

PACIFIC PETROLEUM GEOLOGIST

1959

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 "Sedimentology and Oceanography of Mexican Coastal Lagoons" By Dr. Fred Phleger
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 By B. L. Conrey
 "Antarctic" By Rev. Daniel Linehan, S.J.
- August "Cretaceous Stratigraph and Nomenclature in California" Dr. W. P. Popenoe
- October "Sedimentary Basins of The Netherlands and the History of Dutch Reclamation
 of Sea Floor and Lake Bottom Lands" By Dr. Anthony Pannekoek
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 "Sediments and Marine Life Of Monterey Bay, California" By Edwin H. Stinemeyer
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 "Depletion" ? By Mr. Hiestand

PACIFIC PETROLEUM GEOLOGIST

Part 2

NEWS LETTER OF THE PACIFIC SECTION AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS

ASSOCIATION ACTIVITIES

Vol. 13

January, 1959

No. 1

FORUM MEETING

It was a rewarding evening for those attending the November Forum meeting in Los Angeles at which Art Huey, of Hancock Oil Company, presented "Oil and Views of Venezuela". A well organized presentation described the oil basins of Venezuela with particular reference to the geology of the Maracaibo basin which produces 70 percent of Venezuela's oil.

Venezuela produces about 2,700,000 barrels per day, almost three times California's rate, and about 90 percent of all the production for South America. Venezuela ranks number one among the oil-exporting nations of the world.

All mineral rights under land or water belong to the government. About 16 million acres are presently under lease to private oil companies. There are two types of concessions granted. Exploration concessions are good for three years, at the end of which time up to 1/2 of the acreage may be retained by converting to exploitation. Exploitation concessions are for forty-year terms. There are no drilling requirements, but generally a company will have bid enough millions in bonus to obtain a concession so that the economic incentive to drill is fulfilled. The basic royalty is 16-2/3 percent or higher, but profits are taxed so that the government nets 50 percent or higher. During 1956 and 1957 the government awarded 89 new concessions totalling over 2 million acres for a total take of 685 million dollars. The top price of \$2800 per acre was paid by Superior for some choice acreage in Lake Maracaibo. The blue-chip concessions in the lake have already rewarded most of the venturesome companies. Among the newcomers Superior is now producing 65,000 barrels per day, the Sun group is averaging about 30,000 b/d, and the Signal group is producing 17,000 b/d.

Oil occurs in a variety of types of traps in the Maracaibo basin. The Bolivar Coastal fields, which extend along the east shore for a distance of 50 miles, produce principally from Miocene sands in a homoclinal section under conditions of stratigraphic trapping. The big central lake accumulations are in fault-traps involved in a north-south trending arch and producing from upper and lower Eocene sands under an important basal Miocene unconformity. The west side fields produce from fractured Cretaceous limestone and basement rocks in faulted asymmetric anticlines.

Most of the talk was built around a fine set of color slides showing oil operations in Lake Maracaibo, scenic views of Caracas, and the picturesque Dutch island of Curacao where Shell has a large refinery.

NOTICE

The annual dues of the Pacific Section of the AAPG are the only dependable form of revenue we receive each year. From approximately 1200 members we receive about \$3,000 with the present dues of \$2.50. The Pacific Petroleum Geologist Newsletter, which provides absolutely no income and cost about \$4,200 in 1958, is the major financial burden of the Pacific Section. The steadily increasing cost of publication will necessarily result in either an increase in the annual dues or a decrease in the number of issues of the Pacific Petroleum Geologist per year.

PALEONTOLOGICAL BIOSTRATIGRAPHY SEMINAR

Dr. Fred Phleger and Dr. Gifford Ewing, both with Scripps Institute at La Jolla, spoke at the December meeting of the Seminar at Bakersfield College. The title of their talk was "Sedimentology and Oceanography of Mexican Coastal Lagoons".

Dr. Phleger discussed the physical aspects, depositional environments and origin of three lagoons located about half way down the west shore of Baja California. The largest of these, Scammon Lagoon, was described in the greatest detail. The area is extremely arid. Steep-sided sand dunes border the lagoons, and salt beds are being deposited in back of the low barrier of sand. One of the characteristic features of the tidal flats is the algal pads covering large barren areas next to the salicornia growth. The lagoon channels are steep-sided and as deep as 40'. The tidal range in the lagoons is 7-1/2' with tidal velocities at the channel entrances up to 3 knots. The fine sand forming the barrier reef is 95 percent quartz. The waves wash the sand onto the beaches, and the prevailing winds carry it inland and form dunes. Because of the arid climate, the water in the upper reaches of the lagoon and tidal flats is more saline than normal ocean water. The sand barrier is believed to have been built on a low, shallow strand area of older rocks and has subsequently been built up with the rise in sea level. The foraminifera living in the various environments of the lagoons were found to be of specialized types and characteristic of these conditions the world over.

Dr. Ewing, who assisted Dr. Phleger and piloted the Grumman Widgeon used in the lagoon studies, spoke briefly on the importance of rare flash floods which may not occur more than once in a hundred years but make important changes in the landscape. He also

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PACIFIC PETROLEUM GEOLOGIST

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Editor	Thomas R. O'Neill
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Activities	Warren O. Addicott
Personal Items	Bill C. Osborn
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NEXT DEADLINE JANUARY 30, 1959

pointed out that a large fresh water lake may have existed in the Salton Sink in the past as evidenced by the large Indian population once living on its shores. A carbon 14 determination indicated the possibility of a lake as recent as 300 years ago.

A series of very interesting slides and movies were used to illustrate the lecture.

Plans are being made to publish the results of this investigation.

NOTICE

For general information the following is the membership requirements as appears in the Constitution of the American Association of Petroleum Geologists.

Any person having qualified and been accepted as a candidate for a master's or higher degree in geology by a reputable institution of collegiate or university standing is eligible to junior membership, provided at the time of his application for membership he shall be engaged in geological studies or teaching in an institution of collegiate or university standing, or shall be engaged in petroleum exploration or geological research. One or more years of experience in petroleum geology or in the application of geology to problems involving exploration, development, research, or other phases of petroleum technology may be considered in lieu of complete fulfillment of the scholastic requirements.

SAN JOAQUIN GEOLOGICAL SOCIETY

Members of the San Joaquin Geological Society turned out en masse at the El Tejon Hotel in Bakersfield to hear Karl F. Dalmus, distinguished lecturer for the A.A.P.G., give his talk on "Mechanics of Basin Evolution and its Relation to the Habitat of Oil". Mr. Dalmus' paper was summarized in last month's issue of the "Newsletter".

NOTICE

The following are Committee Chairmen for 1959, Pacific Section, American Association of Petroleum Geologists:

Forum Chairman: Thomas J. Newbill

Distinguished Lecture Chairman: Frank B. Carter

Projectionist: John C. Kirkpatrick

Alternates: John H. Van Amringe
Robyn L. Badger

Publicity Chairman: Harrison C. Jamison

Picnic Chairman: Richard D. Stewart

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Chairman of Committee on Ladies Participation: Elizabeth J. Johnston

Pacific Cross Section Chairman: Kenneth F. Krammes

Christmas Dance Chairman - 1958: Dick Haines

Christmas Dance Chairman - 1959: George H. Feister

Luncheon Speakers Program: Irving Schwade

Local Geological Society Employment Counseling Committee: To be appointed

Boy Scouts Program: Ben C. Lupton

Finance Counselor at Summer Camps:

(Note: These two Committees have been combined)

Subcommittee on Basement Rocks: Tennant J. Brooks

S.E.P.M. OFFICERS

Newly elected officers of the Pacific Coast Section of the S.E.P.M. are Charles W. Cary of Union Oil, president, and Alvin A. Almgren with Superior is secretary-treasurer.

We are informed that a very interesting spring field trip is being planned in the Boulder Creek area of the Santa Cruz Mountains, so watch for further announcements.

COAST GEOLOGICAL SOCIETY

Karl F. Dallmus, A.A.P.G. distinguished lecturer and former Chief Research Geologist of Creole Petroleum Corporation spoke before the Coast Geological Society monthly dinner meeting on December 5. The abstract of his paper on "Mechanics of Basin Evolution and its Relation to the Habitat of Oil in the Basin" appeared in the December Pacific Petroleum Geologists Newsletter.

NOTICE

The Coast Geological Society has elected officers for 1959. They are:

President - Arthur A. Weller (Shell)
 Vice-President - Donald A. Henriksen
 (Richfield)
 Secretary - Carroll Hoyt (General
 Petroleum)
 Treasurer - Andrew Vidos (Newhall
 Land and Farming Co)

For the San Joaquin Geological Society

President - Thomas A Roy (Ohio)
 Vice-President - B.G. Winter (Superior)
 Sec'ty-Treas. - Lee K Jordan (Kern Oil)

PERSONAL ITEMS

It seems that Henry Clark, General Petroleum's Bakersfield scout, has hit a new low in scouting techniques when he was recently seen at the Geological Society luncheon table pumping Don Davis' son for all he was worth. It appears that Don and son had just returned from Artnell's well in the Vallecitos area and Henry wasn't missing any bets.

Kenny Krammes, with Intex in Bakersfield, is on a six-week vacation trip to New Zealand where he did geological exploration work many years ago.

Fred G. Knight is Ohio's new District Geologist in Bakersfield. Fred, his wife, Rosalou, and two children were transferred here from Lafayette, Louisiana.

Dave Shoemaker is back in the fold at Shell's Bakersfield office after a two months' stay in the Los Angeles office.

Shell's Christmas party at Shell Park on the Kern River was a roaring success as far as all the children were concerned, but the grownups spent several anxious minutes waiting for Santa to arrive. It seems he got lost on the way down from the North Pole and landed at Hart Park, which is directly across the river from Shell Park.

The state of single blessedness was dealt one of its more serious blows when Warren Hagist (Superior's aging bachelor) was married to Marjorie Burke, on December 6 at the Santa Barbara Mission. His friends are waiting eagerly to see how he ranks skiing and marriage after accumulating some experience with the latter.

For sale, cheap: one pair of Head skis and accessories. See Warren Hagist, Superior, Los Angeles.

The Bob Schupps, Shell, Durango, Colorado, are vacationing in sunny California during the holidays. We hope Bob bet on the right horse at Santa Anita.

The Standard Gang in Seattle had a Christmas party on December 12, and a good time was had by all.

The Linn County Oil Development Barr #1 in Oregon must have caused quite a stir in the oil business as there were twenty different representatives present. George Webb and Jack Barr (no connection) of Standard, Seattle, must have been misinformed because they arrived a day late for formation tests.

Humble geologist, John Beeson, Eugene, transferred to Los Angeles. The flying weather is pretty smoggy, John!

Humble scout, Dick Vivion, became part of the floor show when he arrived late at the recent opening of the Olympia Elk's Club.

Shell scout, Ivor McCray, Olympia, will be a Seattle resident the first of the year; the bachelors in Seattle can expect some real competition now.

The Schindlers, Shell, Bakersfield, stopped in Olympia on vacation to show off their new arrival to their friends; Stan no longer feels that a VW is a family car.

Shell Northwest Division had a bang-up Xmas party, and the floor show was provided by Bob Elder with his impersonation of a gal getting up in the morning.

Peder Grimstad, Shell, Olympia, planned to help Santa during his stay in Alaska over the holidays at Humble-Shell Bear Creek #1.

The following Tidewater personnel have transferred from San Francisco to the shiny new office on Wilshire Boulevard:

H. H. Neel, Manager of Foreign Exploration
 J. B. Maebius, Senior Geologist
 W. S. Knouse, Staff Geologist
 Robert Dyk, Chief Geologist

The following Tidewater Western Division personnel were transferred to Los Angeles:

F. H. Wilson, Divisional Exploration Mgr.
 A. S. (Ike) Holston, Division Geologist
 H. H. Nixon, Staff Geologist.

Stan Siegfus and Robert Scott moved from the Pacific Electric Building to the new Wilshire office.

Tom Barrow, of Humble, Los Angeles, has been transferred to Houston as Staff Geologist. John Frich, presently District Geologist in Chico, will take over Tom's job as Area Exploration Geologist in Los Angeles. Abe Phillips, from the Houston office, will take over in Chico. J. R. Jackson is returning to Los Angeles after a five-year absence, and will be the Assistant Area Geologist in Los Angeles.

Howard Level of Union's Santa Paula office has considerable spare time now that he no longer manages weekly football pools.

Jim Eke, paleontologist and Bob Carlson, geologist, both of Union's Orcutt office, have been transferred to Bakersfield.

Don Henrikson, Richfield's Ojai office, after a quiet trip to Oregon spent Thanksgiving holidays with his family in San Francisco.

Ivor McCray, with Shell in Olympia, changed from field clothes to tails and presented his sister to society recently at Beverly Hills.

John Griffiths, with Shell in Olympia, is building a boat in a lower floor room of his house. When completed, John will have the famous problem of making the boat narrower, or the door frame wider.

Roy Farnsworth, with Shell in Los Angeles, has found a new route from his home in Whittier to the Los Angeles office. Roy uses a DOG map of the Montebello oil field, and, by devious roads and more mileage, avoids traffic and stop signs.

Doyle Graves, formerly with Union in Los Angeles, is now on special assignment with Union in Caracas, Venezuela. His family has joined him and they can be reached at: Apartado #10,664, Sabana Grande, Caracas, Venezuela.

Dave Martin, a recent U.C.L.A. graduate who has been doing summer field work in Alaska for General Petroleum, has now been assigned to the Bakersfield office to thaw out.

The recent Central California Oil Scouts Association annual Christmas party, under the able direction of Les Herndon, Pat Wright, Jim Miller, Barney Barnard, Ken Jensen, Ray Alexander and many others, produced numerous amusing incidents; but everyone's memory is apparently too hazy to recall or else they are too fearful of reprisals to report them.

John Reckamp, formerly in Bakersfield with Western Gulf, reports from Turkey that his taste for adventure has dimmed somewhat since being overturned by his Turkish jeep driver and held at gunpoint by bandits hiding out in the hills.

Jesse Parsons, Texas Company in Bakersfield, has been waiting impatiently for two years to get a new company car. He recently came back from vacation to find that they had traded in two old cars, one of which was his, for only one new one. Guess who missed out! The reason given for the shortchange was there is no resale value to a Parsonized car.

A recent survey at the Bakersfield office of The Texas Company revealed that all Cal Tech graduates carry moth-infested pinch purses. The theory was almost discarded when Paul Harris arrived without pinch purse, but it was soon discovered that the only reason he didn't have one was because Schlumberger had not sent him one, free. Send additional statistics on this important research program to Bill Bedford.

It has been announced that J. P. Wagner is the new golf champ for the San Joaquin Valley Division of Union Oil.

It has been reported that Cutler Webster, with Honolulu in Bakersfield, has graduated from shooting and eating robins, since he managed to bag a domestic goose on his last duck hunt.

The Standard Oil exploration group, with wives, and guests, had their annual Christmas party at the Bakersfield Elk's Club recently. Carl Helm, Jr., was chairman of the affair and George Starke took charge of the Budweiser keg.

Don Bruce, D.O.G. in Santa Maria, has been transferred to Woodland.

R. G. Menard and Jack Leach, with Sunray in Los Angeles, are becoming famous, due to their appearance in various trade journals reporting on Sunray's desert minerals program. Any TV offers from "Death Valley Days"?

Les Roth, with Amerada in Los Angeles, reports that the skiing at Alta was poor, but the sheeing magnificent. Can it be true that airline stewardesses are as friendly on the ground as in the air?

Bob Jennings, of Amerada's Los Angeles office, spent his vacation in the Bay area with his family. His subsequent off-again on-again office schedule suggests a slow readjustment to the working life.

Ray Pearson, with Richfield in Los Angeles, will be a weekly commuter from Bakersfield until he can find a house in Los Angeles which is near the beach, out of the smog, close to the office, and has no traffic problem. If you find your house, Ray, please let us know.

Harry Jamison, with Richfield in Los Angeles, recently visited Richfield's Caspar office. He reports that John Wiese's new T-Bird has been garaged since the day of its purchase, which exactly coincided with the arrival of the first heavy snows. Don't be bitter, John; the snow will be gone by mid-May.

Tom Rothwell, Regional Paleontologist for Richfield in Long Beach, discovered that it was possible to lower a sail while raising it. This contradictory situation can be achieved if your sailboat is upside down in Newport Bay.

Mark (could you please speak a little louder?) Latker, with Western Gulf in Ventura, returned from a flying trip to Puerto Vallarta, Mexico, with a keener appreciation of tropical fungi.

Reports from Anchorage reveal that local geologists are groaning about the long-before-dawn to long-after-sunset working hours. Further investigation determines that daylight is about four hours long at this season, from 10 A.M. to 2 P.M.

Ottmar F. Kotick is now offering consultation on Alaskan petroleum matters at 1382 Wright Avenue, in Sunnysvale, California.

The NEWSLETTER received an inquiry as to whether the new Pacific Section Treasurer owns a necktie. We feel sure that - well, er, does anybody know the answer to this question?

C. J. Blom, geologist with Standard in Ventura, is being transferred to La Habra.

W. G. McCombs, ex Seaboard scout, has been transferred to the Texas Co Ventura office. He replaces Ralph Carver who was moved to Long Beach.

Jeff Jefferys, Shell in Ventura, thinks he will buy a new car. After checking them all out Nash came out on top because of well, it's pretty clear.

Carroll Hoyt, General Petroleum's Ventura scout, has decided to take his wife along on all out-of-town functions. This keeps him from evil companions and on the straight and narrow.

Jerry Long, Signal Oil and Gas, has been transferred to Ventura as their new Coastal Division scout.

Dick Lyon, Union in Santa Paula, took a Boy Scout group into the desert for Thanksgiving

holidays. The temperature was low but not as low as in the 49th State so Dick didn't complain.

With all the transfers occurring in the Ventura Basin, "Dirty Ernie Bush", the used car dealer, has now entered the real estate appraisal business.

Don Hagen, Bill Cass, Ed Hudson, and Sam Brown all of T. T. Co., have been seen passing in and out of the Ventura Basin.

Roy Turner, Intex in Ventura, spent a wild vacation visiting his wife's relatives in San Francisco.

NURSERY ITEMS

George and Adrienne Rudkin, with Ohio in Bakersfield, just had their second boy on November 22. His name is George Thomas and he weighed 8 lbs., 5 oz.

Gene Tripp and his wife, Marge, have welcomed a new girl into their household. Paula Giselle was born on November 26, and weighed 7 lbs., 14 oz. Gene is with The Texas Company in Bakersfield.

Harry Williams and his wife, Alpha, received their new Christmas present on December 19. John Leo weighed in at 9 lbs., 15 oz. This is the second boy for the Williams'. Harry is Shell's Bakersfield scout.

Nick and Joan Nixon, Tidewater in Los Angeles, added an 8 lb. 11 oz. daughter named Eileen Marie to their household on November 6. No one in the Nixon family was quite sure whether the new addition would arrive in San Francisco, Los Angeles, or along the way, since Nick was involved in the big TWA move.

CALENDAR

January 8, 1959: Thursday 12 Noon, SEG Luncheon Meeting, Roger Young Auditorium, 936 West Washington Boulevard, Los Angeles, "Oil Exploration in Turkey", Dr. Ekrem Goksu, Professor of Geology, University of Ankara.

January 8, 1959: Thursday, 12 Noon, AAPG Luncheon Meeting. Roger Young Auditorium, 936 West Washington Boulevard, Los Angeles, Mr. Max Birkhauser, Shell Oil Company, will present an illustrated talk on "Possible Petroleum Provinces in Alaska". The talk will be followed by a Humble Oil Co. sound movie titled "Operations Alaska".

January 13, 1959: Tuesday, 7:30 PM Sacramento Geological Society regular monthly meeting, Board Room of Public Works Building, 1120 N. Street, Sacramento, California. Speaker to be announced.

January 13, 1959: Tuesday, 7:30 PM, Coast Geological Society Dinner Meeting, Miramar Hotel, Santa Barbara, California. Dr. Ekram Goksu will speak on "Geology and Sedimentary Basins of Turkey". Emphasis will be on petroleum geology.

CORRECTION Contrary to the announcement at the December 5th meeting, the Coast Geological Society mixed meeting is planned for February, not January.

January 14, 1959: Wednesday, 6:30 PM, Dinner Meeting of the Junior Group, Society of Petroleum Engineers, A.I.M.E., Candlewood Country Club, 14000 Telegraph Road, Whittier, California. "Standard-Humble Summerland Platform No. 1", Mr. William Fischer, Standard Oil Co. A 30 minute color movie will be shown.

January 16, 1959: Friday, 6:00 PM, Dinner Meeting, Northwest Geological Society, Poodle Dog Cafe, Fife, Washington. "Natural Gas in Pacific Northwest", by Robert B. Sheppard, Superintendent, Industrial Gas Sales for Pacific Northwest Pipe Line.

January 19, 1959: Monday, 7:00 PM, AAPG Forum Meeting, Union Oil Center Auditorium, Boylston Street between 4th and 5th Streets, Los Angeles, "Problems of Fault Nomenclature"; to be presented in two parts, Part I "Basic Concepts", Dr. John C. Crowell, U.C.L.A., Part II "Proposal for a Dual Classification", Mason L. Hill, Richfield Oil Corp.

January 20, 1959: Tuesday, 8:00 PM, A.P.I., Los Angeles Basin Chapters, Shell Recreation Hall, 2080 Obispo Avenue, Long Beach, "Standard-Humble Summerland Platform No. 1", Mr. Dave Goodwill, Standard Oil Co., a 30 Minute color movie will be shown.

January 20, 1959: Tuesday, 6:30 PM, San Joaquin Geological Society Dinner Meeting, El Tejon Hotel, Bakersfield. "Theoretical and Practical Considerations of Lateral Faulting", Dr. R. F. Walters, Humble Oil and Refining Company.

January 26, 1959: Monday, 12 Noon, A.I.M.E. Petroleum Forum Luncheon, Roger Young Auditorium, 936 West Washington Boulevard, Los Angeles. "Oil Exploration in the Arctic", Mr. Gene Davis, Monterey Oil Co.

February 2, 1959: Monday, 7:30 PM, Bakersfield College Paleontological Biostratigraphy Seminar, Room 56, Science and Engineering Building, "Mesozoic Vertebrates in California and Nevada," Dr. Charles Camp, U.C.

February 5, 1959: Thursday, 12 Noon, AAPG Luncheon Meeting, Roger Young Auditorium, 936 West Washington Boulevard, Los Angeles, Tentative program: "Oil Fields on Demand, Through Nuclear Energy", Mr. Manley L. Natland, Richfield Oil Corp.

BIBLIOGRAPHY OF RECENT PUBLICATIONS

United States Geological Survey

- | | |
|------------------|---|
| Bulletin 1000-H: | Geochemical prospecting studies in the Bullwacker mine area, Eureka district, Nevada, by Alfred T. Miesch & Thomas B. Nolan. \$1.15 |
| Bulletin 1042-R: | Geology of the Ord mine, Mazatzal Mountains quick-silver district, Arizona, by John N. Faick. \$1.00 |
| Bulletin 1053: | Geology and coal resources of the Centralia-Chehalis district, Washington, by |

- Parke D. Snavelly, Jr.,
R. D. Brown, Jr., Albert
E. Roberts, and W. W. Rau,
with a section on micro-
scopical character of
Centralia-Chehalis coal,
by J. M. Schopf. \$2.25
- Bulletin 1061-D: Quaternary geology of
Boulder Mountain, Aquarius
Plateau, Utah, by Richard
F. Flint and Charles S.
Denny. \$1.00
- Bulletin 1070-B: Lead-alpha ages of the
Mesozoic batholiths of
western North America, by
Esper S. Larsen, Jr., David
Gottfried, Howard W. Jaffe,
and Claud L. Waring.
- Bulletin 1071-B: Geologic reconnaissance of
San Clemente Island, Calif-
ornia, by F. H. Olmstead.
\$.75
- Bulletin 1072-B: Barite resources of the
United States, by D. A.
Brpbst. \$.40

Map I-269: GROUND CONDITIONS AND SURFICIAL
GEOLOGY OF THE KENAI-KASLOF AREA, KENAI
PENINSULA, SOUTH-CENTRAL ALASKA, by
Thor N. V. Karlstrom. \$.50

MAP I-273: MAP OF A PART OF THE PRINCE WILLIAM
SOUND AREA, ALASKA, SHOWING LINEAR GEOLOGIC
FEATURES AS SHOWN ON AERIAL PHOTOGRAPHS,
by William H. Condon and John T. Cass. \$.50

California Division of Mines

New list of available publications, November
1958. (This is not a catalog.) Single copies
free; multiple copies, \$.25 ea.

Geological Society of America

Memoir 75: Selected bibliographies of
hydrothermal and magmatic
minerals deposits, by
John Drew Ridge, November
1958.

Arizona Bureau of Mines

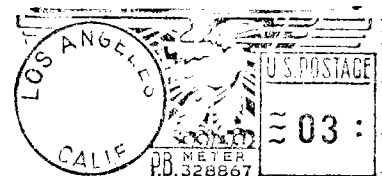
Geologic map of Maricopa County (scale of 6
miles to the inch and printed in color). \$.75

Geologic map of Yavapai County. \$.75

PACIFIC PETROLEUM GEOLOGIST
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No. 1



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BS

PACIFIC PETROLEUM GEOLOGIST

NEWS LETTER OF THE PACIFIC SECTION AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS

ASSOCIATION ACTIVITIES

Vol. 13

February, 1959

No. 2

COAST GEOLOGICAL SOCIETY

Dr. Ekram Gorksu, assistant professor of geology at the Technical University in Istanbul, and presently with Western Gulf on a National Academy of Science fellowship, was the featured speaker at the Coast Geological Society monthly meeting January 13. Dr. Gorksu presented a well organized talk on geology and sedimentary basins of Turkey.

Stratigraphy:

Pre-Cambrian: There is no fossil evidence. Three crystalline massives are considered pre-Cambrian age:

1. Istrandja massive (in Thrace); mica-schist and gneiss.
2. Menderes massive (Western Anatolia); granite, marble, mica-schist, gneiss.
3. Kirsehir massive (Central Anatolia); crystalline schists, marble.

Cambrian: There is no proven Cambrian in Turkey.

Silurian: The oldest rocks with fossils, at Bosphorus (Istanbul) only; sandstone, quartzite, reef limestone.

Devonian: Resembles European Devonian. More limestone (marble) than schist. During Upper Devonian, Anatolia was under water and connected with Western Europe. Schist, marble, graywacke are common.

Carboniferous: During Lower Carboniferous, Anatolia, with the exception of Zonguldak-Amasra (the only coal district of Turkey), was under the sea. Limestone, schist and graywacke.

Permian: Lower Permian cannot be distinguished from upper Carboniferous. Limestone, arkosic sandstone.

Triassic: Triassic facies and fauna resemble the southern Alpine Triassic more than the Northern Alpine. Conglomerate, sandstone, black schists, dolomite.

Jurassic: Most of Anatolia was under the sea. Contains abundant fossils, especially Ammonites. Sandstone and limestone.

Cretaceous: Covers largest area in Turkey. Lower Cretaceous consists mostly of limestones. Flysch facies predominate in Middle Cretaceous. The upper Cretaceous consists of: (1) chalky

limestone and marls, (2) flysch, (3) limestone, (4) schists and sandstones. Limestones predominate in Southern Turkey.

Eocene: Is difficult to separate from Paleocene. Mostly limestone, flysch and some gypsum. Eocene fauna are very much like Italian, Syrian or Egyptian fauna.

Oligocene: Of terrestrial origin in Central Anatolia. Gypsum is very common.

Miocene-Pliocene (Neogene): During Neogene there were two different seas, one in Northern Anatolia and Thrace, the other in Southern Anatolia, at the Mediterranean Sea. The subsidence of the Aegean Sea had not yet taken place.

Quaternary: The Quaternary is represented by a few glacial depositions on the mountains, above 10,000 feet, and lake and river deposits.

Volcanic Activities: There was considerable volcanic activity during the Cretaceous. During the Eocene, Miocene, and Pliocene basaltic, andesitic and dacitic lavas covered large areas of the country.

Sedimentary Basins:

Tertiary and Cretaceous sedimentary basins, with active oil exploration, are in: (1) Southeast Turkey, where Iranian and Iraq sedimentary basins continue northward into Turkey, although with the productive Miocene horizons in Iran and Iraq missing due to erosion. The producing zone at Ramadag (Turkish oil fields) is orbital limestone of Upper Cretaceous age (46000'). (2) Adana-Hatay basin with thick Miocene formations over 12,000 feet. (3) Central Anatolia, around Tuz Gölü" (Salt Lake). (4) Thrace, a relative small but very deep trough of over 10,000 feet Tertiary deposition.

Oil Activities:

The Turkish petroleum law of 1956 enabled the foreign companies to explore Turkish soil. There are some 19 oil companies in Turkey with a total licensed area of 35,628 square miles (out of 296,500 square miles total). American Overseas was the first company to find commercial oil in southeast Turkey. There is considerable oil exploration activity and big hopes for the future in Turkey. The Turkish crude oil production now is 7,000 B/D with a refinery of equal capacity at Batman near Ramadag oil fields.

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NEXT DEADLINE FEBRUARY 27, 1959

NOTICE

The slate of new officers elected by the Northern California Geological Society for 1959 are:

President:	J. Thomas Llewellyn (Honolulu)
Vice-President:	Stanford L. Rose (Standard)
Sect'y-Treas:	L. A. Tarbet (Standard)

NORTHWEST GEOLOGICAL SOCIETY

Robert B. Sheppard, Supervisor, Industrial Gas Sales for Pacific Northwest Pipe Line, presented a twenty-minute film on the construction of the Scenic Inch Pipeline. This pipeline gathers gas from the San Juan gas fields and terminates 1400 miles away at Sumas, Washington and Trail, British Columbia. Mr. Sheppard discussed the gathering and distribution problems, as well as the various users, and the optimistic future of the natural gas industry in the Northwest. A very interesting discussion period followed the lecture.

SAN JOAQUIN GEOLOGICAL SOCIETY

The San Joaquin Geological Society met for their regular meeting on January 20th at the El Tejon Hotel in Bakersfield to hear an interesting paper on faulting by Dr. R. F. Walters of Humble Oil and Refining Company. The title of Dr. Walter's talk was "Theoretical and Practical Considerations of Lateral Faulting". An abstract of his paper is presented below:

The purpose of this discussion is threefold: (a) To present a mechanical analysis of stresses which lead to lateral faulting and a discussion of the conclusions forced by this analysis; (b) to cite some examples of lateral faulting outside of California together with the criteria used for their recognition; and (c) to suggest a few steps which might be taken toward the eventual solution of displacements in the Calif-

ornia fault system and the San Andreas fault in particular.

Lateral faulting can occur only under a limited set of conditions resulting in horizontal compression in one direction and in horizontal extension in a perpendicular sense. Additional compressive stresses result in the development of thrust faults, whereas normal faulting will occur when extension increases beyond certain limits. These limits are illustrated mathematically and graphically.

Criteria are cited which led to the recognition of strike-slip displacement on several well known lateral faults, including the Great Glen, Osburn and West Bay faults.

In conclusion, some recommendations are put forward which would facilitate compilation and evaluation of critical data relative to displacement on the San Andreas Fault.

LUNCHEON MEETING

An interesting talk on "Possible Petroleum Provinces in Alaska" was presented by Dr. Max Birkhauser, Senior Geologist with the Shell Oil Company.

In an area where we know very little about the geology of oil it may prove useful to begin with a study of the various drainage areas. The Yukon River, because of its size and location, should be considered first. The drainage area of the Yukon River is extensive, covering a large portion of Alaska, Yukon Territory and British Columbia. The present pattern of streams suggest that certain changes took place during Quaternary time. The abrupt constriction at the mouth of the Yukon River is anomalous when compared with the area to the east where the drainage basin is broad and open and a possibility is suggested that perhaps during Tertiary time the Yukon River may have had an entirely different course, at least in its lower part.

The U.S.G.S. map of possible petroleum provinces was shown. A second map was introduced by Dr. Birkhauser who believes the size and number of prospective areas should be more restricted. Localities which look most favorable include the Kenai Peninsula, the Copper River Basin, the Arctic Slope and the Yakutat area.

A hydrographic map of Katchemak Bay was introduced and contours on the ocean floor were added. The map shows the northern shoreline to be relatively straight and the northern inland area to be relatively flat, dotted with small lakes. The southern shoreline, however, is deeply indented by fiords and the inland area contains rugged topography. This abrupt change in physiography suggests the presence of a large fault beneath the bay, separating the two geomorphic provinces. This fault may be located relatively accurately by the submarine contours.

The remainder of Dr. Birkhauser's talk was illustrated by color slides taken at the various areas of interest and include Icy Bay, Johnson Creek and Katalla on the Gulf of Alaska, Homer and Ninilchik on the Kenai Peninsula, and the Bear Creek structure on the Alaska Peninsula.

Slides were shown of the Katalla oilfield which was discovered in 1922. Approximately

LOS ANGELES GEOLOGICAL FORUM MEETING

150,000 bbls. of oil were produced from a depth of 800' to 1700'. The field was abandoned in 1932 after the surface installations were destroyed by fire. A photograph of the old Katalla Hotel, also abandoned in 1932, reminded Dr. Birkhauser of a harrowing encounter with a Kodiak bear at 3:00 A.M., just outside the front door of the hotel.

A number of slides were devoted to the Bear Creek structure. This large dome is being drilled by the Humble Oil and Refining Company. The slides showed the excellent exposures of the flanks of the dome, which originally attracted interest in the area.

The talk concluded with the presentation of a slide showing a possible correlation between the stratigraphic section in the Humble well and the section exposed between Cape Kekurnoi and the eastern bank of Puale Bay.

Following Dr. Birkhauser's talk, the Humble Oil and Refining Company presented their color movie "Operation Alaska". The film depicted the immense problems of planning and supply which the Company encountered in drilling the Humble-Shell Bear Creek No. 1 on the Alaska Peninsula. The logistics of procuring, stockpiling and loading for water transportation approximately 15 million pounds of necessities resembled a military operation. The equipment was loaded aboard eleven barges at Seattle and sent 2500 miles along a coastal route to the Humble base at Island Bay. Five trips were required by the barges before all of the equipment arrived. Considerable preparation at the base camp was necessary before the barges could be unloaded. A slip had to be dredged in the nearshore mud flats. Heavy construction equipment dredged the slip at low tide and worked on the road to the wellsite at high tide. The film concluded with scenes showing the setting up of the base camp, the arrival of the drilling equipment and the spudding of the well.

S.E.P.M. FALL MEETING

Plans are being made to expand the technical session of the S.E.P.M., for this year's fall convention (November 11, 12) to two one-half day meetings. Chuck Cary, President of the S.E.P.M., is requesting economic workers, university teachers and students to consider preparation of papers for this meeting. The papers should not be over 30 minutes in length.

Please send in your titles to program chairman, Weldon W. Rau, U.S.G.S., 4 Homewood Place, Menlo Park, California.

S.E.P.M. MEMBERSHIP

The membership roll of the Pacific Section, S.E.P.M., is being brought up to date for 1958-1959. All workers, students and others interested in paleontology and mineralogy are invited to join. Anyone desiring membership should send his name, address and \$1.00 for annual dues to A. A. Almgren, Secretary-Treasurer, S.E.P.M., c/o Superior Oil Company, P.O. Box 1031, Bakersfield, California. All members who have not paid their dues are urged to forward payment before February 15.

Members attending the January Forum meeting held in the Union Oil Auditorium enjoyed a well illustrated talk on "Problems of Fault Nomenclature". The basic concepts were presented by Professor John C. Crowell, U.C.L.A., followed by a proposed dual classification by Mason L. Hill, Richfield Oil Corporation.

These talks pointed out the failings in most geologists' inherited concepts of fault terminology. It is recognized that proper classification is essential for progress in all scientific fields and Crowell indicated our lack of progress in fault classifications since 1913 (Reid and Committee, G.S.A. Bulletin). Presently used fault classifications are completely inadequate and the speakers proposed that fault nomenclature be corrected and brought up to date as soon as possible.

Crowell presented a systematic discussion of significant classification characteristics of faults and illustrated geologic criteria which may be used to analyze displacements on faults.

Hill proposed a dual classification based on the difference between fault slip (actual relative movement) and fault separation (apparent relative movement).

Crowell's slides depicted geologic situations showing offset lines as opposed to situations which only involve the offset of planar rock units. He emphasized that, in the first case fault slip is determinable, whereas in the latter case only fault separation can be known.

Hill's classification is as follows (see A.A.P.G. Bulletin, January 1959):

Apparent Relative Movement (separation)	Fault Type
Dip separation (measured in dip of fault)	Normal Reverse Thrust
Strike separation (measured in strike of fault)	Right-lateral Left-lateral
Dip and strike separations (measured in both dip and strike of fault)	Named after principal separation or appropriate combined term (e.g., normal left-lateral fault of diagram)
Actual Relative Movement (slip)	Fault Type
Dip slip (measured in dip of fault)	Normal slip Reverse slip Thrust slip
Strike slip (measured in strike of fault)	Right-lateral slip Left-lateral slip
Oblique slip (measured in fault surface)	Named after principal slip component or appropriate combined term (e.g., reverse left-lateral slip fault, 1 of diagram)