Sonamon, Los Angeles
Dick Walters, Ventura

Ida Dobler, Standard Oil, has been transferred to Salinas.

S. R. Jeffries, Shell, Ventura, is expected back from a month's special schooling in Houston.

Brick Robinson has recently completed work on his M.A. at U.C.L.A. and has joined Shell Oil Company as a production geologist pending completion of the company's training program.

NURSERY NEWS

To Mr. and Mrs. Ed Miller, Ohio Oil Company in Ventura, a boy, Michael Wayne, born January 21, 1956. Weight 7 lbs, 10-1/2 oz.

Tommy and Jacqi Thomas of the Standard Oil office in Sacramento are proud to announce the arrival of their daughter, Debora Lee, on January 24, 1956. Debbie weighed 6 lbs. 11 oz. and has one older brother, Greg.

Mandy Touring, with Humble Oil Company in Eugene, Oregon, and his wife Elsie, have a new son, David Walter, born November 1, 1955.

Bill and Nancy Lewis, Standard of Bakersfield, are proud parents of a boy, Steven Noble, 7 lbs. 13 oz., born January 10.

Dick and Phyllis Meditz, also of Standard, Bakersfield, welcomed a daughter, Heather, 7 lbs. 11 oz., born January 5.

Mr. and Mrs. Robert Knapp, Standard, Los Angeles, have a new baby boy, James Ralph, 8 lbs. 4 oz., born January 11th.

Mr. and Mrs. R. J. Malloy, Richfield Oil, have a baby daughter, Susanne Angele, born January 19th, 7 lbs. 15 oz. This is their fourth child, three boys and one girl now.

Mr. and Mrs. Paul Harris, Texas Company at Long Beach, have a baby daughter, Laurie Lou, born December 30th. This is their first child. She weighed in at 7 lbs. and went right to work helping Daddy fill out his income tax form.

BIBLIOGRAPHY OF RECENT PUBLICATIONS

SCIENTIFIC PUBLICATIONS - JOURNALS AND BULLETINS

United States Geological Survey

"Oil and Gas Map of the United States", August 1, 1955.

"Preliminary Structure Contour Map of the Colorado Plains", OM 176.

Division of Mines, State of California

California Journal of Mines and Geology, Vol. 51 No. 4, incl. "Mines and Mineral Resources of San Mateo County", and "California Mineral Commodities, 1952 and 1953".

TRADE JOURNALS AND MISCELLANEOUS MAGAZINES

Oil and Gas Journal, January 9, 1956

"Why Some Geologists and Geophysicists Don't Mix", Michel T. Halbouty, pp. 148-151.

Petroleum Engineer, January, 1956

"Recent Developments in the Tejon-Grapevine Field", John P. Lavery, Jr., pp. B-31 to B-34.

"Planning a Logging Program", A.G.T. Weaver, pp. B-51 to B-56.

Petroleum Industry, prepared by Research Department of Merrill, Lynch, Pierce, Fenner and Beane. A financial study of some 40 oil companies. Copies can be obtained from Merrill, Lynch or by contacting Martha Gallagher, c/o Bankline Oil Company, 437 S. Hill Street, Los Angeles 13.

CALENDAR

February 7, 1956: Tues., 6:30 p.m., AIME San Joaquin Valley Section, Banquet Room of Stockdale Country Club, Bakersfield, California. "Sampling and Analysis Procedures for Oil Reservoir Fluids and Application of Data in Engineering Calculations" by Mr. Frank O. Reudelhuber, Core Laboratories Inc.

February 8, 1956: Wed., 6:30 p.m., Los Angeles Basin AIME Jr. Petroleum Group, Petroleum Club, 4365 Atlantic Blvd., Long Beach. "The Harris Bill" by Mr. Pat Elliott, Chairman of the Oil Committee of the Long Beach Chamber of Commerce. Members $3.00, non-members $3.50.

February 9, 1956: Thurs., 12:00 noon, S.E.G., Biltmore Hotel, Los Angeles. "Geological and Geophysical Aspects of Velocity Logging" by Mr. Howard Breck, Seismograph Service Corporation, Tulsa, Oklahoma. $2.00.

February 14, 1956: Tues. 7:30 p.m., Sacramento Geological Society, Board Room, Public Works Building, 1120 "N" Street, Sacramento. "Permafrost and Aufeis" by Mr. B. F. Hale, Special Assistant to the Vice President of the Western Gulf Oil Co., Los Angeles.

February 14, 1956: Tues. 7:30 p.m. The Coast Geological Society dinner meeting Montecito Country Club, Santa Barbara, California. "Geology and Exploration in the Gulf of Suez Area, Egypt". Mr. Paul Hayes and Mr. R. H. Mansfield. SPECIAL! This is "Ladies' Night.....bring the wife.

February 15, 1956: Wed., 7:30 p.m., Stanford University, Room 320, Geology Building, Stanford, California. A lecture under the auspices of the School of Mineral Sciences. "Problems of the Pennsylvanian in the United States" by Dr. H. Wanless.

February 20, 1956: Mon. 7:00 p.m., General Petroleum Auditorium, Los Angeles Forum Meeting. Mr. Mel Hill, Western Gulf Oil Co., will speak on "Wrench Fault Tectonics".

February 27, 1956: Mon. 12:00 noon, AIME Petroleum Technology Group, Rodger Young Auditorium, 936 W. Washington Blvd., Los Angeles. "Pumping Offshore Wells" by Mr. R. J. Ralph, Manager of Hydraulic Services, Kobe Inc. $2.25 including tax, tip and parking.

March 1, 1956: Thurs. 12:00 noon, Los Angeles Luncheon Meeting, Rodger Young Auditorium, 936 W. Washington Blvd., Los Angeles. Mr. Donn S. Gorsline, Ph.D Candidate at U.S.C., will speak on "Marine Geology of Sebastian Viscaino, Baja California, Mexico".

March 5, 1956: Mon. 7:30-9:30 p.m., Bakersfield Paleontologists Biostratigraphy Seminar, Harvey Auditorium Building, Visual Aids Sections, Bakersfield College. "The Shapes of Organisms" by Dr. V. L. Vanderhoof, Intex Oil Co.

March 8, 1956: Thurs. 12:00 noon, S.E.G., Biltmore Hotel, Los Angeles. "Radioactive Surveying in Shallow Bore Holes" by Mr. R. B. Moran, Moran Instrument Co. $2.00.

PACIFIC PETROLEUM GEOLOGIST
PACIFIC SECTION, A.A.P.G.
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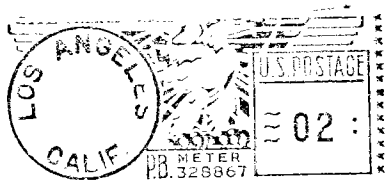

Mr. F. R. Neumann
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Chico, Calif.

PACIFIC PETROLEUM GEOLOGIST

NEWS LETTER OF THE PACIFIC SECTION
AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS

Vol. 10 March 1956 No. 3

ASSOCIATION ACTIVITIES

LOS ANGELES LUNCHEON

On February 2nd, 1956, the Los Angeles Luncheon Meeting was held at Rodger Young Auditorium. After a very short business meeting, Mason Hill, President of the Pacific Section, introduced Dr. Richard H. Jahns, Professor of Geology at Cal-Tech, who spoke on "Pegmatite Gems in Southern California".

The principal gem deposits of southern California occur in dikes and other bodies of pegmatite that are most widespread in parts of Riverside and San Diego counties. The gem material, which has aroused world-wide interest since the initial discoveries about 75 years ago, includes transparent varieties of beryl, garnet, quartz, spodumene, topaz, and tourmaline, as well as asteriated quartz and cat's-eye varieties of beryl and tourmaline.

The pegmatite is intrusive into rocks of the Southern California batholith, of Cretaceous age, and to a lesser extent into metamorphic rocks of pre-batholith age. Most is granitic in composition, and probably represents the last stages of igneous activity related to the batholith. The pegmatite bodies known to contain gem material constitute a very small percentage of the thousands exposed in the region.

The major gem occurrences are restricted to the inner parts of pegmatite bodies that show a well-defined zonal structure. Graphic granite is the chief constituent of the outer zones, whereas extremely coarse-grained quartz, potash feldspar, spodumene, and black tourmaline are most prominent in the inner zones. The gem minerals are components of a somewhat less coarse-grained rock type known as "pocket pegmatite", which is characterized by abundant well-faced crystals of potash feldspar, albite, and muscovite. Scaly aggregates of lepidolite are present locally.

Many gem crystals are essentially "frozen" in solid pegmatite, and are so severely fractured that they yield little material of good quality. Others, however, occur within or along the margins of irregular "pockets" that range from less than an inch to several tens of feet in maximum dimension. The "pockets" contain little open space, but instead are nearly filled with angular fragments of quartz, crumbly aggregates of partly decomposed feldspars, and masses of clay minerals. The gem crystals of highest quality are scattered through these heterogeneous fillings.

The pegmatite bodies are thought to have been formed from injected magma, their zonal structure resulting from fractional crystallization of the liquid. The process probably was complicated by reactions between the liquid and the crystals formed from it, and during later stages by boiling of the residual liquid and condensation of the vapor elsewhere in the same pegmatite bodies. The "pockets" evidently were developed near the end of the sequence, when the small quantities of residual liquid were rich in volatiles and numerous rare elements. Final escape of some volatile material from the "pocket pegmatite" seemingly was essential to preservation of the gem crystals, for wherever such material was retained the crystals were severely corroded or altered to opaque aggregates of micas, clays, and other minerals.

By far the greatest production of gem material from the southern California pegmatite deposits was obtained during the heyday of mining from 1900 to 1914. The total production is valued at slightly more than $2 million, not including the substantial output from hundreds of individuals who have carried on informal operations without benefit of definite agreements with the mine owners. The deposits have provided stimulation for prospectors, miners, gem dealers, mineral collectors, high-graders, and even geologists out of all proportion to the monetary return from the materials they have yielded.

Discovery of nearly all the deposits came through detailed searches for float material and scrutiny of surface exposures, and to some extent through happy accidents in the development of underground mine workings. Some geologic criteria of potential use in exploration have been established during recent years, but in general these remain to be tested. The pegmatite bodies are as yet untouched by the exploratory drill, and they have yet to yield to more subtle methods of search. As in exploration for petroleum, the seeking of additional gem deposits has suffered from a lack of competent geologists who can see beneath the surface of the ground.

S.E.P.M. FIELD TRIP

The S.E.P.M. sponsored a field trip to the type section of the Tejon formation in Liveoak Canyon on February 18th, 1956. The hardihood of Southern California's geologists is attested to by the fact that 140 souls attended the trip, in spite of ice on the Ridge Route, spitting snow at the assembly point, and a promise of rain by the weather man. The day was made bearable by excellent arrangements and text by Stan Carlson and Jim Bigelow, clearing skies, and by 24 gallons of hot coffee and 500 doughnuts by the U.S.C. students. It had been about 11 years since this closed land had been available for a general field trip.

SAN JOAQUIN GEOLOGICAL SOCIETY

Donald M. Ford, geologist with Sunray-Mid Continent Oil Company, Bakersfield, has been appointed by the executive committee of the San Joaquin Geological Society to assume the duties of Secretary-Treasurer. This office was left vacant by the transfer of Doug Wilson, Intex Oil Company, to Roswell, New Mexico.

PACIFIC PETROLEUM GEOLOGIST

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NEXT DEADLINE MARCH 29

SAN JOAQUIN GEOLOGICAL SOCIETY

The San Joaquin Geological Society monthly dinner meeting was held at the El Tejon Hotel on February 7th. An "Eocene Symposium" was presented by Richard B. Palmer of The Texas Co., and James S. Bigelow of Western Gulf. Moderator of the talks was Robert B. Hutcheson of Superior Oil.

Mr. Bigelow discussed the Eocene of the southern end of the San Joaquin Valley. The bulk of Eocene time here is represented by the Tejon formation. Possibly the lowest two members of the San Emigdio formation are Upper Eocene.

Eocene rocks are clearly defined in the type area of the Tejon formation between Pastoria and Tecuya Creeks. Here Tecuya formation (non-marine Oligocene?) rests unconformably on the Tejon which in turn rests on granitic basement. To the west the upper unconformity becomes less pronounced until in the vicinity of San Emigdio Creek the Oligocene-Eocene boundary is a matter of paleontological control.

The Tejon is predominantly an Upper Eocene, shallow water sandstone, coarse grained in the lower part and grading upward into a fine grained sediment. It is found in the outcrop from Pastoria Creek westward some 25 miles to Santiago Creek. It reaches a maximum thickness of 4200' in Pleito Creek. The formation has been divided into four units by J. G. Marks as follows:

Reed Canyon silt
Metralla sandstone (Cannonball sand)
Live Oak member (Worm Impression silt)
Uvas conglomerate

The type Reed Canyon silt consists of 60' of fine grained sediment grading upward from fine sand to silt. Its fauna suggests shallow water deposition. Tecuya formation unconformably overlies it at the type locality in Reed Canyon. East of Reed Canyon Tecuya rests on older Eocene and to the west on Oligocene rocks. The Reed Canyon silt is probably Upper Eocene in age. Beds possibly correlative paleontologically with this unit are found in the middle member of the San Emigdio formation to the west in San Emigdio Creek. However, the Tejon formation and the San Emigdio formation are distinctly different mappable units. The presence of an unconformity at the base of the San Emigdio formation is not clearly established. Reed Canyon fanules have been found in Tejon Ranch and Wheeler Ridge oil fields. To the north this unit is presumed to grade into the deep water facies of the Upper Eocene, the Kreyenhagen shale.

The Metralla sandstone is a fine to medium grained, silty, grey, consolidated sand some 1300' thick. Typical large spherical concretions account for the name "Cannonball sand", often applied to this unit. It probably grades westward into a deeper water facies correlative with the Kreyenhagen shale and the Point of Rocks sand. Like the Reed Canyon silt, it probably belongs in Laiming's "A" zone of the Eocene.

The Live Oak member is the thickest and most widespread member of the Tejon. It grades upward from a coarse, conglomeratic sand to a fine grained, silty one. It is extremely fossiliferous. It reaches a maxim thickness of 3000' between Pleito and Salt Creeks. Approximately the upper three-fourths is assigned to Laiming's "A" zone and the lower one-quarter to his "B" zone. This age determination is not definitive since the presence of a "B" zone fauna is open to question.

The Uvas conglomerate consists of coarse clastics derived from the underlying basement. It has a limited surficial extent and is known principally from its type locality in Grapevine Canyon. It is tentatively placed in Laiming's "B" zone.

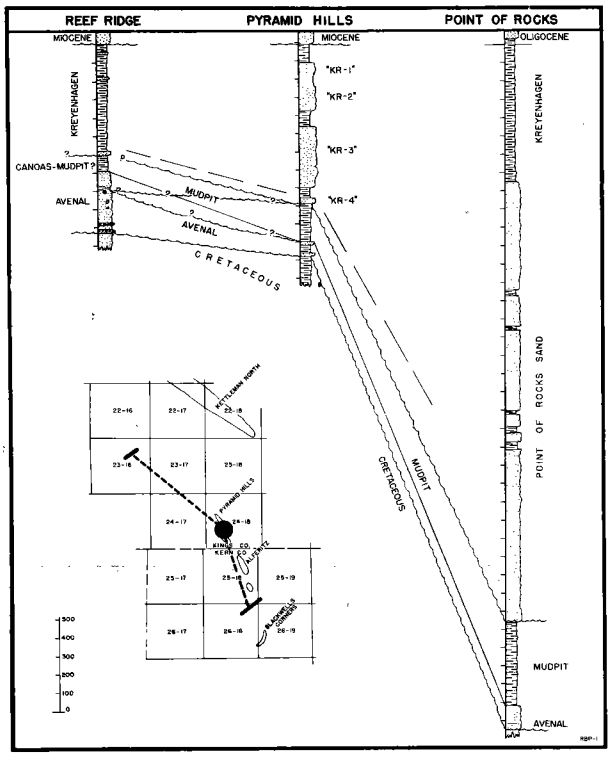
Mr. Palmer discussed "Some Problems of Eocene Stratigraphic Relationships, Westside of San Joaquin Valley". The purpose of this talk was to present some of the problems in stratigraphic relationships in the area from the southern end of Reef Ridge immediately north of the Pyramid Hills, southward to the Belgian Anticline. Considerable disagreement exists with respect to equivalence of names, equivalence of age, and even to the basic diagnosis of the age connotation of the microfaunas.

It is believed that all major Eocene stages from "A" through "E" are represented in outcrop and subsurface somewhere in the area under discussion. Lithologically, large changes in the sand-shale percentage distribution are common. In the subsurface, structural and stratigraphic anomalies coupled to lithologic differences make interpretation both complex and controversial.

There is no intention, implied or otherwise, to offer a unique solution to age or lithologic correlation. Rather, it is intended merely to suggest what the problems are.

Reef Ridge: Surface evidence along Reef Ridge indicates that at least two and possibly more Eocene formations are present - the Kreyenhagen shale and the Avenal sand. The Kreyenhagen shale, upper Eocene, is 1000 feet thick and contains several sandstone lenses and a green clay-shale member ("Canoas") toward its base. The Avenal sand, 300 feet - 400 feet thick, underlies the Kreyenhagen and rests unconformably on Cretaceous sediments. What is the true age of the Avenal and Canoas? The Avenal has been called Domengine in age, but could be Martinez in which case the "Canoas" could then be a "Cantua" shale with an unconformity at the base of the Kreyenhagen. The Avenal might also be a "Cantua" sand. In any case the section is obviously attenuated compared to the Eocene near Coalinga.

McClure Valley-Pyramid Hills-Devils Den: Kreyenhagen sands and shales occupy the position of the Kreyenhagen shale of Reef Ridge. Sand comprises 3/5ths to 3/4ths of the section and is underlain by the Mudpit green clay-shale series (200 to



CORRELATION SECTION FROM REEF RIDGE TO DEVILS DEN

450 feet thick). Mudpit rests apparently conformably on Avenal. Typical Martinez is reported, in some places, between the Avenal and Cretaceous. Is the Avenal as old as Martinez? What is the age of the Mudpit? Is it "Canoas", "Cantua" or just young Eocene that is slightly older than Kreyenhagen? If it is "Cantua" then the lower-most "Kreyenhagen" of Pyramid Hills may possibly be Domengine equivalent. If this is true, the underlying Avenal could be a Cantua sand lying unconformably on Martinez or Cretaceous.

In Point of Rocks and Wagonwheel Mountain outcrops, the Kreyenhagen sands coalesce into an almost continuous sand body 2500 feet-3600 feet thick, lying below typical Kreyenhagen shale. Point of Rocks sand appears to lie unconformably on Mudpit shale (750 feet) which, in turn lies conformably on Avenal sand (320 feet). Avenal is separated from typical Cretaceous by a thin shale body, possibly representing a Martinez equivalent. The age problems are similar to those of Reef Ridge.

Beer Nose-Shale Hills: In this area, in the Mudpit, a sand or silt section appears which has been called Mabury, (0-200 feet). In many wells only glauconitic silts remain at the base of the Eocene where the Avenal would normally be.

The age of the Mabury and Mudpit are closely allied, obviously. If the Mudpit is a low Kreyenhagen unit, then Mabury is a "Canoas" sand (stray Point of Rocks). If the Mabury marks an unconformity between two shale units resembling Mudpit, it is Domengine if it lies above the unconformity, and possibly Cantua or Gatchell if it lies below.

McDonald Anticline-Media Agua Creek: Progressively southward the Eocene increases in shaliness in the Lower Point of Rocks section. Remnants of Mabury and possibly Avenal sands persist.

On Media Agua Creek, V. S. Mallory describes a surface section in detail, as follows: 1290 feet of Point of Rocks sand overlie 105 feet of blue-green to olive, silty shale and 600 feet of sand. Below the 600-foot sand are 300 feet of green to olive clay-shale, resembling Mudpit, with a 25-foot sand 75 feet below its top. The contact between the 600-foot sand and the olive clay-shale (Mudpit?) could easily be an unconformity. If this lower shale is Mudpit - and Mudpit is a Cantua equivalent - - then (1) the 25-foot sand would be Mabury equivalent and a Cantua sand; and (2) the overlying 600-foot sand could be Domengine or Gatchell. If the Mudpit is lower Kreyenhagen shale, then the entire section is also Kreyenhagen in age and only the very bottom few feet represent something older - such as Martinez.

Temblor Ranch-Belgian Anticline: Deep tests in the Belgian Anticline and Cymric areas indicate a tremendous thickness of Point of Rocks sands and associated shales. The youngest Eocene present, up to 1000 feet thick, is considerably younger than any found to the west and north. No definite identification of Eocene older than Point of Rocks zone "A-2" has been made.

Summary: In summary, it would appear that:
(1) Eocene stratigraphy on the west side of the San Joaquin Valley indicates a build-up of sand, particulary in the younger stages.
(2) Representatives of all Eocene stages are present.
(3) Age designations for several key units of the Eocene are in doubt.
(4) Lithologic variations in youngest Eocene are most severe north of Pyramid Hills. Older Eocene is largely a clay-shale facies with varying amounts of sand. Younger Eocene is predominantly sand.
(5) Only fragmentary information is available on Eocene south of Belgian Anticline.
(6) Outcrop sections almost invariably represent truncated conditions with younger Eocene usually present eastward in the sub-surface.

DISTINGUISHED LECTURER SERIES

The next speaker of the Distinguished Lecturer Series will be Mr. N. Wood Bass, Staff Geologist of the Fuels Branch Geological Division, U.S.G.S., Denver, Colorado. Mr. Bass will speak on "Comparison of Modern Shorelines with Oil-Bearing Sand Lenses in the Mid-Continent and Denver Basins with Consideration of Evidence for Oil Migration from Crude Oil Composition". This meeting will be held on Thursday, March 15, 1956 at 7:30 p.m. in the General Petroleum Auditorium, Los Angeles. All members and guests are cordially invited to attend.

OIL FIELD AND POOL NAMES

The new list of accepted names for oil fields and oil pools in California has been issued by the Classification Committee of the A.A.P.G. and the Conservation Committee of the State of California. Anyone who wishes to obtain this list may do so by contacting Irv Frazier,929 South Broadway, Los Angeles,15,California. Telephone- Trinity 9271. The list is free, of course.

BAKERSFIELD PETROLEUM WIVES

The Petroleum Wives organization in Bakersfield held their annual "free" dance at the Veterans Memorial Hall. The dance was a costume affair with the central theme of "Fiction Frolic". Costumes worn covered a wide range of ideas limited only by the imagination of each individual. Some of the geologic guests were so convinced of the authenticity of the egg that was laid in the middle of the floor by a prehistoric monster that it was necessary to have the"doctor" examine it.

PERSONAL ITEMS

The Middle East is about to have new troubles added to its present headaches. Ross Phillips and Sarge Reynolds, consultants from Bakersfield and Woodland respectively, are joining forces with Hampton Smith to invade Turkey on an exploration program on Bolsa Chica's new concession.

Tony Morris, Los Angeles consultant, leaves this month to supervise exploratory work for Edwin W. Pauley in Jordan. It is reported there is a shortage of chain mail and bullet proof vests in California at present.

Dick Haines, Conoco, spent 4 days in Bandera, Texas. Company meetings on a ranch.

Don Olson, Union, Santa Paula, is vacationing in Acapulco, Mexico.

Ted Off, Ojai Oil Company in Ojai, Bill Saunders, Intex in Ventura, Bob Erickson, Standard Oil in Ventura, Pat Fazio, Shell in Ventura, Tom Barrow, Humble Oil in Los Angeles and Bob Paschall of Hancock Oil in Ventura, comprised the group of local geologists that escorted Professor John Harbaugh's petroleum geology class from Stanford on a rather extensive field trip through the Ventura Basin on February 17th and 18th.

Ernie Rennie has recently joined Tide Water Associated's exploration staff in Ventura. Ernie comes to Ventura from Oceanic Oil Company in Bakersfield.

Tom O'Neill, Shell in Ventura, is presently driving a 1956 DeSoto. It surely is accomodating of Shell's Credit Union to allow Tom to drive their new car.

Dave Engstrom started work for Standard Oil Company the middle of February. Formerly with Army Corps Engineers in Alaska.

Rumor has it that Joe Schweitzer, Standard Oil Company, has just returned from a second honeymoon - is this true?

Art Brookley of Paleo Lab is to be married Saturday to Beverly Ritter, also of Standard Oil Company Paleo Lab, Los Angeles. (Which Saturday, Art?)

Elmer McIlvain, Richfield Oil Paleo Lab, died February 11th, 1956, after a long illness. He was employed in the Long Beach Southern Division office for a number of years.

William Heiner, USC graduate, is a new employee with General Petroleum. He was formerly with U.S. Hydrographic Office, Washington, D.C.

Theodore Ehring has been employed by The Texas Company as a Junior Geologist at Bakersfield. Ted is a recent USC graduate.

Dave E. Tolle, Texas Scout at Long Beach, has been promoted to scout-leaseman and transferred to Sacramento. He will be replaced by H. D. (Don) Pitcher who has been transferred from production operations in Ventura.

The smile on the face of Jim Miller, Bakersfield Scout for Sunray-DX is just because he's back in God's country.

Ken Jensen, TideWater scout, Bakersfield, has been transferred to Sacramento to take over duties as TideWater's representative in that area. He will be replaced by Wayne Thomas, formerly scouting the Ventura area for TideWater.

Bud Bryan, Schlumberger, has been transferred from Bakersfield to Midland, Texas. George Hepburn, formerly in Taft, will take his place.

Jean D. Senteur de Boue, Bakersfield consultant, who has recently been doing considerable field mapping in the Central Valley area for an unnamed oil company, forgot to set the brakes on his bright red and yellow jeep one afternoon and was last seen chasing it over one of those 1000-foot cliffs often found in the vicinity of Tulare Lake.

P. J. Farrelly, a new Conoco geological trainee, is presently engaged in subsurface studies at their Bakersfield office.

Bob Hacker, Union in Santa Paula, is the new golf star in the Ventura Basin. In a show-down golf match against Tom Cate, Shell in Ventura, Bob's mastery of the game was not to be denied and he soundly thrashed the inept Mr. Cate. Tom Cate, smarting from his first defeat in many months, has gone into seclusion and cannot be reached for comment.

Otto Hackel, Intex, Ventura, has just been transferred to Bakersfield and will assume his new responsibilities as Chief Geologist for Intex Oil Company in the Western Division.

John C. May, Intex, Dallas, will now become Manager of Exploration for the entire company.

Loring Sneddon, formerly of Intex Oil Company in Bakersfield, has become Chief Geologist of Hancock Oil Company with his office in Long Beach, California.

Art Huey, Hancock, Long Beach, is now in charge of Special Projects for Hancock and also heads exploration in foreign operations.

Roy Turner, Intex, Ventura, replaces Otto Hackel as District Geologist in the Coastal area.

A group of his friends have initiated an R. L. Hewitt Memorial Fund, headed by Horace Harrington and William Cortwright, Trustees. This trust fund will be established at the Bakersfield Savings & Loan Co. Mr. Harrington asks that contributions to this memorial fund be made directly to him at 3301 Brundage Lane, Bakersfield, and designated for the R. L. Hewitt Memorial Fund.

Wayne Sayer has joined Superior Oil Company as district landman at their Bakersfield office.

Bill Saunders, Intex, Ventura, is planning to follow Otto to Bakersfield. Bill was recently named one of the Board of Directors of Intex Oil Company.

Harold Fothergill, Union Oil at Santa Maria spent the past month in Union's L.A. Office.

Dr. V. L. VanderHoof, Intex, Ventura, is going to Bakersfield about June 1st to take charge of special geologic projects for Intex.

Bob Herron, formerly with MJM&M in Ventura, has just returned from a frigid vacation in Bryce and Zion National Parks and a not-so-frigid few days in Las Vegas. Bob has just joined the geologic staff of Hancock Oil Company in Bakersfield.

Bob Nesbitt, another MJM&M alumnus from Ventura, has gone to Bakersfield, joining Western Gulf's exploration department.

S. R. Jeffries, Shell in Ventura, has commuted back to Texas for another course in Shell's special training program.

Jim Jackson and John Cronin of Shell in Ventura have taken to hiding beneath their desks to avoid any discussions with their colleagues at Shell since President Eisenhower has announced his decision to run for re-election.

Bill Park, Division of Oil and Gas in Santa Maria, has been transferred to Taft, California and Bill Bradford, D.O.G. in Long Beach, will take his place in Santa Maria.

Ed Hall, Union, Santa Paula, is spending a month in Los Angeles practicing smog inhalation. Jerry Rickels is cracking the whip at Santa Paula during Ed's absence.

Charlie Bishop and Doug Wilson, Intex Oil Co., are leaving Bakersfield to open new field offices. Charlie will be in Denver under the western division office of Bakersfield; Doug will be in Roswell, New Mexico, working under the mid-continent division in Midland, Texas.

Gene Wilson has left the Ohio Oil Company in Coalinga and has joined Caltex, heading for Sumatra via New York.

Friends of R. L. Hewitt, Trico Oil & Gas Co., Bakersfield, were saddened by his sudden death February 5th of a heart attack.

Brick Robinson reports that he has completed work on his M.A. degree (Geology) at U.C.L.A. and has now joined Shell Oil Company as a production geologist pending completion of the company's training program.

F.M. "Moose" Bernard, geologist with Sinclair Oil Company in Portland, Oregon, has been transferred to Italian Somaliland. Moose may now be contacted at Box 16, Mogadiscio, Italian Somaliland, c/o Sinclair Somal Corp.

Chuck Kundert is leaving the California State Division of Mines to be employed by the Utah Construction Company in San Francisco. Chuck's job of revisions on the State Geologic map will be handed to Charles Jennings who will carry on the work without interruption.

Dana Detrich, Shell, has been transferred to Bakersfield. Dana has been a hard worker for the Pacific Section, having served on various committees, and will be missed.

The placid domino atmosphere in the University Club was disturbed on February 23rd when the waiter handed Homer Steiny a birthday cake. Irv Frazier's baritone voice could be heard throughout the Club singing "Happy Birthday Homer".

NURSERY NEWS

Bill Castle, Richfield Oil Company, and wife are proud parents of a new baby boy, David Alan Castle, born February 10, 1956. He weighed 8 lbs. 4-1/2 oz. and is their third boy.

Mike Yeager and his wife have a baby boy, William Doty, who was born February 20, 1956, weighing 7 lbs. 11 oz.

A boy, Brian Christopher, weighing in at 8 lbs. arrived at the home of Tom and Janice Llewellyn, TideWater Associated, on February 21, 1956.

Ed and Betty Gribi, Consultant, Great Falls, Montana, welcolmed James Edward on August 1, 1955. He weighed 3 lbs. 2 oz. at birth, but is a fat and happy 12 lbs. at present. He joins Dan, 5, and Sharon, 2-1/2.

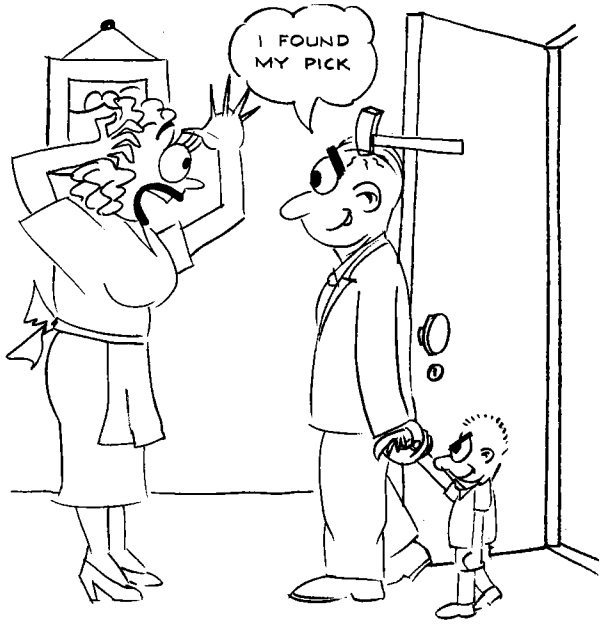
Jane and Walter Austin, Tide Water, Bakersfield, have announced the arrival of Miss Cecile Marie, born February 25, 1956

To Mr. and Mrs Michael B. Jager, Richfield, Ojai, a boy, born February 20, 1956-- Weight 7 lb. 11 oz.

Sue and Ed Dryden, Standard Oil, Ojai, announce the arrival of a boy, Tracy Stephenson, February 20, 1956.

Mr. and Mrs. Don Fissell have a small son, 9 lbs. 9oz. (what's small about that) - born, February 19th - name, Mark Jon.

ANDY CLINE by Sullwold



CALENDAR

March 14, 1956: Wed., 6:30 p.m., San Joaquin Geological Society, Distinguished Lecturer Dinner Meeting, Hotel El Tejon, Bakersfield. "Comparison of Modern Shorelines with Oil-Bearing Sand Lenses in the Mid-Continent and Denver Basins" by Mr. N. Wood Bass, U.S.G.S., Denver.

March 15, 1956: Thurs., 7:30 p.m., A.A.P.G. Distinguished Lecturer Meeting, General Petroleum Auditorium, Los Angeles. "Comparison of Modern Shorelines with Oil-Bearing Sand Lenses in the Mid-Continent and Denver Basins with Consideration of Evidence for Oil Migration from Crude Oil Composition" by Mr. N. Wood Bass, Staff Geologist, Fuels Branch Geological Division, U.S.G.S., Denver,Colo.

March 16, 1956: Fri., 7:30 p.m., Coast Geological Society Dinner Meeting, Miramar Hotel, Santa Barbara. "Comparison of Modern Shorelines with Oil-Bearing Sand Lenses in the Mid-Continent and Denver Basins with Consideration of Evidence for Oil Migration from Crude Oil Composition". Mr. N. Wood Bass, U.S.G.S., Denver, Colo.

March 20, 1956: Tues., 7:00 p.m., A.A.P.G. Los Angeles Forum Meeting, General Petroleum Auditorium, Los Angeles. "Preliminary Report on the Geology of the Santa Monica Mountains". Dr. Cordell Durrell, Professor of Geology, U.C.L.A.

March 20, 1956: Tues., 7:30 p.m., A.P.I., Los Angeles Basin Chapter, Shell Recreation Hall, Obispo Ave. and Hill Streets,Long Beach. "Air Pollution Control with Respect to Oil Field Operations", by Mr. Hubert C. Ferry, Union Oil Co. "Enforcement of Air Pollution Control Regulations" by Mr. Lewis J. Fuller, Air Pollution Control. Also a film"Wheels Across Australia".

March 21, 1956: Wed., 6:30 p.m., Joint Dinner Meeting Los Angeles Basin Jr. Petroleum Group and ASME Process Industries, Shangri-La Cafe, 9604 East Whittier Blvd. (3 blocks east of Rosemead) Pico, California. "Theoretical Approach to Sucker Rod Loads in Slant Wells". by Mr. Douglas M. Jones, Consulting Engineer, Axelson Mfg. Co. Members-$2.75, Non-members $3.00.

March 26, 1956: Mon., 12:00 noon, A.I.M.E. Petroleum Technology Group, Rodger Young Auditorium, 936 W. Washington Blvd., Los Angeles. "Progress in Petroleum Exploration" by Wayne Hoyleman, Consultant. $2.25 including tax, tip, and parking.

April 2, 1956: Mon., 7:30-9:30 p.m., Bakersfield Paleontologists Biostratigraphy Seminar, Harvey Auditorium Building, Visual Aids Section, Bakersfield College. "Western Washington Foraminifera" by Dr. Weldon W. Rau, Menlo Park, California.

April 3, 1956: Tues., 6:30 p.m., Branner Club Athenaeum, Hall of the Associates, Cal-Tech. "Artificial Production of Diamonds and Other Minerals" by Prof. George C. Kennedy, Geophysics Institute, U.C.L.A.

April 5, 1956: Thurs., 12:00 noon, Los Angeles Luncheon Meeting, Rodger Young Auditorium. "Geology of the Mt. Baldy Region" by Perry Ehlig, Phd.Candidate, U.C.L.A.

BIBLIOGRAPHY OF RECENT PUBLICATIONS

SCIENTIFIC PUBLICATIONS - JOURNALS AND BULLETINS

Division of Mines, State of California

"Earthquakes in Kern County, California, during 1952." Bulletin 171. Price $4.00

"Radioactive Deposits in California", Special Report 49, by George Walker, Tom Lovering, and Hal Stephens.

TRADE JOURNALS AND MISCELLANEOUS MAGAZINES

Petroleum Engineer, February, 1956

"Geologists are Talking About----". Dr. A.I. Levorsen, pages B-39 to B-47.

"Reservoir Evaluation by Log Interpretation" Charles R. Glanville, pages B-50 to B-63.

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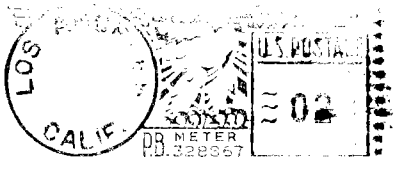

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PACIFIC PETROLEUM GEOLOGIST

NEWS LETTER OF THE PACIFIC SECTION
AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS

Vol. 10 April 1956 No. 4

ASSOCIATION ACTIVITIES

LOS ANGELES FORUM

On Tuesday, March 20th, the Los Angeles Forum Meeting was held in the General Petroleum Auditorium. Dr. Cordell Durrell, Professor of Geology at the University of California at Los Angeles, was the featured speaker an gave a "Preliminary Report on the Geology of the Santa Monica Mountains". Dr. Durrell based his report on unpublished theses at U.C.L.A., Cal. Tech., and U.S.C., and on the published reports of H.W. Hoots, W.S.W. Kew and E.K. Soper.

The Santa Monica Mountains are divided into three areas of somewhat different structure and stratigraphy. These are: 1) east of Santa Ynez Canyon, 2) west of Santa Ynez canyon, and 3) south of the Malibu Coast fault. The Griffith park area is excluded. The western area is divided into northern and southern regions by the Malibu Bowl fault.

Stratigraphy

The western area is characterized by exposure of basement rocks, the Santa Monica formation of slate, schist, and hornfels, and plutonic intrusives. The Santa Monica formation is correlated with similar rocks of Triassic age in the Santa Ana Mountains.

Next younger than the basement rocks are the red clayey conglomerate correlated with the Trabuco of the Santa Ana Mountains, and the overlying brown-weathering conglomerate, sandstone and shale generally called Chico formation.(Marine Cretaceous) Both units are thickest immediately west of the basement outcrop, being respectively 700 and 3500 feet thick. Thinner sections of each are present along the north side of the basement high almost to Cahuenga Pass, and along the south side to a little east of Sepulveda Blvd.

Marine Paleocene beds overlie the Cretaceous unconformably in Santa Ynez Canyon, and along the north flank of the basement high. They extend westward across Topanga Canyon almost to Malibu Canyon, and are present again in the upper part of Solstice Canyon. In the eastern area the Paleocene consists of about 300 feet of soft white and brown arkose and arkosic conglomerate. In the west the section consists of 5000 feet of closely packed cobble conglomerate, sandstone and shale.

Eocene is known from only a few fossils in 1200 feet of conglomerate, sandstone and shale that overlies Paleocene in Solstice Canyon.

The Sespe formation is a highly varied red bed sequence but with some gray, green, tan and white members. It consists of conglomerate, sandstone, shale, siltstone, and claystone, with various degrees of sorting. No fossils have been found. The Sespe is not present in the eastern area, being cut off against the Temescal fault in the easternmost reaches of the Topanga Canyon drainage basin. There it is about 1200 feet thick, but it thickens eastward to possibly 4500 feet on Topanga anticline, then decreases to 2800 feet near Malibu Creek and 3000 feet at the head of Solstice Canyon. The westernmost known outcrop is in Trancas Canyon, but this is an area that has not yet been studied.

The Sespe rests unconformably on the Paleocene and Eocene, but there is no marked divergence in attitude across the contact. The Sespe is overlain by marine beds of Miocene age.

The stratigraphic nomenclature of the lower and middle Miocene rocks needs revision. For the present the term Lower Topanga is used as a formation name and is applied to all the beds between the Sespe and the Middle Topanga formation, which is a distinctive volcanic unit that should probably be called Conejo formation. The term Upper Topanga is also used as a formation name for the beds above the Middle Topanga formation and below the Modelo formation.. This is a complex unit that may eventually be divided into more than one formation.

The Lower Topanga in the eastern area consists of a maximum of about 1000 feet of sandstone and shale with a little conglomerate. It thins eastward to less than 200 feet. The basal contact is an unconformity but with no noticeable angle between beds. Lower Topanga is present in the Encino area, and a little may be present in the Pacific Palisades area.

In the western area the Lower Topanga extends westward across the upper Topanga drainage basin, around the nose of Topanga anticline, across Malibu Creek, and northwesterly for several miles into an area not yet studied. In this belt the rocks are dominantly sandstone with some conglomerate and shale. The section faces north. A "Vaqueros" fauna is present in the lower part of the western segment of this belt. A "Topanga" or "Temblor" fauna is present in the higher beds, and at the base on Topanga anticline. The contact with the Sespe is an unconformity on Topanga anticline, and is possibly gradational farther west. The thickness is about 3500 feet on Topanga anticline, and 4500 feet west of Malibu Creek. All of this is in the northern part of the western area.

In the southern part of the western area, south of the Malibu Bowl fault, the Lower Topanga contains much more shale. Along Escondido Canyon 2000 feet of unfossiliferous dark micaceous shale is overlain by a sandstone with "Temblor" megafossils. The base is not exposed. Westward to Arroyo Sequit the area has not been studied. From Arroyo Sequit to Little Sycamore Canyon the Lower Topanga consists of 6000 feet of beds, more than half shale. The base is not exposed. The lower part carries a "Vaqueros" megafauna, and the upper part a "Temblor" or "Topanga" megafauna. This section has been divided into several mappable units. The westernmost part of the range has not been well studied, but possibly somewhat older marine beds are exposed there.

The Middle Topanga (Conejo formation) consists of interlensing basalt and andesite flows of lava, agglomerate, mudflow, breccia, tuff breccia and tuff. All are submarine and contain fossiliferous interbeds at many places, and are mostly if not exclusively Relizian in age.

In the eastern area the volcanics, mostly basalt, rest unconformably on Lower Topanga and are

2000 feet thick near Laurel Canyon Blvd. They thin to the west, but are present in the Encino area. In the Topanga drainage basin they are overlapped by the Upper Topanga but they reappear on the nose of Topanga anticline, and rapidily thicken westward to 12,000 feet, in the area south of Agoura. The Middle Topanga is present only on the north flank of the range, facing north.

The Upper Topanga rests with strong unconformity on older rocks including Middle and Lower Topanga, Sespe, and the Paleocene beds. In the eastern area there are amazing alternations of conglomerate, sandstone,shale, siliceous shale and chert. Beds of reworked basalt, clasts of basalt up to 12 feet in diameter and clasts of Cretaceous conglomerate and quartz diorite up to 3 feet in diameter are present. The age is Luisian, and the thickness may be as much as 7,000 feet in the Cahuenga syncline. Upper Topanga is present in the Encino area and in the upper Topanga drainage basin. It is well exposed on Topanga anticline where there is 4,000 feet of sandstone,sandy shale and shale, with some conglomerate. A basal conglomerate of basalt is well developed, and higher beds consist of siliceous shale, cherty shale and chert with interbedded sandstone, shale and some conglomerate. The section is like that in the eastern area, and at both places there are rapid changes in lithology along the strike as well as across the section.

Upper Topanga, largely siliceous shale with a pebble bed at the base is in a syncline at the head of Escondido Canyon, and rests on Eocene, Sespe, Lower Topanga, and the Malibu-Bowl fault.

Intrusions of basalt, diabase, andesite and some more silicic igneous rocks cut all formations up to and including the Upper Topanga. Intrusive bodies are both massive and brecciated, and the latter are difficult to distinguish from breccias of surface origin. Some of the breccia east of Malibu and along the Latigo Canyon Road is clearly intrusive, and it is thought possible that all the breccia of that region is intrusive. Many intrusions were localized by pre-existing faults. Intrusions are more abundant in the older rocks, and the larger and coarser-grained bodies are in the older rocks. Intrusions in the Upper Topanga are small and fine grained. No intrusions have been found in the Modelo formation.

The Modelo formation of Upper Miocene age transgresses all other formations in the eastern area. Conglomerate occurs only at the base, and is composed of materials derived from the rock immediately below. The Modelo is present in the eastern area on the north flank of the range, and extends westward into the Calabasas syncline. It is present on the south side of the range from Benedict Canyon west to Pacific Palisades. It rests on a surface of considerable relief.

Marine beds of Pliocene and Pleistocene age are present along the coast northwest of Santa Monica.

The area south of the Malibu Coast fault is comprised mostly of the Pt. Dume area. On the tip of Pt. Dume, San Onofre breccia overlies unconformably andesite that may be intrusive or extrusive. To the north and separated from the igneous rock by a fault are diatomaceous and cherty shales with some sand,of Mohnian age. They do not closely resemble the Modelo formation. Near the highway north of Pt. Dume are hard cherty beds, shales, and sandstones of Relizian age, intruded by diabase. They resemble the Upper Topanga but seem to be older.

East of Pt. Dume along the coast is a thick section of San Onofre Breccia that apparently passes under the shales north of Pt. Dume.

In view of the differences between the rocks of this area and those north of the Malibu Coast fault, it is believed that they were deposited in a different basin, or in parts of a basin more widely separated than are the rocks now adjacent across the Malibu Coast fault.

Structure

The dominant structure of the western area is the east-trending Santa Monica anticline best shown in the Modelo, but present also in the Cretaceous rocks and Santa Monica formation. It is possibly present also in the Paleocene and the Lower Topanga. The south flank terminates against the Malibu Coast fault. The axis plunges steeply at the west end of the basement high, and all the formations thicken rapidly in this region. Total thickness of Cretaceous through Upper Topanga rocks in the eastern area is 12,100 feet, whereas to the west the rocks of the same interval total 33,500 feet. Thus the eastern area has been anticlinal and has tended to be high since the Cretaceous.

Immediately to the west are two northwest-trending synclines with the Topanga anticline between them. West of Liberty Canyon there is an east-trending syncline in the Upper Topanga which is not present in the Middle Topanga below it. Farther west on the north flank of the range the beds all dip north.

In the southern part of the western area a complex anticline extends from near Big Sycamore Canyon eastward for several miles, but does not reach Malibu Creek. This fold has been highly deformed, and part of the axis near Arroyo Sequit has been twisted into an S shape.

The Nichols Canyon Fault that bounds the north margin of the basement high is probably the oldest fault that cuts the post basement rocks. Since it has a gouge and breccia zone as much as 500 feet thick, and dips northward at a lower angle than do the sedimentary rocks, it is believed to be a reverse fault. It is probably pre-Upper Topanga in age, but may be still older. It displaces the Modelo formation in Stone Canyon by

only a few feet. It is offset by the pre-Modelo Benedict Canyon fault, and by northwest-trending faults west of Stone Canyon. It is present in the Encino area and is faulted north under the San Fernando Valley. It is possible that it extends west beneath the Calabasas syncline.

Northwest and northwest-trending faults are numerous in both the eastern and western areas. The Benedict Canyon fault system strikes northeast and offsets the Cretaceous to Upper Topanga formations and the Nichols Canyon fault by 1.5 miles. The relative movement is left lateral or down on the north. If dip slip, the movement is more than 1.5 miles. The minimum possible movement is 1.25 miles. The post-Modelo movement is only about 300 feet, down on the south side, and cannot be lateral.

A very similar pre-Modelo fault strikes northwest from west of Stone Canyon, and cuts off the sediments on the northwest side of the Benedict Canyon fault. Parallel faults in the Encino area carry the Nichols Canyon fault and the Topanga formations beneath the San Fernando Valley. All horizontal components are right lateral.

The Temescal fault in the northeast part of the Topanga drainage basin strikes northwest and is left lateral, but a parallel fault along Old Topanga Road, is right lateral. Parallel northwest striking faults westward to and beyond Malibu Creek have small displacements and are all left lateral. All of them affect the Modelo by only a few feet if at all.

Northwest striking faults in the Sycamore Canyon area are less well known. The Big Sycamore Canyon fault offsets the base of the Middle Topanga by 1.5 miles in a left lateral sense. A complex of faults 1.5 miles east offsets the same horizon by 7 miles in a right lateral sense. Dip components would be less than horizontal components.

The Malibu Bowl fault is a very important but as yet little known fault that strikes a little north of west in the area of Corral, Solstice and Escondido Canyons, about 3 miles north of the coast. Near the Latigo Canyon Road Paleocene is in contact with Lower Topanga on the south, so the fault has a large displacement. The lower Topanga on the two sides of the fault is quite different which suggests a considerable lateral movement. The Upper Topanga is displaced by only a few score feet.

The Malibu Coast fault system includes Hoots' Hollywood fault. It is known at the surface near the Los Angeles River, where it brings Modelo against basement, northwest of Santa Monica where it cuts Pliocene and Pliestocene beds, and for 19 miles from near Malibu Creek to Arroyo Sequit. It separates the Santa Monica Mountains from the Los Angeles basin; it probably terminates the Inglewood-Newport zone; it probably forms the north boundary of the Catalina Schist basement west of Beverly Hills, and it forms the north limit of the San Onofre Breccia. It is probably very old but has had quite late movements.

Summary and Conclusion

Fold axes trend west and northwest, and principal faults trend east, northwest and northeast. The western area has been anticlinal and structurally high since Cretaceous. Maximum folding occured at pre-Upper Topanga, pre-Modelo, and post-Modelo times. Faulting is probably as old as Cretaceous, is associated with each later unconformity, and large movements occured between Middle and Upper Topanga, between Upper Topanga and Modelo, and in post-Modelo time, including a time later than the marine Pliestocene beds northwest of Santa Monica.

Analysis of known components of fault movements permits no simple single explanation of the origin of structure. The stress fields must have been complex and subject to change with time.

DISTINGUISHED LECTURER SERIES

The first speaker in the current Distinguished Lecturer Series was Mr. N. Wood Bass, Staff Geologist of the Fuels Branch Geological Division, U.S.G.S., Denver, Colorado. Mr. Bass addressed the San Joaquin Geological Society, Bakersfield, the Sacramento Geological Society, and the Los Angeles Chapter of the Pacific Section, A.A.P.G.

The subject of Mr. Bass's address was "Comparison of Modern Shorelines with Oil-Bearing Sand Lenses in Mid-Continent and Denver Basin, with Consideration of Evidence for Oil Migration from Crude Oil Composition", and proved very intesting to all those in attendance at the various meetings.

Exposed sand bodies along modern shorelines, particularly those of the Atlantic and Gulf Coasts, are separated by gaps (tidal inlets), exhibit an offset arrangement with respect to adjacent sand bodies, have convex tops, and presumably have flat bottoms. Many modern shoreline sand bodies, of which Cape Henry, Virginia, is a striking example, are made up of a series of overlapping beaches which are exposed as ridges of sand trending parallel with the coast. These ridges represent lines of beach growth.

Systems, called "trends", of shoestring oil sands whose individual sand bodies are (1) separated by gaps containing no sand, (2) arranged en echelon, and (3) have convex tops and relatively flat bottoms, are present in the Pennsylvanian system in Kansas and Oklahoma. Evidence for at least one unusually large sand lens indicates that it contains growth ridges similar to those at Cape Henry. Somewhat similar belts of oil-bearing sand bodies are present in the Denver Basin in Colorado and Nebraska. The features described above are not so evident here, however. The sands appear to occur as lenses, most have convex tops and many have concave bottoms. The sand lenses in the Mid-Continent contain oil, gas, and salt water; those in the Denver Basin contain oil, gas, and fresh water.

Commonly, crude oils from different stratigraphic horizons differ significantly in composition (Research Committee, Tulsa Geological Society, 1947). In an area only 15 miles wide and 40 miles long oils from 43 pools in beds associated with the unconformity above the topmost beds (Ordovician) of the Arbuckle group contain 31 varieties of oils, and the oil in all the pools is underlain by salt water. On the other hand, only one variety is present in oils from 33 pools in the Burbank sand (Pennsylvanian) distributed along an ancient shoreline 150 miles long. At places where the Bartlesville sand wedges out against the unconformable surface on the Mississippi lime the oil in the pools in the top of the Mississippi lime is like the oil of the pools in the Bartlesville sand. The facts suggest that the local environment of the source material determined the variety of oil in each pool, and that commonly oil has migrated only locally from source beds into the nearby or adjacent reservoir beds.

SAN JOAQUIN GEOLOGICAL SOCIETY

The third and last paper of the Eocene Symposium initiated by the San Joaquin Geological Society was presented by Mr. E. H. Stinemeyer and was "The Biostratigraphy of the Eocene-Paleocene Lodo Formation in the Vicinity of Salt Creek, Fresno County, California".

The area studied is 27 miles north of Coalinga and lies in the northeast quarter of T. 18 S., R. 14 E., M.D.B. & M.

Samples from six measured surface sections in the Lodo formation were examined for microfaunal zonation. Six Eocene-Paleocene foraminiferal zones published by Boris Laiming were recognized. The outcrop faunas were correlated with those found in Shell Cantua Core Hole #2, 2-1/2 miles to the northeast.

The geology, locations of surface sections and Shell Cantua Core Hole #2 were shown on two aerial photos. A structural section and a stratigraphic correlation chart, together with generalized foram range charts, were discussed. Kodachrome slides showed the area in general, the surface sections and diagnostic foraminifera.

The Tertiary sediments in the area strike generally N 55° W and dip from 25° to 45° to the northeast. The structure appears to be monoclinal with only minor faulting.

The Lodo formation in the Salt Creek area varies from 1,100 to 1,650 feet in thickness. The Cerros shale, the basal member, unconformably overlies the Cretaceous Moreno shale. The Cerros varies from a greenish-gray claystone to a dark gray siltstone and is 130 to 325 feet thick. The Cantua member, a lenticular sand body, overlies and intertongues with the Cerros shale. This member is 400 feet thick at Salt Creek and pinches out 3/4 of a mile to the south. The uppermost member of the Lodo, the Arroyo Hondo, grades from a greenish-gray siltstone to a bluish-gray claystone varying from 750 to 1,100 feet in thickness. The lower part of the Arroyo Hondo interfingers with the upper sandstone tongues that have been mapped as Cantua. Overlying the Lodo is the Yokut sandstone formation.

Laiming's E zone fauna was encountered in the basal 40 feet of the Cerros member and D zone fauna in the superjacent 30 feet. C zone fauna was found in the succeeding 230 feet of section, which included the balance of the Cerros shale, the main finger of the Cantua sandstone and a few feet of the overlying shale. The B-4/C contact was found just above the most southerly tongue of the main Cantua sandstone in the outcrop. B-4 fauna was recorded in the succeeding 470 feet of Arroyo Hondo shale, between and above the upper Cantua sandstone tongues. B-3 forams were found in the superjacent 350 feet and B-2 in the uppermost 225 feet of the Arroyo Hondo shale. Samples collected in the basal 80 feet of the Yokut sandstone formation were barren of forams.

In Shell Cantua Core Hole #2, Laiming's B-4 fauna was found above the basal sand. This fauna correlates with the B-4 fauna above the uppermost Cantua sandstone tongue in the upper part of the Arroyo Hondo member in the core hole. A faunule at the top of the Arroyo Hondo in the core hole correlates with a B-3 faunule several hundred feet below the top of the Arroyo Hondo in the outcrop.

LOS ANGELES LUNCHEON MEETING

On March 1, Donn S. Gorsline, Candidate for Ph.D. at U.S.C., addressed the monthly Los Angeles Luncheon Meeting held at the Rodger Young Auditorium. Mr. Gorsline presented a very interesting talk on "Marine Geology of Sebastian Vicsaino Bay, Baja California, Mexico".

A combined expedition of the Allan Hancock Foundation of the University of Southern California and the Scripps Institute of Oceanography to Sebastian Viscaino Bay was used to illustrate the results of applied marine geology and oceanography. Scientists cooperated in measuring and recording various aspects of the biology, geology, and oceanography of the bay and vacinity.

Petroleum geologists have become familiar with submarine coring techniques, but may not be acquainted with the standard equipment of the oceanographer and marine geologist. Some of these were illustrated and briefly described, and others were displayed together with examples of marine cartography and bottom photography of local shelf areas. The shipboard equipment can be roughly grouped as bottom sediment sampling gear, temperature recorders, water sampling equipment, transparency recorders, current measuring instruments and biological collection devices. Navigational equipment and echo sounders were not discussed.

Sebastian Viscaino Bay is located on the west coast of Baja California between 27°40' and 30°00' north latitude, and 114°00' and 115°45' west longitude. The bay lies in the Baja California Syncline which trends northwest-southeast and follows the general line of the coast. This depression is flanked by the Sierra San Pedro Martir on the east, and by the Sierra Viscaino and its insular extensions on the west. The southern boundary of the bay is formed by the Santa Clara Desert plain, which is probably a raised portion of the original bay floor. Tide flats and lagoons form the north-central coastal portions of the desert. Large sand dunes move with the prevailing winds across the rest of the surface and encroach on the lagoons.

The climate of the region is arid. The dominant winds blow from the northwest and down the length of the bay. Longshore currents enter the bay from the north and form a clockwise gyral pattern. Deeper currents turn around the north end of Cedros Island and meet the circling bay waters. The north flow also meets the south flow to form a semipermanent convergence near the north end of Cedros Island. Tidal currents of two and more knots velocity flush the straits south of Cedros Island and scour the entrances of the major lagoons. Water depths range from sea level to 100 fathoms except in the straits where the maximum depths are never more than 25 fathoms. The lagoons are shallower than 4 fathoms except in the central portions of the Scammon Lagoon channel where the depths of 12 to 14 fathoms occur.

The sediments of the bay floor are sands, sandy silts, and silts containing minor amounts of calcareous fragments, and are similar in appearance to nearshore sediments of the southern California coast. The fine-grained sediments of the western and eastern parts of the bay contain concentrations of organic matter derived from the straits and from areas of upwelling in the northern part of the bay. Organic matter is also concentrated in the tide flats and some of the bottom sediments of the lagoon.

In the area south of Cedros Island, a complex sediment has formed as the result of the structural, biologic and oceanographic conditions which obtain there. The shallow saddle forming the floor of the straits has probably been formed by diastrophic processes. Tidal currents moving through the restricted areas reach relatively high velocities and have scoured the shallowest portions of the channel sill to bedrock. Strong currents have also winnowed out the majority of the fine materials, leaving a coarse-grained sedimentary cover. Large volumes of nutrients carried by the currents have fostered the development of large marine populations and the resulting clastics of organic origin make up the major portion of the sediment. Portions of the shallow nearshore area are covered by a profuse growth of calcareous algae which also contribute large volumes of detrital calcareous material to the sediments of the straits.

Analyses of the characteristics of modern coastal environments such as those found in Viscaino Bay enable marine geologists to recognize similar sedimentary associations in the geologic record.

SACRAMENTO GEOLOGICAL SOCIETY

The regular monthly meeting of the Sacramento Geological Society was held February 15, 1956 in Sacramento. Mr. B.F. Hale, Special Assistant to the Vice President of Western Gulf Oil Company, gave a very interesting illustrated talk entitled "Permafrost and Aufeis". Mr. Hale handled geological problems encountered in the building of the Alaska Highway while he served on the staff of the Commanding General of the Northwest Service Command during the early part of World War II.

Mr. Hale started by explaining the terms; "Permafrost"-ground that is always frozen, and "Aufeis"-another name for ice formed on the surface of the ground.

The Arctic posed problems that had never been thought of before. To illustrate, slides were shown of roads that were located on gentle mountain slopes and the road cuts were completely filled with ice. The phenomena occured primarily in the springtime when the springs would be seeping water through the top layers of soil and moss. If the water-carrying layers were cut into by a road cut, the water would be exposed to the cold air and would freeze. The water would continue to flow and freeze till the road cut was filled to overflowing with ice.

Two methods were used to combat this problem. The first was to put heaters in the ground on the uphill side of the road and thereby heat the water sufficiently so that it would cross the road before freezing. The second successful method was to send heavy construction equipment up the mountain slope as far as possible and have the equipment run back and forth across the slope. The idea was to pack down the moss and top layers of soil so that they would freeze and form an ice dam above the road. This ice dam forced the water to the surface where it would freeze above the road and never reach far enough down the hillside to cause damage to the road.

A second example of trouble encountered was rarer but a satisfactory preventive measure was never thoroughly worked out. This phenomena occured in streams and rivers. The bottom of the stream would freeze and the top of the water would freeze. The stream continued to flow in the area between these two ice sheets. In a cold spell the water in the area of a sand bar or shallow rill would freeze solid from top to bottom and cause an ice dam across the stream. The water would back up in the stream channel developing a terrific pressure against the ice dam. Finally the pressure would become too great and the water would break through to the surface. As the water flowed down on top of the ice it would freeze and continue to build up an amazing thickness of ice.

Mr. Hale described some of the problems encountered in the building of a small petroleum refinery at the Norman Wells oil field. The boilers had to be carefully insulated and built up on pilings so that the air could circulate under them. Otherwise the ground would thaw and the boilers would sink in a bog. This did not completely solve all of the problems as the thawing and freezing during fall and spring would heave the pilings right out of the ground. This heaving action was combatted by coating the pilings with asphalt and grease so that the ice would not adhere to the piling but would slip by during the freezing process.

SAN JOAQUIN VALLEY A.I.M.E.

The San Joaquin Valley Section of the A.I.M.E. held its second annual Semi-Formal Dance Friday, March 2, at the Bakersfield Country Club. In addition to the fine dance music, those in attendance were treated to a delicious breakfast.

PERSONAL ITEMS

Dave Toelle of The Texas Company has been transferred from the Long Beach area to the Sacramento Valley where he will fill the duties of a scout-leaseman.

Bill Merriam has set up offices in Sacramento to do contract leasing. Bill was formerly with The Texas Company in the Sacramento area.

Joe Lozano has joined the Western Gulf staff in the Sacramento Valley where he will work as a permit man in their land department.

Charley Ward of the Brazos Oil & Gas Company in Sacramento has a bet that he can lose 15 pounds by Easter but latest reports from the bathroom scales shows Charley is going to have an awful tough time making the goal.

Art Hawley of Western Gulf has a rival for his wife's attention. It seems Jeanne is taking a course in "California Indians" and spends every free moment out digging in the fields.

Tom Wooton of Shell has been transferred from Bakersfield to the Sacramento Valley. Tom will handle Shell's stratigraphy problems.

John T. Llewellyn of Honolulu Oil Company has been transferred from Billings, Montana, to Honolulu's San Francisco office to handle their interests in the Sacramento Valley.

Glenn Harris, Shell's Geophysicist in the Sacramento Valley has left the Sacramento area temporarily to attend school in Houston, Texas.

Andy Marianos of Humble is being welcomed back to Chico by his fellow employees. Andy has just received his Master's Degree from Louisiana State University.

Tod Harding with Humble in Chico has succumbed to the charms of a local gal and will be married on Saturday, April 7th in Chico. Since his engagement, Tod can no longer see what he ever saw in Southern California and now raves of the beauty of Superior California.

C. W. "Wes" Porter has resigned his position with Tide Water Associated to take over duties as Chief Geologist for Trico Oil and Gas Co., Bakersfield.

A Bakersfield Geological and Engineering Consultant of some mean ability, Jean D. Sentour de Boue, has announced formulation of a new service for those interested in true "subsurface geology" which involves the use of various items of equipment such as trident, aqualung, medium sized cable tool rig and matching row-boat. He says he is available on "moderately short notice".

Gene Runyan, geologist for Tide Water Associated Oil Company has been transferred from Ventura to San Francisco.

This is to inform those friends of Tom Llewellyn that he is still in the employ of Honolulu Oil Corp. and no transfers have transpired, at least to Tide Water's knowledge.

(NOTE: Referring to the March issue of the Newsletter's personal items, Llewellyn's name was linked with Tide Water for some unknown reason.)

George and Beverly Webb, Standard Seattle, spent a very relaxing winter vacation in Palm Springs, California. There should be a law against sending illustrated post cards from such luxurious vacation spots back to the office.

Mark Zappe, Ohio, Olympia, Washington, has announced his engagement to Miss Doris Durand of St. Martinville, Louisiana. The date of the nuptials is April 8, 1956. Mark is now sunning himself and resting up for the big occasion in Phoenix, Arizona.

Speaking of shipping coal to Newcastle -- the Bakersfield office of Monterey Oil Co. airmailed one Banducci Corner special garlic dipped sandwich to Bob Rist in New Orleans. It is understood that Bob dearly loved these sandwiches and even though he is living in a Gourmet's paradise, he certainly appreciated the thoughtfulness of the gang he used to work with.

Mike Rector, Geologist for Union, has recently bitten off a large chunk of extra-curricular work for himself. He has just become Scoutmaster for a new Boy Scout troop in Bakersfield.

William H. LeRoy recently with Standard of California in Bakersfield has joined Reserve Oil & Gas Company.

L. C. Lovely, Union Oil geologist in Bakersfield, has been transferred to Santa Paula. M. H. "Bud" Oakes of Union's Santa Paula office will go to Bakersfield.

Neal Hurley, geophysicist, joined Richfield Oil Corp.'s Bakersfield office late in February.

John Stoddard, Standard Oil of California geologist, has resigned to assume oil exploration activities in Colorado.

Jim O'Flynn -- tried and true, got himself shipped to Northern Peru. Richfield's Bakersfield office said it was only for two years so Jim went quietly.

Vince Finch and Galen Sturgeon, Shell, were recent visitors in Los Angeles.

The scouts have been getting their fishing gear together in anticipation of a big summer season scouting off the Rincon and other offshore areas.

Clyde Cotton formerly Area Geologist for TWA has been transferred to Calgary to be in charge of operations in Alberta. His new address is 107 Bank of Commerce Building, Calgary, Alberta, Canada.

Rufus Smith, Continental Oil Co., has been promoted to Manager of Production, Western Region. He will be in charge of production and drilling for California, Nevada, Oregon and Washington.

We understand Jim Babcock, The Texas Company, hasn't been doing enough field work lately. After attending a core party on Friday, Jim entered a ski race at Yosemite over the week-end. The legs finally gave out about 150 feet from the finish flags to ruin a good down-hill time but enabling the spectators to view a lovely spill.

Earl W. Hart was married to Miss Donna Olson on March 17th in Portland, Oregon. The Harts will reside in San Francisco. Earl is with the Division of Mines in San Francisco.

Robert L. Sprinkle, Seaboard Oil Co., Billings, Montana, has been transferred to Denver as administrative assistant.

Several geologists of the Shell Alaska District in Seattle brought their muscles out of hibernation recently with a ski trip to Snoqualmie Pass. No broken bones or strains-just pains. Herb Mann is now known as "snowball Mann".

The Standard Oil Company of California, Exploration Dept., is closing its Yakima, Washington field office effective March 15, 1956. All personnel are returning to the Seattle office.

Thomas Wright, Standard of Seattle, is slowly recovering from the confirmed news that his wife, Louise, will have twins sometime in April.

Bill Basham, Standard, Seattle, arrived in the office one Monday morning with a king-size fish story. Seems he was steelhead fishing on the Skykomish River when, so he claims, a monstrous 3-foot steelhead followed his lure to the surface but did not bite. Perhaps Bill should confine his sporting to shooting ducks, which he did very well this past season.

Charlie Guion with Humble has now returned to the Sacramento Valley as a permanent resident after a temporary sojourn in the Los Angeles area.

Don Gordon with Standard in Sacramento is being transferred to the Seattle area. Don is being replaced by Tom Ise from the Oildale office. Don is disappointed in the transfer as he was hoping to enjoy the back yard he has worked on all year.

D. M. "Mack" Robinson of Shell in Seattle is back at work (and skiing) after being off a month and a half due to an accidental asphyxiation while on vacation in Southern California. (The smog just got a little thick.)

This is to confirm that Jack Barr, Standard, arrived in Seattle driving his MG sports car from the San Joaquin Valley through all of the California flood areas. He wishes his friends to know that the snorkel tube on the MG worked fine.

Ed Phelps, Shell, has been transferred from scouting in Los Angeles to geologist at Ely, Nevada.

Ward Abbott and Joe Merrow, geologists in Shell's Salt Lake District office, have been transferred to Ventura.

For those who have been wondering about the resemblance of the marble on the Superior Building to the interior marble of other buildings, Homer Steiny offers the following clarification:

"The white marble now being put on the face of the Superior Oil Building is called 'Royal Danby' and is supplied by the Vermont Marble Company from their quarry near Danby, Vermont and is Middle Ordovician" (Looks more like lower Upper Ordovician to the rest of us)

Glenn Lansing, recently with T.W.A., Ventura, has joined the Exploration Staff of Intex Oil and leaves for Colorado on May 1st.

Shell Oil Company, Ventura,has added two new geologists to its staff- Ward Abbott and Joe Merrow. Both Ward and Joe transferred from Salt Lake City and will be assigned to Salinas District

Tom O'Niell,Shell, Ventura has laryngitis. The office is so quiet now you can hear the trucks go by.

NURSERY NEWS

Bob and Helen Reedy of Western Gulf in the Sacramento Valley are proud to announce the arrival of Mark Robert Reedy, 8 lbs. 4 oz. on March 16th. The Reedys have two other boys.

William and Audrey Barnwell, Standard, Seattle, received a bundle of bliss from the stork, their second child, with the arrival of Mary Blair, on January 20, 1956.

To Mr. and Mrs. Les Brockett, Richfield, Olympia, Washington, a girl, born March 6, 1956. Weight 7 lbs. 9 oz.

Ingrid and Tom Cameron, Tide Water Associated in Bakersfield, have announced their adoption of a baby girl, Suzan Elizabeth, born December 23, 1955.

Samuel Franklin Louke, boy geologist, was born March 27th to Gladys and Moe Louke, Richfield, Bakersfield.

Barbara and Keith Berry, Paleo. Dept., Standard, Bakersfield, announce the arrival of Ellen Suzanne, 10 lbs., on February 6th, 1956.

Bryan Gaylord was welcomed by Isabel and Ray Wermeyer, Standard, Bakersfield, on January 25th. Weight 8 lbs. 10 1/2 oz.

Kathleen and Dean Kleinkoff, Geophysical Dept., Standard, Bakersfield, greeted David Dean, 7 lbs. 1 oz., on March 3rd.

Mr. and Mrs Sam Tate welcomed Betty Eloise into their home March 12th. Betty weighed 7 lbs. 15 oz.

Miss Patricia Anne Egan introduced herself to her proud parents, Ruth and Joe Egan, on March 20th. Weight 5 lbs. 8 oz.

ANDY CLINE by sullwold

CALENDAR

April 10, 1956: Tues., 7:30 p.m., Coast Geological Society Dinner Meeting. Montecieto Country Club, Santa Barbara. "Wrench Fault Tectonics" by Mr. M.J. Hill, Chief Geologist, Western Gulf Oil Co.

April 10, 1956: Tues., 7:30 p.m., Sacramento Geological Society, Board Room, Public Works Bldg., 1120 "N" St., Sacramento. "Land Subsidence in Texas and California" by Mr. Joseph F. Poland, District Geologist, Ground Water Branch, U.S.G.S.

April 11, 1956: Wed., 6:30 p.m., Los Angeles Basin AIME Jr. Petroleum Group, Petroleum Club, 4365 Atlantic Blvd., Long Beach. "Fishing Tools and Techniques" by Mr. August Segelhorst, Chief Engineer of S.R. Bowen Co. and Mr. Gene Maxwell, Asst. Chief Engineer, Baash-Ross Co. Members $3.00, Non-Members $3.50.

April 11, 1956: Wed., 6:30 p.m., San Joaquin Geological Society Dinner Meeting, Hotel El Tejon, Bakersfield. "Wrench Fault Tectonics" by Mr. Mel Hill, Western Gulf Oil Co.

April 12, 1956: Thurs., 12:00 noon, S.E.G., Biltmore Hotel, Los Angeles. "Geophysical Study of a Fault in the Mojave Desert" by Dr. C.H. Dix, Cal Tech. $2.00

April 16, 1956: Mon., 6:30 p.m., AAPG-SEPM Joint Forum Dinner Meeting, Scully's Restaurant, 48th and Crenshaw Blvd., Los Angeles. "Geology of Portions of the Pancake Summit and Green Springs Quadrangles, Nevada". by Mark Rich and Barney Pipkin, U.S.C. Graduate Students. Bar service, free parking. Dinner $2.25, tax and tip included.

April 23, 1956: Mon., 12:00 noon. AIME Petroleum Forum, Rodger Young Auditorium, 936 W. Washington Blvd., Los Angeles. "Progress in Drilling Fluids" by Mr. W.L. Heater, formerly with Baroid Sales. $2.25 including tax, tip and parking.

May 1, 1956: Tues., 7:30 p.m., Joint AAPG-SEG Distinguished Lecturer Meeting, General Petroleum Auditorium, Los Angeles. "Geologic Interpretation of Aeromagnetic Surveys" by Mr. James Affleck, Gulf Research and Development Company, Pittsburg.

May 3-5, 1956: Thurs. - Sat., A.I.M.E. Pacific Northwest Regional Meeting, "Metals and Minerals Conference", Olympic Hotel, Seattle, Washington. "Petroleum and Natural Gas in British Columbia" by Courtney Cleveland, Pacific Petroleums Ltd., will be among the papers presented.

May 3, 1956: Thurs., 12:00 noon, Los Angeles Luncheon Meeting, Rodger Young Auditorium, Los Angeles. "Modern Life and Geology in Switzerland" by Dr. John S. Shelton, Professor of Geology, Pomona Coll.

May 4-5, 1956: Fri. -Sat., Barbeque, Friday, Santa Maria. Saturday, SEPM-sponsored Field Trip to the Huasna area near Santa Maria. Details by mail.

May 7, 1956: Mon., 7:30-9:30 p.m., Bakersfield Paleontologists Biostratigraphy Seminar, Harvey Auditorium, Visual Aids Section, Bakersfield High School. "Coccolithophorids and Related Forms in Biostratigraphy" by Dr. M.N. Bramlette, Scripps Institute of Oceanography.

May 11, 1956: Thurs., 12:00 noon, S.E.G., Biltmore Hotel, Los Angeles. "Shearing Experiments on Rocks at High Temperatures and Pressures" by Dr. David T. Griggs, U.C.L.A. $2.00

PACIFIC PETROLEUM GEOLOGIST
PACIFIC SECTION, A.A.P.G.
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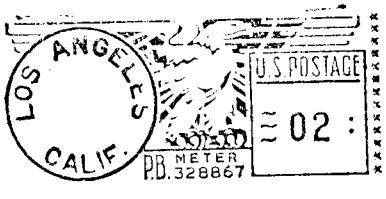


Mr. F. R. Neumann
381 E. 4th St.
Chico, Calif.

Form 3547 Requested

PACIFIC PETROLEUM GEOLOGIST

NEWS LETTER OF THE PACIFIC SECTION
AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS

Vol. 10 May 1956 No. 5

ASSOCIATION ACTIVITIES

JOINT A.A.P.G.- S.E.P.M. FORUM

On April 16 the Los Angeles section of the A.A.P.G. held a Joint Forum Dinner Meeting with the S.E.P.M. at Scully's Restaurant on S. Crenshaw Blvd. The featured speakers of the meeting were Mark Rich and Bernard Pipkin; both Candidates for Masters Degree at U.S.C. The speakers gave interesting talks on "Geology of Portions of Pancake Summit and Green Springs Quadrangles, Nevada".

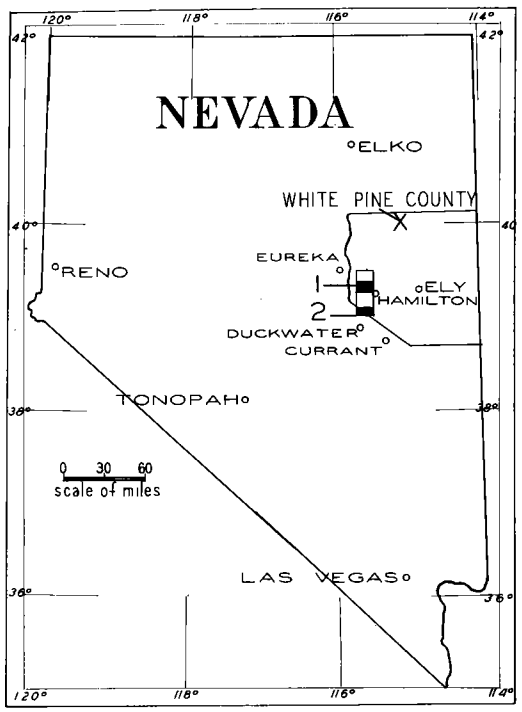
The first speaker was Mark Rich who covered a portion of Pancake Summit quadrangle. The Pancake Summit quadrangle is about 42 miles west of Ely in west-central White Pine County, Nevada. It is bounded on the west by the Pancake Range. On the northeast it is bordered by the foothills of the White Pine Range and on the southeast by the north part of Mount Hamilton (Pogonip Ridge). The southern extent of Newark Valley comprises the central portion of the area. About 55 miles south in Railroad Valley are the producing wells of the Shell Oil Company.

Paleozoic rocks in the southern portion of the quadrangle range in age from Cambrian (?) to Permian and are greater than 20,000 feet in aggregate thickness. They consist predominantly of limestone and dolomite, with some shale, sandstone and conglomerate. On Mount Hamilton, a small igneous body of unknown age is emplaced into the oldest rocks which are metamorphosed about the intrusion. Overlying late Paleozoic rocks, in angular unconformity, are tilted lake beds of Eocene age which are mainly conglomerates, sandstones, tuffaceous sandstones and marls. They locally attain a thickness of 1,500 feet. They in turn are covered by volcanic tuffs and flows of Tertiary and possibly Quaternary (?) age. At least two stages of Quaternary alluvial accumulation prior to deposition of Recent detritus are represented.

Main structural features in the area are north-south trending assymetric folds in the Paleozoic rocks which are cut by numerous major and minor faults. The folds are exposed along the borders of the area. The fill in the central valley covers any other structures that are present. However, a small exposure of Devonian rocks in the middle of the valley may represent part of the core of a large anticline or may represent the remnant of an upfaulted block. The most prominent anticlinal fold includes Mount Hamilton and some smaller ridges to the east. Numerous north-south and east-west faults have greatly complicated this structure. Stratigraphic displacement of at least 7,000 feet is indicated for a major frontal fault along Mount Hamilton.

Other folds of importance are in the Pancake Range. They consist of gentle crenulations to the northeast, becoming steeper toward the south.

Basin Range structure is especially conspicuous along the west front of the White Pine Mountains, including Mount Hamilton. The major portion of block faulting occurred during the interval between Eocene and approximately early or middle Pleistocene time. Fairly recent movements are indicated locally.



LOCATION OF MAPPED AREAS

1= SO. PART PANCAKE SUMMIT QUAD. (RICH)
2= SO. PART GREEN SPRINGS QUAD. (PIPKIN)

Lead and silver, mined along the east side of Mount Hamilton, have been the most important ores produced. Copper is becoming of interest on the west flank. Discovery of petroleum nearby has focused considerable interest on this part of the region.

Bernard W. Pipkin spoke about the Green Springs quadrangle which is in the east-central Nevada area approximately 75 miles southwest of Ely. The central part of the area investigated is at the north end of Railroad Valley and is flanked by the White Pine Range to the east and the Pancake Range to the west.

The exposed Paleozoic rocks are conformable and range in age from Devonian to Permian. They attain an aggregate thickness of 7,500 feet. No Mesozoic strata were recognized in the mapped area although Cretaceous lake sediments crop out in the neighboring Illipah quadrangle. The Paleozoic rocks are unconformably overlain by un-named laucustrine sediments of probable Eocene age. The beds are composed of fine-grained clastics and water-laid tuffs, and they locally attain a thickness of at least 1,100 feet. Crystal tuffs of undetermined thickness overlie the lake beds but the degree of conformity of these beds is uncertain. During late Tertiary time basic lava flows covered a large portion of the quadrangle. Quaternary sedimentation is recorded in fanglomerates and terrace

NEXT DEADLINE MAY 31

deposits which have been correlated with the flood stages of Pleistocene lakes by some workers.

The principal structural features are found in the highly folded and faulted strata of the White Pine and Pancake Ranges. Folds developed in Paleozoic rocks during the Mesozoic were largely destroyed by subsequent block faulting in the Tertiary Period. However, the remnants of several folded structures are exposed near the north boundary of the area. Thrust faulting was contemporaneous with the intense folding of the Paleozoic strata. In the Pancake Range a bedding thrust between Devonian and Mississippian rocks has greatly reduced and altered the strata in the fault zone. Although the geology of Railroad Valley is largely obscured by alluvium, isolated outcrops give evidence for normal faults with throws of several thousand feet.

A.P.I. SPRING MEETING

The American Petroleum Institute will hold its Spring Meeting at the Statler Hotel, Los Angeles, on Thursday and Friday, May 10 and 11, 1956. There will be an evening session and banquet held Thursday evening, May 10th, at 6:30 p.m. The featured speaker of the evening will be Major General K. D. Nichols, U.S.A. (Ret.) who will deliver an address on "Atomic Energy in the Petroleum Industry". General Nichols is now a Consulting Engineer and was formerly District Engineer, Manhattan District as well as General Manager of the Atomic Energy Commission.

On Thursday afternoon the Management Address will be delivered by Mr. Howard C. Pyle, President, Monterey Oil Company. Mr. Pyle will speak on "Offshore Operations in California". In addition to Mr. Pyle's interesting talk and many interesting technical papers, the general session will include a film on the Monterey-Texas offshore operations at Seal Beach entitled "Island Adventure".

LOS ANGELES LUNCHEON MEETING

On Thursday, April 5, 1956, the Los Angeles Luncheon Meeting was held at the Rodger Young Auditorium. Mr. Perry Ehlig, Candidate for PhD at U.C.L.A., was the featured speaker and gave an interesting talk on the "Geology of the Mount Baldy Region".

The Mount Baldy region is in the highest part of the San Gabriel Mountains about 40 miles ENE of Los Angeles. The study of basement rocks within this region has revealed a very complex history with at least three distinct periods of intense deformation,all in pre-Tertiary time. Four groups of metamorphic rocks(San Gabriel gneiss, San Antonio metasediments, Pelona schist and cataclastic and retrograde rocks of the Vincent thrust fault), quartz diorite and quartz monzonite of probable Mesozoic age, and Tertiary dike rocks ranging from olivine basalt to quartz latite are well exposed in this area. The only post-metamorphic sedimentary rocks present are Quaternary alluvium, landslides and talus.

Distribution of the metamorphic rock groups is controlled by faults, the most important of which is the pre-Tertiary Vincent thrust fault. Along this fault San Gabriel gneiss and San Antonio metasediments were thrust a minimum of six miles over the Pelona schist. The thrust is marked by a thick zone of cataclastic and retrograde rocks which formed above the base of the overthrust mass. The Vincent thrust fault has been displaced with a 2 1/2 mile left-lateral separation along the NNE-directed San Antonio fault. This fault also marks the eastern limit of the exposed San Gabriel gneiss and the western limit of the San Antonio metasediments.

The oldest rock in the region, the San Gabriel gneiss, is probably pre-Cambrian in age. The complex history of this gneiss is illustrated by amphibolite dikes which truncate the foliation of the pre-existing gneiss and are themselves cut by granite pegmatite and aplite dikes. Quartz diorite was intruded into the gneiss as sills without noticeable metamorphic effects. Foliation in the gneiss is very consistent with a SW regional dip of about 35°. The rock also displays a conspicuous E-W lineation. Uniform compositional layering in some rocks is suggestive of a sedimentary origin; however, feldspar, quartz, hornblende and biotite in variable proportions are the dominant constituents of all the rocks, and quartzite, marble or other rock types diagnostic of a sedimentary origin are absent.

On the east side of San Antonio Canyon an alternating sequence, more than 5000 feet thick, of metamorphosed quartzose sandstone, calcareous sediment and shale is collectively referred to as the San Antonio metasediments. Metamorphism of these sediments was associated with the intrusion of quartz diorite and is most intense adjacent to quartz diorite bodies. Sillimanite, cordierite, diopside, forsterite, spinel, corundum, garnet, wollastonite, tremolite, scapolite and anthophyllite are but a few of the minerals which formed during metamorphism. Although these rocks have a strong E-W lineation like that of the San Gabriel gneiss, they dip steeply toward the north.

The structurally simplest and lowest grade metamorphic rock in the region is the Pelona schist. Though it has long been considered one of the oldest basement rocks in Southern California, its age is more likely Mesozoic than pre-Cambrian. It is probably the youngest metamorphic rock in the San Gabriel Mountains. The Pelona schist is composed of several thousand feet of thin bedded graywacke, siltstone, chert and tuff which have been metamorphosed to muscovite, albite, quartz, chlorite, epidote and amphibole-

bearing schists. Dips in the Pelona schist are typically less than 45° toward the south or west, and are generally slightly greater than the dip of the overlying Vincent thrust fault. Development of identical structures and minerals in the Vincent thrust rocks and the Pelona schist indicate that the Pelona schist was metamorphosed contemporaneously with thrusting. Overturned folds and rolled porphyroblasts in both rocks indicate overthrusting from the southwest. Since the thrust cuts quartz diorite and is intruded by quartz monzonite, its activity occurred between the formation of the two igneous rocks. The lack of quartz diorite intrusions in the Pelona suggests a similar age for it.

SAN JOAQUIN A.P.I.

The San Joaquin Valley Chapter of the A.P.I. will hold its Seventh Annual Barbeque and Golf Tournament at the Bakersfield Country Club, May 19th, 1956. Applications for Barbeque Tickets and entries for the Golf Tournament will be mailed during the first week in May. The costs for the Steak Barbeque will be $3.50 per plate. The entry fee for the Tournament will be $4.00, which includes green fees and a souvenir prize for each entrant.

SACRAMENTO FIELD TRIP

The Sacramento Geological Society will sponsor a Field Trip in the Taylorsville region of Plumas County, California on June 23 and 24, 1956. The trip will be led by Cordell Durrell, Geology Professor at U.C.L.A. The Taylorsville area is a classic area in the Sierra Nevada in that it shows a complete section of Paleozoic rocks. The trip will stop over in Quincy, California on the night of June 23rd. Reservations for lodging should be made personally for that night. There is a hotel and several motels in Quincy but advance reservations would be advantageous. Further details about the trip will be printed in the June issue of the Pacific Petroleum Geologist. Additional information may also be had by contacting Mr. Art Hawley, Western Gulf Oil Company, Sacramento, California.

GEOLOGY AT THE UNIVERSITY OF CALIFORNIA, RIVERSIDE

The Geology Department of the recently established College of Letters and Science of the University of California at Riverside will graduate its first B.A. geologist in June. This will mark the end of the first year of full-scale operation of the Geology Department, and the occasion calls for an introduction of the newcomer among California college geology departments to the members of the profession.

The new department is staffed by Dr. Michael A. Murphy, formerly of Shell Oil Co. and UCLA Ph.D., and Dr. Thane H. McCulloh, also from UCLA, who has been affiliated with the U.S. Geological Survey. An addition to the staff is expected for next year.

The department functions within the framework of a Liberal Arts College somewhat similar to Pomona College. Courses are offered in geology permitting a major in that subject and leading to the B.A. degree. Courses in Mineralogy, Petrology, Structural Geology, Paleontology, Field Geology, and Petrography are required of the majors. Students attend the UCLA summer field course in addition to taking six units of the campus field course. A senior-year field and laboratory research problem and thesis is required.

Students interested in geophysics are encouraged to major in mathematics or physics and minor in geology. A magnetometer (loaned by General Petroleum Corporation) and a gravity meter are available for the use of seniors in geophysics.

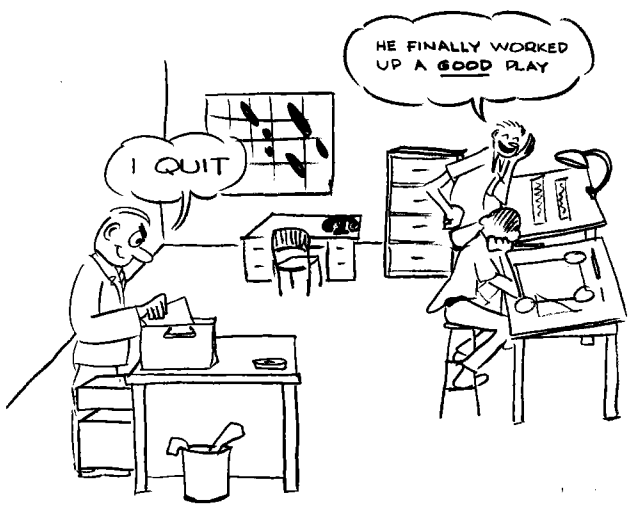
The present enrollment of the college is only 650 students. This small enrollment permits small classes and intimate association between the students and instructors. Close personal supervision and instruction are the result. On the basis of the existing enrollment of 20 geology majors, it is estimated that approximately 5 to 10 geologists will graduate from UCR per year.

Despite generous appropriations for equipment and supplies, the department suffers from serious shortages in some areas. In particular, the Geology Library is short of much essential material. Numerous gifts from individuals and organizations have helped greatly in supplementing the limited library budget, but much remains to be done, and any assistance is welcomed.

A cordial invitation is extended by McCulloh and Murphy to every reader of the Pacific Petroleum Geologist to visit UCR and get acquainted with the new department.

ATTENTION L.A. GEOLOGISTS! Sec. 43.30 of the L.A. City Municipal Code reads as follows: "No person shall advertise to tell fortunes, locate oil wells, gold or silver, to restore lost love or friendship or affection, to unite or procure lovers, husbands or wives, by means of occult or psychic powers, clairvoyance, spirits, astrology, palmistry, necromancy or other craft, charms or magnetism." With all this restrictive legislation its a wonder that L.A. geologists ever sell a play to management.

ANDY CLINE by sullwold



PERSONAL ITEMS

Robert R. Nelson, Honolulu Oil Co., Santa Barbara, has been transferred to the Bakersfield office.

Dick Miller, scout, and Hugh McClellan, geologist, have been transferred from Continental's San Miguelito office to Long Beach.

Millis Oakes, geologist for Union at Santa Paula has been transferred to the Los Angeles Basin.

Kazimierz Pochopien, geologist, Union Oil Co., has been transferred from Salt Lake City to Santa Paula.

Lou Heintz, formerly Chief Geologist for St. Anthony Oil Co. at Santa Fe Springs, and Gene Templeton, also formerly with St. Anthony, have joined forces as consultants with offices at 1746 N. Stanley Ave., Hollywood. Phone - Hollywood 7-7515.

Bill Osborn has been transferred from Bakersfield to L.A. to work in Continental's newly created L.A. Division.

Mort Kline, Jr., Colorado School of Mines, Dick Walters, Williams & Wyoming & Stanford, Howard Sonneman, UCLA, are all new additions to Humble's geological forces.

A partial list, by companys, of those who were able to attend the A.A.P.G. National Convention in Chicago includes:

Union: Sam Grinsfelder, John Hazzard, Stan Wissler, Ed Scott, Doyle Graves, Hal Fothergill, Harold Billman
General Petroleum: Quentin Moore
Tide Water Assoc.: Tom Cameron, Charlie Foss
Getty Oil Co.: Emil Kluth
Western Gulf: Mel Hill, Carl Kennedy, Mark Latker, Ben Hake
Signal: Frank Parker, (Chairman of National Business Committee)
Superior: George Wheatley
Richfield: Mason Hill, (President of the Pacific Section, AAPG) and John Loofbourow
Standard: Hal Rader, Howard Anderson, Herm Weddle, Mark White, Bill Barbat, Lloyd Owens, Richard Hovey, Oscar Weser
The Texas Co.: Jim Hamill, Kenny Myron, Wayne Felts
Shell Oil Co.: Leo Newfarmer, Grant Valentine, Jim Moore, Ernie Hoskins, Art Weller, Don Gresser
Sunray-Mid. Cont.: Everett Pease (Treasurer of Pacific Section, AAPG)
Monterey Oil Co.: Tom Baldwin (Secretary of Pacific Section, AAPG) and Joe Hudson
Continental: Roy Barnes, Bill Cory
Hancock Oil Co.: Art Huey
Intex Oil Co.: Ray Turner
Humble Oil Co.: Joe Pelline, Charlie De Lancey
Kern Oil Co.: Fred Vandenberg
Consultants: Bill Kleinpell, Harold Hoots, Graham Moody, Vic Church

Hank Tomko and Al Oestreich were recently transferred to Shell's Columbia District at Elma, Washington.

Bob Smith was transferred from Louisiana to the Alaska District.

Herb Mann is spending a month or so in Bakersfield to soak up a little sunshine (and work a little) before heading for Alaska. Since he left rainy Seattle, they've had nothing but sunshine.

Darren W. Wales has joined the Richfield Oil Company's Long Beach office. Darren is a graduate of the University of Melbourne, Australia and has worked for Zinc Corporation in Melbourne, Texaco Exploration Co. in Alberta, Canada, Australia Oil Exploration in central Queensland and for the Australian Commonwealth Government, Bureau of Mineral Resources.

Spence Reber, Standard, Los Angeles Basin, has been transferred to the Seattle office.

Al Solari, Standard Oil Co., was recently transferred from San Francisco to Oildale where he will take over his new position of Superintendent of the Northern California Division.

Evan H. Burtner, Standard Oil Co. in Oildale, was transferred to San Francisco to fill the position of the assistant to the Manager of Exploration.

Anthony Paap and E. C. Doell, Standard Oil Co., San Francisco, were recently appointed to the positions of Assistant Chief Geologist.

Olaf P. Jenkins, Chief of the Division of Mines, San Francisco attended the A.A.P.G. National Convention in Chicago.

Dick Atchison, George Rudkin and Tom Roy of Ohio's Geology Department, Bakersfield, are planning a fishing party. Tom is going to show them how to catch trout.

Mark Zappi, Ohio Oil Co. Geological Dept., Bakersfield, was married on April 8th to Doris Marie Durant at St. Martinville, Louisiana.

Bob Nelson, geologist, Honolulu Oil Corp., has been transferred from Santa Barbara to Bakersfield.

Tom Cameron, District Geologist for Tide Water in Bakersfield is in Chicago for the convention and plans to go on to New York from there.

Jim Kurfess, Geophysicist for Tide Water, Bakersfield, and his wife took a trip to the Grand Canyon which included a ride down the trail on mule back.

Billy Osborn, Geologist with Conoco in Bakersfield, has been transferred to the Los Angeles office.

Mark O. (Hans) Miller, Geophysicist with Conoco in Bakersfield has been transferred to Ft. Stockton, Texas in the Delaware Basin.

Don Sorgenfrei, Geophysiscist for Superior Oil Co. has been transferred to the Bakersfield office from Midland, Texas.

Bob Blocher, Shell, just returned to Seattle after a six month stint in the New York office.

George H. Clark, a graduate of Claremont-Pomona College, formerly with Shell Oil Co. in Casper, Wyoming, has joined the Geological Department of Richfield Oil Corp. in Bakersfield.

Jean Adams, lady geologist for Richfield, has been ill and her cohorts in the Bakersfield office wish her a speedy return.

M. Jean D. Senteur de Boue, local Bakersfield consultant, is working on a project utilizing his new service which was reported last month. He is currently using his skin diving gear while engaged in a minute study of the micro-organisms of coccoliths on the floor of Searles Lake near its deepest point.

Leo Wanek with General Petroleum in Sacramento will be summering in Nevada with his family. Leo is going to try his luck at deciphering the geology of the Great Basin.

The Texas Company office in Sacramento has a new secretary, Vivian Durack. Reports say she is doing the work of a geologist and landman combined. Look for big things from The Texas Company.

Marie Dellinger, Exploration Dept. Secretary for Tide Water Associated, Los Angeles, recently received a diamond service emblem for 25 years of continuous service at an award dinner held at the Statler Hotel.

Bill Barlow has developed a slight allergy to poison oak and is doing his best to overcome it.

Roland Bain is leaving The Texas Company, Long Beach office. He is planning to enter private construction work in Spokane, Washington.

John N. Huber, District Geologist, Tide Water Associated at Casper, Wyoming, has resigned.

Phillip R. Patten, University of California Graduate, AB '46, MA '47, is now employed by The Texas Company, Long Beach.

According to Bill Thomas, "Rats" Rathwell claims he is domino champion of Paradise, California. He will challenge any geologist that happens to be doing field work or fishin in his area.

A. T. (Andy) Anderson, Continental Oil Co., has been promoted to L.A. Division Geologist.

Bob Kelly, Continental Oil Co., has been promoted to Offshore Division Geologist.

Hugh McClellan is moving from Ventura to Seal Beach where he will look after exploitation of Continental's Seal Beach and San Miguelito properties.

Presley De Jarnett, geologist for the Ohio Oil Company in the Bakersfield office, is going to Tripoli, Libya for a two year tour of duty. He has been assigned to the Oasis Oil Company of Libya which is a subsidiary of the Ohio Oil Company.

NURSERY NEWS

Mr. and Mrs. Dick Glenn have a new daughter, Laura Jean, 6 lbs. 8-1/2 oz., born April 7th, 1956. Dick is with Standard Oil.

Ruth Ann and Don Six, Geologist with The Texas Company, Bakersfield, welcomed a daughter on March 9th, weighing 7 lbs. 3 oz., named Rebecca Ann.

To Bert and Josie Nunn, Formation Logging Service Co, a boy, Kenneth, 6 lbs 10 oz., on April 18.

Mr. and Mrs. Tom Barrow, Humble Oil, have a baby daughter named Barbara Loyd born April 24th weighing in at 8 lbs. 3 oz. This is their third child.

CALENDAR

May 16, 1956: Wed., 6:30 p.m., Los Angeles Basin AIME Jr. Petroleum Group, Sequoyah Restaurant, 9023 E. Washington Blvd., Rivera, Calif.(Corner Washington and Rosemead). "Multi-phase Aspects of Pressure Build-up" by Dick Perrine, Cal Research Corp. "Effect of Offset Producing Wells on Pressure Build-up" by George Pfaffman, Signal O&G, and "A Comparison of Theoretical Pressure Build-up Extrapolation Methods" by Ted Nowak, Union Oil Co. Members $3.00, Non-members $3.50

May 18, 1956: Fri., 7:30 p.m., The Sacramento Geological Society Annual Spring Dinner Meeting, Officers Club, McClelland Air Force Base, Sacramento. "Moving Rocks of Racetrack Playa" by Dr. George M. Stanley, Prof., Fresno State Coll. Wives and visitors are cordially invited.

May 21, 1956: Mon., 7:00 p.m., AAPG Forum Meeting, General Petroleum Auditorium, Los Angeles. "Development of Petroleum Reservoirs in Fractured Rocks of the Monterey Formation" by A.T. Anderson, Continental Oil Co., and "Reconnaissance Geology of the Eastern California Desert Area" by R.L. Johnston, Western Gulf Oil Co.

May 24, 1956: Thurs., 7:00p.m. Northwest Geological Society Dinner Meeting, Steak House, Olympia, Washington. A Schlumberger engineer will give a talk on "Well Logging Techniques".

May 25 and 26, 1956: Fri. and Sat., Geologic Field Trip around the northern Olympic Peninsula will be conducted by Bob Brown, U.S.G.S.

May 25, 1956: Fri., 1:00 p.m. Pacific Coast Oil Scouts and Landmen Association Mid-Year Meeting, MiraMar Hotel, Santa Barbara, California. Program to feature offshore operations and exploration in California coastal waters. Speakers: Frank Hortig, State Lands Commission, C.R. Bell, Richfield Oil Corp., C.H. Savit, Western Geophysical, and T.S. Cate, Shell Oil Company.

May 28, 1956: Mon., 12:00 noon, AIME Petroleum Forum, Rodger Young Auditorium, 936 W. Washington Blvd. "Progress in Drilling" by Mr. Joe Kellogg, Kellogg and Sons, Drilling Contractors. ($2.25 includes tax, tip and parking)

June 1,1956: Fri., Los Angeles Basin Chapter API Annual Barbeque and 1st Annual Golf Tournament. Free beer starting at 4 p.m., barbeque starting at 6 p.m., door prizes 8 p.m. All to be held at Lakewood Country Club, Lakewood California. For Reservations- Bill Anderson, c/o API, 510 W. 6th St., Rm. 1209, Los Angeles(14) Barbeque Ticket $3.50, Golf Fee $2.00.

BIBLIOGRAPHY OF RECENT PUBLICATIONS

SCIENTIFIC PUBLICATIONS - JOURNALS AND BULLETINS

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"Geology of Christmas Copper Mine in Gila, County, Arizona", Bulletin 1027-H

"Stratigraphic Section in the Vicinity of Eureka, Nevada", Professional Paper 276, by T. B. Nolan, C. W. Merriam, J. S. Williams

"Geology and Ore Deposits in Bagdad Area, Yavapai County, Arizona", Professional Paper 278, by C. A. Anderson, E. A. Scholz, J. D. Strobell

"Birth and Development of Paricutin Volcano, Mexico", Bulletin 965-D, by W. F. Foshag and Jenaro Gonzales R.

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Open File Report: "Preliminary Report on the Geology of San Nicolas Island, California", by J. G. Vedder, J. E. Schoellhamer, M. C. Israelsky. Geologic map scale 1:12,000 and copy of test. May be consulted only at Room 803 Federal Building, Los Angeles, from 9:30 A.M. to 4:00 P.M. Press released May 1, 1956. (Arrangements may be made for photostats.)

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"Future of Exploration in California", by Homer Steiny

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Petroleum World, April 26, 1956

"Why We Believe the Conservation Act Will Be Good for California", by R.W. Ragland, Richfield Oil Corp. Page 25. (Full text of speech delivered at San Joaquin Valley Oil Producers Association dinner, April 10,1956. The speech by A.C. Rubel, opposing the measure, will be published in full in the May 31st issue of Petroleum World).

World Oil, April, 1956

"Better Exploration Promises Enough American Oil for the United States", Dr. A.I. Levorsen, page 80.

"New Method for Mapping Old Shorelines", William F. Tanner, page 123

"Exploration Geophysics Makes Rapid Strides", Milton B. Dorbin and Robert G. Van Nostrand, page 129

PACIFIC PETROLEUM GEOLOGIST
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LOS ANGELES 8, CALIFORNIA

Vol. 10 No. 5

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Form 3547 Requested

PACIFIC PETROLEUM GEOLOGIST

NEWS LETTER OF THE PACIFIC SECTION
AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS

Vol. 10 June 1956 No. 6

ASSOCIATION ACTIVITIES

L.A. BASIN LUNCHEON

On May 3rd, the Los Angeles Luncheon Meeting was held at the Rodger Young Auditorium. The speaker for the meeting was John S. Shelton, Professor of Geology, Pomona College, who presented a most interesting talk entitled, "A Southern California Geologist Looks at Switzerland". Professor Shelton not only presented a view of the classic geology of the Alps but gave a most interesting insight into the Swiss people and their customs.

Switzerland is about 226 miles in greatest dimension and could easily be fitted into the area between Santa Maria, Searles Lake, Palm Springs and San Pedro, although the latitude corresponds to southern Montana. About half of its 16,000 square miles is grassland and the other half is evenly divided between forest and steep rocky slopes. 700-square miles are covered by glaciers. Relief extends from 650 feet (Lago Maggiore) to 15,217 feet (Monte Rosa).

In this rugged area live almost 5 million people (about the same as Los Angeles County). Four languages are official; about 73 per cent speak Swiss German, a dialect now seldom written, 21 per cent French of very high quality, 5 per cent Italian and a small area in the Engadine Valley speaks Romansch, a quaint survival from the days of Roman domination. A little over half the people are Protestant and most of the rest are Catholics.

The 22 cantons enjoy greater autonomy than the states of our country as shown by strongly contrasting school programs, judiciary systems and the fact that each canton may elect its two representatives to the Council of States (like our Senate) in any way and for any length term it likes.

Military duty is required of all able-bodied citizens from 20 to 48 years old and after the first year or two consists of about 2 weeks of training a year. This takes precedence over all other jobs. There is no standing army, but every man takes all his equipment, including weapons, home with him, and this makes it possible to mobilize fully in 4 hours

The entire country is served by dial telephones. Banks and Post Offices are open longer hours than here (most bills are paid through postal accounts instead of banks). The citizens are neat (almost no litter along roads), law-abiding (e.g. traffic), enthusiastic about the arts (concerts sold out in first day). Having no important natural resources except hydroelectric power, income is earned chiefly by work performed - and this must compete with neighbors having the advantage of local raw materials. Therefore the job well-done is their only means of survival. This premium on quality and skill is reflected in the educational system and throughout Swiss life.

Switzerland may be divided into three geomorphic and geologic provinces:

1. The Jura Mountains on the north consist of subparallel folds plus minor faulting in Mesozoic and Tertiary rocks with arcuate plan and generally ENE trend. Topography somewhat resembles Appalachians on a reduced scale.
2. The Mittelland, a belt of low relief and large lakes produced by alluviation in a subsiding foredeep. It is underlain by the Molasse - upper Oligocene and Miocene clastic sediments, partly marine and partly brackish and freshwater, to estimated depths of over 25,000 feet. It is gently deformed in general and compressed and overturned along the south margin where the Alps have pushed against it. Effective test drilling is being delayed by leasing problems arising from the autonomy of the Cantons.
3. The Swiss Alps, topographically and geologically, are the culmination of the well-known alpine arc, bowed out toward the northwest and having here strong structural grain along ENE trends. Looking only at the north margin in the Glarus region as a sample, several spectacular observations seem now to be beyond dispute:
   a. The north margin has plowed into the Molasse - its own debris shed northward during much of Cenozoic time.
   b. Parts of the alpine mass (Jurassic and Cretaceous) have ridden out over fossiliferous Eocene deposits. (The Mythen klippen.)
   c. Parts of the Mesozoic section are repeated (as in the north wall of the Wallensee, or the Rauti Spitz). (To the west, parts of the section have been inverted on top of thrust planes.)
   d. Old rocks have been thrust over young with both tectonic and paleontological confirmation. (Permian Verrucano over Eocene Flysch.)
   e. There are numerous examples of intense folding, generally overturned northward and often between thrust planes.
   f. Both the sediments produced within the orogenetic belt during its activity (= Flysch) and those deposited outside (= Molasse) bear witness to the folding and thrusting by their breccias and conglomerates and facies changes.

Complexities arise from the variable intensity of metamorphism, the extreme variation in facies, the extreme deformation and the fact that erosion and diastrophism have been active for a long time.

Compared to geology in southern California, this area represents intense study during about 150 years of a belt about like our Transverse Ranges. It was all mapped long ago and most of it has been gone over many times. Ph.D.'s are now given for a thorough job where almost the only new fact is discovery of a poor fossil in metamorphic rocks or a horizon that can be matched across a valley. This thoroughness breeds respect for the data the Swiss have gathered. At the same time it is obvious that work in any one small area would be complex to the point of frustration without the benefit of unifying concepts. To avoid this chaos the Swiss are driven to speculation on schemes that will make sense out of the mess, and this has stimulated a great deal of theorizing, some of which has drawn criticism from abroad. It is my opinion that the Swiss are general-

NEXT DEADLINE JUNE 26

ly, as geologists, well-trained, thorough, hard-working, imaginative and quick to revise their speculations when new data turn up. They are likely to be better informed as to what is going on in the profession than most of us are.

S.E.P.M. FIELD TRIP

The annual spring S.E.P.M. field trip, jointly sponsored by the Coast Geological Society, was held in Santa Maria May 4th and 5th.

The evening dinner meeting on May 4th was a barbeque at the Santa Maria Club and was thoroughly enjoyed by the 266 members and guests who attented. Aden W. Hughes, Consulting Paleontologist, discussed the Stratigraphy and Forams of the Huasna Basin, and Dr. V. L. VanderHoof, Intex Oil Co. Geologist, talked on the Geology and Development History.

The field trip the next day through the Huasna Basin was led by Vern Rutherford, Union Oil Co. Geologist. Beautiful weather, wonderful exposures, an informative syllabus containing a geologic map on an aerial photo mosaic and two cross sections, an excellent lunch, plenty of beer and cokes, and an enthusiastic group of 220 paleontologists and geologists provided all the requisites for a highly successful trip. Foraminiferal sample localities from the Upper, Middle and Lower Miocene were visited.

PACIFIC SECTION PUBLICATIONS

Everett Pease, Treasurer of the Pacific Section, wishes to announce to the membership that the Mt. Diablo-Lodi-Galt cross-section, which has been out of print for some time, will be re-printed and available for distribution within two weeks.

The Directories of the Pacific Section Membership that were formerly on sale for $3.00 for extra copies and to non-members have now been reduced to $1.00 per copy and are available by contacting Miss Joan Baldwin, c/o Shell Oil Co., 1008 W. 6th St., Los Angeles, California.

U.S. GRANT DENIES SUBSIDENCE REPORT

U.S. Grant, Professor of Geology at U.C.L.A., wishes to clarify his position with respect to statements recently made in certain newspapers in the Los Angeles area. Dr Grant's letter to the Editor of the Pacific Petroleum Geologist follows:

"Ten days or so ago some of the local newspapers, with surprising disregard of accuracy, published sensational articles which gave the impression of quoting me as forecasting alarming land subsidence at and near the 20th Century Fox Studio lot if oil production is developed there. I did not see any of these articles till yesterday, which accounts for my tardy reaction to this absurdity.

Will you please quote me in the Pacific Petroleum Geologist as being incensed at the inferences in these alarmist newspaper accounts that I made any report or any statements about land subsidence at the 20th Century Fox Studio region. I have never studied that area and have never made any statements, verbal or written, as to the effect of proposed oil production there. Many oil fields have subsided but generally so slightly that no damage has resulted. In most cases the subsidence can not be detected except by careful and repeated level surveys. The Wilmington field is an exception."

NORTHERN CALIFORNIA PETROLEUM ROUND TABLE 5TH ANNUAL BARBEQUE & GOLF TOURNAMENT

The Northern California Petroleum Round Table will hold its 5th Annual Spring Barbeque and Golf Tournament Friday, June 29, 1956. The festivities will be held at the Green Valley Country Club which is located 3 miles north of Highway 40 at the Benicia turnoff. The activities will be swimming, golfing, drinking and eating. Lots of door prizes and golf prizes. The golf tournament will start at 10:00 am.

Further details and tickets may be obtained by contacting Bob Dickey, c/o Brazos Oil & Gas Company in Sacramento; Bill Horsley, c/o Richfield Oil Corporation in Bakersfield, or Jeff Watts, c/o the Market Street office of P.G. & E. in San Francisco. The price per ticket is $3.50 and all men in the oil industry are invited.

U.S.C. OFFSHORE SYMPOSIUM

On June 11, 1956, papers will be given by five graduate students of the University of Southern California Department of Geology on sedimentation and foraminiferal ecology of the offshore area of southern California. Their reports represent the results of researches completed as M.S. theses which will be published subsequently. Visitors from other educational institutions and from the oil industry are welcome.

The symposium will be held in Founder's Hall, Room 226, from 2 pm till 5 pm. The topics to be covered in this symposium will be as follows:

1. "Ecology of Foraminifera of Santa Cruz Basin" by Johanna Resig.
2. "Sediments of Santa Monica Bay" by Stewart Keesling.
3. "Foraminiferal Ecology of Santa Monica Bay" by Emil Zalesny.
4. "Submarine Geology of Santa Rosa-Cortes Ridge" by Elazar Uchupi.
5. "Foraminiferal Biofacies Around Catalina Island" by Robert McGlasson.

SACRAMENTO GEOLOGICAL SOCIETY

The annual Spring Dinner meeting of the Sacramento Geological Society was held at the McClellan Air Force Base Officers Club on the 18th of May. Dr. George M. Stanley, Professor at Fresno State College, gave a very interesting illustrated talk entitled"Origin of Playa Stone Tracks, Racetrack Playa, Inyo County, California".

Curious tracks on Racetrack Playa, obviously made by moving stones, have been interpreted as caused by wind blowing stones over wet level clay. The stones weigh from ounces to several hundred pounds.

Among hundreds of tracks on this playa, certain ones exhibit near parallelism which implies unit movement; precise measurements and plots confirm this. Certain bends and cusps in these irregular tracks are comparable in all tracks of the same "signature". A transparency plot of analogous points (one for each track in the same signature group) when moved along plotted tracks, matches repeatedly at other analogous points. Rotation precluded true parallelism of tracks and identity of lengths and shapes. Distance of unit movement exceeded 300 feet and maximum spread of stones in the unit is 480 feet.

Unit movement over so great a span scarcely allows any reasonable conclusion as to cause other than wind-blown ice flows dragging protruding stone. Ice ramparts and other evidence indicate longshore shearing motion, feasible for ice flows but impossible for ice shove by thermal expansion.

The writer finds no evidence that stones, freely wind blown, have made tracks. Though not disproved, this idea meets serious objections in many other small object tracks than those surveyed and is unfeasible for tracks inscribed by 300 pound stones.

Dilbert, your the only man I know that can be in a bull session and talk about food, liquor and women, and end up talking about food.

SACRAMENTO SOCIETY FIELD TRIP

The Sacramento Geological Society will hold a field trip June 23 and 24 in the Indian Valley region of Plumas County, California. The Indian Valley region is part of the Taylorsville area mapped by J.S. Diller and is exceptional in that a rather complete section of Paleozoic rocks are exposed on the surface. The trip will be led by Dr. Cordell Durrell, Professor at U.C.L.A. and Mr. Vern McMath, graduate student at U.C.L.A. who is completing a thesis in this area.

The field trip will start at noon on June 23 at the highway junction of 40A and 89 in Plumas County. Saturday night will be spent in Quincy, California. Reservations should be made personally by persons planning to attend. The trip will break up at approximately 2:00 pm Sunday to allow people to return home Sunday evening.

An informal dinner will be held Saturday evening in the Quincy Hotel, Quincy. A syllabus will be available for those taking the trip. Field clothes are in order as a hike across the section will be included in the trip.

The trip will complete the 1955-56 program for the Sacramento Geological Society and the next meeting will be September, 1956.

PERSONAL ITEMS

Kenny Jensen, scout for Tidewater Associated Oil Co., has opened an office in the Country Club Center in Sacramento.

The Northern California Petroleum Round Table gave a cocktail party for members of the oil industry in Sacramento at Scheidels Restaurant on May 22nd. The party served as a preliminary for the barbeque to be held next month. Some of the people attending didn't get home till well after 2 am the following morning.

Glenn Harris, geophysicist for Shell in Sacramento, has returned home from his extended stay in Houston, Texas. Glenn is real sharp after all his schooling, so we hear.

J.J. Pickell, Shell Oil Co., who is the proud owner of a new home in Ventura, will spend the summer in Sacramento. The weeds get a break this year.

Swiss Holmes, Fritz Loomis, and Tom Wooten, all of Shell in Sacramento, are building new homes and we understand they are to be beauties. Wonder where they will all be transfered to?

Howard Level, Union Oil Co., is the latest addition to Union's Santa Paula Exploration staff. Howard has just been transferred to Santa Paula from Salt Lake City.

Bud Oakes, Union Oil, has been transferred to Santa Fe Springs from Santa Paula.

Bob Paschall, Hancock, Ventura, the eminent thespian, was recently seen in a starring role in a play sponsored by the Saticoy Lions Club. Hollywood talent scouts please note.

Bill Baseley is a new geologist for Richfield in Ojai. Bill comes to Richfield via U.C.B. and U.C.L.A.

Al Morejohn, geologist with Seaboard Oil Co., Bakersfield, is being transferred to New Orleans. He will be joined by Bill Mackersie who has been in Denver. There are almost enough California men in New Orleans now to start a fair-sized colony.

Horace Harrington, President of the San Joaquin Geological Society and District Geologist for the Bakersfield office of The Superior Oil Co. has just returned from the Northwest Geological Society's Field Trip, May 25th and 26th, on the Olympic Peninsula, Washington. The trip started at Olympia and Horace says that it was so well organized that he never even had time to get a line wet in any of the streams.

The Texas Co.'s Jim Learmont is a much happier man these days - his wife and two children have recently arrived from Birmington, England, to join him in Bakersfield.

R. Stanley Beck, who recently recovered from a stormy bout with double pneumonia, has just returned from a visit to Eastern Washington where he visited with his nephew and friends in the area in which he grew up.

Mick Lachenbruch, Western Gulf Oil Co., Bakersfield, has gotten into a lot of trouble by building a sand box for his children. It seems the whole project has gotten too large and out of hand, much to the consternation of his wife and neighbors. It has been reported that it looks more like a swimming pool.

William Hunter and Richard Sharp have recently resigned their positions from Standard Oil Co.'s Bakersfield Exploration Department.

Seaboard Oil has moved into its new spacious building on Brundage Lane in Bakersfield, The beautifully designed headquarters, built by Drex Dana, local oilman, has 5000 sq. ft. of space and 24 rooms, including a coffee room for relaxation between "work breaks". Gerry Ganapole informs all the friends of Seaboard that until an official "open house" is scheduled, they are invited to drop around at coffee time - and bring their own cup.

Harold Billman has been appointed Division Geologist for Union Oil Co.'s Bakersfield office. He replaces Miguel (Mike) DeLaveaga who has resigned.

George Quick has recently resigned his position with Union.

Leonard M. Snyder, Shell, Salt Lake City, left the 31st of May to take a personal part in Uncle Sam's army life.

Recent developments in the foreign exploration section of Richfield under the leadership of John Loofbourow are as follows:

Bill Bishop - after a 6-month sojourn in Italy will return to the LA office

Jerry Knowles - after a cold winter of well sitting in Nevada also returns to the LA office. It is reliably reported that Jerry has a sore right arm from defending himself from one-arm bandits.

John Szatai - M.A., Stanford, Ph.D. candidate from S.C. is the most recent addition to the foreign geological staff.

We will attempt to find out from Bill Bishop what the sub titles of Italian movies leave unsaid.

Ilaf Anderson of Western Gulf in Santa Maria, has been transferred to the Bakersfield office.

Ken Bishop, formerly with Continental Oil Co., Washington, has gone to Bogota, Colombia for the Texas Company.

Adrian Maaskant, Shell, Ventura, has just returned from a week's vacation spent touring Northern California.

Ventura's most famous big-game hunters, Eric Phillips and Jim Boatner of Western Gulf, recently covered themselves with glory. It seems a rat was seen on the street in Ventura and Eric held the vicious monster at bay with a toy lawn mower while Jim shot it with a pellet gun. Well-deserved "Hero" medals on purple and yellow backgrounds have been awarded the brave twosome in a very stirring ceremony.

Ken Myron, Texas Company in Santa Maria, went to Detroit after the National AAPG Convention and spent his vacation driving his new Thunderbird back to California.

Vern Crackel, Western Gulf, Ventura, is the proud possessor of a new Chevrolet station wagon. He says he likes his new Chevvy almost as much as he would an automobile. (Easy General Motors-Thats what the man said)

Mike Jager, formerly of Richfield,Ojai, is basking in Florida sunshine. He's not working, however--he's in the U.S. Air Force.

Bob Erickson,Standard in Montalvo, has been seen hobbling about on crutches these days. Seems Bob was matched against some of his children's toys and lost in the first fall.

Bill Bishop, Richfield, working out of the world-wide office, has just returned from Italy. He probably will be living away from Los Angeles rather than away from Ojai in the future.

Ed Uren of Western Gulf in Ventura is leaving about June 15th for New York City for a six month Special Studies Course with the Gulf Oil Company.

S.R. Jeffries of Shell in Ventura is spending his vacation fishing in Mexico.

Cleve Bowles, Signal, spent all of 15 minutes in Los Angeles on way from Calgary to Guatemala.

Bill Rand reports that Juan Sabueso Piedras, prominent Argentine geologist, has formed a partnership with John de Sentaur de Boue, consultant of Bakersfield. They are conducting a research program in offshore coring using the double thimble jet method developed by Sabueso Piedras.

Tom Adame, Jr., a recent graduate from (if you will excuse the phrase) UCLA, has joined the offices of Lewis & Ganong in Bakersfield.

Joseph Jensen, consultant for Tidewater Oil Company, and his wife Lois left Los Angeles Tues., May 29th, on Scandanavian Airlines for an eight week's trip in Europe.

Tom Llewellyn, Honolulu Oil Corp., is in the hospital after a recent serious automobile accident on the San Mateo - Hayward Bridge. Friends may reach him at the Oak Knoll Naval Hospital in Oakland.

Clyde Cotton, Tidewater, spent two weeks in Los Angeles getting ready for the frozen north country.

The Texas Co., Santa Paula, has added a new member to its staff, Richard Pratt, Jr. Geologist, M.S.-University of Washington, who is currently working on his Ph.D.

Tidewater Oil Company has added three new geologists to their exploration staff in Ventura: Louis Villanueva from Stanford; James Trotter from Northwestern and the Northern Natural Gas Company, Omaha; and Herschel Nixon from U.S.C. and Shell Oil Company.

Rocky Minar, Shell Oil Company, Ventura, is vacationing at the Grand Canyon.

Sophie and Alex Anderson of Tidewater's Geological Department announce the premature arrival of Sandra Lorraine, 3 lbs., 5 oz. on May 23rd, their second child.

Jim Sanders and Jim Mercer are on temporary duty in Santa Barbara for Tidewater.

Continental's Danny Nolan has left Bakersfield to join their exploration staff in Roswell, New Mexico.

Manny Castro, Shell Oil in Ventura, has just returned to Ventura from the Shamrock Hotel swimming pool in Houston. He keeps muttering something about some school he went to in Houston.

NURSERY NEWS

Tom and Catherine Rothwell, Richfield, Long Beach, announce the arrival of John Dickinson, 7 lbs. 2 oz., on May 23, 1956. The Rothwells have a boy 16 and a girl 12.

The John Formans, General Petroleum, announced their 3rd child, a boy, Peter Deuel, 7 lbs. 9 oz., born April 10th, 1956.

The Bill Heiners have a baby boy, their 2nd child, Richard William, 7 lbs. 13 oz., born May 8th, 1956.

CALENDAR

June 7, 1956: Thurs., 12:00 noon. Pacific Section AAPG Luncheon Meeting, Rodger Young Auditorium, 936 W. Washington Blvd., Los Angeles. "Highlights of Trip Around The World" by Dr. M. Guy Edwards, Consultant. Excellent color pictures. $2.00 including tax and tip.

June 13, 1956: Weds., 6:30 pm, AIME Los Angeles Basin Jr. Petroleum Group, Rodger Young Auditorium, 936 W. Washington Blvd., Los Angeles. "Pros and Cons of the California Conservation Act". Speakers: Mr. A.C. Rubel, Vice-President, Union Oil Co., and Mr. J.R."Bill" Pemberton, Consultant, Los Angeles. Reservations: Engineer of Southern California, 1724 W. Main St., Alhambra, California. Phone At 2-3280.

June 14, 1956: Thurs., 12:00 noon, SEG Luncheon Meeting, Biltmore Hotel, Los Angeles. "Can We Get the Geophysicists Out of Geophysics?" by Mr. Carl Savitt, Chief Mathematician, Western Geophysical Co. There will be no meetings in July or August.

June 18, 1956: Mon., 7:00 pm., AAPG Los Angeles Forum Meeting, General Petroleum Auditorium, Los Angeles. "Scientific Manpower and National Safety" by Mr. Ben Hake, Western Gulf Oil Co. "A Diving Geologist Views the Continental Slope" by Mr. Edwin C. Buffington, Geological Diving Consultants, Inc. There will be no meetings during the summer months. The next meeting will be in September.

June 19, 1956: Tues., 7:30 pm. Coastal Geological Society Dinner Meeting, Montecito Country Club, Santa Barbara. Subject "Financing in Petroleum Exploration and Development", by Mr. L.R. Seaman, President of Intex Oil Company.

June 23-24, 1956: Sat. and Sun., Sacramento Geological Society Field Trip. Indian Valley area near Taylorsville, Plumas County., California. Study of the best Paleozoic section exposed in the High Sierras.

June 25, 1956: Mon., 12:00 noon. AIME Petroleum Technology Group, Rodger Young Auditorium, 936 W. Washington Blvd., Los Angeles. "Progress in Well Logging" by Mr. Russell L. Forsythe, Assistant Manager,Pacific Coast Area, Schlumberger. $2.25 including tax and tip.

June 29, 1956: Fri., Northern California Petroleum Round Table Golf Tournament and Barbeque at the Green Valley Country Club, Sacramento.

The San Joaquin Geological Society announces there will be no meetings during the summer months. Meetings will resume next September.

BIBLIOGRAPHY OF RECENT PUBLICATIONS

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Reprints of topographic maps of San Bernardino, Trona, Death Valley and Santa Ana sheets. Scale 1:250,000 (same scale as California geologic map).

Division of Oil and Gas, State of California

Summary of Operations, Vol. 41, No. 1, January-June, 1955
- Wild Goose Gas Field
- Marysville Buttes Gas Field
- Pleasant Creek Gas Field
- Oakridge Oil Field
- Correlation Sections of West Side Fields of Kern County
- Rosedale Ranch Oil Field
- Wheeler Ridge Oil Field
- Bowerbank Gas Field
- Pleasant Valley Oil Field
- Huntington Beach Oil Field, Southeast Extension of Town Lot Area

Wildcat Maps:

W-3-10 San Mateo, Santa Clara and Santa Cruz Counties. Scale 1" = 2 miles

W-4-1 West Side Fields of Kern County and Portions of Santa Barbara and San Luis Obispo Counties. Scale 1" = 1 mile

W-4-2 East Side Fields of Kern County. Scale 1" = 1 mile

Oil and Gas Field Maps:

25 Sacramento Valley Gas Fields

71 Deer Creek

72 South Mountain

TRADE JOURNALS AND MISCELLANEOUS MAGAZINES

Oil and Gas Journal, April 30, 1956

"Geologists Outlook Hinges on Answers to Three $64 Questions"

"Geophysics Is Here To Stay", Holland C. McCarver

"Where Are The World's Giant Fields?", G. M. Knebel and Guillermo-Rodrigues Eraso

"Finding Oil With Geophysics"

"What Causes Low Radiation Intensities Over Oil Fields?", Hans Lundberg

Petroleum World, May 31, 1956

"Why We Believe The Conservation Act Will Be Bad For California" by A.C. Rubel

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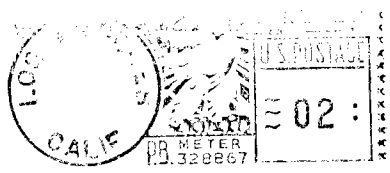

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PACIFIC PETROLEUM GEOLOGIST

NEWS LETTER OF THE PACIFIC SECTION
AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS

Vol. 10 July 1956 No. 7

ASSOCIATION ACTIVITIES

LOS ANGELES FORUM MEETING

On June 18th the Los Angeles Forum Meeting was held in the General Petroleum Auditorium. The speakers for the evening were Mr. Ben Hake who addressed the meeting on the subject of "Scientific Manpower and National Safety" and Mr. Edwin C. Buffington, Geological Diving Consultants, Inc., who spoke on "A Diving Geologist Views the Continental Shelf". An abstract of Mr. Hake's talk was not immediately available but the Pacific Petroleum Geologist hopes to be able to cover his speech in a future issue. The following are a few remarks taken from Mr. Buffington's address.

It is perhaps stating the obvious to say that there has been a tremendous surge in interest and exploratory activity on the continental shelf by the oil industry in the past 10 years. Academic interest in the continental shelf has been continuing since geologists first began to systematically describe the continents and ponder on their origin. The continental shelves, because of their relatively shallow depths and proximity to land, have always been more accurately and completely sounded than the deeper portions of the ocean. A fair notion of surface sediment distribution on the shelf has been developed by the study of notations as to bottom type made on nautical charts by mariners and systematic sampling done by various oceanographic institutions. Hand in hand with the increasing academic interest in the continental shelves has developed the realization by the oil industry that the continental shelves probably represent areas of tremendous petroleum reserves. Consequently, the last 10 years have witnessed a tremendous expenditure of effort by the oil industry in studying the shelf particularly by seismic methods and the detailed study of sedimentary processes in shallow water environments. The only element lacking has been the detailed surface mapping by field geologists, and now, even this last difficulty is being resolved, at least in part.

Most of you will remember your first year geology course. The theory that the continental shelf was a combination wave built and wave cut terrace that bore direct relation to a factor which was known as wave base. Wave base was defined by William Herbert Hobbs as the level in the water below which there was no effective water movement attributable to wave action. This depth was equal to the wave length of the largest storm wave, approximately 600 feet, which corresponds to the depth of the edge of the continental shelf in most portions of the world.

The shelf was supposed to represent a profile of equilibrium concave upward. This theory was developed in part from observations, in part from wave theory, in part from bottom sampling and from the study of marine terraces.

Another theory stated by Veatch and Smith was that the continental shelf was simply a plane of marine abrasion and that very little sediment existed on it except a veneer of sand and gravel and finer sediments around river mouths.

Variations on these two themes include associating each of them with present sea-level and with ancient sea-levels when the volume of the ocean was much reduced due to the presence of continental glaciers.

A current theory which has been proposed by Dietz and Menard holds that the continental shelf has been formed since the Wisconsin stage of the Pleistocene. They believe that practically all effective erosion at the shore line takes place in water no deeper than 5 fathoms which is essentially the breaker zone. This depth they call the "depth of vigorous abrasion", a very descriptive term. They almost completely discount the concept of wave base and feel that the shelf was planed by the vigorous surf abrasion of an encroaching shoreline which started within 5 fathoms of the present edge of the continental shelf which was approximately the Pleistocene shoreline and continued in to the present shoreline.

What is really more important to the petroleum geologist than the origin of the surface and outer form of the shelf is the structure and composition of the rocks which it comprises.

With this very brief and necessarily incomplete background we shall recount some of the observations that G.D.C. diving geologists have made on the continental shelf off Southern California during the past two and one-half years. Along the Southern California Coast the edge of the continental shelf and the beginning of the slope are roughly marked by 50 fathom curve. Our deepest diving to date is just half that depth. However the 25 fathom (150 foot) contour frequently extends many miles from shore so that hundreds of square miles of shelf can now be mapped and studied in detail. The diver on entering the water does not gasp in sudden wonderment at far reaching vistas of the ocean floor. He may gasp at the coldness of the water which trickles into his rubber suit, but his only wonder is that he has such a hard time seeing his partner who may be as much as 20 or 30 feet away. And this is in the clear surface water. Water usually gets increasingly turbid with visibility correspondingly decreased, as the bottom is approached. Under the best conditions visibility may be as much as 50 - 60 feet. Ordinarily it is somewhere around 15 or 20, and more frequently you can feel the bottom before you see it.

The underwater field geologist is precluded by the watery environment from making the broad and semi-scenic observation which he makes by habit when working in the non oceanic outdoors. The diving geologist must take special care to be sure that the rock he is examining is indeed bed rock for he cannot stand back and take an all over look at a big exposure before making his measurements. Reliable attitudes can be and are secured by two geologists taking independent measurements and comparing them to each other. The diving geologist by necessity must develop the habit of thinking in three dimensions and retaining in mind the aspect of the last attitude as he searches for and measures the next. He cannot take a field map or

photographs with him underwater.

In the course of making more than 5000 dives we have observed several things which may have bearing on the theories which have been mentioned. Although we have not yet attempted to take the facts and formulate them into an integrated hypothesis, many of them make us strongly skeptical of parts of the currently held theories.

On a dive to 150 feet and the customary tow shoreward to 90 or 100 feet rock is rarely seen except in areas where there are unusual structures or currents. The bottom is almost invariably of silt or silt witn fine sand. There is very little sign of animal life - a few crabs or sea pens and worm tubes. The bottom has a distinctive dippled look which bespeaks little disturbance by current or wave motion. Except around headlands and points bottom currents are rarely noticed. With some exceptions this general environment seems to persist to depths around 70 or 80 feet, where the sediment gets coarser, generally in the fine sand range, and rock outcrops, if present, begin to appear. Further inshore toward the beach, sediment generally gets coarser still and the frequency of rock outcrops diminshes as the surf zone is approached.

These observations give rise to peculiar feelings when evaluated in terms of the various theories on the origin of the shelf. Certainly the decreasing size of sediment when moving seaward agrees with the old classic profile of equilibrium theory although the possible presence of bed rock between two zones of sediment is nowhere suggested in discussions. Where sediment is found occuring continuously from the surf to 150 feet without being interrupted by a zone of bedrock, it almost invariably gets finer seaward. Perhaps it is a little premature to completely discard the old profile of equilibrium theory, at lease as far as the sediment distribution aspects are concerned. It seems to apply to many portions of the California coast, although the evidence from sampling other areas cannot be denied; which serves to point out the dangers of both direct and "rebound" generalizations.

Any of you who have inspected a sample of bedrock chiseled from the sea floor have probably been impressed by the fact that it always has a certain air about it. You also probably noticed that it was pockmarked with holes and covered with a variety of marine plants and beasts in various stages of decomposition. It is practically impossible to retrieve a hand sample of any size from the ocean floor that doesn't have these borings and encrustations. The holes are primarily made by rock boring mollusks such as pholads and by echinoids such as the sea urchins whose spines, incidentally, are an annoyance to the diver. Before discussing the implications of this we should further note that the beginning of the zone where bedrock is most frequently found is also marked by the existence of a very noticeable bottom water movement or surge which becomes more pronounced toward shore and is frequently strong enough to discomfit the diver as he swims along the bottom.

The presence of exposed bedrock on the flat shelf surface at depths of 60 to 70 feet indicates either that erosion is actively taking place at the present time, or that a fossil surface is being kept exposed by currents which are strong enough to prevent any sizable amount of deposition by detritus being carried seaward from the surf zone. It may be that elements of both are taking place. It is almost certain that the ubiquitous rock borers effect a considerable amount of erosion with the surge and bottom currents removing the by-products of their chomping. However, since they are killed when buried by a thin film of sediment, their effectiveness as erosive agents must be controlled by the balance between the sediment being supplied to the bedrock zone and the current or surge which moves it on. The over all effectiveness of erosion on the bedrock by abrasion of sand moved about by the surge may be small but it cannot be discounted. Some rocks which become soft on saturation are more vulnerable to this by virtue of being exposed underwater, although it is only fair to add that other kinds appear to hold up better in water than air. One definite conclusion is that erosion of the shelf is probably not completely confined to the depth of vigorous abrasion (5 fathoms) as suggested by Dietz and Menard, but that appreciable amounts of it may be taking place in the outer portions of the surge zone which do not overlap with the surf zone. This erosion may be accomplished by rock boring organisms,an agent which has not previously been considered important.

Any theory developed on the origin of the continental shelf and slope must be strictly qualified with respect to the type and locale of the facts on which it is based, and to be thorough should include positive information on current processes taking place on the shelf including surface sediment distribution, subsurface structure of the shelf, presently determinable from seismic data and the projection of such surface geology as is known, and the general tectonic and sedimentary history of the area.

NEW MEXICO REGIONAL STUDY

The Roswell Geological Society has just finished a West-East cross section of Southeast New Mexico, from the San Andres Mountains to the New Mexico-Texas border. This profile ties with the North-South section published by the Midland Geological Society.

The vertical scale is 1 inch = 2000', and the horizontal scale is 1 inch = 4 miles. This resulted in overall dimensions of 13 3/4 inches by 74 1/4 inches. The section has been lithographed in eight colors, and includes an index map. The cost is $5.00 per copy and will be mailed in a cardboard tube for protection. Address inquiries to: Roswell Geological Society, P.O. Box 6732, Roswell, New Mexico.

MAY AAPG FORUM MEETING

On May 21st, 1956, the Los Angeles Forum held its monthly meeting at the General Petroleum Auditorium and the featured speakers of the evening were A.T. Anderson,Continental Oil Company and R.L. Johnston,Western Gulf Oil Company. The reviews of the papers presented by both Mr. Anderson and Mr. Johnston will be presented in this months issue and next months issue of the P.P.G. This was done to provide interesting material for the Newsletter during the summer months when no regular Forum Meetings are held.

Mr. A.T. Anderson presented a talk entitled "Development of Petroleum Reservoirs in Fractured Rocks of the Monterey Formation". Although the bulk of the production from fractured reservoirs in California comes from rocks of the Monterey Formation, there is also production from fractured rocks of Cretaceous and older age. Fractured reservoirs produce approximately seven percent of the total oil being produced in California. This percentage would be higher if the production from the Elk Hills Naval Reserve was not restricted and also if the Santa Maria Basin did not produce low gravity oil which is normally the first type to be shut in during long periods of overproduction in the state. Lack of knowledge pertaining to fractured reservoirs further limits the development of this type of accumulation. The literature dealing with the known producing areas contains many divergent ideas as to their origins and characteristics. No overall theories, such as have been expounded for sand and sandstone reservoirs, have as yet been attempted for fractured reservoirs.

Because of the dearth of core samples from producing horizons in fractured reservoirs, most of the study was carried on in the outcropping portions of the Monterey Formation. The Monterey formation is composed of five major lithologic units: carbonate bearing rocks,phosphatic rocks, volcanic rocks, siliceous rocks, and clastic mudstones and sandstones. In outcrop and in subsurface sections, ruptures are developed throughout the various rock units, and are best developed in the highly siliceous chert rocks.

Various types of ruptures are found developed in these rocks; shrinkage fractures,dip,strike, and diagonal joints,bedding plane fractures, fracture cleavage, "S" shaped fractures, low angle fractures, crestal fractures, step faults, and brecciation structures. Of the various features only the step faults are believed formed directly by preconsolidation deformation, although early developed preconsolidation differential compaction and slumping involving the cherty rocks are believed responsible for the localization of later brecciation structures. The great bulk of the rupturing developed in these rocks occured after consolidation as the result of folding which is believed to be caused by the elevation and tilting of basement fault blocks produced by regional compressive forces. The deformation of these sediments resulted in the development of flexure folds, in which adjustments within the rock body are accomplished by movement along bedding plane fractures and the division of the rock body into layers. The development of tensional, compressive, and torsional stresses within these layers, as the result of frictional forces produced by the differential movement between layers, and the stretching of the layers during formation of the local structures has caused development of the rupture features observed.

Study of present producing reservoirs indicates that two distinct types of reservoirs are found. In one, the complete interval of fractured rock is composed of fine grained members of the Monterey and, in the other, sandstone interbeds are common within this interval. In the latter case, the primary porosity and permeability inherent to the sandstone interbeds will increase the capacity of these reservoirs.

Structurally, three distinct types of accumulation are recognized- anticlinal, updip wedge belts of porosity, and terraces. The majority of the fields are found on the anticlinal structures. No conclusions were reached as to the method of capping, although several methods were suggested during the studies, including: tarry residues, impervious Pliocene beds, nonfractured interbeds, or interbeds of poor fracture development, and gouge filled bedding plane fractures.

Conclusions

1) Rupturing in various forms is developed to a greater or lesser degree throughout the Monterey rocks, with few exceptions and the degree of rupturing is quite irregular.

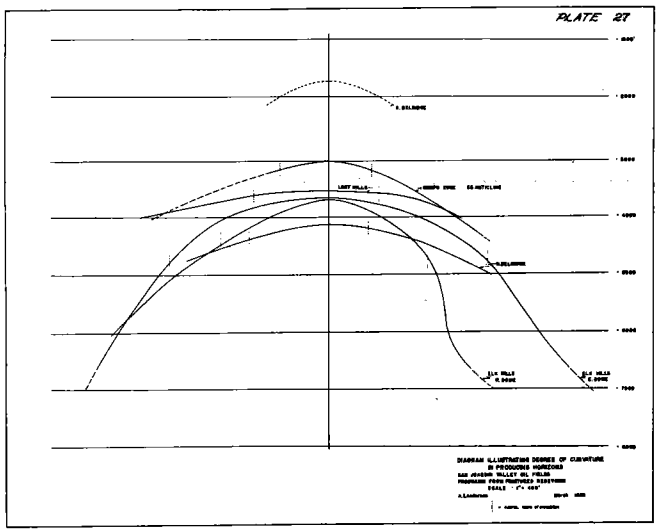
2) The bulk of the rupturing is developed during the folding and warping of the Monterey section, resulting from regional deformation.

3) Folding within the Monterey rocks is accomplished by adjustment along fractures developed paralleling the bedding planes.

4) The adjustments of the Monterey rocks along these bedding plane fractures has resulted in development of tensional, compressive, and torsional stress within the layers between these fractures. This stress has caused the rupturing.

5) Fractured reservoir accumulations have been found in structural positions similar to the structural positions of sandstone reservoirs, such as anticlines, updip wedge belts of porosity and faulted terraces.

Many questions concerning the problem remain to be answered. It is hoped that in the future more attention will be paid to the collection of both surface and subsurface information pertaining to this problem.



U.S.G.S. CHANGE OF ADDRESS

As of July 16, all U.S.G.S. offices will be operating on the 10th Floor of the Bartlett Bldg., 215 West 7th Street, Los Angeles. The "Public Inquiries Office" will be located in Room 1031. Correspondence to the "Oil and Gas Leasing" section should be directed to Room 1012. Maps can be purchased in Room 1031.

LOS ANGELES LUNCHEON MEETING

On June 7, the Los Angeles Luncheon Meeting was held at the Rodger Young Auditorium. The featured speaker was Dr. M. Guy Edwards, Consultant of Pasadena,who delivered a very interesting talk entitled "Highlights of a Trip Around the World". Dr. Edwards illustrated his talk with excellent Kodachrome slides of scenes from several Asiatic and European countries.

Greatly increased exploration activities in both petroleum and mining industries were noted in each of the countries visited. Of particular interest to the speaker were visits to the Mining Bureaus in Manila and Madrid. In Manila, Dr. Culver, former State Geologist of the State of Washington, and ex-head of the Department of Geology at Washington State, was host. His duties were to aid in the rehabilitation of the Bureau of Mines and the Department of Geology at the University, as a part of the M.S.A. program. In Madrid, the Institute of Geology and Mines was visited under the guidance of a senior geologist who had worked for some years on the geology of Spanish Morocco. A copy of the geological map of Spanish Morocco was exhibited.

Also shown was a set of pictures taken on a recent trip throughout the Inland Passage of Southern Chile, leading to the Straits of Magellan. This passage, only navigated in fair weather, is about 400 miles long and is considerably narrower and more sinuous than the Inland Passage to Alaska. The shipping route follows the Messier Straits which separates Wellington Island from the mainland, thence through the Smyth Channel and into the Straits of Magellan. The rocks along this route are mapped by the Department of Mines and Petroleum for Chile as "Cretaceous Intrusive" chiefly granite and granodiorite, some Paleozoic and Pre-Cambrian granite and metamorphic rocks included." The terrain along this passage is extremely rugged, uninhabited and largely unexplored.

PERSONAL ITEMS

The next Coastal Geological Society meeting will be a barbeque in Oak Park, Santa Barbara, on Friday, July 20th. Bring your wives.

Jim Jackson, Shell, Ventura, is vacationing at this time and is probably fishing off Ensenada.

Ninety-nine golfers participated in the annual Pacific Section Golf Tournament held jointly at the Ojai Country Club and the Saticoy Country Club. Cliff Dunseth and Jack Warren tied for low gross honors with 77's. Third was John Reeder, Humble, with a 79. Winner of the low net prize was Bob Sitzman, Western Gulf, who shot a 121 with a handicap of 54 for a net of 67. Second low net was Howard Level, Union, Santa Paula, with a total of 125, a 57 handicap netting 68. Howard Level also had the distinction of being the only golfer in the tournament to require 22 strokes on one hole.

Frank Bell, Shell, Ventura, is vacationing in the Rocky Mountains.

Wayne Ross from the University of California at Berkely and Bruce Mobly from the University of Oregon are two new geologists with Tidewater in Ventura.

Charley Foss, Tidewater, Ventura, is vacationing in Zion and Yellowstone National Parks.

L. V. Lombardi, formerly with the Stanford Research Institute, is now in charge of Gulf Geophysical office at Fort Worth, Texas. He recently visited the Peninsula area.

Carl H. Savit, Geophysicist for the Western Geophysical Company of America gave a paper before the School of Mineral Sciences Journal Club at Stanford University May 21st. Mr. Savit's subject was "Oil Exploration in Italy".

The Coastal Geological Society has made a tentative request for Bakersfield's Jean D. Senteur de Boue to speak before one of their future meetings on the subject of Searles Lake faunal problems. It is fairly common knowledge that M. Senteur de Boue is a hard man to catch during the summertime because of the press of his many interesting activities.

Lee Holcomb, Paleontologist, previously with R. Stanley Beck, recently joined Shell Oil's Bakersfield Exploration Dept. and is now being transferred to Casper, Wyoming.

T. I. Anderson, Western Gulf Exploration Dept., Santa Maria, has been transferred to the Bakersfield office.

The Cutler Websters, of Honolulu Oil Co., Bakersfield, all have the mumps - Cutler, Persis and their three young boys. It's refreshing to see a family doing things together these days.

The Exploration Dept. of Standard, Bakersfield, has just returned from a two-week active duty tour with the Air Force at March Field, Among other things he participated in a KC 97 flight to refuel a B47 jet bomber. He says it's a fascinating procedure.

Ted Ehring, The Texas Co., Bakersfield, and Jim Miller of Sunray Oil Corp., Bakersfield, have both recently moved into brand new homes.

Hal Hanson has resigned his position in the Exploration Dept. of Oceanic Oil Co. in Bakersfield to take a position with the California State Water Board.

Somehow, during the furor of the late afternoon scramble for barbecued beef at the Britt Park AAPG picnic, Jay Wagner, Union Oil Co., Bakersfield, was separated from his pair of prescription sun glasses (couldn't see anyway, you know). If anyone knows of an unclaimed pair - please get in touch with Jay.

Conoco's Bakersfield office announces the transfer of the following men: John Cagle to Houston, Texas; Howard Semler to Ardmore, Oklahoma; and Bill Osborn to Los Angeles.

The members of Geological Diving Consultants, Inc. have been studying the micro-organisms in the shallower portions of Searles Lake for one of the major oil companies and would appreciate any information that M. Jean D. Senteur de Boue can give on the mating habits of the deeper forms of the coccoliths which he is studying. We are especially interested in the micro-organisms of these micro-organisms and the type of aqua-microscope you are using to observe this rare phenomena.

(Anyone knowing the where-abouts of Jean D. Senteur de Boue, please contact the Editor of the Pacific Petroleum Geologist. Letters are piling up addressed to de Boue from geologists who are also studying the micro-organism's of coccoliths and the P.P.G. is particularly interested in forwarding this mail. Quite a shortage of office space makes this request necessary.)

Of additional interest is the activity of a M. Jacques Plongeur-Froid-dEnfer a geologist of a French diving concern, who is making a deep dive into the Tonga Trench for the purpose of obtaining a dip and strike in the deepest part of the world. He made his dive to 5400 fathoms last year and should be back in 1959 after a short period of decompression due to the relatively deep diving he is doing.

Dick Hester, Signal Oil Co., Bakersfield, is reported to be having a postman's holiday on the hard rocks of the High Sierras.

Doc Miller, Shell Oil Co., Los Angeles,has recently undergone surgery and is reported to be recovering nicely.

Ben Hake, Western Gulf, Los Angeles, is being transferred to Bolivia where he will assume the duties of General Manager, Bolivian Gulf Oil Co.

Earl H. Bescher, Jr., Area Chief Scout, Humble Oil and Refining Co., has been transferred to the main office in Houston, Texas, as Staff Geologist. He will be succeeded by John S. Reeder, who comes to us from Wichita Falls, Texas. Earl's many friends extend to him a fond and reluctant farewell, and to John a hearty welcome.

Tennant Brooks, Bakersfield, took two of his boys and two of their buddies on a week-end High Sierra back-pack trip 18 miles from Balch Park to Summit Lake and back. They camped at 9500' amidst drifts of snow up to 6' thick - "and it was cold!" Between them, they caught 37 fish. T. J. says the boys didn't have to pass any cooking tests this trip so he had to do all the cooking.

Texan Dick Atcheson, Ohio Oil Co., Bakersfield, has returned to Texas on his vacation (to get his brainwash renewed, says Tom Roy).

Ohio Oil Co.'s John Yeager is in the San Joaquin Hospital recovering from a mild heart attack.

Don Lamar (student at UCLA) is working during the summer for Standard Oil.

Bill Davidson has left the smog bound confines of the LA Basin to sit on a well at Green River, Utah. He will probably be there for the one big social event of the year - namely the cantelope festival.

Alan Johnston, formerly of Sacramento, will sit on Standard's offshore core boat.

Melvin Swinney formerly on the Stanford Faculty is going to work for Richfield in the LA office.

Helen G. Duggan is retiring after serving with Richfield for a number of years in the Long Beach and LA office.

Paul Elliott, Western Gulf, Los Angeles, and Miss Carol Gardner, also with Western Gulf of Los Angeles, will be married sometime in July. Congrats to both Paul and Carol.

C.E. VanGundy, The Texas Co.,Long Beach, won a Schenley Sportsman Club Sportfisherman's Award plus a beautiful rod for engaging in a 40 minute wrestle with a 35 lb. 3 oz. King Salmon. The bout took place off the Farallone Islands near San Francisco and needless to say,Van won. Congrats.

Frank Goodban, The Texas Co., L.B., has just returned from a camping and fishing trip in Oregon and Northern California.

It is reliably reported that the Sacramento group had a bang up time at the Northern California Petroleum Round Table Golf Tournament and Barbeque held at the Green Valley Country Club.

Bob Hacker, formerly with Union Oil Co. in the Santa Paula office, has recently joined forces with the Lloyd Corporation in Ventura.

Dan Flynn, General Petroleum, Ventura, spent his vacation in Nevada mapping out his Masters' thesis.

Coastal Oil Scouts attending the National Oil Scout Convention in Corpus Christi, Texas, were Ken Frost, Tom Cate of Shell, Ventura; Bill Castle of Richfield, Ojai; Mike Adams of Western Gulf, Ventura; and Sam Tate of Humble, Ventura. Tom Cate and Sam Tate took their vacations in Texas.

Ken Myron, The Texas Co., Santa Maria, is away on a special assignment for the Texas Co.

NURSERY NEWS

R.L. and Pat Stites, Ohio Oil Co., Bakersfield, announce the arrival of their fourth baby girl- 8 lbs.,5 oz.- Molly Ann.

Lynette and Eric Phillips, Western Gulf, Ventura, had their third boy, James Richard, 7 lbs. 10 oz. on June 7th.

CALENDAR

July 12,1956: Thurs., 6:30 pm, AIME Los Angeles Basin Junior Petroleum Group. Meeting place- Sequoyah Restaurant, 9032 E. Washington Blvd., Rivera, California. The topic will be:"A Panel Discussion-'Design of Surface Facilities'". The Moderator- Carl Harrell, Superior Tank and Construction Company. Panel members-Paul E. Lehr, Los Angeles Basin Production Manager, Shell Oil Company, and John Combs, Signal Oil and Gas Company. Price- $3.00 for members and $3.50 for non-members, tax and tip included.

July 20, 1956: Friday, Coastal Geological Society Barbeque, Oak Park, Santa Barbara, California. Be sure to bring wives and girl friends.

July 23, 1956: Mon., 12:00 noon. AIME Petroleum Technology Group. Rodger Young Auditorium, 936 W. Washington Blvd., Los Angeles. Topic- "Trends in Oil Field Operations", Speaker- F.R. Schmieder, General Superintendent, Shell Oil Company. $2.25, tax, tip, parking, included.

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Topographic map of San Diego and vicinity.

Reprint of Hayward Geologic Quadrangle.

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California Journal of Mines and Geology, Vol. 51, No. 5, April 1956 "Basic Studies in the Clay Industry".

Special Report 45, Exploratory Wells Drilled Outside Oil and Gas Fields in California to December 31, 1953.

Geological Society of America

Bulletin Vol. 67, No. 5, May, 1956. "Carbon 14 Date for a Marine Terrace at Santa Cruz, California". pp 675-677.

New Books

"Introduction to Microfossils", Daniel J. Jones. Harpers Geoscience Series, 1956.

PACIFIC PETROLEUM GEOLOGIST
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Vol. 10 No. 7

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PACIFIC PETROLEUM GEOLOGIST

NEWS LETTER OF THE PACIFIC SECTION
AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS

Vol. 10 August 1956 No. 8

ASSOCIATION ACTIVITIES

MAY AAPG FORUM MEETING

On May 21st, 1956, the Los Angeles Forum held its monthly meeting at the General Petroleum Auditorium. Mr.R.L. Johnston was one of the featured speakers and delivered a talk entitled "Reconnaissance Geology of the Eastern California Desert Area". (A resume of Mr. Johnston's talk was held until this issue to make it possible to more thoroughly cover his talk. It was also felt that most members would appreciate having a professional paper to review in the August issue when normally no meetings are held.)

The eastern California area to be discussed is rather easily defined as it is bounded by several prominent physiographic features. Starting from the north it includes all the rugged mountainous area east of Owens Valley. Just to the south it includes the broad Mojave Desert whose western limits are so well marked along the Garlock and San Andreas faults. Continuing to the south, the area includes the Imperial Valley section and all the region lying east of the San Andreas fault. Two rather obvious and contrasting physiographic provinces are apparent in this eastern portion of California. North of the northeast-southwest trending Garlock fault lie a series of long, relatively narrow steep-sided, northwest trending mountain ranges separated by flat bottomed intermontane valleys. South of the Garlock fault the land forms are composed of heterogeneous, low lying,isolated ranges which are much more subdued in physiographic configuration than the area just to the north. Both the north and the south areas are more closely related physiographically to the Great Basin of Nevada, Utah and Arizona than to the physiography present in other portions of California.

Eastern California is characterized by the widespread occurrence of Paleozoic rocks. In addition, all the rocks of Tertiary age in eastern California are of nonmarine origin except for a small portion of the Imperial Valley area. The change in the stratigraphic section in moving from the coastal areas of California into eastern California is very sharply marked along the boundary of the provinces. The rock types in eastern California consist of four major units:

1. A pre-Cambrian series of highly to only moderately metamorphosed sediments and igneous rocks.
2. An overlying series of mildly metamorphosed Paleozoic clastics and carbonates.
3. A Mesozoic sequence of volcanics and sediments with a later series of granitic intrusives.
4. Tertiary nonmarine beds associated with volcanic rocks.

Exposures in the mountainous area of eastern California are usually excellent due to the complete lack of vegetation. As might be expected under these conditions, the mapping of surface geology is greatly facilitated through the use of aerial photographs.

It is becoming increasingly apparent that a correct interpretation of the geologic history of western California can only be reached when a detailed study of the relatively unknown eastern portion has been made.

In no area can there be found a complete section of any of the four major rock units. The early pre-Cambrian is found in scattered exposures throughout most of eastern California. Outcrops of the late Pre-Cambrian and Paleozoic series are quite common north of the Garlock fault and in those areas adjacent to the Death Valley region. Tertiary rocks are found throughout the entire area, generally in irregular scattered patches in the mountainous areas and nearly always present filling the intermontane valley basins. As might well be expected, a great number of local formation names have been used in the literature throughout the stratigraphic section, with several names applying to the same stratigraphic unit. In this discussion an attempt will be made to limit the nomenclature to the more commonly accepted names.

The basement rock, the Archean, is composed of highly metamorphosed marbles, schists, quartzites and gneissic material of an unknown thickness. Cores of several of the larger ranges are composed of this early pre-Cambrian material.

A strong unconformity separates the Archean from the overlying late pre-Cambrian or Pahrump series. Three formational members are generally assigned to the Pahrump; the Crystal Springs, Beck Springs and Kingston Peak. Composed predominantly of shallow water sediments showing cross-bedding, ripple marks and mud cracks, the Pahrump series is surprisingly little metamorphosed and resembles quite closely the general features of the overlying Paleozoic system.

A considerable thickness of clastics and carbonates assigned to the overlying Paleozoic system is separated from the Pahrump by another major unconformity. The base of the Paleozoic or Cambrian has not been established as yet, although most field workers are inclined to consider the light buff, limy, dolomite, the Noonday dolomite, as the basal member of this system. It forms perhaps the best lithologic marker in the eastern California area and appears to be readily correlative with the Reed Springs dolomite found farther north in the Inyo Mountain section. The overlying Johnny, ~~Sterling~~ quartzite ~~and~~ Wood Canyon formations of the Death Valley area comprise the remainder of the generally accepted lower Cambrian series. In the Inyo Mountains the correlative members are composed of the Deep Springs, Campito sandstone and the Silver Peak. Diagnostic fossils appear for the first time in the upper portion of the Wood Canyon and Silver Peak formations with the presence of the Widely spread Olenellus. Middle Cambrian has been identified in the Nopah range as consisting of the Cadiz, Bonanza King and Corn Field Springs formations where the red-brown coloration of the Cadiz is in striking contrast to the light and dark banding in the dolomites of the Bonanza King and Corn Field Springs formations. The widespread Nopah formation marks the occurrence of the upper Cambrian section and is easily distinguished by the alternating smoky and creamy grey dolomites.

Ordovician rocks comprise one of the most easily recognized units in the area, being composed of the

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buff to pinkish Pogonip lime at the base and the overlying light grey Eureka quartzite which is in turn overlain by the dark grey Ely Springs dolomite. The overlying Devonian consists of the massive Hidden Valley dolomite and the strikingly banded limestone and dolomites of the Lost Burro formation. A considerable thickness of Mississippian lime is exposed throughout parts of the Death Valley area and the Inyo Mountain Range, forming bold cliff faces and canyon walls. The overlying Pennsylvanian resembles the Mississippian lithology being composed of massive to thin bedded, grey to buff limestone with local occurrences of coarse conglomerates. A rather surprisingly thick sequence of Permian is found locally developed in certain sections of the southern Panamint Range and Red Rock Canyon area.

The transition from the Paleozoic to the Mesozoic does not indicate a pronounced unconformity since the contact between beds of Permian and Triassic age along the east face of the Inyo Range gives evidence of no appreciable break.

A profound unconformity exists everywhere between the Tertiary section and the underlying older rock. The Tertiary itself seems to be divisible into two general units, the older being composed of more highly altered, more decomposed, more folded and faulted sediments and volcanics. Since definite dating of the Tertiary section is only possible in a few spot localities, the older Tertiary class is generally considered to range from Eocene through lower Miocene.

Late Tertiary sediments are characterized by being less altered and generally composed of more fine-grained lake bed material. The associated volcanic material is commonly seen as black, resistant basaltic interbeds or as soft, light grey tuffaceous deposits

The eastern portion of California was originally accepted as exhibiting structure like that of the Great Basin area to the east. Early writers usually believed the structure of eastern California to be the result simply of breakage along large normal faults. Recent studies however, have indicated the structural framework to be the result of compressional forces associated with a number of major northwest trending lateral shear zones. Low angle fault planes, either the result of thrusting on a regional scale or gravitational sliding, are present over wide areas.

Recent studies in the eastern California area which have been aided by the use of aerial mosaics have greatly emphasized the importance of major zones of both lateral shears and low dipping thrusts. A pronounced regional alignment of fault trends throughout the eastern California area in a northwesterly direction can be easily distinguished. The Garlock fault probably represents the biggest break in the area with movement along the fault generally considered to be of the left lateral type, and appears to be a minimum of five miles. The eastern end of the Garlock fault has posed a problem for the geologist for a number of years. Early surface work had indicated the fault trace to veer sharply to the south around the east flank of the Avawatz mountains and to disappear in a major thrust zone. Within the last few years detailed studies in this area strongly indicate the Garlock fault actually joins a major northwesterly trending lateral shear zone which occupies the Death Valley floor. Evidences of other major lateral shears are suggested by the Owens Valley trend and the Panamint Valley trend.

A.A.P.G. - S.E.G.

On April 12th, 1956, a resolution was passed by the Executive Committee of the A.A.P.G. bearing on future relations with the S.E.G. The resolution is as follows:

"RESOLUTION

WHEREAS The American Association of Petroleum Geologists and the Society of Exploration Geophysicists no longer meet jointly in annual sessions, due to difficulties incurred by the size of such meetings, and

WHEREAS, an increasing need exists for mutual cooperation and coordination of scientific effort among geologists and geophysicists; now

THEREFORE, be it resolved by the Executive Committee of The American Association of Petroleum Geologists that regional sections and affiliated societies be encouraged to continue the spirit of cooperation and coordination existing in the past among geophysicists and geologists; and be it further resolved that such groups be encouraged to take the initiative in holding meetings jointly with geophysical groups; and

be it further resolved that copies of this resolution be mailed to all geological and geophysical societies and groups, and that the Executive Committee suggests that this resolution be published in the several bulletins and journals of the many geological and geophysical societies."

LOS ANGELES FORUM

On June 18th the Los Angeles Forum Meeting was held and one of the principal speakers of the evening was Mr. Ben Hake, Western Gulf Oil Company. It was impossible to include an abstract of Mr. Hake's talk,entitled "Scientific Manpower and National Safety", in the July issue of the Pacific Petroleum Geologist. Mr. Hake, as Chairman, A.A.P.G. Committee on National Responsibility, is eminently qualified to speak on this subject and a condensation of his remarks follow:

World Leadership

Since about the turn of the century adequate world leadership has been lacking. Factions have been maneuvering and fighting for the dominant position. At the close of World War II, the United States had achieved undisputed leadership of the world; was in unique possession of an irresistable weapon; and had unrivalled fighting forces, backed by preponderant industrial capacity and preeminent scientific ability.

It is perhaps unnecessary to recall how we relinquished that position of leadership. We yielded vital strategic territory to an unreliable wartime ally. We hastily recalled and disbanded our armies, leaving token forces on our frontiers. We curtailed research and development of weapons; failed sufficiently to safeguard our military secrets; traded power and prestige for membership in the United Nations; and accepted military stalemate in Korea.

The Soviet Union is making steady progress toward occupation of the position we vacated. She has already extended her control over fifteen once-free countries, inhabited by more than 600 million people.

The Soviet Menace

The United States is the principal target of the subversive activities and the hostile planning of the Soviet Union. Her leaders fear and hate us because our prosperity and our ways of life refute the falsehoods that permeate their doctrines; because they envy our possession and enjoyment of the greatest assembly of wealth and power ever known to man; and because we are the principal obstacle in their path toward world domination.

We must not be misled by honeyed words or beguiling gestures. Throughout the history of the Soviet Union, falsehood and deception have been dominant features of her statecraft, strategy and tactics. During less than 40 years the Soviet has broken 34 solemn peace covenants. So long as the Communist Party continues in this path...we may know that their motives are evil and their promises unreliable.

Neither do we dare to underrate the Soviet Union as an opponent. ... The accounts of her amazing progress in scientific and industrial development and in the production of advanced types of weapons are now being widely publicized in our country. She has attained this position by means of a rigidly disciplined, nationwide drive for industrial and military development.

Opposed Philosophies

Two philosophies could hardly be more directly opposed than those of the United States and Soviet Russia. The Soviet comrade feels free to enjoy only those privileges that have been granted him by the State. The American citizen feels free to do anything not specifically prohibited by competent legislation. In the Soviet Union, the individual is molded by governmental pressures from the cradle to the grave. We mold, remold or neglect our government, in conformity with the urges felt by the people. Soviet philosophy denies the individual any importance, except as he may serve the State. We are perilously close to denying the State any importance, except as it pampers the individual.

The Vital Sectors of Competition

In seeking ways to insure our own safety, it behooves us to study the methods of the Soviet Union. Early in this study we perceive that in three vital sectors of national development the Soviet has attained amazing strength; while in those same sectors we have permitted ourselves to develop weakness. Those sectors are discipline, education and military policy.

Discipline

Public discipline in the Soviet Union is a method of molding every individual into a trained servant of the State. It is imposed through numerous agencies, of which the principal one is the Secret Police. ... Their agents are so numerous and widely distributed that any casual group of five people assumes that among them is at least one agent of the Secret Police. This system ... prevents extensive transmission of ideas considered undesirable by the state.

In the United States, public discipline is a method of protecting the individual in the reasonable enjoyment of his rights. We have relied heavily upon self-discipline to control the individual in his relations with society and the State. But for some decades we have been misled by theoreticians who argued that discipline damages the ego and that children should not be subjected to it, either in homes or in schools. The sad results of that mistaken theory are obvious in our homes, our schools, and our police courts.

Education

The Russian child begins formal education at the age of three and, if sufficiently proficient, may continue his education for twenty years. Those who fail to meet the standards at various levels are shunted into labor organizations, trade schools or semi-professional schools, so that only the more brilliant minds attain the higher levels of education.

At every level, study loads are far heavier than in our institutions; and mathematics, foreign languages and the natural sciences are strongly emphasized. As a result, the Soviet educational system is producing adequately trained scientists and engineers in much greater numbers than we are.

One of the most potent reasons for the sad state of our public schools is the fact that the salary scale of teachers is in the bottom third of the national range of incomes. This has produced a growing shortage of qualified teachers and a resultant lowering of standards of instruction. ... Many high school graduates have had so little instruction in mathematics or the natural sciences, that the universities are obliged to offer high school level instruction in these fields. The annual totals of college graduates in science and engineering are far below national requirements; and the percentage of degrees granted in physics and chemistry are declining.... Improvement of our public school system is imperative.

Military Policy

Military policy exacts a heavier toll of human effort in the Soviet Union than in the United States. The Russian boy is given basic military training in secondary school and is then liable for two to five years of active duty, depending upon the type of service. But, recognizing that some educated men are more valuable to the nation in their professional capacities than in the armed services, the Soviet has set up an extensive system of deferments and exemptions for those in certain technical services and those in training for such services.

In 1955 our military laws were amended in ways designed to minimize the impact of the military obligation on technically specialized personnel. It is yet too early to determine whether or not the application of these new laws will accomplish what is necessary. If not, additional changes must be made, for we dare not waste the talents of our technically trained young men.

The Achievement of World Peace

How shall we protect ourselves and retain the ability to work effectively for world peace? What-

ever else we may do, we must develop and maintain, through an indefinite future, the capacities to absorb unforeseen attack and immediately to deliver a decisively crushing counter-attack. The maintenance of such forces will heavily tax our strength, our income and our patience; but only by being so potentially dangerous as to discourage any thought of attack upon us can we hope to prevent another world war and provide time and incentives for the evolution of peaceful ways of solving the major problems of the world.

Our Tasks

The tasks we must perform are many and arduous. Not only does self-interest dictate that we defend our home and our principles; but the United States is today the most important bastion of individual liberty in the world. Should that bastion be conquered or subverted, humanity would experience something like a return of the Dark Ages.

Our first task is to accept the fact that a superlative military organization is as important now, and through an indefinite future, as if war had been formally declared; for never again will we have the opportunity to prepare for a major war after the shooting starts.

Second, everyone must realize that the research and development work essential to the maintenance of our national strength and the continuous provision of superior weapons, can only be accomplished by highly trained technologists; and that our research institutions and our industrial plants are now the very nerve centers of national development and overall military strategy. Our laws and our conduct must be made such as to insure efficient allocation of the talents of our people to both military and industrial activities. Every man must serve his country in the manner in which he will be most valuable.

Third, knowing that every form of human progress is the fruit of intelligence developed by education, we must make strenuous efforts to elevate the quality of all of our educational facilities, and to improve the attitudes of our youth toward their educational opportunities.

And finally, we must dedicate ourselves anew to the defense of the principles on which our nation is founded; and for that purpose, promote the revival of moral and enlightened discipline in our homes and schools, whereby our youth will be helped to develop intelligent self-discipline and the ideal of individual service to the community and the nation.

No one can write formulas for the accomplishment of these tremendous tasks. The means must be developed by individuals and groups, working in their own communities and, from them, exerting pressures upon the states and the nation, until, in our traditional manner, the requirements of the nation are satisfied. A nation can derive strength only from its people; so responsibility rests directly upon every citizen.

LOS ANGELES LANDMEN'S ASSOCIATION

The Los Angeles Capter of the Landmen's Association has elected the following slate of new officers for 1956-57:

President- Ralph Cormany, Hancock Oil Co.
Vice-President- Howard Said, Union Oil Co.
Sec.-Treas.- John C. Galloway, Western Gulf.

Mr. Cormany replaces retiring President Larry Graham, Continental Oil Company.

SEPTEMBER LUNCHEON MEETING

On Thursday, September 6th, the Los Angeles Luncheon Meeting will resume at Rodger Young Auditorium. A very interesting movie will feature the meeting. It is titled "The Texas Tower" and was made during the construction of a radar tower off the coast of Texas. The same type of construction is used in off-shore drilling platforms. The radar tower was built in 70 feet of water 40 miles off the coast. One Pacific Section member has seen this film and says that it should be highly recommended to all. A hurricane was photographed from the tower and these pictures are some of the very few in existence that have been made during a hurricane from a horizontal, stationary platform. All members are encouraged not to miss this meeting.

PERSONAL ITEMS

Bakersfield fly-boys Dave Costello, Tidewater; Warren Cebell, Amerada; and Don Ford, Sunray-DX, spent their military leave(that's service talk for four weeks paid vacation) in Idaho flying jets. Capt. Cebell qualified in jet gunnery in near record time and created quite a sensation.

General Petroleum's Bakersfield office has recently acquired two new geologists, Ed Goodrich and Dale Holyoak. Ed Goodrich, a graduate from Washington and Lee with a Masters degree from the University of Missouri, joined G.P. after leaving the Air Force where he was ferrying jet fighter planes. Dale Holyoak is a recent graduate from Utah State College.

General Petroleum's Q. Moore has left Bakersfield's office for the Los Angeles office to help out as Asst. to the Director of Exploration during Frank Carter's illness. Everyone wishes Frank a speedy recovery.

Doug Waterman of Standard's Bakersfield office, and an old Rockie Mountain man by choice, has just returned to Bakersfield all aglow after vacationing with his wife Ruth in the Colorado Rockies.

Tennent Brooks, geologist for Ferguson & Bosworth in Bakersfield, a UCLA alumnus, on a recent trip to the Salinas Valley, was so delighted upon reading in a local paper that Stanford University had admitted some "minor infractions of PCC rules" (this has since been denied) that he called his Stanford buddy, Cutler Webster, collect from King City in the middle of the night to tell him all about it. This was while Cut was sick in bed with mumps.

Attention San Francisco office of Standard of California. In the July Issue of the PPG, it was stated that"the Exploration Department of Standard, Bakersfield, has just returned from a two-week active duty with the Air Force at March Field." The Editor wishes to state that this was a mistake and to add that this was only true of Rufus Cook and not the entire Exploration Department. (Certainly hope this arrives in time to save their jobs.)

Don Gladden of the Land Department of Western Gulf is now calling Sacramento home. Don was transferred from Bakersfield.

Eugene Nelsen, a graduate from Cal Tech, is assisting in the office of The Texas Company in Sacramento for the summer. Gene hasn't decided what his plans will be in the fall.

Joe Harvey of General Petroleum in Sacramento is a traveling man these days. Joe is currently spending some time in Washington. Some people will do anything to get away from the heat.

Bob Lindblom of Standard has been transferred from Bakersfield to Sacramento. The girls in Bakersfield will miss Bob as he has been there for over three years.

Attention all fishermen--Make your fishing trips pay. Don Barrett of General Petroleum, Sacramento, is a veritable gold mine. On a recent field trip, Don bet Doug Thamer, The Texas Co., that Doug would not catch fish and agreed to give Doug a dollar for every fish he caught if Doug would give Don a dollar for every fish he didn't catch. Local betting commissioners couldn't see how Doug could lose more than one buck. Doug had poor luck and only managed to catch, with his hands, one dead sucker that was floating down the creek. The fish was brought back in Doug's car but Don, catching wind of the fish,which was apparent to everyone in the neighborhood, stole the fish out of Doug's car. Don put the fish in the trunk of his own car and proceeded to forget it. Four days later the fish could be kept a secret no longer. The fish was removed and placed on Doug's desk while he was out. Doug still isn't to clear about how that fish got around. Rumor has it that Don never did pay the buck but it sounds like a potential gold mine for anyone who can catch fish and get a deal like that.

Bob Teitsworth, Amerada, Rio Vista, will be leaving about September 1st for an extended vacation under the auspices of that very popular travel bureau, the U.S. Army. Bob will winter in Fort Ord, California. Bob is being replaced by Bruce Hill from Amerada's staff in Bakersfield.

Ted Barr, Graduate student in geology at UCB, is working in Standard's Sacramento office for the summer.

Dr. Olaf Jenkins, Chief, State Division of Mines, is convalescing at his home in Berkeley from a recent operation. Olaf is feeling so well again that his doctor is having a real problem keeping him out of the field for a couple of weeks more.

Roland Bain, former geologist with The Texas Company at Long Beach and now in the construction business in Spokane, Washington, has been awarded a Fulbright Scholarship to study at the University of Paris (Petroleum Institute). He will leave for Paris in September and will be joined by his wife and child a month later.

Fred R. Kelley is one of the latest geologists hired by the State Division of Mines. Fred has been a member of A.A.P.G. for several years and was recently instructor in petroleum geology at Stanford. He is currently undertaking research for the Division on clays and ceramic materials and will also continue his mapping and investigation of Cretaceous formations in the southern Diablo Range, a problem he started at Stanford under the direction of Professor Si Muller.

Gordon Oakeshott, for the past several years Supervising Geologist for the Division of Mines, has been promoted to the newly-created position of Deputy Chief.

It is understood that Irv Fraser spent some time in Long Beach while the Miss Universe Contest was going on. How did the pictures come out Irv?

The Los Angeles office of Western Gulf is becoming famous for the recent visits Cupid has made there. In August Mark Latker will marry Mary Reid, secretary for the land department. Also in August, Dick Dahlke, geological draftsman is to marry scout secretary Renee Kellas.

Loyde Metzner has recently resigned from Signal Oil and Gas. Loyde plans to take a trip through Utah and Wyoming and return in about three weeks to open consultant offices here in the L.A. Basin.

Honolulu's Cutler Webster, Bakersfield, got a four point buck during the first hour of the archer's deer season near Huasna. This makes 3 years in a row Cutler has had bow and arrow venison in his deep freeze.

Jim O'Neill, Bakersfield District Geologist for Oceanic Oil Company,has just returned from a cool vacation at Carmel with his wife and two little girls. It seems he only had to work part time for Oceanic during the two weeks.

Arlo Oden and Charlie Salotti, of Standard's Taft office, are leaving to return to school. Arlo is planning to work for his Ph.D at Michigan University and Charlie will accompany him and do graduate work. Darrel Helmuth of Standard's Bakersfield Exploration Department will replace Arlo. It is rumored by some of Darrel's friends that he intends to run for Mayor of Taft.

G.R. Ware has been recently employed to perform the duties of junior geologist for the Santa Paula office of The Texas Company. Mr. Ware has recently been granted a MA Degree from UCLA.

Bob Scott, The Texas Co., Bakersfield, has recently been hospitalized for an appendectomy.

Jim Jackson, Shell, Ventura, is in Los Angeles to replace Lyle Smith during Lyle's vacation. Vacation relief and the Fall Convention will give Jim two reasons to visit L.A. this year.

Bob Sprinkle, now with Seaboard Oil Company, Denver, has a good reason other than business to be in California this fall. Bob's son, Bob III, married a Stanford coed and is now living in Menlo Park. Bob Sr. will also attend the Fall Convention of the AAPG on his visit here.

Bill Lee, Sunray's L.A. Basin scout,will join The Texas Company's Santa Paula office on August 6th. His new duties will also be scouting.

Don Hartman,former scout for The Texas Co. in the coastal area, has been re-employed as a junior geologist and will be assigned to the Long Beach office. Don recently completed the work for his MA at UCLA.

NURSERY NEWS

To Mr. and Mrs John Szatai, Richfield, a baby boy, Gregory Allen, 8 lbs.,on July 14th.

To Mr. and Mrs Robert Hindle, their second child, a daughter, Tacy Helen, 7 lbs. 2 oz., on June 12th.

Jane and Jack West, Hancock Oil Co., Bakersfield, greeted a new playmate for their daughter Jackie, Jim Christopher, 6 lbs. 6 oz., on June 28th.

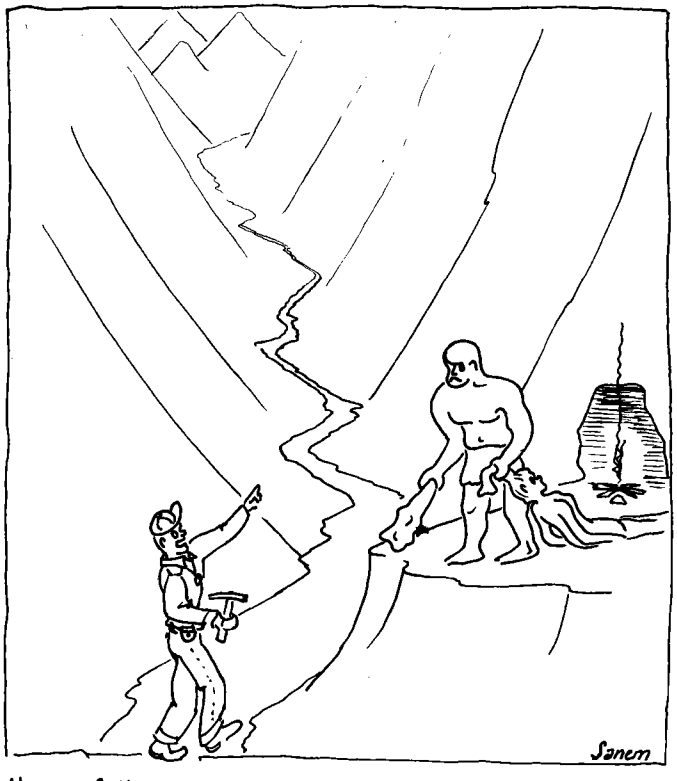
Wesla and Al Kerr,Richard S. Rheem, Bakersfield, announce the arrival of Kevin Bruce, 8 1/2 lbs., born May 3rd.

Jack and Ann Christensen, Shell, Sacramento, are proud to announce a new addition to their family, Jon Christensen. Jon was born June 30th and joins two other boys.

Ken and Lee Erskine, Shell, Ventura, just welcomed their first new member of the family. Lisa Ann, 7 lbs. 4 oz., was born July 14th.

Arnold and Pansy Jue, Formation Logging Service, greeted their forth arrival, Lawrence Norman, on July 27th. Lawrence weighed in at 5 lbs. 7 oz.

Mr. and Mrs John Todhunter, a daughter, Nancy Diane, on June 12th. Nancy tipped the scales at 7 lbs. 1 oz.



Has a fellow with a plane table been by here recently ?

BIBLIOGRAPHY OF RECENT PUBLICATIONS

SCIENTIFIC PUBLICATIONS - JOURNALS AND BULLETINS

United States Geological Survey

"Contributions to the Geology of Uranium and Thorium", by United States Geological Survey and Atomic Energy Commission for the United Nations International Conference on Peaceful Uses for Atomic Energy. Geneva, Switzerland, 1955. Price $6.00 Professional Paper 300.

"Geology and Petrology of the San Juan Regions, Southwestern Colorado", by E.S. Larsen, Jr., and Whitman Cross. 1956 Professional Paper 258. Price $5.25

"Cenozoic Geology of the Colorado Plateau", by C.B. Hunt. 1956. Professional Paper 279

"Bentonite Deposits in Marine Cretaceous Formations of the Hardin District, Montana and Wyoming." Bulletin 1023. Price $1.50

Note: Telephone Number of U.S.G.S. Maps and Information Office is now Richmond 9-4711, Extension 1255. Offices are located in the Bartlett Building, 215 W. 7th St., Room 1031.

Division of Mines, State of California

California Journal of Mines and Geology, Vol. 51, No. 6, July 1956.
"History of Borax Production in the United States"
"Lode Gold Mines of Alleghany and Downeyville Districts, Sierra Co."

"Exploratory Wells Drilled Outside Oil and Gas Fields in California to Dec. 31,1953". Special Report 45. Price $1.50

Note: A limited number of copies of Chapter 9 of Bulletin 170 are available and may be purchased from the Division of Mines, Price $1.00. All Division of Mines Publications may be purchased at the Los Angeles office.

Geological Society of America

"Handbook of South American Geology: An Explanation of the Geologic Map of South America". Memoir 65, June, 1956 (Map published in 1950)

TRADE JOURNALS AND MISCELLANEOUS MAGAZINES

World Oil , July 1956

"Reefs Are Hard to Find" by Richard A. Pohly

"Arizona- Boom or Bust?" Cloyd Swapp, P. 80

"Determining True Resistivity" Maurice Martin and J.L. Dumanoir, p. 95

"Nomographs Make Reservoir Estimates Quick and Easy", Keith D. Sheppard

Oil and Gas Journal,

"Calculation of Oil in Place in Reef Reservoirs" Richard W. Hillyer, July 2, 1956, p.109

"Humble Plans New Recovery Method", July 16, p.70

"Radiation Logging", E.R. Atkins, July 16, p. 88

"Plan Your Well Spacing Early", Rupert C. Craze and James W. Glanville. July 30, p. 216

CALENDAR

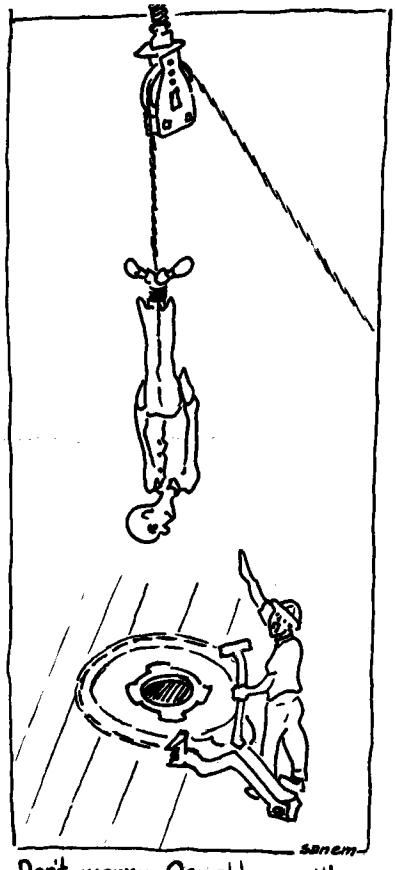
August 9,1956: Thurs., 6:30 p.m., AIME Los Angeles Basin Junior Petroleum Group. Sequoyah Restaurant, 9032 E. Washington Blvd., Rivera. "Effect of Muds on Productivity" Speakers: Ted Bertness, Senior Research Engineer, General Petroleum Corp. and F.R. (Russ) Wade, Division Petroleum Engineer, Union Oil Co. $3.00 members, $3.50 non-members. Tax and Tip included.

August 11, 1956: Sat., 4:30 p.m., Sacramento Petroleum Picnic. Seal Swim School, at intersection of Hoew and Hurley Avenues, Sacramento. Contact Mrs. J. Cunningham, IVanhoe 7-3191 for reservations.

August 27,1956: Mon., 12:00 noon. AIME Petroleum Technology Group. Rodger Young Auditorium, 936 W. Washington Blvd., "Progress in the Development of Producing Equipment". Speaker Mr. C.T. Reichert, Division Sales Manager, National Supply Co., $2.25.

September 6,1956: Thurs., 12:00 noon. Pacific Section A.A.P.G. Luncheon, Rodger Young Auditorium. Offshore Construction, Inc. will show a movie entitled "The Texas Tower".(Shows construction of an offshore radar tower that is built similar to the offshore drilling platforms to be used in Calif.)

September 11,1956: Tues., 8:00 p.m. Sacramento Geological Society, Board Room, Public Works Bldg., 1120 N St., Sacramento. A program of 4 or 5 papers on the Sacramento Valley by local geologists. Election of officers for the coming year will be held.



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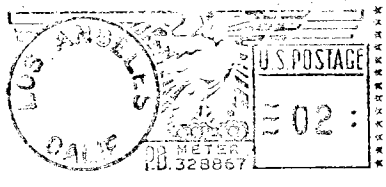

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PACIFIC PETROLEUM GEOLOGIST

NEWS LETTER OF THE PACIFIC SECTION
AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS

Vol. 10 September 1956 No. 9

ASSOCIATION ACTIVITIES

SYSTEMATIC GROUND PHOTOGRAPHY

Mr. L. W. Le Roy prepared the following article for the August, 1956 issue of the Mines Magazine, a copyrighted publication. Permission to copy was secured from the Mines Magazine so that Mr. LeRoy's views could also be presented to the readers of the Pacific Petroleum Geologist.

"Major oil companies are taking steps to correct a failure of many geologists through the use of Systematic Ground Photography in field geology. For years standard field equipment for the oil and mining geologist has consisted principally of a pick-hammer, hand lens, and compass. To these items most geologists now add at least one or more versatile-type cameras as it is realized that through the camera medium, "pictorial geologic facts" can be obtained and which may be integrated into final reports covering the field assignment. J. H. Jackson, the first official photographer for the United States Geological Survey, demonstrated the importance of photographing geologic phenomena. His prints were largely responsible for President Ulysses S. Grant signing a Congressional Bill in 1872, which made the Upper Yellowstone region of Wyoming the first National Park of the United States.

Geologic Photography Now Simplified

Since Jackson's time, geologic photography has been simplified greatly as a result of improved cameras, film, accessory equipment, and technical and semi-technical published information. Today, those who possess only the fundamental rudiments of photography, can obtain satisfactory prints or transparencies at a minimum cost of both material and time.

Geologists photograph geologic phenomena for the purpose of illustrating their reports and for substantiating their written conclusions. However, most geologists have failed to systematize their field photographing procedure, that is, they are content with only one "shot" of a formation, fold, or fault. To systematically photograph these features generally requires numerous shots taken at various angles and distances.

Required with Some Companies

Several major oil companies require their field geologists to photograph, both in black and white and in color, all major geologic elements present in their assigned areas. These photos are carefully captioned and systematically filed for reference as well as indexed to the final report. Such an integrated procedure permits a rapid review of the area by those who are unable to witness actual field conditions or by those who later may be assigned to geologically re-evaluate the area.

Systematic field photographic routine is relatively simple. The first step involves photographing the feature (fold, fault, vegetation, drainage, etc.) from a distance. These photographs show the general relationship of the feature to adjacent features. Several photos may be necessary at this stage in order to obtain complete pictorial coverage. The second step involves photographing the details of the feature such as formation contacts, bedding characteristics, textural and color variations of the rocks, and strata relationships. In this stage, numerous photos may be required to adequately portray the feature. A careful record should be kept on all photos including date, name of photographer, purpose of exposure, and locality.

Geologic field reports should be well illustrated with key, ground-controlled photographs. These photographs must be properly arranged in the text of the report as well as completely captioned. The photos (either in black and white or in color) should be large enough, preferably 4x5 inch, so as to permit the reader to readily and easily grasp its geologic significance. Photographs should not be included in a report with the idea of increasing its volume; the padding factor should be reduced to a minimum. Make each photo count."

GRAHAM B MOODY

Mr. Graham B. Moody has been nominated as a candidate for National President of the American Association of Petroleum Geologists. Mr. Moody has had a colorful career encompassing the Philippine Islands, South America and Texas as well as his home state of California.

Mr. Moody is a graduate of the University of California at Berkely(Class of 1914) and from 1917 to 1918 worked in the Fuel Oil Department of Southern Pacific Company. From 1918 to 1920 he was employed by California Petroleum Company. In 1920, Mr. Moody joined the Standard Oil Company of California from which he retired in 1955. While with Standard of California he served as geologist in the Los Angeles Basin with tours of duty in the Philippines, South America and Texas. For several years prior to his retirement, he held the position of Chief Reserves Engineer in the main office in San Francisco.

Mr. Moody has long been active in A.A.P.G. affairs having become a member in 1927. In 1935 he served as Secretary of the Pacific Section. From 1938 to 1940 he was on the Committee for Publications of the A.A.P.G. During the years 1945-46 Mr. Moody was a member of the Research Committee and he also served from 1945 till 1956 on the Statistics of Exploratory Drilling Committee of the A.A.P.G. He was Vice-Chairman of this Committee from 1948 to 1956 and was elected Chairman in April, 1956. Mr. Moody has also been active on the Reserves Committee of the American Petroleum Institute.

Mr. Moody has published articles dealing with-

PACIFIC PETROLEUM GEOLOGIST

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	Bob Sanem
Coast Correspondent	Frank Yule
San Joaquin Correspondent	Dick Hester
Northern California Correspondent	Doug Andrews
Sacramento Correspondent	Carl Helm
Northwest Correspondent	Les Brockett

NEXT DEADLINE SEPTEMBER 25

Developments on the West Coast; California Oil Reserves; California Oil Finding Costs; Possible Future Petroleum Provinces - Pacific Coast States and Nevada and a variety of other related subjects.

A. I. M. E. PETROLEUM BRANCH CONVENTION

Mr. Mason L. Hill has announced that the Pacific Section of A. A. P. G. will have a complementary booth at the A. I. M. E. Petroleum Branch Convention, Los Angeles, October 15-17. A booth has been selected in the ballroom foyer of the Biltmore. Misses Joan Baldwin, Martha Gallagher and Dorothy Harkness will be in charge of arranging the exhibits. Miss Baldwin will be chairman. Cross sections, guidebooks, and results of other projects will be displayed, also posters announcing the Pacific Section, Fall meeting of the A. A. P. G., S. E. G. & S. E. P. M. to be held at the Ambassador, November 8 & 9, 1956, the St. Louis meeting in 1957 and the Los Angeles meeting in 1958.

PACIFIC SECTION NOMINATION

The Nominating Committee, comprised of E. H. Rader, chairman, Frank Carter, Bob Paschall, Walt Stokesbary, Frank Parker, has selected nominees for the Pacific Section offices for the year beginning November, 1956, as follows:

President:
Harvey W. Lee, Union Oil Company
Everett W. Pease, Sunray Mid-continent Oil Co.

Vice President:
Robert B. Kelly, Continental Oil Co.
Louis J. Simon, The Texas Company

Secretary:
Aden W. Hughes, Goodkoff & Hughes
Robert R. Knapp, Standard Oil Co. of California

Treasurer:
Paul L. Hayes, Southern California Petroleum Co.
William E. Kennett, Superior Oil Co.
Thomas L. MacLeod, Jr., Bell Petroleum Co.

Additional nominations may be made by written petition of 25 or more members in good standing. Such nominating petitions must be received by the Secretary on or before October 1st, 1956.

PERSONAL ITEMS

Burt Amundson of Standard Oil Company in Sacramento has been in the hospital having an operation on his nose. Burt will be leaving Sacramento about the 1st of September for Bakersfield for an assignment in the Oildale office.

Doug Hastings,in charge of Standard Oil Company's Sacramento office, has been transferred to Seattle to head Standard's activities in the Pacific Northwest. Joe Floyd is presently in charge of the Sacramento office.

Tom Roy, Ohio Oil Company, Bakersfield, that inveterate Republican(Tom, you will remember, got out of the license plate line at the Dept. of Motor Vehicles when he saw that his new plates were lettered F.D.R.) was at home painting his living room walls during part of the Convention and at one point became so excited at some of the doings on TV that he stepped in the paint bucket on the rug thereby upsetting both the bucket and his wife.

The crew of the Universal Consolidated deep test rig at Lost Hills and a certain Richfield scout whose initials are Bill Horsley were seen to be making faces at each other through powerful binoculars during a recent formation test. It seems that the good old days when an oil scout packed a pair of binoculars under one arm and a .45 under the other are about gone.

Frank Kilmer,geologist, is no longer working for Shell in the Sacramento office. Franks plans are temporarily indefinite.

Lois Martin, Paleontologist with the Shell Oil Company,is moving up to Sacramento to set up a Paleontology Lab. Ken Hanks will be going up also and will handle the sample preparation.

John Evers is a new draftsman with Western Gulf Oil Company in Sacramento. John formerly worked for Shell in Seattle.

Bob Scott, The Texas Company, Bakersfield,who recently has been convalescing from an appendectomy was given a month's time to recuperate,the last two weeks of which were spent(it is rumored) hiking and fishing in the mountains the first week and deep sea fishing for albacore and the like the second week. The name of the doctor that recommended this treatment is understandably confidential but may be had upon reasonable request at The Texas Company offices.

Arch Warne, Richfield, Bakersfield,just returned to work after a one week tour of mapping a route for his next year's assault on the summit of Mt. Humphreys in the High Sierra.

G. Ray Arnett was seen by TV viewers peering from delegate Charles Jones' box at the Republican Convention. Ray reports the hors d'oeuvres at the Governors reception were delightful.

M.C. "Little Barney" Barnard, Richfield, Bakersfield, took time off from remodeling his kitchen to sneak back into San Francisco for a day or two under cover of the Republican Convention crowd. "Big Barney" Lindsey, Sunray Mid-Continent, stayed home-- the Secret Service people thought it was just as well.

Richfield of Bakersfield welcomes to the fold George H. Clark, geologist, graduated from Pomona College, Claremont, Graduate School. George was previously an Exploitation Engineer for Shell in Casper.

Jack Nisbet returned after more than 3 years with the Navy and resumes geological duties for Richfield in Bakersfield.

Bob Wells has returned from vacation. The Bakersfield report is that he stated only that he passed through Los Angeles and Tiajuana and that he couldn't have picked two better places for doing it.

Ted Ellsworth, Geophysical Service Inc., Houston, reports he has moved into the new Bank of the Southwest Building, written up recently in Life, and invites his friends to drop in when visiting Houston.

After geological exploration in the jungles of Cuba, Mr. Henry H. Neel of Tidewater Oil Company has returned to the fog of San Francisco. Hank is now able to include the kettle-drum amoung his many accomplishments.

Martin H. Mitchell, Manager of Tidewater Oil Company's Western Division, Land Department, in San Francisco, has been named General Manager of the Company's operations in Turkey. His headquarters will be in Ankara.

Attending the Mexico International Congress will be Mr. and Mrs. Bill Corey and Mr. and Mrs. Wilbur Rankin - at the termination of the meeting they will visit Guatemala.

Ian Campbell, Professor of Petrology and Executive Officer, Division of the Geological Sciences, California Institute of Technology, is the new president-elect of the Pacific Division,, American Association for the Advancement of Science. Professor Campbell was a member of the Executive Committee of the Division from 1939 to 1947.

Shell's Columbia District office, after two years' anticipation, has finally moved from Elma to Olympia. Grant Valentine and Jim Moore now have offices without the appearance of Grand Central Station.

On August 4th Floyd Johnson of Western Gulf, Olympia, and Jim Moore, Grant Valentine, Ivor McCray, Barney Sellers, Howard Kinsey, Stan Schindler, Jerry Herndon, and Maurie Price, all of Shell, Olympia, went deep-sea fishing angling out of world-famous Westport, Washington. Floyd Johnson took the pot for the first salmon caught. Jim Moore took honors for the most and largest fish caught. No one became ill so a good time was had by all.

Howard Wilson, Ohio Oil Company, Olympia, just returned from an extensive tour of Canada. He reports that the fishing was great but can't say as much for the roads.

Ray Pearson, Richfield of Bakersfield, got away from the strain for a week at the Upper Glacier Lodge, deep in granite outcrop country-- he said "Of course I wasn't looking for oil".

Since receiving his Master's degree in geology from the University of Oregon, Adrian Nelson has joined Tidewater's Bakersfield Exploration department.

Standard of California announces a new Bakersfield District Supervisor, Brad McMichael. Brad is being transferred from Standard's Seattle office to replace Al Solari who has recently been promoted to Supervisor of Exploration in San Francisco.

Gregg Webb, Standard, Bakersfield, has resigned from the Geophysical Department to teach at an eastern college.

Bill Quackenbush, formerly with Continental Oil Company, Los Angeles, has been employed by Statex (State Exploration Company of Texas) and will be working in the Amarillo office with Bob White.

All the friends of John N. Huber will be saddened to hear of his death in the early part of August while working in Casper, Wyoming. John was employed recently by Ferguson and Bosworth, Bakersfield Consultants, and was looking after their affairs in Casper when he was unexpectedly stricken with a heart ailment.

NURSERY NEWS

Tidewater, Bakersfield, announces the following 'Blessed Events':

Margie and Joe Covello- a son, Joseph Craig, 8 lbs.1 oz., on the 16th of July

Margaret Ann and Wayne Shaw- a son, David Randolph, 8 lbs.2 oz., on August 14.

Margaret and Dave Costello- a son, David S.,Jr., 8 lbs.5 oz., on August 7th.

Lynn and Ernie Bush, General Petroleum, Sacramento, are proud parents of their 1st child- a boy, Mark Petty, 6 lbs.6 oz., born August 7th.

Smart ground squirrel-now ask him one on foraminiferal ecology.

BIBLIOGRAPHY OF RECENT PUBLICATIONS

SCIENTIFIC PUBLICATIONS - JOURNALS AND BULLETINS

United States Geological Survey

"Geology of Ivan Pah Quadrangle" by D. F. Hewitt. Professional Paper No. 275.

"X-Ray Powder Data for Uranium and Thorium Minerals". Bulletin 1036-G

"Floods of 1952 in California". Water Supply Paper 1260-D.

"Reports and Maps of Geological Survey released only in open files". Circular 379. 1955.

"Surface Water Supply of the United States, 1954 - Part 2. Pacific Slope Basins in California." Water Supply Paper 1345.

"Uranium Deposits at Base of Chinle Conglomerate, Monument Valley, Arizona." Bulletin 1030-C.

"Geology of Medford Quadrangle, Oregon and California". GQ 89.

Division of Mines, State of California

Map to Special Report 45 "Exploratory Wells Drilled Outside Oil and Gas Fields in California to December 31, 1953". Price $1.25

CALENDAR

Sept. 13, 1956: Thurs., Central California Oil Scouts Annual Steak Barbecue and Golf Tournament, Kern County Golf Course and Picnic Grounds, (nine miles east of Bakersfield along Kern River). Golf Tournament all day; beer served from 3:00 p.m. on, and dinner served at 6:30 p.m.
Barbecue contribution: $3.00 per person
Green fee: 2.00 per person

Sept. 13, 1956: Thurs., 12:00 noon, S.E.G., Biltmore Hotel, Los Angeles. "Geophysics and Missiles" by Matthew Slavin, United Geophysical Corp. $2.00.

Sept. 13, 1956: Thurs., 6:30 p.m. AIME Junior Petroleum Group. Sequoyah Restaurant, 9023 E. Washington Blvd. (at Rosemead), Rivera, California. A panel discussion on Registration for Professional Engineers. Speakers are Asa G. Proctor (C. E.) President, Woodland; L. M. K. Boelter (Ch. E.) Vice President, Los Angeles; George L. Sullivan (M.E.), Santa Clara; Harold J. Clark (Pet. E.), Los Angeles; S. B. Barnes (C.E.), Los Angeles; G. M. Simonson (E.E.), San Francisco; William T. Wright (C.E.), Los Angeles, and J. Douglas Locke, Executive Secretary, Sacramento. $3.00 for members, $3.50 for nonmembers, including tax and tip.

Sept. 17, 1956: Mon., 7:00 p.m., General Petroleum Auditorium. "Habitat of Oil in the Los Angeles Basin" by W. F. Barbat, Chief Geologist, Standard Oil Company of California.

Sept. 18, 1956: Tues., 7:30 p.m. Los Angeles Basin Chapter API. Shell Recreation Hall, corner of Hill and Obispo, Long Beach. Topic and speaker to be announced. A film on the construction of the Monterey Drilling Island at Seal Beach will be shown.

Sept. 18, 1956: Tues., 7:30 p.m., Sacramento Geological Society, Board Room, Public Works Bldg, 1120 "N" St., Sacramento. "1955 Eruptions of Mt. Kilauea" by Dr. Gordon Macdonald, U.S.G.S. The talk will be illustrated by a color film. Election of officers for the new year will be held.

Sept. 24, 1956: Mon., 12:00 noon, AIME Petroleum Forum, Rodger Young Auditorium, 936 W. Washington Blvd., Los Angeles. "Progress in Production Research" by John E. Sherborne of the Union Oil Company. $2.25 including tax, tip and parking.

Oct. 4, 1956: Thurs., 12:00 noon, Los Angeles Luncheon Meeting. Rodger Young Auditorium. The speaker and subject matter has not yet been announced.

Oct. 6, 1956: Sat., AIME Southern California Petroleum Branch Annual Field Trip. The trip will tour the Ventura and San Miguelito Fields. Assembly time 9:00 a.m. at the Shell Oil Company barbecue grounds on N. Ventura Avenue. Reservations and tickets -- C. E. Downey, Youngstown Steel Products, 714 West Olympic Blvd., Los Angeles 15, RI. 9-7581.

MR MASON HILL ANNOUNCES:

PACIFIC SECTION ANNUAL MEETING

AAPG-SEPM-SEG

AMBASSADOR HOTEL

LOS ANGELES

NOVEMBER 8-9, 1956

PACIFIC PETROLEUM GEOLOGIST
PACIFIC SECTION, A.A.P.G.
3434 WEST 43RD STREET
LOS ANGELES 8, CALIFORNIA

Mr. F. R. Neumann
381 E. 4th St.
Chico, Calif.

Form 3547 Requested

PACIFIC PETROLEUM GEOLOGIST

NEWS LETTER OF THE PACIFIC SECTION
AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS

Vol. 10 October, 1956 No. 10

ASSOCIATION ACTIVITIES

FALL CONVENTION

The Thirty-third Annual Meeting of the Pacific Section of the American Association of Petroleum Geologists, Society of Exploration Geophysicists, and the Society of Economic Paleontologists and Mineralogists will be held jointly at the Ambassador Hotel, Los Angeles, California, on Thursday and Friday, November 8 and 9, 1956.

Registration for the A. A. P. G., S. E. G., and S. E. P. M. societies will begin at 8:00 A.M., Thursday in the Ambassador Hotel. Tickets for various luncheons will be available at registration desk.

The Convention Committee will be under the General Chairmanship of Mr. V. H. King.

A brief outline of the program of professional papers to be presented for the American Association of Petroleum Geologists portion follows:

Thursday Morning 9:10 A.M.

"History of Exploration and Development of the Willows-Beehive Bend Gas Field"
Donald E. Barrett, General Petroleum Corporation, Sacramento, California.

"Santa Fe Pool Development, Santa Fe Springs Oil Field, California"
C. L. Doyle, Asst. Chief Petroleum Engineer, General Petroleum Corporation, Los Angeles, California.

"Structure of the Wheeler Ridge Oil Field"
Archer H. Warne, Richfield Oil Corporation, Bakersfield, California.

"Preliminary Report on the Tectonic History of the Vizcaino Peninsula and the San Benito Island, Baja California"
Donald B. McIntyre and John S. Shelton, Department of Geology, Pomona College, Claremont, California.

"Potassium-Argon Dating of Sedimentary and Igneous Rocks"
Joseph Lipson, Jack Evernden, and Garniss Curtis, University of California, Berkeley, California.

"Hydrodynamics, a Practical Exploration Tool"
Jack W. Knight, Executive Vice-President, Petroleum Research Corporation, Denver, Colorado.

Thursday Afternoon 1:30 P.M.

"Tertiary Sequence on Northeast Coast of Gulf of Alaska"
Don J. Miller, Alaskan Geology Branch, United States Geological Survey, Menlo Park, California.

"Geology of the Trinity Islands, Alaska"
Charles E. Kirschner, Standard Oil Company of California, Seattle, Washington.

"Geology of San Nicolas Island, Ventura County, California"
J. G. Vedder, United States Geological Survey, Pomona College, Claremont, California.

"Silurian of the Great Basin"
Roy Harold Waite, Shell Oil Company, Ely, Nevada.

"Tabular Masses of Disordered Breccia in Southern California"
Richard H. Jahns, California Institute of Technology, Pasadena, California; Lauren A. Wright, California State Division of Mines, Los Angeles, California.

"Post-Eocene Age of Markely Gorge Fill, Sacramento Valley, California"
Alvin A. Almgren and William N. Schlax, The Superior Oil Company, Bakersfield and Los Angeles, California.

"The Santa Cruz Basin Oil Province"
Edward A. Gribi, Consulting Geologist, Great Falls, Montana.

Friday Morning 9:10 A.M. (Joint Session)

"Radiation Logging in Shallow Bore Holes"
Robert B. Moran, President, Moran Instrument Company, Pasadena, California.

"The International Geophysical Year"
Dr. Joseph Kaplan, Chairman, United States National Committee for the International Geophysical Year.

"The Training of Geologists"
Charles F. Park, Jr., Dean of the School of Mineral Sciences, Stanford University, California.

"Jobs and Geologists"
J. P. Rockfellow, Manager of Employment, Union Oil Company of California, Los Angeles, California.

"A Geologist's Long-Term Forecast of Petroleum Supply"
Wallace E. Pratt, Consulting Geologist and Past Vice-President, Standard Oil Company of New Jersey.

Friday Afternoon 1:30 P.M. (Joint Session)

"Oil or Alibis"
A. C. Rubel, President, Union Oil Company of California, Los Angeles, California.

"Explore or Liquidate"
Ed. J. Hamner, Manager of Exploration,

PACIFIC PETROLEUM GEOLOGIST

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Calendar	Norris Saunders
Cartoonists	Harold Sullwold
	Bob Sanem
Coast Correspondent	Frank Yule
San Joaquin Correspondent	Dick Hester
Northern California Correspondent	Doug Andrews
Sacramento Correspondent	Carl Helm
Northwest Correspondent	Les Brockett

NEXT DEADLINE OCTOBER 30

Humble Oil and Refining Company, Houston, Texas.

"Economics of Exploration"
Graham B. Moody, Petroleum Consultant, Berkeley, California.

"Military Petroleum"
Ottmar F. Kotick, Colonel, Quartermaster Corps, United States Army, Memphis, Tennessee.

"Factors Related to Fault Seals in Some California Oil Fields"
Albert F. Woodward, Staff Engineer, Union Oil Company of California, Whittier, California.

A joint luncheon of the American Association of Petroleum Geologists, Society of Exploration Geophysicists, and the Society of Economic Paleontologists and Mineralogists will be held at 12:00 noon, Thursday, in the French Room and Dolphin Court of the Ambassador Hotel. Tickets at $3.50 per person (including tax and gratuities) will be on sale during registration. Theodore A. Link, National President, A. A. P. G., will speak.

Unofficial college reunion luncheons are being arranged for the convenience of those not planning to attend the S. E. G. Luncheon on Friday noon. Tickets at $3.50 per person (including tax and gratuities) will be on sale during the convention. These luncheons will be held in the Ambassador Hotel in the following locations:

U. C. L. A. - Sun Club Terrace, A. L. Diehl, Chairman

Stanford - Cocoanut Lounge, Homer Steiny, Chairman

Cal-Tech. - Lido Patio, J. E. Joujon-Roche, Chairman

U. S. C. - Lido Room, J. A. Mann, Chairman

U. C. - Frenchette Room, M. J. Hill, Chairman

Pomona - Rose Room, J. A. Forman, Chairman

U. of Wash. - Garden Room, F. L. Webster, Chairman.

A cocktail party will be held Friday evening in the Foyer of the Embassy Room from 7:00 to 8:00 P.M. prior to the Annual Dinner Dance.

The Annual Semi-Formal Dinner Dance will be held in the Embassy Room of the Ambassador Hotel, Friday evening. Tickets $7.50 per person (including tax and gratuities). Dinner will be served at 8:30 P.M. with dancing from 9:00 P.M. to 1:00 A.M.. Music will be furnished by Barney Sorkin's Orchestra. All persons attending the convention are cordially invited. To facilitate arrangements, it is suggested that each party group select one member to assume responsibility for reservations at their table. This person should enter the names of his party on the reservation card.

Lyle Smith reports that the new dance floor in the Ambassador, which is larger, should be a pleasant place for our Friday night Dinner Dance.

The Cocoanut Grove Lounge has been reserved for visiting wives between the hours of 10:00 A.M. to 12 Noon on Thursday, and between the hours of 2:00 to 4:00 P.M. on Thursday and Friday.

SOUTHERN CALIFORNIA PETROLEUM BRANCH A. I. M. E. TO TREK VENTURA IN OCTOBER

Saturday, October 6th, is the date set for the A. I. M. E. Southern California Petroleum Branch's annual Field Trip, according to a recent announcement by Branch Chairman, Herman Schaller. Ventura area will be toured this year and arrangements for the trip are being completed under the direction of L. A. Braden, Field Trip Chairman, of Tidewater Oil Co., Ventura.

Points of interest in this year's trip include a visit to the City of Ventura's Ranney Sea Collector on Pierpont Bay, a facility which may be used widely in future waterflood operations in California. In the Ventura Field, the groups will be shown Tidewater's slide problems, deep timbered cellars, hydrauger holes, and Shell's "packed hole" drill collar stabilization, pilot waterflood, and cathodic protection of oil well casings.

In San Miguelito Field, the oil men will be briefed on history, stratigraphy, production data and will see Continental Oil Company's pilot waterflood and sea water collector, and cathodic protection of oil well casing.

Assembly for the tour is at 9:00 A.M., at the Shell Oil Company barbeque grounds on North Ventura Avenue. At noon a box luncheon will be served at this location, and after the trip a roast Prime Rib dinner will be served at the American Legion Hall, Ventura.

Members of this year's Field Trip Committee, in addition to Chairman Braden, are Henry Abadie (Advisor), Gilbert Jemmott (Program), Norbert Methven (Caravan), Robert Phelan (Clean Up & Games), Innes MacKenzie (Food), C. E. Downey (Tickets), and R. L. Richardson (Finance).

ANNUAL HOLIDAY DINNER DANCE

Joe Hathaway announces that the A. A. P. G., S. E. G. and S. E. P. M. Annual Dinner Dance will be held again this year at the Oakmont Club, Glendale, Saturday evening, December 1st, 1956. Announcement of the dance and reservation cards will be mailed in the near future.

AAPG FORUM

September 17th meeting at the General Petroleum Auditorium opened the fall session of the Forum. "The Habitat of Oil in the Los Angeles Basin", prepared by W. F. (Bill) Barbat, Chief Geologist of Standard Oil Company of California, was read by Howard Anderson.

The structural setting of the Los Angeles Basin was reviewed. The tectonic patterns at the intersection of the Transverse Ranges and Peninsular Ranges geologic provinces were reviewed as the setting for the major subsidence that characterized the sedimentary cycle in which the Puente, Repetto, Pico and later sediments were deposited.

Oil in the Los Angeles Basin is geologically young, ranging from upper Miocene to upper Pliocene. The major production comes from the lower Pliocene sediments accumulated during the most active transgressive phase of the sedimentary cycle. Adequate reservoir rocks are present in the Basin as sands and conglomerates. Great volumes of fine grained sediments, frequently rich in organic residues, provide an abundance of source beds. The interlayered relationship of sands and shales, apparently the result of gravity flow, "turbidity" currents, provides ample down dip conduit for the migration of oil into the traps.

The depositional environment may be interpretatively reconstructed as follows: Water depths from 4,000 to 6,000 feet, with temperature ranges comparable to equivalent depths in present offshore basins. The basin was separated from the open ocean by sills sufficiently low to allow some circulation below sill depth. Bottom conditions were not toxic. Shores were frequently 30 to 40 miles distant. Normal deposition was from the setting of suspended fine materials during the early and middle phases of the cycle. The normal deposition was frequently interrupted by turbidity current deposition of coarser grained load. The biological environment was favorable for the production of large amounts of organic material and sedimentation rapid enough to bury much of this before its destruction, although not so rapid as to dilute beyond effective source bed condition.

The traps of the basin are predominantly structural. On the southwest side of the basin some traps relate to drape folds associated with subsidence of the basin. On the northeast side traps are more frequently associated with the buckle folds of late compression. Optimum depth of sediments characterize the basin. There has been no appreciable load effects upon the reservoirs. The major producing pools have been of moderate depth.

Exploration and development have been intense in the Los Angeles Basin. The density of exploratory wells drilled is appreximately two per square mile for the entire area. When the central deep synclinal area is omitted, the concentration of exploratory wells approaches eleven per square mile. Close spacing of development wells has been encouraged by large vertical columns of oil and small parcel ownerships. Currently, however, the intense urban development has imposed serious competition for land use, resulting both in preventing many exploratory plays and the early abandonment of producing wells prior to ultimate depletion.

SACRAMENTO GEOLOGICAL SOCIETY MEETING

The first Fall meeting of the Sacramento Geological Society was held Tuesday, September 18, 1956. A very interesting illustrated talk on the 1955 eruptions of Kilauea was given by Dr. Gordon A. Macdonald. An abstract of this paper will be given in next month's news letter. Election of officers was also held. with the new officers being as follows:

President: Carl Helms, Jr., Standard Oil Company of California
Vice President: Donald Barrett, General Petroleum Corporation
Secretary: Alan Powers, Bureau of Reclamation
Treasurer: Robert Reynolds, California Department of Highways.

PERSONAL ITEMS

The paper which Mase Hill of Richfield presented to the International Geological Conference in Mexico City was well received and considered one of the best illustrated of the Conference. Title was "Oil in California".

The newly married Paul Elliots of Western Gulf are back from a 6000 mile trip which took them to Banff, Lake Louise, Glacier, Yellowstone and the Tetons. The Elliots are now at home in San Marino at 1935 Del Mar Avenue.

D. G. Herring of The Texas Company, (Sr. Geologist Los Angeles) has been chosen to work on special exploratory problems. Replacing him will be A. J. MacMillan, District Geologist Bakersfield.

Humble announces the acquisition of three new Geologists. Earl Madsen of Oregon State, Pat Haley of Notre Dame and the University of Florida and Cyril Bird of U. C. L. A.. Cyril is from Los Angeles, Pat from Streator, Illinois while Earl calls Eugene, Oregon his home.

A Richfield Geologist, on a core boat off Coal Oil Point, after watching a successful recovery from a fishing job involving the use of underwater television, commented that the picture was the best he had seen on the Santa Barbara channel.

Friends of Bill Thomas, Chief Scout for Shell in Los Angeles, will be pleased to hear that he is rapidly recuperating from a major operation involving the removal of a gland from his face.

Richfield announces a new employee - Dale Dirly (grad of U. C.) will be employed as a Geologist.

R. B. Palmer, The Texas Company Geologist in Los Angeles, will become District Geologist in Bakersfield replacing A. J. MacMillan. Paul B. Harris of Long Beach will replace Palmer in Los Angeles.

Personnel in Continental's Los Angeles office are confused by Spanish written cards from Mexico, all signed by one Guillermo Corey. Best bets are that the contagious native spirits of the area are responsible. Guillermo took in the conference and continued on to Guatamala, returning to Los Angeles in the best of spirits.

Tom Baldwin and family of Monterey made a leisurely trip to Mexico down the west and back up the east coast. Mexican officials report the ruins of Tehuantepec missing -- last seen heading north in a green Studebaker station wagon.

Jim McDonald of Humble, back from vacation at Big Bear, reports golfing, swimming, ice skating, hiking and wood cutting. (Vacation?)

The Texas Company announces the hiring of Robert McClasson as Junior Geologist in the paleo lab. Bob is presently enrolled at U. S. C. working for his masters degree.

Charles W. Chesterman, Senior Mining Geologist, State Division of Mines, has just returned from attendance at the International Geological Congress in Mexico City where he presented a paper on lightweight aggregate materials in California. The Division has in press his bulletin on pumice and pumicite in California. Charlie drove his family to Mexico City and reported an extremely interesting trip and a chance to meet many foreign geologists for the first time.

Bankline Oil Co. is terminating the Geological and Land Departments in Los Angeles as of October 1, 1956. E. J. (Ed) Bartosh, Chief Geologist and Petroleum Engineer will have temporary offices at 1851 Hill Drive, Los Angeles, (41), telephone Clinton 6-6544. Mr. Bartosh has been with Bankline Oil Co. twenty-two years. Miss Martha Gallagher can be contacted thru Mr. Ed Bartosh or at 1037 Burnside Avenue, Los Angeles, (19), Webster 9-8615. Miss Gallagher has worked for Bankline Oil Co. as geologist for eight years.

Olaf P. Jenkins, Chief, California Division of Mines, is president-elect of the Association of American State Geologists. This is an organization of long standing, comprised of the State geologists or chiefs of the bureau of mines or geological survey of each of the states.

The new officers of the Northwest Geological Society are, Floyd Johnson, president; Conrad Howard, secretary; and Marshall Huntting, treasurer. They will preside over their first meeting Monday, October 8th, at the Poodle Dog Cafe, Tacoma, Washington. Program will be movies of the Williston Basin.

Red Pope of Standard Oil Company of California has been transferred from Salt Lake City, Utah to Ojai, California. Red will serve as resident scout for the Ventura Basin.

Ohio Oil announced they are closing their Olympia, Washington office. Bill Yerington transferred to Coalinga; Marcus Zappi, geologist transferred to Jackson, Mississippi; Howard Wilson, landman, transferred to Bakersfield.

Jess Parsons, The Texas Company, Bakersfield, managed to get a deer for his freezer- on the very last day of hunting season over King City way.

According to Bill Bedford of The Texas Company, the best way to have a vacation is to send your wife away four weeks in advance. It seems Bill has taken to eating dinner at the Padre, where it is rumored a seven course dinner can be had for the price of one beer. Occasionally when the local haunts did not have delicacies to his liking, he managed to mooch a tasty meal from a long list of slight acquaintances and by gerrymandering the boundaries of the Petroleum Wives District Bar-B-Ques. This frugal existance made it possible for him to live it up at the elite Blackboard Cafe, etc. Bill also found that laundry presents no difficulties if you buy clothes on approval and return them at the end of a well worn month.

George LaPerle, Jean Adams and Ed Bien from Bakersfield were Richfield's envoys to the 20th session of the International Geological Congress in Mexico City.

Two Bakersfield couples were recently off vacation-honeymooning, Noel and Gerry Street, Tide Water, and Buzz and Marilyn Welch, Sunray-Mid-Continent.

This may be denied, but it has been rumored that M. Senteur de Boue, Bakersfield consultant in matters geological, has allegedly run an electrical device in an extremely interesting wildcat well in the San Joaquin Valley. (Sec. 21-12N-19W) The well, Hon-Cal Oil Company, "Parlay #22-21", apparently logged a fabulous eastside section. This may also be denied, but there are indications that a copy of the log may be had from a certain well established Bakersfield Blueprinting Company's log library.

Jim O'Neill, Oceanic and Wayne Sayres, Superior, Bakersfield, were seen at the Bakersfield Memorial Stadium the night of the Compton-Bakersfield Jaysee game herding around five young and pleased R. M. Pyles' Boys Campers. This is part of the oil industry program to help the deserving and needy youth of California.

Bankline Oil Co. announces the closing of its Bakersfield Exploration offices effective December 1st. Lee Jordan and Yale Langworthy have been part of the Bakersfield staff for many years.

A. J. MacMillan, The Texas Co., Bakersfield, district geologist is being transferred to Los Angeles. Mac is being replaced by Dick Palmer, an ex-Bakersfield man who has been in Los Angeles for nearly a year.

NURSERY NEWS

Mr. and Mrs. Hal H. Nelson of Superior announce the birth of a daughter, Tracey Ann, 7 lbs. 2 1/2 oz. on September 4, 1956.

Mr. and Mrs. Darren Wales of Richfield Oil in Long Beach announce the birth of Daniel Roy Wales, 8 lbs. 15 oz. on June 30, 1956.

CALENDAR

October 4, 1956: Thurs., 12:00 noon, AAPG Los Angeles Luncheon Meeting. Rodger Young Auditorium, 936 West Washington Boulevard, Los Angeles. "Highlights of the Recent Wyoming Field Conference in the Jackson Hole Area of Northwestern Wyoming", by Mr. Peter H. Gardett, Consultant. $2.00 including tax, tip and parking.

October 9, 1956: Tues., 7:30 p.m. Sacramento Geological Society, Board Room of Public Works Building, 1120 N Street, Sacramento. A program of 3 or 4 papers of local interest is planned.

October 11, 1956: Thurs., 12:00 noon, SEG, Biltmore Hotel, Los Angeles. "Preparation of Seismic Data for Geological Interpretation" by Kenneth E. Burg, vice-president Geophysical Service Incorporated.

October 11, 1956: Thurs., 6:30 p.m., AIME Junior Petroleum Group. Sequoyah Restaurant, 9023 East Washington Boulevard (at Rosemead), Rivera, California. "Multiple Zone Completions" by Marshall Turner, Monterey Oil Co.. $3.00 for members, $3.50 for nonmembers, including tax and tip.

October 11, 1956: Thurs., 7:30 p.m., AAPG Distinguished Lecturer Series, General Petroleum Auditorium, Los Angeles. Mr. Donald A. Myers, Geologist, USGS, Denver, Colo., will speak on the "Geology of the Late Paleozoic Horseshoe Atoll of West Texas".

October 12, 1956: Fri., 7:00 p.m., Channel 11, Richfield Oil Corporation's TV program "Success Story" will feature the Division of Business and Technology, Long Beach City College. "Success Story" will view the school's vocational training facilities of several industries, including petroleum. The Los Angeles Basin Chapter of the API sponsers many petroleum courses at Long Beach City College. This program provides a fine opportunity of making known to the oil workers the scope of oil field vocational training facilities available to them.

October 14-17, 1956: Sun. through Wed., National Convention Petroleum Branch, AIME, Biltmore Hotel, Los Angeles. Registration fee: $5.00 members, $10.00 non-members (including set of pre-prints).

October 22, 1956: Mon., 7:00 p.m., G. P. Auditorium, "Geology of Ridge Basin Area" by Dr. John C. Crowell, Associate Professor of Geology, U. C. L. A..

October 22, 1956: Mon., 6:30 p.m., San Joaquin Geological Society Dinner Meeting, Hotel El Tejon, Bakersfield. "1955 Eruptions of Mt. Kilauea" by Dr. Gordon Macdonald, U. S. G. S. The talk will be illustrated by a color film.

November 8-9, 1956: Thurs. and Fri., Pacific Section Annual Meeting of AAPG, SEPM and SEG., Ambassador Hotel, Los Angeles.

BIBLIOGRAPHY OF RECENT PUBLICATIONS

SCIENTIFIC PUBLICATIONS - JOURNALS AND BULLETINS

United States Geological Survey

"Accuracy of Ore Reserve Estimates for Uranium-Vanadium Deposits on the Colorado Plateau". Bulletin #1030-D.

"Bibliography of Alaskan Paleozoic Paleontology". Bulletin #1021-H.

Division of Oil & Gas, State of California

W-5-1 - Wildcat Map. Kings, Fresno, Monterey City. $2.00 including postage.

W-4-3 - Wildcat Map. Kern City, District 4 (North portion to Tulare City) $2.00 including postage.

#33 - Sunset Beach Map. $1.25 including postage.

Division of Mines, State of California

"Geology of Huntington Lake Area", Fresno City. Special Report #46. $.78 including tax, no postage.

TRADE JOURNALS AND MISCELLANEOUS MAGAZINES

World Oil

"Special Report from Behind the Iron Curtain", August, 1956, pages 174 through 206.

Oil and Gas Journal

"Richfield Starts Drilling Island Off California", September 17, 1956, page 120.

"Revolutionary Drill Barge Ready for Boom Off California", September 24, 1956, page 86.

MR MASON HILL ANNOUNCES:

PACIFIC SECTION ANNUAL MEETING

AAPG-SEPM-SEG

AMBASSADOR HOTEL

LOS ANGELES

NOVEMBER 8-9, 1956

PACIFIC PETROLEUM GEOLOGIST
PACIFIC SECTION, A.A.P.G.
3434 WEST 43RD STREET
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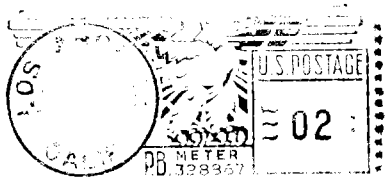
Vol. 10 No. 10



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PACIFIC PETROLEUM GEOLOGIST

NEWS LETTER OF THE PACIFIC SECTION
AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS

Vol. 10 November 1956 No. 11

ASSOCIATION ACTIVITIES

THE TWENTIETH INTERNATIONAL GEOLOGIC CONGRESS

John E. Szatai of Richfield Oil Corp., acted as a correspondent for the Pacific Petroleum Geologist at the Twentieth International Geologic Congress, held from September 4th - 11th, 1956 at the University in Mexico City. An introductory festive plenary session, followed by a lavish all afternoon buffet lunch and cocktail party given by the Mexican government, sparked a lasting deep amity and desire for international cooperation in all attending geologists. The sessions that followed concerned a large variety of subjects. The first group of these dealt in a series of sessions on each of the following fifteen subjects: (1) Vulcanology; (2) Mesozoics of the Western Hemisphere; (3) Petroleum Geology; (4) Geohydrology of the Arid Regions; (5) Relations between Tectonics and Sedimentation; (6) Origin of Mineral Deposits; (7) Paleontology; (8) Plutonic Rocks; (9) Applied Geophysics; (10) Micropaleontology; (11) Petrology and Mineralogy; (12) Geochemistry and Isotope Geology; (13) Genesis of Reefs; (14) Marine Geology; (15) Miscellaneous Geologic Problems. The second group included a series of symposia on each of the following: (1) Petroleum and Gas; (2) Manganese; (3) Paleogeography; (4) Cretaceous of the World; (5) Geochemical Exploration. In addition, meetings were held by thirteen special committees: (1) Association of African Geological Surveys; (2) International Geological Map of Africa; (3) International Union of Paleontology; (4) Society of mining Geologists; (5) International Stratiographic Commission; (6) Geological Map of the World; (7) Author's Resumes; (8) Karroo Correlation; (9) Spendiarov Commission; (10) Geological Map of Europe; (11) World's Physiographic Map; (12) Clays; (13) The Earth's Crust.

Limited time and great wealth of subjects made it necessary to hold 20 to 30 sessions simultaneously. In all, over 800 papers were presented within 7 days.

The treatment of petroleum and gas was excellent. Over 50 papers were presented on the theory and world wide occurrence of oil by many outstanding workers in the field. Grouped by continents, these papers have been published in original and abstracted form in five volumes.

Over 100 countries were represented by about 4,000 participants, of which nearly half were from the United States. Californians not only attended in impressive numbers but contributed considerably to the success of the Congress by presenting very interesting papers on a veriety of subjects. Papers were given by: O. L. Bandy, G. V. Chilingar, T. Clements, R. F. Dill, T. Downs, W. H. Easton, K. O. Emery, J. C. Hazzard, M. L. Hill, K. B. Krauskopf, W. R. Lowell, H. Lowenstam, J. F. Mann, Jr., H. W. Menard, W. R. Moran, F. P. Shepard. Among the papers presented only Mase Hill's "Oil in California" concerned oil directly. According to comments it was the best illustrated paper in its field. Other attending Californias were: Jean Adams, E. M. Bien, Lucie Birdsall, Max Birkhauser, Ian Campbell, W. H. Corey, J. C. Crowell, R. S. Beck, E. Borax, J. W. Durham, E. C. Edwards, A. Engel, J. Green, F. W. Hinrichs, A. S. Huey, O. P. Jenkins, W. S. W. Kew, S. J. Kriz, F. Kunkel, R. T. Laird, G. R. LaPerle, T. H. McCulloh, E. L. Packard, C. F. Park, Jr., W. J. Plumley, A. Safonov, J. S. Shelton, R. R. Simonson, J. E. Szatai, H. E. Thalman, M. Van Couvering, V. W. Vandiver, C. E. Weaver. Several of these contributed by taking an active part in discussions.

A.A.P.G. ELECTION RESULTS

The announcement of the names of the newly elected officers for the Pacific Section for the coming year can now be made;

President - Harvey Lee, Union Oil Company.

Vice-Pres.- Robert Kelly, Continental Oil Co.

Secretary - Aden Hughes,Goudkoff and Hughes,

Treasurer - Bill Kennett, Superior Oil Co.

The official tally indicates that this was an extremely close election, and all nominees are to be thanked for their willingness to accept the responsibilities of the respective offices.

The outgoing officers, President Mason Hill, Vice President Loyde Metzner, Secretary Tom Baldwin and Treasurer Everett Pease have all done a splendid job during the past year and all the members of the Pacific Section are very grateful. The P.P.G. staff wishes to join with the outgoing officers in wishing the new officers a most successful reign.

AAPG DISTINGUISHED LECTURER

On Thursday, October 11,1956,another in the series of Distinguished Lecturers visited the Los Angeles area and spoke to the interested members. Mr. Donald A. Myers, Geologist, USGS, Denver was the speaker and he delivered a very interesting address on "Geology of the Late Paleozoic Horseshoe Atoll, West Texas". Mr. Don Myers is one of three authors of this paper, the other two being Mr. P.T. Stafford and Mr. R.J. Burnside, both of which are also members of the USGS in Denver. A brief summary of the authors remarks,as presented by Mr. Myers, follows.

PACIFIC PETROLEUM GEOLOGIST

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Activities	Mickey McKnight
	Henry Charles
Personal Items	Bill Emerson
Selected Bibliography	Martha Gallagher
Calendar	Norris Saunders
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Coast Correspondent	Frank Yule
San Joaquin Correspondent	Dick Hester
Northern California Correspondent	Doug Andrews
Sacramento Correspondent	Carl Helm
Northwest Correspondent	Les Brockett

NEXT DEADLINE NOVEMBER 27

The Horseshoe Atoll, a horseshoe-shaped accumulation of Pennsylvanian and lower Permian limestone in the Midland Basin in West Texas, is the largest carbonate petroleum reservoir in North America. This carbonate mass is 70 to 90 miles across and as much as 3,000 feet thick. From 1947, when the discovery well was drilled in the southeastern part of the atoll, to the end of 1953, the atoll yielded 244,066,994 barrels of oil, and is currently being subjected to extensive water-flooding in an effort to increase further the ultimate yield of petroleum.

By March 1, 1954, more than 5,000 wells had been drilled into the Horseshoe Atoll, and the logs of these wells, together with cores from more than 100 of the wells, were used by the Geological Survey and the Texas Bureau of Economic Geology in a cooperative study of the characteristics and significance of this vast and unusual limestone mass. The availability of this large amount of subsurface data has made possible an analysis of the configuration, stratigraphy, and porosity of the atoll that may aid in understanding other reef-like carbonate reservoirs. Although it is not certain that the Horseshoe Atoll originated within the same environments that control the development of modern reefs, the terms "reef" and "atoll" are applied to this limestone mass because it apparently had most of the characteristics of a reef during its growth.

The origin of the atoll is open to debate. The atoll may, however, have accumulated in a steadily subsiding basin, shifts in sea level having produced the several unconformities found in the reef.

The entire faunal assemblage suggests that the waters in which the atoll accumulated were marine and were probably of normal or near-normal salinity. Apparently there was little turbidity during periods of maximum atoll growth. It is suggested that the upwelling of nutrient-rich sea water from adjacent deep water contributed food to organisms growing on the atoll. In early Wolfcamp time large amounts of clay and silt filled the eastern and northern parts of the Midland Basin. These muds encroached to the south and west, smothering the atoll. The deposition of the Dean sand of Rodin (1950) marks the death of the Horseshoe Atoll.

The investigation of the Horseshoe Atoll was carried on cooperatively by the U. S. Geological Survey and Texas Bureau of Economic Geology from 1949 until 1955. During the early part of the study as many as 8 geologists participated, but the present discussion is based on the work of the authors, who carried the investigation to a conclusion.

NORTHWEST GEOLOGICAL SOCIETY

The election of new officers of the Northwest Geological Society for the year ending September 1957:

President - Floyd L. Johnson
Western Gulf Oil Company
307 Security Building
Olympia, Washington

Secretary - Conrad B. Howard
Shell Oil Company
Union Avenue Building
Olympia, Washington

Treasurer - Marshall T. Huntting
Division of Mines and Geology
Transportation Building
Olympia, Washington

S. E. P. M. ANNUAL DINNER MEETING

Dr. J. J. Galloway will be the speaker at the annual dinner of the S. E. P. M. on Thursday evening, November 8th. The meeting will be held at the Mona Lisa Restaurant across the street from the Ambassador Hotel at 6:30. Tickets for the steak dinner are $3.50 including gratuities. Dr. Galloway's talk "Changing Rulers of the World" should appeal to wives as well as members of S. E. P. M.

REDLANDS ALUMNAE LUNCHEON

The regular annual luncheon for the University of Redlands alumnae and major students of the Department of Geology will be held on Friday, November 9th, at the 8th and Hill Street Mike Lyman's Restaurant. If you plan to attend, contact Dr. Dana or Professor Gros at the A. A. P. G. annual meeting at the Ambassador Hotel by Friday morning, November 9th.

VENTURA BASIN CROSS SECTION

Cenozoic Correlation Section Across the Central Ventura Basin, from the Santa Ynez Fault North of Ojai to the Western edge of the Santa Monica Mts.. Robert H. Paschall, Committee Chairman, of the Ventura Basin Sub-Committee on Cenozoic of Ventura Basin. Available from Joan Baldwin or at A. A. P. G. Convention $1.00 over the counter or $1.10 if mailed.

A.A.P.G. CONVENTION

Mr. Tom Macleod, Bell Petroleum, is in charge of exhibits for the Fall Convention, November 8&9, Ambassador Hotel, Los Angeles. Tom has asked that the P.P.G. announce to all of you who do not plan to be there to change your mind and come. The Convention will be bigger and better than ever this year. In addition to a larger and more convenient display area, Tom has lined up some new exhibitors who will add greatly to the interesting equipment exhibits we have had in the past. A list of the Exhibitors and their Representatives follow:

EXHIBITOR	REPRESENTATIVE
Rapid Blue Print	V. Mosbacher
Geophysical Service	J. Wilson
Baroid	L. Choate
Submarex Corp.	Wm. Rand
Formation Logging	R. Patterson
Johnson Testers	J. Flanagan
Erb & Gray	B. Davis
Lane Wells	C.F. Ludwig
Pacific Towboat & Salv.	Chuck Slocombe
Western Geophysical	--
Engineers Synd.,Ltd.	W. Bilike
United Geophysical	Dr. R. Peterson
Seismograph Serv.	H. Breck
Cook Testers	R.M. Cook
McCullough Tool Co.	W.R. Wiley
Geolograph Serv.	K. Holder
Petroleum Information	G. Goodin
American Paulin	D. Copple
Pacific Log Exch.	L. Knox
Munger Oilogram	A. Munger
Pacific Mud Serv.	Kemp Barley
Flintridge Motors	H. Lindsey
Schlumberger	--
Petroleum Tech.	E. Welday

PERSONAL ITEMS

Jim McDonald, Mort Kline and Don Rogers attempted a weedend climb of Mt. Whitney last month. They were forced to turn back by large bolts of lightning and snow flakes the size of golf balls. However, these intrepid souls marched 20 odd miles through and over snow in one day.

Cleve Bowles of Signal is spending his time in Venezuela at last report.

The A. A. P. G. booth at the A. I. M. E. Convention, October 15th through 17th was very successful. Joan Baldwin, the chairman, would like to give thanks to Betty Herbold, Dorothy Harkness and Martha Gallagher for their very able assistance at the booth.

Monterey is moving to new office space in the Superior Building in November.

The Northwest Geological Society monthly dinner meeting was held at the Poodle Dog Cafe in Tacoma on October 10th. After an excellent chicken dinner the fifty-four in attendance enjoyed movies depicting the development of the Williston Basin.

Grant Valentine, District Geologist, Shell Olympia, is temporarily assigned to the Los Angeles office; Howard Barnes is filling in for him during his absence.

Richfield Oil Corporation will close its Northwest office in Olympia in November; Les Brockett, geologist in charge, will be transferred to Los Angeles.

Al Oestreich, Shell geologist, has been transferred from Olympia to Salt Lake.

Jack Kaboth, landman for Sinclair, Portland, has been transferred to Amarillo, Texas.

Hunting season is in full swing in the Northwest; B. J. Sellers, Lab Technician and C. O. Newell, Geologist, both Shell,Olympia, have each bagged his deer - to say nothing of Newell's 19 grouse to date.

Hank Tomko, Shell geologist, Olympia, very nearly got his deer; he was all ready to fire when a woman ran up and put her arms around the animal. It seems she had raised it from a fawn and it was very tame. If Hank doesn't get his deer soon that tame one had better be wary!

Brad McMichaels, Area Exploration Supervisor, Standard, Seattle, has been transferred to Bakersfield and has been replaced by Doug Hastings of Sacramento.

Bob Knapp, Standard Oil Co of California is spending a month in San Franciso at company expense learning the fine points of restaurant evaluation.

Jim Higgins, Standard Oil Company of California, was enjoying the primitive life while virtually camping out in his new Sunny Hills home. The utility companies finally came through and he is now back to bathing and watching T. V.

Ohio Oil Company, Los Angeles has a new employee, James J. Williams (Jerry) who recently received his M. A. from U. C. L. A.

Dick Hester will soon be leaving for Guatemala on a 4 to 6 months tour of duty in the Peten Jungle which is a Tropical Rain forest 200 miles north of Guatemala City.

Bob Briggs who has been working for the Cal-Tex Oil Co. in Sumatra is back in California on a three months vacation. Bob has been working on a M. A. degree in geology during his vacation. His son Bobby who was born in Sumatra is three years old and speaks the native tongue fluently. It is hoped that Bob will show up for the fall convention.

Lyle Smith reminds us that there will be plenty of floor space for dancing at the fall meeting's dinner dance.

Mel Hill of Western Gulf is leaving California to be director of geologic research at Gulf's Research and Development Lab at Harmarville, Penn.. Bob Johnston is moving from Bakersfield to Los Angeles to replace Mel.

Tony Morris and family left Amman enroute to Bierut and had reached Baghdad at last word. They will proceed to Bierut and will probably wait there until safe to return to Amman.

Bud Sherman has taken a several months leave of absence from Richard S. Rheem in Bakersfield to go to Thailand where he will be engaged in a production and geological survey of that country.

Bill Davidson visited the Los Angeles office after overseeing the drilling and abandonment of Standard's Moonshine Wash well in the Paradox Basin. He was able to spend a week south of the border in addition.

James N. Babcock has resigned from The Texas Co. to enter business in Chicago with his father.

George Harlow, geologist, has joined the staff of Humble, Eugene, Oregon.

Mr. Paul H. (Galivanting) Dudley has just returned from the Philippines, via Australia. Paul spent 13 months on the island of Luzon in the capacity of Consulting Advisor to Philippine Oil Development Company, in regard to geologic exploration in the islands and to the pioneer well, drilled on northern Luzon. After his stint of "dodging Bandidos" on Luzon, he returned to the United States, via Australia where he spent 2 months on another consulting assignment for the Oil Holdings Pty., Ltd., an Australian concern regarding a 650,000 acre concession in the state of Victoria. Paul has several thousand excellent slides of the area and indicated that he might be available for another of his famous "Thursday Noon Travelogues".

Robert Zinke of Monterey's Midland, Texas office is on temporary duty in the Los Angeles office. Bob (a Missouri School of Mines grad.) is living at 6758 Parapet, Lakewood.

Mark Latker of Western Gulf and his bride of two months flew to Mexico City in their plane for a belated two week honeymoon.

Don Ford of Sunray Mid-Continent in Bakersfield had a sweet surprise on the occasion of winning his second consecutive World Series Pool. A group of poor losers had converted the pool into pennies which were placed, prior to delivery, in a large jar of Karo Syrup.

Stewart A. Kessling has been employed as a Junior Geologist by The Texas Company in Santa Paula. Stewart has a M. A. from the University of Southern California.

Warren D. Gillies has been employed by The Texas Company as a Junior Geologist in Santa Maria. Warren has a B. A. from Franklin & Marshall College and a M. A. from University of California at Los Angeles.

Tom Rothwell of Richfield is going to Rensselaer P. I., M. I. T., and Princeton to lecture on the "Paleoecology as applied to Petroleum Geology" in December. He expects to visit with Jack Elam who is an assisstant Professor at Rensselaer.

Jack Morrison of General Petroleum's Ventura office is vacationing at the Grand Canyon.

NURSERY NEWS

Don and Marlie Gillespie, Shell Oil Company of Bakersfield, are the proud parents of twin boys born August 16, 1956. The boys were named Peter William and Matthew Donald.

Western Gulf Oil Company is proud to announce the following additions:

Ed and Joyce Taylor, a boy, Peter Stedfast Taylor, 6 lbs 1 oz., on October 3rd.
Mick and Agnes Lachenbruch adopted a baby boy two weeks ago. Daniel Brian was born Sept. 26th, 8 lbs. 6 oz.
Jim and Marge Wylie, a girl, Robin Alice Wylie,6 lbs. 12 oz., on October 4th.

BIBLIOGRAPHY OF RECENT PUBLICATIONS

SCIENTIFIC PUBLICATIONS - JOURNALS AND BULLETINS

United States Geological Survey

Map I-175 Paleotectonic Map of the Jurassic System, by E. D. McKee and others, with a separate section on Paleogeography by R. W. Imlay. Price $5.00, (20 per cent discount on purchases of two or more copies).

Bulletin 1043-A, "Photogeologic Procedures in Geologic Interpretation and Mapping."

Water Supply Paper 1109, "Ground Water Geology of the Coastal Zones Long Beach - Santa Ana Area, California", by J. F. Poland and others.

Bulletin 1021-H, "Annotated Bibliography of Alaskan Paleozoic Paleontology."

Circular 390, "Index of Surface Water Records to September 30, 1955 - Part 10 - Great Basin".

Oregon - Base Map with Highways, scale 1:500,000.

Topographic Index California, Arizona, and Nevada, new edition.

Division of Mines, State of California

Wildcat Map W-5-2, West Fresno County.

TRADE JOURNALS AND MISCELLANEOUS MAGAZINES

Oil and Gas Journal, October 15, 1956

"New Nuclear Radiation Logging Method". Gilbert Swift & Russell G. Norelius. Page 109.

"Seismic Magnetic Data Processing" R. C. Dunlap, Jr.. Page 127.

"Oakridge Fault Gives Up Pliocene Production", William T. Smith. Page 186.

CALENDAR

November 5, 1956: Mon., 7:00 p.m., Northwest Geological Society, Poodle Dog Cafe in Tacoma "Earthquake Evidence on Crustal Structure in Puget Sound Area" by Professor Frank Neumann, Director, Seismological Station, University of Washington.

November 8, 1956: Thurs., 6:30 p.m., Los Angeles Basin AIME Jr. Petroleum Group, Turf Club, Lakewood Boulevard and Anaheim Telegraph Road, Rivera. "Plunger Lift" by John Stoddard, National Supply Company and "Gas Lift" by Bill Dockeny, Regan Forge and Engineering Co.. Members $3.50, non-members $3.75.

November 8 & 9 PACIFIC SECTION ANNUAL MEETING AND CONVENTION, Ambassador Hotel, Los Angeles, California.

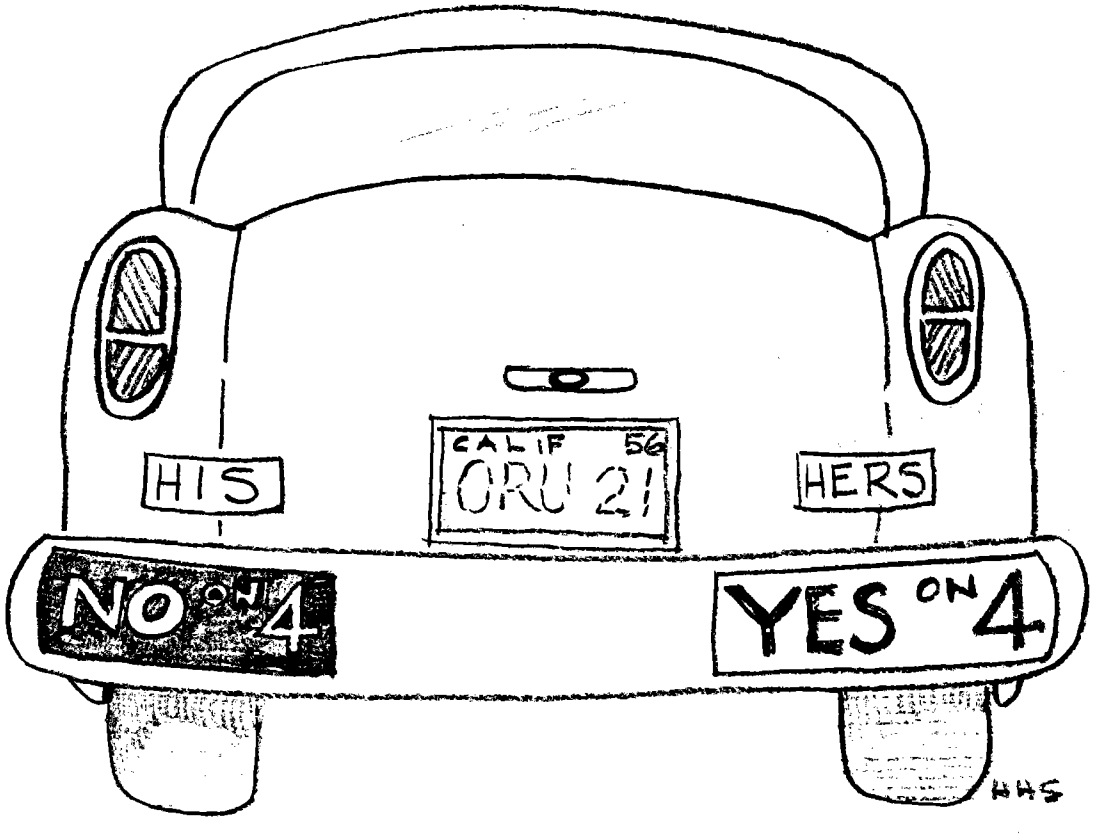
November 19, 1956: Mon., 7:00 p.m., AAPG, General Petroleum Auditorium. Two talks "Timing of Some Oil Accumulation in Southern California" by Frank Parker, Signal Oil and Gas. "Metamorphic and Igneous Rocks of Mojave Desert" by Thane McCullough, University of California at Riverside.

November 20, 1956: Tues., 7:30 p.m., Los Angeles Basin Chapter API, Shell Recreation Hall, Hill and Obispo Streets, Long Beach. "Latest Development in Corrosion Control Technique in Producing Wells". Also slides of foreign operations in Venezuela by Earl Taven, Ken Corporation.

November 26, 1956: Mon., 12:00 noon, AIME Petroleum Forum, Rodger Young Auditorium, 936 West Washington Boulevard, Los Angeles. "Progress in Reservoir Engineering" by Frank G. Miller, Stanford University. $2.25 (tax, tip and parking included).

December 6, 1956: Thurs., 12:00 noon, AAPG Los Angeles Luncheon Meeting. Rodger Young Auditorium, 936 West Washington Boulevard, Los Angeles. "Jordan" by J. B. Anderson of Edwin Pauley. $2.00 including tax, tip and parking.

December 10, 1956: Tues., 7:30 p.m., Sacramento Geological Society, Board Room of Public Works Building, 1120 N Street, Sacramento. "Cretaceous of Julesburg Basin", Dr. Benjamin Burma, California Exploration Co..



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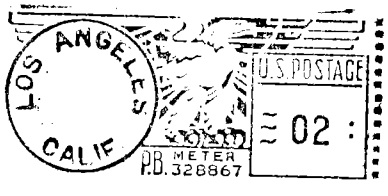

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PACIFIC PETROLEUM GEOLOGIST

NEWS LETTER OF THE PACIFIC SECTION
AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS

Vol. 10 December 1956 No. 12

ASSOCIATION ACTIVITIES

SACRAMENTO GEOLOGICAL SOCIETY MEETING

The October meeting of the Sacramento Geological Society was held Tuesday, October 9, 1956, in Sacramento. The program consisted of a group of three papers.

Dr. William Gardner of the U.S. Bureau of Reclamation, described in some detail the history of the Trinity River project, and some of the problems that have risen since it was first planned. The project was started in 1942 when preliminary dam sites and tunnel locations were examined. As the project progressed, the engineers determined the reservoir capacity would have to be boosted from over 1,000,000 acre feet to over 2,000,000 acre feet. This required a higher dam so that the proposed site had to be re-examined. This examination disclosed that the site had to be moved down stream a short distance.

When money was voted by Congress to start construction on the project, Congress added a sentence, which,when complied with, required a dam to be built on Clear Creek, and the first diversion tunnel was shifted south approximately five or six miles. They have located the tunnel in quartz diorite, but the core holes show the rock to be fractured and surprises are to be expected before the tunnel is completed. Further field work is planned for the Clear Creek dam and the diversion tunnel from the reservoir behind the Clear Creek dam to the Sacramento River.

Anatole Safanov of the Brazos Oil and Gas Company, gave a very interesting and amusing talk on the International Geological Congress held this summer in Mexico City. The Mexican government was a very cordial host and showed the visitors every courtesy. The meeting was held at the campus of the University of Mexico which is very pretty and very functional.

The Russian delegation had about sixty people attending the conference and all of the people were leaders in Geology in the Soviet Union. They had a very impressive display of geologic books and maps and the most impressive being a 12 by 20 foot colored map of the Soviet Union. The entire area had been mapped at least in reconnaissance style.

Dr. Charles Higgins from the Geology Department of the University of California at Davis, gave an illustrated talk on "Wind Abrasion by Particles in Suspension".

Occurrence of anchored ventifacts with faces oblique to inferred average erosive wind direction, with leeward faces inclined more than 16°, and with sharp crestal edges between windward and leeward faces suggests that abrasion was produced chiefly by a stream of suspended or partly suspended particles following local deflections of the wind stream, rather than by impact of undeviating, saltating sand grains. That suspended material might be capable of producing ventifact shapes is suggested by previous studies on wind flow over obstacles.

Consideration of wind-flow deflection suggests that saltating sand grains do not follow straight, inclined downward paths near obstacles, but are more or less deflected with the wind stream over or around the obstacles. Paths of finer particles are deflected more than those of coarser particles and have a correspondingly lower angle of impact on the obstacle surface. Thus source and size distribution of wind-transported abrasive material, more than character of ventifacts, may determine whether abrasion will result largely from low-angle scour by suspended material or from high-angle impact by saltating grains.

The September meeting of the Sacramento Geological Society had Dr. Gordon H. Macdonald talk on "The 1955 Eruption of Kilauea Volcano, Hawaii." The talk was accompanied by colored movies of the eruption. The night scenes of the lava cones were beautiful. An abstract of the talk given by Dr. Macdonald follows:

A flank eruption of Kilauea began in east Puna on February 28,1955, from vents along the east rift zone of the volcano. It was the first eruption in that area since 1840. The eruption was preceded by several months of earthquakes, gradually increasing in number to several hundred a day just before the outbreak. The initial vents vents remained active only 28 hours. On March 1, lava activity was replaced by steam clouds and mild phreatic explosions.

On March 2nd a new series of earthquakes accompanied the opening of fissures and formation of fault scarps across the Kapoho road. Lava broke out of these cracks near Puu Kii at 2:15 p.m., and through the afternoon avtivity spread eastward. Evacuation of Kapoho village commenced on February 28 and was completed by March 3rd, during the evening of which lava erupted in the edge of the village and several houses were destroyed. The lava fountains near Puu Kii reached heights of 600 to 800 feet on March 4th and 5th and a flow from them crossed the beach road. Activity ceased on March 6th.

On March 6th a new series of earthquakes commenced, originating near the Kalapana road, and a probable outbreak in that area was predicted. On March 12th lava broke out near Puu Kaliu, and on the 13th new vents formed near and across the Kalapana road. A lava flow entered the ocean on March 16th and on the same day new vents developed half a mile southwest of the Kalapana road. Other flows entered the sea on March 28 and April 2nd.

Activity ceased on April 7th but resumed weakly on April 24th. A strong resurgence occurred on May 16th, and new flows destroyed a village on May 19th and 26th. The eruption ended abruptly on May 26th.

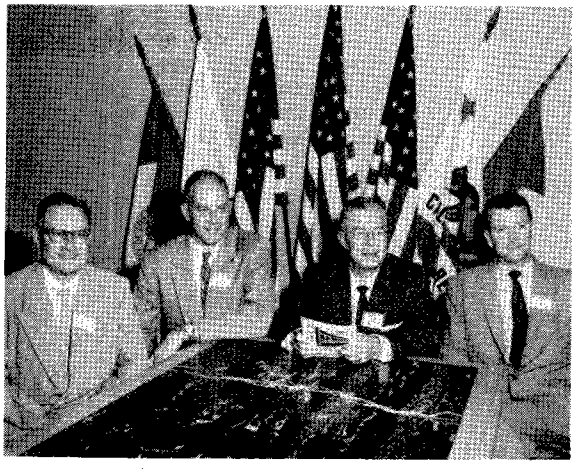
The volume of eropted material was approximately 120,000,000 cubic yards. The flows covered an area of about 3900 acres, of which 1100 acres was under cultivation. Approximately 6.3 miles of public road and many miles of canefield roads were buried and 21 houses were destroyed.

NEXT DEADLINE DECEMBER 28

NEWLY ELECTED PACIFIC SECTION OFFICERS

After an eventful and very successful tour of duty as President of the Pacific Section of the A.A.P.G., Mr. Mason Hill smilingly hands the traditional gavel to his successor, Mr. Harvey Lee, Union Oil Company. (above)

President Lee is shown below with his staff of newly-elected officers at the recent Convention held at the Ambassador Hotel, Los Angeles. From left to right they are: Aden Hughes-Secretary, Bob Kelly- Vice President, President Lee and Bill Kennett- Treasurer. The staff of the P.P.G. joins the other members of the Pacific Section in thanking Past President Hill and his fellow officers for their labors during the past year and to extend to President Lee and his officers'congratulations an best wishes for a successful reign.



ANNUAL HOLIDAY DINNER DANCE

The 5th Annual Holiday Dinner Dance was held on December 1st at the Oakmont Country Club, Glendale. This was by far the largest turnout of exploration men and their wives yet and it is rapidly becoming famous as one of the most gay and festive affairs of the year. The activities were started by a lovely cocktail party that was sponsored by the company listed below. After the cocktails an excellent meal was followed by dancing to the music of Manny Harmon's orchestra. The evening was considered to be a great success by all and the memberships of the Pacific Section of the AAPG and the SEG and SEPM wish especially to thank the following listed companies for their contributions which made the cocktail party such a huge success:

Baroid Well Logging Service
Fairchild Aerial Surveys
Formation Logging Service Company
Geophysical Service, Inc.
Halliburton Electric Well Service
Homco Inc. of California
Johnston Testers,Inc.
Lane Wells Company
Mardril, Inc.
McCullough Tool Company
Pacific Mud Company
Petroleum Information
Rapid Blue Print
Robert H. Ray Company
Schlumberger Well Surveying Corp.
United Geophysical Corporation
Western Geophysical Company

PERSONAL ITEMS

Paul McGovney, Honolulu Oil Corp., Calgary, Canada, wishes to announce the removal of Honolulu's offices to 320 7th Ave. West.

Tony Morris, former Activities Editor of the PPG, reports that transportation between Amman, Jordan, and Beirut remains difficult but that he and the geophysical crews working for Edwin W. Pauley are back in Amman for the nonce.

Red Pope, Standard Oil, has been transferred to Ojai to become coastal division scout. He is replacing Mickey McKnight who will concentrate his efforts in the Los Angeles basin.

Mandy Touring, Humble geologist, Eugene, Oregon, will be leaving soon for a four-month training course in Los Angeles.

Vince Finch, Shell Exploration Manager, Seattle, has just returned from a hunting trip to eastern Washington, Montana, and north of Calgary, Canada. While he did get a few birds he still has his deer tags which he will sell cheap.

Some of the Northwest personnel attending the A.A.P.G. meeting in Los Angeles were Mandy Touring and George Harlow, Humble, Eugene, Oregon; Doug Hastings and Chuck Kirschner, Standard, Seattle; C. D. Johnson and N. L. Johnson, Sinclair, Portland; Grant Valentine, Shell, Olympia; and Floyd Johnson, Western Gulf, Olympia.

Red Pope, Standard Oil scout from Ojai has finally moved his family from Salt Lake. Will this change affect the evening activities at the Wagon Wheel?

Frank Hornkohl, President of Hornkohl Laboratories, Bakersfield, was recently elected Governor of Rotary International District 542 at the district conference at Santa Barbara.

Glenn Shepherd, formerly with W. T. Woodward in Taft is joining the Martin, Sykes & Associates in Caracas, Venezuela.

Mack Robinson, Shell Oil Company geologist, has been transferred from the Alaska District, Seattle, to Bakersfield, California.

Bob Hacker, formerly of Union in Santa Paula, has become a new employee with Lloyd Corporation in Los Angeles.

Bill Broomfield, Richfield land man, has set up a land office for Richfield in the Upper Ojai. Bill was formerly in Los Angeles.

Jerry Rickels, Union Oil Company, has been transferred from Santa Paula to Los Angeles. Jerry will join the offshore operations.

Ed Hafer, Union, has been transferred from Santa Fe Springs to Santa Paula.

Warren Gillies, U.C.L.A. graduate, is a new employee for The Texas Company in Santa Maria.

Dick Lyons, California at Berkeley, is a new hire of Union in Santa Paula.

Wayne Felts, The Texas Company geologist, Los Angeles, was a recent visitor to their Olympia office.

'Kaz' Pachopien, Union in Santa Paula, is on the verge of gaining his U.S. citizenship. Congratulations are certainly in order for Kaz.

John Gates, Western Gulf, Ventura, has just left for New Orleans to attend the S. E.G. convention.

Bill Hughes, The Texas Company, Santa Maria, is spending his evenings polishing his newly-acquired gold cup. Seems Bill is quite an authority on baseball and at recent meeting of the Santa Maria Toastmasters' Club, he won the gold cup for his treatise on baseball.

George Quick, formerly of Union Oil Company in New Mexico and Arizona, has joined the staff of Ross Cabeen in Los Angeles.

Hal Lian, Union, Santa Paula, has just moved into his new house in Ventura.

Leo Wanek and family, of General Petroleum, have returned to Sacramento after the summer in Nevada. Leo now has a trailer for sale. It made good living while working in Nevada, but now he desires the room of a house.

Dick Zingula, Humble, Chico, has returned to L.S.U. to get his doctorate.

Bob Teitsworth, Amerada, departed for Ft. Ord, October 7th, 1956 to start his 6 months Army training.

Richard Roland of Ohio was transferred to Coalinga November 12th.

Dick Clawson of Standard has once again been transferred, this time to the Bakersfield office.

Ben Rathwell made good his boast that he was coming to Los Angeles during the convention to get some of the Southern California domino money. Confirm by asking Roy Barnes or Frank Minshall.

Jerry Knowles has left the warm environ of Los Angeles for the clear, cold climes of Nevada.

Pete Hall, Richfield, Ojai, has moved onto his big new ranch in the Upper Ojai Valley. Pet's 40 acres are covered with apricots, grapes, and almonds.

John Woffington, landman for Tidewater in Ventura, is about to leave for Bakersfield. Wally Austin from Bakersfield, will replace John in Ventura.

Tom Benson, The Texas Company, Santa Maria, has become so adroit with his attempts at spray painting that he is about to paint his Austin Healey a two-tone puce and Chartreuse.

Rod Colvin, General Petroleum, Santa Maria, also a well-known painter of the house variety, has inadvertently achieved some very dramatic effects with his recent painting venture. It seems Rod's daughter decided that sand thrown on the fresh paint would look good. Amazingly, it did, and now Rod is grabbing full credit for it himself.

Alex Sarad, Tidewater Oil Company in Ventura, is leaving the Coastal area and scouting, to work in the Land Department in Bakersfield.

R. N. (Bob) Critchlow, U.C.L.A., is a new employee of the Honolulu Oil Corp., after spending a week at Santa Barbara, he was transferred to Bakersfield, where he now resides.

Newly elected officers of the San Joaquin Geological Society are:

President: Tom Wilson, Ohio Oil Company
Vice-Pres: U. L. Vander Hoof, Intex Oil Co.
Sect-Trea: Jack Clare, Superior Oil Company

Grant Valentine, District Geologist, Shell Oil Company, Olympia, has returned from a two-month stint in Los Angeles and appears to have survived the smog and night life without noticeable effect.

Dick Hester of Signal has arrived in the bush of Guatemala. He is enjoying the hardships of field exploration such as being a guest at a fiesta celebrating the marriage of the mayor's daughter at one of the local towns.

Lyle Smith of Shell has been sent to Bakersfield to temporarily replace Walt Stokesbary who is in Texas for a training course.

Don Greenlee, also of Shell is in Los Angeles to replace Lyle.

Jim Cowell, Ventura, is also with Walt on the training course in Texas.

Don Herring, Senior Geologist of The Texas Company, is spending six months on special assignment at the Houston office.

Les Brockett, of Richfield, returned from Washington after closing the Olympia office and is now working in Long Beach.

Despite the problems of squatters, union welfare funds, etc. it appears as though (contractor) Oscar Wesser of Standard Oil will complete his apartment house sometime before the first of the year.

Do it yourself Joe (Switzer) is recovering from bruises received when his 6 horsepower Roto tiller backed him through a fence.

Errata: Gordon B. Oakeshott, Deputy Chief, Division of Mines, dropped the staff a card to report that "Wildcat Map W-5-2, west Fresno County," was incorrectly reported to have been the responsibility of the Division of Mines. He further adds that Division of Oil and Gas Supervisor, Ed Musser, would probably appreciate credit for this map, since it was published by his Division. Thanks much, Gordon, and we are real sorry we made this mistake. Our apologies, Ed.

CALENDAR

AAPG FORUM- No December Meeting

AIME PETROLEUM FORUM- No December Meeting

December 11, 1956: Tues., 6:30 pm, Branner Club Dinner, Athenaeum, Cal.Tech., Speaker- Martin R. Huberty, Chairman of Irrigation and Soils, U.C.L.A. will speak on "Water Resources of the Western United States and Some Plans for their Development". $3.00 Please notify Harold Sullwold, Jr., Geology Dept., U.C.L.A. if you plan to attend.

December 13, 1956: Thurs., 12:00 noon, SEG Luncheon, Biltmore Hotel, Los Angeles. "Development and Interpretation of Aerial Radioactivity Surveys with Respect to Uranium and Some California Oil Fields. $2,00 incl. tax and tip.

December 13, 1956: Thurs., 6:30 pm , Los Angeles Basin AIME Jr. Petroleum Group, Turf Club, Anaheim Telegraph Road and Lakewood Blvd., Rivera, Calif. "Mud Logging" by Bob Patterson, Formation Logging Service Co., and Hal Case, Core Lab. Members $3.50, non-members $3.75, incl. tax, tip, and parking.

December 14, 1956: Fri., 8:30 pm, Petroleum Wives Club of Sacramento. Buffet Dinner Dance. Park Terrace Swimming and Tennis Club, Sacramento, California. All petroleum personnel are invited. For reservations contact Mrs. J.C. Cunningham, Iv- 73191.

January 10, 1956: SEG Luncheon Meeting. SEG Distinguished Lecturer John Murrell, De Golyer and Mc Naughton, "Where is Tomorrows Oil Coming From?" This will be a Joint Meeting with the AAPG.

PACIFIC PETROLEUM GEOLOGIST
PACIFIC SECTION, A.A.P.G.
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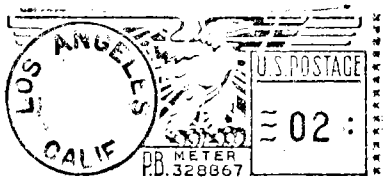

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Form 3547 Requested