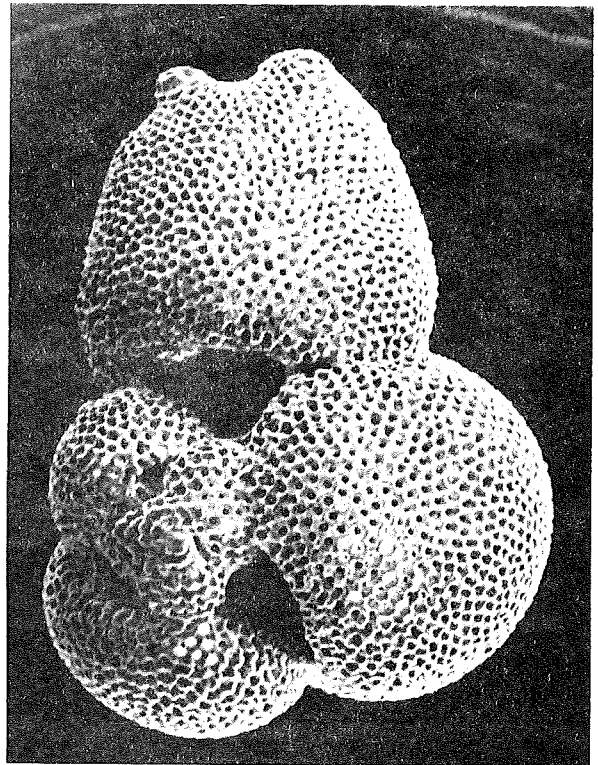


UCLA



*Department of
Geology
Newsletter
1968*

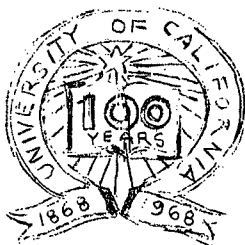
THE COVER

Scanning electron micrographs are of the planktonic foraminifer Globigerinoides sacculifer (Brady), from the top centimeter of a gravity core at 172 fathoms, 9°47.0' S. lat., 129°33.3' E. long., collected 1961 by Scripps Sahul Shelf Cruise II of the Stranger, on the Sahul Shelf of the Timor Sea, off northwestern Australia. This is part of a microfauna being studied by A. R. Loeblich Jr. and Helen Tappan Loeblich.

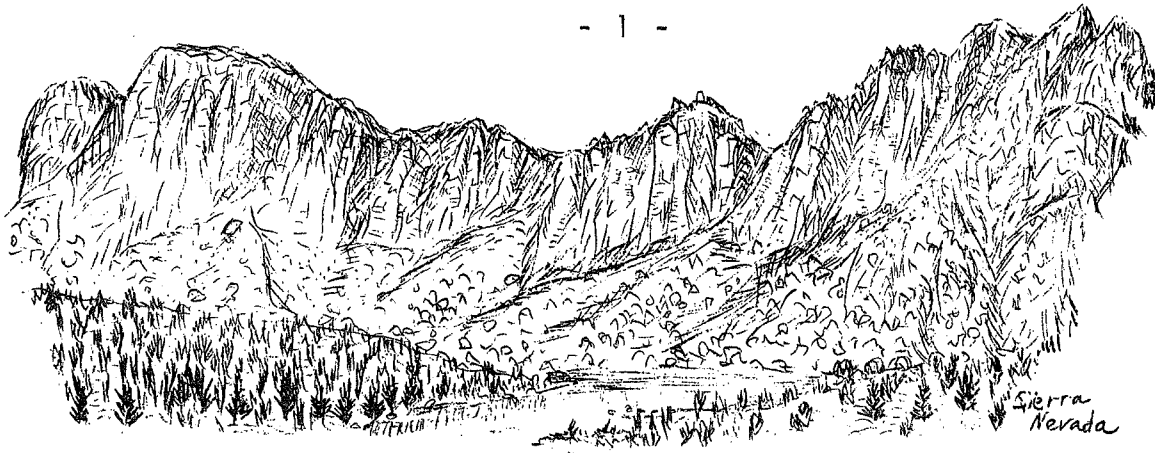
The entire specimen at right is magnified X90; at left the surface of the four chambers of the final whorl are enlarged X 1000. Last chamber surface is at the top, penultimate chamber next, then the second from the last chamber (these latter two indicate the surface curvature), and finally the oldest (smallest) chamber of the final whorl at lower left. A thin layer of calcite added to the entire test surface with the formation of each new chamber results in smoothing and thickening the wall (note between pores) of earlier chambers; this is particularly noticeable in the contrast of the top three figures. Small button-like coccoliths are visible in some of the pore openings, having been entrapped in the sieve-like wall of the empty foraminiferal test during its short stay on the sea floor.

The specimen was coated with gold palladium, and photographed with 35 mm film by R. B. MacAdam, on a Japan Electron Optics Laboratory Company (JEOLCO) JSM Scanning Electron Microscope, at Chevron Oil Field Research Company, La Habra, Calif.

Scanning electron micrographs were made, and both the cover and text of the newsletter reproduced in their laboratory, courtesy of Chevron Oil Field Research Company, La Habra.



Helen Tappan (Loeblich)
Newsletter compiler and editor
Department of Geology
UCLA



Higgledy piggledy
What is geology?
Glaciers and minerals,
Mid-ocean ridges,

Turbidites, pediments,
Earthquakes and isotopes,
Canyons, volcanoes and
Faults beneath bridges,

Mapping, and quartz crystals,
Paleontology,
X-ray, E.M. and probe,
Dinosaurs tall,

Oceans and atmospheres,
Moon to the Moho; it's
Hard rocks and soft rocks and
No rocks at all!

In the April, 1968 issue of *Geotimes*, Robert Bates discussed the recently developed verse form called the Double Dactyl, in "The Geologic Column" (p. 46). A dactyl consists of three syllables, of which the first is stressed. Three lines of each stanza are double dactyls, the last has only four beats (one dactyl and a final accented syllable). These final accented syllables of the two stanzas rhyme. The first double dactyl line is a nonsense phrase, the second a noun, the subject of the verse.

To keep up with sister publications, such as *Esquire*, *Time* and *Geotimes*, our Alumni News has contributed its bit toward the evolution (or extinction?) of the double dactyl, as headings for this page and following sections. After all, paleontology has long made use of the dactyl (e.g. Paleozoic shark *Dactylodus*, cystoid *Dactylocystis*, and the flying Pterodactyl), so why not the double dactyl too?

All who received the first issue of the Department Newsletter and sent in completed questionnaires (about 10% of the alumni) requested that it be continued. In this year of elections, non-voting in California is not regarded as a protest vote, so herewith is the second edition. However, write-ins are encouraged, and useful suggestions were included by some.

The University this year celebrated completion of its' first century, coincident with major changes throughout. Among these were the inauguration (on the UCLA campus) of a new President, Charles J. Hitch. Our own UCLA Chancellor

Murphy has resigned, effective this fall, but to date no successor has been named. The second year under the quarter system was somewhat less hectic than the first, and was the first of year-round operation, with the first full summer quarter at UCLA.

Enrollment at UCLA this year exceeded its planned maximum of 27,500 and even surpassed that at Berkeley. The nine campus total exceeded 95,000. In geology, enrollment has also increased somewhat. The Lower Division course (Physical Science 3-G) had approximately 500 enrolled during 1966-67 over the three quarters. Enrollment in 1967-1968 nearly equalled that during the first two quarters alone, and for the year reached 727. Geology undergraduate majors were fewest about five years ago (only 37 in 1962-1963), but in 1967-1968 there were 55 declared geology majors. The mineralogy class in the fall quarter had 34 students alone, and as most of these are sophomores, and have not declared a major at that stage, an increase is expected to continue.

Graduate enrollment has shown a different trend. The recession of a few years ago resulted in most continuing into graduate study, so that there were 86 graduate students in 1962-1963. The subsequently reduced undergraduate enrollments around the country for a time lessened the number of new graduate students. We had 58 in 1966-67, but an increase to 65 during 1967-68. However, from 1962-1963 to the present, 45 completed Ph.D. degrees, and 54 M. A.'s. The same period saw 45 new B. A.'s from UCLA. Part of the present cause of graduate fluctuations is due to the draft, of course, and part is due to the limited availability of support for graduate students. During 1967-1968 we had 13 University teaching assistantships, 2 graduate fellows (supported by a Shell grant to the Department), 7 NDEA fellowships (four finishing), 2 NSF traineeships, and 2 NSF fellows. In addition, 6 more students were supported by faculty grants obtained for this purpose from NSF, ACS, etc., and 4 more are interdepartmentally supported (geochemistry). For the coming year, more than 80 highly qualified applicants vied for the 20 available positions. Some were therefore split to support three students for 2 quarters each. Pending possible changes due to the draft situation, the graduate appointments for 1968-1969 are:

Chancellor's Teaching Fellows: Roy T. Budnik
Carrell Ramsey
NDEA- Title IV Fellow: Gary Rosenberg
Graduate Intern Fellows: Jan Clemens
William Holman

NSF Traineeships:	Dorothy Zeller (new)	
	Dennis Howe (renewal)	
	Donald Coates (renewal)	
NSF Fellow:	Phelps Freeborn	
Mabel Wilson Richard Fellow:	Kitty Barrows	
Teaching Assistant:		
Steven Kirby	Richard Robinson	} 1/3 Shell Oil Fellow
Gerald Dollinger	Matt Matthews	
J. G. Liou	Robert Post	
Gordon Moir	Robert Hill	
Michael Semet	Herbert Adams	
John Grimmer	William Holman	
Robert Horodyski	Edward Warner	
H. C. Chang		

The source of our graduate students might be of interest. Of those graduate students enrolled during 1967-1968, 32 obtained previous degrees in California, of which 13 were from UCLA, 2 from U. C. Berkeley, one each from U. C. Riverside, and U. C. Santa Barbara, two each from Pomona, Occidental, Cal State Los Angeles, San Fernando Valley State, and San Jose State, and one each from Fresno State, University of the Pacific, Univ. Southern California, Stanford and Cal Tech. Those from outside California came from Wisconsin (6), MIT (3), Univ. West Virginia (3), Hunter College, N.Y. (2), Carleton College (2), and the Univ. of Illinois (2). One each were from the Univ. of Colorado; Dartmouth; Univ. of Miami; Univ. Rhode Island; Midwestern, Texas; Southern Illinois; Northern Illinois; Florida State; Allegheny College; Wittenberg; Reed College; Cornell; Oklahoma State Univ.; Univ. of Arizona; and Monmouth College, Illinois. Foreign students were from Univ. British Columbia, University of Oslo (Norway), London, Kyushu Univ., Taiwan Univ., Univ. Cape Town, Univ. of Louvain (Belgium), and University of Teheran (2).

In answer to requests as to the nature of the present curriculum, Lower Division requirements include Phys. Sci. 3-G (the survey course), Earth History, and 15 courses in other sciences, including three-quarter sequences each in physics, chemistry, mathematics and biology, and a second 3 quarter sequence in one of these. Upper division requirements include the three-quarter mineralogy-petrology sequence, a three quarter structural-stratigraphic-field geology sequence, principles of paleontology, and the summer field course. Other courses satisfy general university breadth requirements, and explore the field of specialty of the individual.

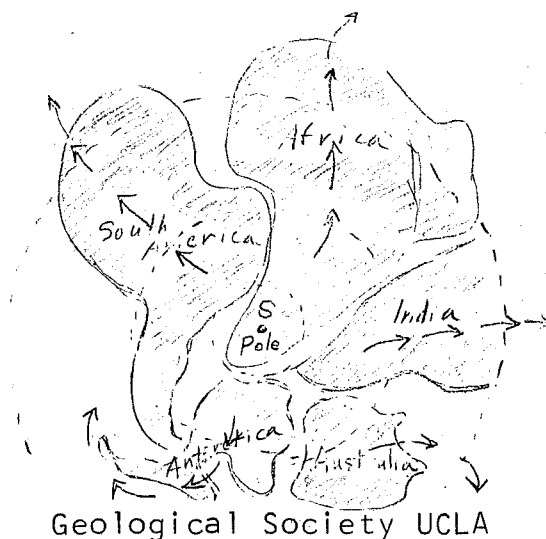
In addition to these required courses, other upper division offerings include intermediate petrology, intermediate structural geology, mineral deposits, isotope geochemistry,

geochemistry (the last two being also listed under the geophysics curriculum), petroleum and engineering geology, regional geology, geophysical exploration, problems in earth history and special studies. Graduate courses are in advanced paleontology, paleoecology, vertebrate paleontology (also listed in zoology), paleobiology of plant microorganisms, micropaleontology, paleobotany, biogeology, X-ray crystallography; crystal chemistry and structure of minerals, phase equilibria, igneous petrology, metamorphic petrology, structural petrology of deformed rocks, sedimentology, sedimentary petrology, clay mineralogy, marine geology, advanced structural geology, structural analysis of deformed rocks, stress and deformation of geologic materials, and a series of seminars (in mineralogy, geochemistry, petrology, sedimentology, structural geology and tectonics, physical geology, paleontology, and mineral deposits).

Graduate students must take a general Preliminary Examination upon entrance, as a basis for guidance to further studies. The Master of Science requires a minimum of 9 courses (upper division and graduate level), including at least one seminar, and preparation of a thesis. The Ph.D. may be obtained directly after the bachelor's without a previous M. S., but has no fixed course number, the courses being suggested for the individual by an advisory committee; it is awarded upon completion of a series of examinations and an original dissertation. A recent addition is the Candidate in Philosophy Degree, not a terminal degree, but awarded upon completion of examinations and course work and advancement to candidacy for the Ph.D. (completion of all but the dissertation).



*Whitsunday Island, S. Pacific
after Darwin, Coral Reefs*



Higgledy piggedy.
Weg'ner's Hypothesis,
Coastlines and Permian plants
Tried to explain.

Rem'nant polarity's
Theorys' heart transplant-
Migrating continents
Credence regain.

Various activities of the Geological Society of UCLA are aimed at better communication between staff and students, on an informal basis. The fall quarter was initiated with a Friday afternoon session at the local Pizza Palace, for beer, pizza and fellowship in general. Similar sessions were held each succeeding Friday, same place, same purposes.

A more formal (?) occasion was a party at Paul Doose's house, which consisted of a hamburger cookout, followed by dancing. During the spring quarter a faculty-student party was held at the home of the Chairman, Dr. Nelson, also a picnic, with free food and drink, and good fellowship.

Departmental field trips have also been a regularly sponsored event of GSUCLA. During the 1967-1968 academic year, a three-day trip was held in the vicinity of Pacheco Pass, led by Dr. Ernst and others. A trip to the Grand Canyon area is tentatively scheduled for this coming fall.

Also a major contribution of the Society is the sponsorship of the many talks and lectures by local and visiting geologists. These are joint events of Society and Department, and are listed in a later section. The Tuesday noon Instant Seminar continues its successful means of interspecialty communication. The informal talks, concerning research or

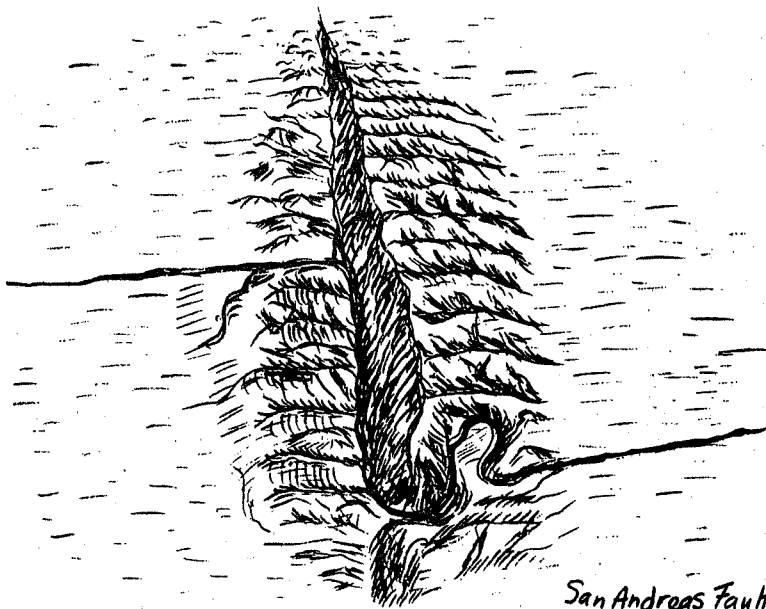
other subjects of interest are chosen by drawing of names from the "bag" the previous week. They are followed by lively discussions. These "brown bag" lunches are accompanied by free coffee, and attendance is invariably at "standing room only" levels.

Officers during the current year were:

Andy Link, President
Don Coates, Vice President
Jeanie Denison, Secretary
Julie Guenther, Treasurer
Dave Baker, Grad. Students Assoc. Representative

For 1968-1969, the officers will be:

Martin Matthews, President
Irving Levine, Vice President
Steve Kirby, Secretary
Jan Clemens Blacic, Treasurer
Dave Baker, Grad. Students Assoc. Representative





Special Lectures, 1967-1968

Higgledy piggedy
Base of the Cambrian
Five hundred million years
Minus or plus.

Double importance of
Fossils Precambrian:
"O₂" in our air, and an-
cestors to us!

The lecture series, sponsored jointly by the Department of Geology and the GSUCLA, brings speakers to the campus from many areas, and has added greatly to the regular curriculum for the student. It has equally benefitted faculty colleagues. All such lectures are open to the general public, and most are listed in the University Weekly Calendar, which is widely distributed to other institutions and companies. A few are spur-of-the-minute additions, when visitors pass through and can be prevailed upon without advance notice, other than posting on the department bulletin board.

Those of the past academic year are listed in order of presentation:

Professor Lauriston Marshall, Graduate Research Center of the Southwest, Dallas, Texas, "Evolution of Oxygen in the Earth's atmosphere", July 12, 1967.

A seminar on the Franciscan included the following six talks on October 24-26:

Professor W. Gary Ernst, UCLA, "Franciscan Metamorphism", Oct. 24.

Dr. J. William Schopf, Department of Biology, Harvard University, "Amino Acids in Precambrian sediments", Oct. 24.

- Dr. R. N. Brothers, Department of Geology, University of Auckland, New Zealand, "Structural Geology and metamorphism of New Caledonia and the Kermadec Ridge", Oct. 25.
- James A. Brown, UCLA, "Metamorphism of the Franciscan group in the Stanley Mountain area northeast of Santa Maria", Oct. 26.
- Dr. Lincoln Hollister, "Internal structure and contact relations of a glaucophane schist tectonic block, Santa Barbara County", Oct. 26.
- Dr. W. R. Dickinson, Department of Geology, Stanford University, "Mesoscopic structures and tectonic relations of New Zealand schists and graywackes", Oct. 26.
- Professor T. W. Gevers, University of the Witwatersrand, Johannesburg, South Africa, "Rift valleys and active and extinct volcanoes of East Africa", Nov. 2.
- Dr. Dale Jackson, U. S. Geological Survey, Menlo Park, California, and Visiting Professor, Univ. Calif., Santa Barbara, "Xenoliths in Hawaiian basalts - fragments of the lower crust or upper mantle?", Nov. 8.
- Dr. Keith A. Howard, U. S. Geological Survey, Menlo Park, "Cordilleran infrastructure in the northern Ruby Mountains, Nevada", Nov. 9.
- Professor T. W. Gevers, Univ. Witwatersrand, Johannesburg, South Africa, "Geology of Southern Africa", Nov. 10.
- Professor George W. Wetherill, UCLA, "The relationship between the time of fall and the source of stone meteorites", Nov. 14.
- Mr. Edward Beutner, Department of Geology, Pennsylvania State University, "Development of the overthrust belt in Idaho north of the Snake River plain", Nov. 16.
- Dr. Tjeerd van Andel, Scripps Institution of Oceanography, "Rifted mid-oceanic ridges", Nov. 30.
- Dr. George V. Wood, British Petroleum Company, "Regional variation of cementation in carbonate rocks", Jan. 11.
- Dr. Paulo M. B. Landim, Department of Geology, University of Campinas, Sao Paulo, Brasil, "Gondwana sequence in Parana Basin, Brasil", Jan. 11.
- Dr. Nikita A. Bogdanov, Senior Scientist, Geological Institute, Academy of Sciences, U. S. S. R., Moscow, "General aspects of the geology of Eastern Siberia", Jan. 16.

"Geological structures of the northeastern part of the U.S.S.R.", Jan. 25.

"Geological structures of the Kamchatka region", Feb. 6.

"Geological structures of the southeast part of the U.S.S.R.", Feb. 8.

"Geosynclines of the western circum-Pacific in the Paleozoic", Feb. 29.

Dr. C. M. Wai, Institute of Geophysics and Planetary Physics, UCLA, "Experimental partition studies and the chemical differentiation of meteorites", Jan. 18.

Dr. Volkmar Trommsdorff, Mineralogical-Petrological Institute, University of Basel, Switzerland, "Progressive metamorphism of siliceous dolomites in the central Swiss Alps", Jan. 18.

Professor Keith A. W. Crook, Australia, "Tectonism, climate and sedimentation", Jan. 31.

Professor William C. Krumbein, Department of Geology, Northwestern University, and Visiting Professor, UCLA, "Statistical models in sedimentary studies", Feb. 1.

Mr. William Paynton, Manager of military products, Texas Instruments, Attleboro, Massachusetts, "Economical use of mineral resources using composite materials", Feb. 13.

Professor Everett C. Olson, Department of Geophysical Sciences, University of Chicago, and Visiting Professor, UCLA, "Permian vertebrates and stratigraphy of Oklahoma", Feb. 15.

Professor George C. Kennedy, UCLA, "Rate of evolution of the crust of the earth", Feb. 20.

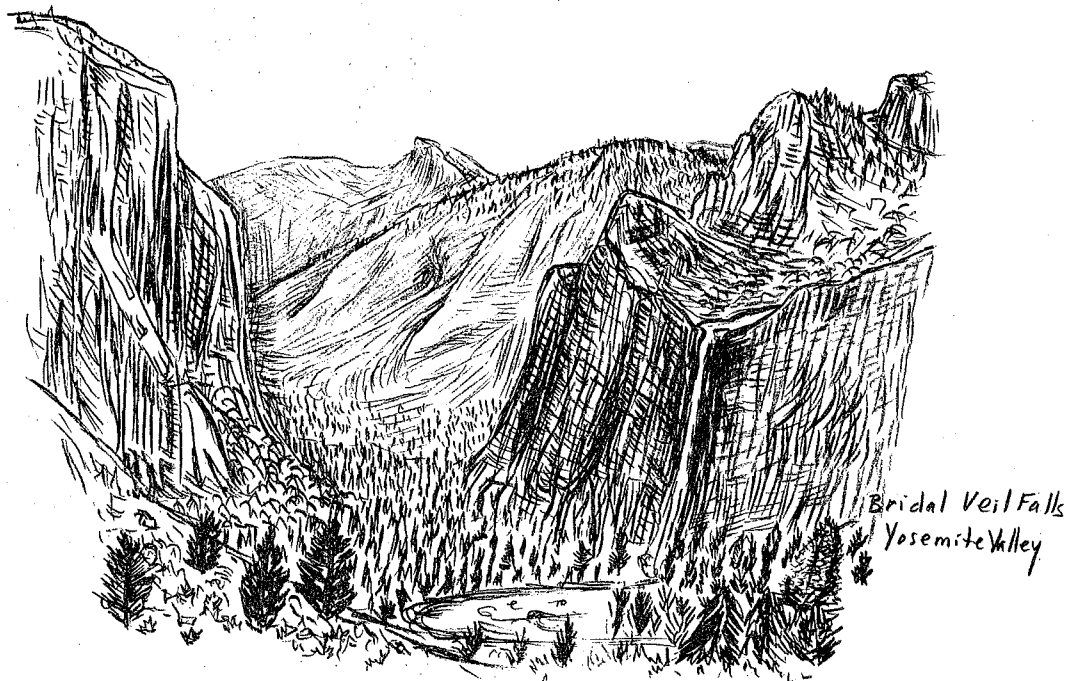
Professor William C. Krumbein, Northwestern University, "Some properties of geological measurements", Feb. 22.

Dr. John Hack, U. S. Geological Survey, Washington, D. C., "Longitudinal stream profiles in the analysis of land forms", March 4.

Professor Everett C. Olson, University of Chicago, "Some aspects of morphological integration and evolution", March 7.

Dr. F. F. Sabins, Chevron Research Company, La Habra, "Geologic applications of remote sensor imagery", April 4.

- Professor Harold C. Urey, University of California, San Diego,
"Primitive atmosphere and oceans of the earth", April 11.
- Dr. Charles D. Hollister, Woods Hole Oceanographic Institution,
Massachusetts, "Sedimentation processes in the deep sea",
April 29.
- Dr. Alfred R. Loeblich Jr, Chevron Oil Field Research Company,
La Habra, "Application of the scanning electron micro-
scope to Paleontology", May 7,
- Mr. Daniel E. Karig, Department of Geology, University of
California, San Diego, "Tectonic implications from recent
marine geological and geophysical studies in the Tonga-
Kermadec and Mariana Island arcs", May 16.
- Dr. Adolf Seilacher, Visiting Professor, Univ. Calif.,
Santa Cruz, "Origin of the fossiliferous Solnhofen lime-
stones and Cretaceous counterparts in Lebanon", May 20.
- Professor K. Naha, Indian Institute of Technology, Kharagpur,
India and Visiting Professor, Univ. Calif. Berkeley,
"Large scale superposed folding in the early Precambrian
of central Rajasthan, western India", May 23.
- Mr. Charles Raymond, Division of Geological Science, California
Institute of Technology, "Three dimensional flow in a
transverse section of a valley glacier", May 28.





Faculty Happenings

Higgledy piggedly
Geology faculty:
Carlisle, Gibbs, Nelson, Hall,
Rosenfeld, Cloud,

Watson, Dollase, Schopf,
Oertel, Lane, Hollister,
Bear and I (Loeblich),
Rockhounds avowed!

Higgledy piggedly
Joint with I.G.P.P.:
Kaplan, Ernst, Wetherill,
Kennedy, Shreve.

U. S. Grant, Joe Murdoch
Willis P. Popenoe
Bill Rubey: all "retired."
... Would you believe...?

As previously, activities and accomplishments of the faculty are given in alphabetical order, except for the Chairman, Vice Chairman, and our Associate Dean.

Clemens A. Nelson, Chairman, Ph.D., Minnesota

As all residents of California are aware, University budgets are stringent, and administrative problems enlarged. Combined with the recent change to quarter system, revised curriculum, etc., Clem finds that he has been able to spend only about three weeks in the field, finishing up the Waucoba Spring quadrangle map for the USGS, and that all of his other "research" activities have been confined to paper-pushing.

N. Gary Lane, Vice Chairman, Graduate advisor, Ph.D., Kansas
Gary became Vice Chairman when Don Carlisle became an Associate Dean. July and August, 1967 were spent at the U.S. National Museum, Washington, D. C. (on an NSF grant) studying the evolution of Mississippian crinoids; two weeks of September were occupied in collecting crinoids in New Mexico and Arizona on the way back to L.A. Both museum visit and collection trip will be repeated this summer. He was appointed Research Associate of the USNM this winter, has submitted to Ray Moore material on crinoids for the Treatise on Invertebrate Paleontology (1 suborder, and 5 other families). Gary published articles in the Univ. Kansas Paleo. Contr. on Permian crinoids from Nevada, a revision of Suborder Cyathocrinina, and symmetry planes of Paleozoic crinoids (two co-authored with Gary Webster), and gave a talk on the last at the New Orleans meeting of the GSA. He completed papers this year on a

crinoid from the Mazon Creek (Pennsylvanian) fauna of Illinois, and one on two Devonian crinoids from central Nevada (with J. G. Johnson). Currently he is Secretary for the Pacific Coast section of the Paleontological Society.

Donald Carlisle, Associate Dean, Graduate Division, Ph.D., Wisconsin.

Don states that the bulk of his creative work this past year has been in the Graduate Division, where significant programs have been initiated for graduate study for Negro-American, Mexican-American and American Indian students. This past year was the first of operation of the Master's Opportunity Program, funded by the Danforth Foundation, and supporting 21 students. These students in Social Sciences, Humanities and Mathematics did very well, and all but two are continuing. This past March Don initiated a Doctoral Opportunity Program, with four years of support (2 as fellows, 2 as T.A.'s) for five students at first, and then for an additional five. This is possibly the first such program at this level in the U. S. Both programs will be doubled next year as a result of the "ill-windfall" from the increased student fees ("Registration" and "Non-resident fees" were increased this year in line with the State decision to have students pay for a greater share of the costs of their education, although this is not termed "tuition." Part of this was then set aside for scholarship aid to needy students). Some 140 applied for the Master's program, and over 40 for the Ph.D. one, even with little advance notice. Interestingly, more of the Ph.D. group are interested in the sciences. Awards include those in Zoology (3), Chemistry (1), Planetary and Space Science (1), Anthropology (1), English (2), Education (4), and one each in Psychology, Poly Sci., Bus. Ad., Spanish and Sociology. Another program, also time-consuming for Don, is the Regents Graduate Intern-Fellowship Program. This is a four-year award (2 as Fellow, 2 as T.A.), that emphasizes specific training for the T.A. Geology qualified for this and received 2 of the 52 awards allocated. Not all was administration, however, for Don also taught two courses (field geology, and Mineral Deposits seminar). He does have the summers for research, and will spend this one, as last, in the British Columbia Vancouver Island area. Related to this, he is director of an NSF Undergraduate Research Participation Grant, so takes his work with students in the field with him too!

Ted L. Bear, B. A., UCLA

A geological consultant (Bear and Kistler), Ted is also a Lecturer in Petroleum Geology, joining us each fall to teach a course in Petroleum and Engineering Geology. His firm also moved to a new office this past April, at 1052 West Sixth Street, Los Angeles.

John M. Christie, Ph. D., Edinburgh

The rock deformation laboratory is jointly operated by the Department and Institute of Geophysics, under the direction of Christie and D. T. Griggs. Two NSF grant renewals obtained during the year support research and student theses, one for study of the origin of preferred orientation in quartz and other minerals, and the other involving year-long hot creep tests on rocks. Good progress has been made in the study of mechanisms of rock deformation at high T and P, and the development of preferred orientation. A new laboratory is nearly completed, containing ten new deformation rigs of new design (developed by Griggs and Blacic) for long constant strain-rate or creep tests at high T and P. These will more than double the laboratory capability.

Five papers from the group were presented at the Amer. Geophysical Union meeting in Washington, D. C., in April, including one on experimentally produced preferred orientation in mica aggregates (Terry E. Tullis), Petrofabric analysis of quartz aggregates using the X-ray pole-figure goniometer (H. R. Wenk, D. W. Baker, and Griggs), Spherical harmonic analysis of X-ray pole-figure data (Baker, Wenk and Christie), Syntectonic and annealing recrystallization of α -quartz (H. W. Green), and the non-rational nature of deformation lamellae in quartz (Christie, J. A. Tullis, and J. D. Blacic).

H. R. Wenk was a post-doc with this group last year, and is now assistant professor in Geology, U. C. Berkeley, teaching mineralogy, crystallography and X-ray crystallography.

Preston E. Cloud Jr., Ph. D., Yale

Field work last summer (1967) in the pre- and early Paleozoic of Banf Park, Alberta, with graduate student G. R. Licari, was supported by a grant from the Bache Fund of NAS. This produced two occurrences of a distinctive new young pre-Paleozoic microbiota.

Pres is chairman of the N.A.S. Committee on Resources and Man (CRAM), and is currently preparing the final report of this committee for press. He is on a Committee on Marine Resources Development, advisory to the Secretary of the Interior, which meets several times a year, and on committees on Remote Sensing of the Environment, and on Resources and Man of the NAS; he is also on the committee on nominations for the NAS. Pres is also preparing a book of "Adventures in Earth History" for use in an upper division course in historical geology. This is to be a selection of previously published papers, which he has been searching out, and coordinating, as well as preparing connective material.

Many lectures were presented. In the fall he made a Sigma Xi National Lecture tour, speaking on "Precambrian life and atmospheric evolution" at 18 different institutions (in Louisiana, Texas, New Mexico, Arizona and California).

He spoke on the "Realities of mineral distribution" at the Univ. Texas dedication of a geology building, and on various aspects of life and its beginnings, and the atmosphere and hydrosphere on the primitive earth at the Univ. Montana, Missoula, the Univ. Utah, Salt Lake City, Pennsylvania State Univ., at a N. Y. Acad. Sci. conference, at United Aircraft Research Center, in Connecticut, and at the Lloyd V. Berkner Memorial Symposium at the AAAS meeting in December.

A grant from the NASA Exobiology Program is aiding his studies of the early life. Articles also were published in Science on atmospheric and hydrospheric evolution, and on the Precambrian-Cambrian boundary (with T. D. Ford and C. A. Nelson), in the Proc. Nat. Acad. Sci. (with G. R. Licari) on reproductive structures in nanofossils from the Gunflint Iron Formation, and as a USGS Bull., on geology and bauxite deposits in Alabama. Other articles appeared in various volumes, "The University involvement in new urban development" in The University as a Major Influence in the State, a conference held at UC Santa Barbara; "Remarks to Committee on Science and Astronautics, U.S. House of Representatives", published by the Govt. Printing Office; on "Environmental sciences and national goals" (with V. E. McKelvey), a report to the U.S. House of Representatives Committee on Science and Astronautics; and "Early evidences of life and their implications", in the volume "Infectious Diseases", Charles C. Thomas Publ.

Wayne A. Dollase, Ph. D., M. I. T.

Two papers were published by Wayne during the past year, one on the structure of a meteoritic tridymite, and another on the structure of pharmacosiderite. He attended the Tucson meeting of the American Crystallographic Association in February. For the past year he has been working on the structure and crystal chemistry of several members of the epidote group.

W. Gary Ernst, Ph. D., Johns Hopkins

Since February Gary has been on leave from UCLA, and lecturing as Crosby Visiting Prof., at M.I.T. He also lectured during the year at the University of South Carolina, Columbia, Harvard and the University of Massachusetts. Two books by Ernst were completed during 1967: "Amphiboles", is vol. 1 of a new monograph series on Minerals, Rocks and Inorganic Materials, published by Springer Verlag, January, 1968. "Earth Materials" is a paper-back, one of a group of texts for beginning college students, to appear in the fall of 1968, by Prentice-Hall.

Gary is now completing a report on the investigations and research during a U.S.-Japan cooperative project. Involved with him on this were Y. Seki, H. Onuki and M. C. Gilbert. It was supported by the NSF, by UCLA and by the Japan Society for the Promotion of Science. He was invited to present a paper at the symposium on experimental petrology in Novosibirsk,

by the Academy of Sciences, USSR, but will be back in California by the end of June, 1968, at the UCLA Geology Field Camp, with Clarence Hall.

Associated pre- and post-doctorals are working on electron microprobe analysis of metamorphic mineral assemblages (Hermes and Rutherford), stability relations of zeolites, scarn minerals and amphiboles (Liou, Gustafson and Semet) and Franciscan field relations and petrogenesis (Whelan).

Ronald J. Gibbs, Ph. D., U.C. San Diego

Ron is continuing his studies of the Amazon River system, the factors that control its geochemistry, such as dissolved salts and their relationship to the solid transported material, and the oceanic processes affecting the Amazon River sediments over an area from the mouth of the river northward to Trinidad, and eastward to the mid-Atlantic ridge. Research is supported by an ONR contract. Two students (John Connor and Jeff Heller) are preparing theses based on parts of this project.

A new project involves the Yukon River, a "natural laboratory" for several interconnecting studies of sedimentary and geochemical processes involved from erosion and transportation to final deposition in the ocean. During the summer 1968 he will visit the Yukon to direct various student studies related to the project: factors controlling the glacio-fluvial system will be investigated by Andy Link, over some 8 glacier-fed basins; a survey of 15 major tributary basins of the Yukon River system (by Gordon Moir) will investigate their sedimentology and geochemistry; study of ocean processes affecting the Yukon River sediment (Matt Matthews) will involve a one-month cruise just off the Yukon delta. Other studies have continued on the quantitative X-ray diffraction techniques for fine-grained sediments, and the development of the new Automatic Particle-Size Analyzer, investigating polymodal distribution in sand-silt size, and extending the range of use of the analyzer into clay-size particles.

A paper on Amazon geochemistry was presented at the GSA meeting in New Orleans, and a major evening (invited) lecture was presented at the Gordon Research Conference on Geochemistry (August, 1967). Ron also attended a Clay Minerals Conference in Denver in August, and visited the Marine Institute, University of Miami, and Lamont Geological Observatory, New York, to obtain cores from the Atlantic Ocean off the Amazon River. He is serving on a JOIDES (Joint Oceanographic Institutions for Deep Earth Sampling) committee on mineralogic aspects.

Publications appeared in Science, "The Amazon River: the environmental factors that control its dissolved and suspended load", in the Bull. GSA, "The geochemistry of the Amazon River System Part 1, the factors that control the salinity and the composition and concentration of the suspended solids"; in Clay Minerals, "Quantitative X-ray diffraction analysis using clay mineral standards extracted from the sample

to be analyzed", and in the Journal Sedimentary Petrology, "Clay Mineral Mounting techniques for X-ray diffraction analysis".

Clarence A. Hall, Jr., Ph. D., Stanford
Clarence is continuing his research on the stratigraphy and structure of the central Coast Ranges, California, and the microtexture of bivalved mollusk shells, as an aid in paleo-ecologic reconstructions. He led a NDEA-sponsored field trip in the San Luis Obispo Area for 40 Junior College teachers. A publication in the GSA Bull, v. 78 (with C. E. Corbató), was on "Stratigraphy and structure of Mesozoic and Cenozoic Rocks, Nipomo Quadrangle, Southern Coast Ranges, California". Clarence states that the colored map accompanying this article included the names of more than 60 UCLA students and staff members who in some way contributed to the geologic mapping.

Lincoln S. Hollister, Ph. D., California Institute of Technology

Talks were given by Linc at Kingston, Ontario and in Washington, D. C., on "Sector zoning in staurolite, Kwoiek area, British Columbia" (abstract published in Canadian Mineralogist, v. 9); and "Compositional characteristics of sector-zoned staurolite" (abstract in Trans. Amer. Geophys. Union, v. 49). Jointly with A. E. Bence, he published "Sector compositional variations in staurolite" in Science, v. 158.

Six invited talks were given, at Princeton, University of California Davis (2 lectures), University of Washington (2) and Yale. An NSF grant was received to continue for two years, studies of compositional zoning in metamorphic minerals.

Isaac R. Kaplan, Ph. D., University of Southern California
Ian served as a member of the Planetary Biology Advisory Subcommittee of the Space Science and Applications Steering Committee, NASA, which held meetings in New York, Washington, D. C., Ames Research Center and Moffet Field, and as a member of the Review Committee for AEC, Marine Biology Division, visiting Johns Hopkins University. Other trips during the year were to attend the NAS Research Council meeting in Vancouver, to lecture at the University of Calgary, Alberta, and to visit the Manned Space Center of NASA in Houston, for orientation of the Apollo Program at the Lunar Return Laboratory. Two weeks in August 1967 were spent at a Summer Conference for Post-Apollo Planning, at Santa Cruz.

Publications during the year appeared in Talanta, Science, and Geochimica Cosmochimica Acta, and concerned trace element distribution in marine sediments and interstitial waters. Six students are working on various aspects of marine and organic geochemistry under Ian's direction. He developed an instrument for in situ measurement at great depths in the ocean, as a beginning for construction of an ecological in situ probe, is

principal investigator on the NASA Lunar project, hoping to obtain samples from the Moon for analysis, and is placing instruments on the deep-drilling vessel of JOIDES, for ship-board analysis of gases and dissolved ions in interstitial waters.

Helen Tappan Loeblich, Ph. D., Univ. Chicago

An article published in *Palaeogeog.*, *Palaeoclim.*, *Palaeoecol.*, on "Primary production, isotopes, extinctions and the atmosphere" discussed fluctuations in abundance of phytoplankton through geologic time, and the many interrelated effects of this fluctuation. Further elaboration of her model of Fluctuating Productivity, and various aspects of protistan evolution are given in a larger article (jointly with Al Loeblich, in press), and testing of some aspects of this model will be undertaken with support of a 3-year grant from the Petroleum Research Fund, Amer. Chem. Soc., beginning in September. Research and publications during the year also concerned multifaceted aspects of planktonic microfossils and their interrelationships, ranging from various phytoplankton groups, to Tertiary tintinnids and Cretaceous foraminifers. Many of these projects and resultant publications represent joint research with husband Al. His scanning electron microscope, at Chevron Oil Field Research Co., was used in many, as in description of the first known Tertiary tintinnids, and (in addition to standard methods, such as thin sections and X-ray) interpretation of their wall structures, method of wall formation, and relationships. Scan studies also were made of various genera of ebridians (siliceous nannofossils), and the siliceous dinoflagellate *Actiniscus*, in studies of Paleozoic acritarchs (organic walled phytoplankton) and the wall structures and ultra-microscopic morphology of various foraminifers.

Major projects that are continuing are the preparation of a text for micropaleontology for Harper & Row (hopefully to be completed this year), with a biologic rather than systematic or stratigraphic emphasis, a large project on Holocene foraminiferal ecology of the Sahul Shelf off Northwest Australia, and preparation of many sections for the flagellate volume of the *Treatise on Invertebrate Paleontology* (Part B). Necessary background studies for these resulted in indices and bibliographies for various groups, with continuing annual supplements. These have covered calcareous nanoplankton, tintinnids, silicoflagellates, ebridians, and (in preparation) Russian Paleozoic acritarcha. Articles on Foraminifera were prepared for the *Encyclopedia of Marine Resources* and the *McGraw Hill Encyclopedia of Science and Technology*. Recent and future directions of research in "Foraminiferida" and "Protista other than Foraminifera" were discussed in invited articles to be published in the *Journal of Paleontology*.

After many years delay, due to shortage of funds, remodeling of the micropaleo lab climbed up in the priorities

list to begin this spring. Part of the former laboratory is being converted for palynological preparation, and the remainder will be retained for sample washing. Graduate students under her direction are studying various morphological, stratigraphic, ecologic and evolutionary aspects of Paleocene-Eocene planktonic foraminifera (Ron Schmidt presented papers on different aspects of this at the GSA in New Orleans, and the SEPM in Bakersfield), Pleistocene Foraminifera (Egil Bergsager), Cretaceous Foraminifera (Phil Owens) and Cretaceous-Paleocene siliceous microplankton (Bill Cornell). Two of these students were supported in part by a grant from NSF.

Gerhard Oertel, Dr. rer. nat., University of Bonn
Gerhard returned from a year's sabbatical in Europe in September, after spending the last two months in bed due to an accident. During the sabbatical he completed a systematic collection of important British slates, for laboratory investigation of the mechanism of the formation of slaty cleavage. A side-effect of the year's trip was the publication "Lessons from a feasibility study for computer models of coal-bearing deltas", *Sedimentology*, vol. 9, jointly with E. K. Walton, of the Geology Department, University of Edinburgh.

The academic year was spent in investigation of the fabrics of slates, by means of the X-ray pole-figure device, and in teaching.

John L. Rosenfeld, Ph. D., Harvard
John is currently completing his work on rotated garnets, and their use in deciphering the geology of western New England. The latter study is now in press. He is presently working on piezothermometry, taking advantage of stress-optical halos around quartz inclusions in garnet. Other research in progress involves map preparation and geologic interpretation of the Middle Haddam Quadrangle, Connecticut, in collaboration with G. P. Eaton. This will appear in the USGS Geologic Quadrangle series.

William W. Rubey, D. Sc., Villanova; Yale
Although Professor Emeritus, Bill conducted a seminar for graduate students during the winter quarter, 1968, on advanced topics in geology, such as modern concepts of the oceanic basins, processes leading to segregation of continental-type rocks, geochemical balance of erosion and sedimentation, and other topics of similar scope, depending upon the interests of the participants. Attempts to limit the number in the seminar to a maximum of twelve, did keep it to fifteen! This completed his formal teaching duties.

He has been much in demand by other campuses and societies as a lecturer and discussion leader. He gave the Emmons Lecture at the Colorado Scientific Society in Denver (January, 1968),

and spent several days in Bloomington, Indiana, at Indiana University (April), where he had been invited to present a colloquium and informal seminar. In October he was the invited lecturer at Western Michigan University's Visiting Scholar Program, in Kalamazoo, giving an evening talk and two afternoon seminars on the "Geologic History of the Hydrosphere and Atmosphere", and the "Overthrust Belt of Western Wyoming and Southern Idaho". The following week he lectured at the University of Wisconsin.

Bill also was a group discussion leader at a conference on the Origins of Life, of the New York Academy of Sciences, held in Princeton, New Jersey, and lectured on the Denver Earthquakes at Scripps Institution of Oceanography.

Ronald L. Shreve, Ph. D., California Institute of Technology
Ron has been on leave of absence during this past Spring Quarter, as Visiting Professor at the University of Minnesota, Minneapolis. His continuing studies of landslides and glacial motion processes led to the publication of two papers, "The Blackhawk Landslide", as GSA Special Paper 108, and "Leakage and Fluidization in Air Layer Lubricated Avalanches", in Bull. GSA, v. 79. He will be back in California in July.

J. William Schopf, Ph. D., Harvard
Bill Schopf joins us this coming academic year. He obtained a B. A. from Oberlin College, and his M. S. and Ph. D. from Harvard. Since then he has been a Teaching Fellow in Paleobotany, and Junior Fellow in the "Society of Fellows" at Harvard, except for the summer of 1967 when he was a Research Associate at the NASA Ames Research Center in California. He spent the spring of 1968 in Australia, on a collecting trip in the Precambrian rocks. Trained as a paleobotanist, his emphasis has been on the bacteria and primitive algal forms of the Precambrian. Numerous publications on these have appeared, some with E. S. Barghoorn and other associates at Harvard, concerning early Precambrian fossils from South Africa, and from Central Australia, in Science (1965-1967), and in the Journal of Paleontology. Electron microscopy and biochemical investigations have added to the data obtained from optical microscopy alone, and are particularly useful in studies of these most ancient organisms. He will teach a seminar in paleontology this year.

William S. Ting, Ph. D., Glasgow
Associate Research Geologist Ting was elected Academician, Chinese Academy of Science, this year. His present research concerns fungal spores in amber from the Cretaceous of Israel and the Mexican Miocene, the pollen content of the La Brea asphalts, and pollen studies of the Pine Valley Pleistocene deposits. Later in the present year he will be working on mid-Pleistocene palynology of the Trinil level, associated with Pithecanthropus erectus remains.

Four papers were completed; one on the Tertiary gymnosperm pollen of the western United States will appear in *Pollen et Spores*, that on palynology of the Eocene Del Mar Formation possibly will be in the U. C. Geological Publications, and final manuscript revisions are being made for studies of the Pintwater Cave, and for a theory of pollen analysis. Miscellaneous studies during the year were of surface samples from Saanich Inlet, Vancouver, and the electronmicroscopy of the cell wall of Pinus pollen. A paper on Fung-huan (a bird of the Pheasant family) was published in the Memoir of the Ethnological Institute of China, Academia Sinica (in Chinese), and two others, concerning paleontology and historical extinction of mammals in North China, and on historical shorelines of the North China Plain, were published in Taiwan.

Kenneth D. Watson, Ph. D., Princeton

Part of the summer of 1967 was spent in Ontario and Quebec, investigating geological relationships and textural and structural features of metamorphosed metal deposits. Research completed during the past year concerned "Eclogite inclusions in Kimberlite Pipes at Garnet Ridge, northeastern Arizona" (with D. M. Morton), and raises the question of a genetic relationship between eclogite and the soda-rich basic rocks of the Colorado Plateau. Another manuscript (with D. G. Brookins) concerned "Carbonatite, associated with Kimberlite, from Bachelor Lake, Quebec". This study showed a similarity in Sr isotope ratios and total Sr between calcite of kimberlite, regarded as a primary mineral on the basis of geological and textural evidence, and that of carbonatites.

George W. Wetherill, Ph. D., Chicago

A member of the Institute of Geophysics and Planetary Physics, as well as the Department, George also teaches courses in geology. His specialization is in geochronology, isotope geology, and studies of meteorites. He is among those chosen by NASA to analyze material to be obtained by Apollo astronauts from the Moon. His lecture in November, sponsored by the Institute, concerned stony meteorites.

RESEARCH ASSOCIATES

Dr. Alexander Stoyanow, Ph. D., Moscow, and formerly professor of Geology at the University of Arizona, has been a Research Associate of the Department of Geology since 1950.

Dr. Edward C. Wilson, Ph. D., U. C. Berkeley, Curator of Invertebrate Paleontology, L. A. County Museum, became a Research Associate this academic year.

Dr. Mason L. Hill, Ph. D. Wisconsin, a structural and petroleum geologist, formerly with Richfield Oil Company, will become a Research Associate of the department beginning in September, 1968.

VISITING PROFESSORS

1967-1968

During the winter quarter, two visiting professors joined the department. Each offered a course in his particular specialty, and advised students on related problems during his stay.

Professor Everett C. Olson, Department of Geophysical Sciences, University of Chicago, taught the seminar in paleontology entitled "Problems of Paleocology and Evolution", for which 14 enrolled, although other students and faculty also attended and joined in the discussions. The seminar was centered around problems of interpretation of the fossil record, systematics, the nature of phyletic sequences, biometrical analysis, mechanics of evolution, ecologic reconstruction, and the development of community structure through time.

Professor Olson is an authority on Permian reptiles and amphibians, as well as the theories and mechanisms of evolution.

Professor William C. Krumbein, Department of Geology, Northwestern University, is an authority on the application of statistics to ecological problems. He taught a seminar entitled "Statistical Designs in Geologic Problems". Lectures were related to the text by Krumbein and Graybill, "Statistical models in geology", and each of the 30 enrolled students had an individual project to which statistical applications were made. Many other students and faculty members attended the class sessions of one of the most crowded graduate courses in many years.

1968-1969

Two visiting professors will be with us this coming fall quarter:

Dr. Kurt Georg Verner Bostrom, Associate Professor, Institute of Marine Sciences, University of Miami, Florida, will conduct a seminar in Sedimentology, concentrating on volcanism and sedimentation on the Rift-Rise System.

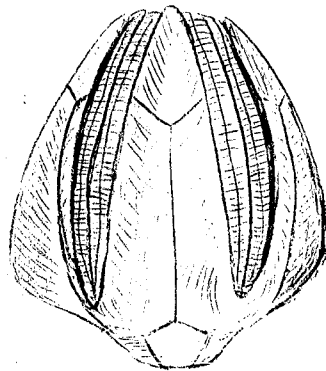
Dr. Keisuke Ito, Assistant Professor, Department of Geoscience, Osaka City University, Osaka, Japan, will teach the advanced course in petrology, Geology 236A, Igneous petrology.

MUSEUM ACTIVITIES

Louella Saul, Museum Scientist, in addition to curatorial duties, collected fossils from the Pigeon Point Formation along the Santa Cruz coast, near Benecia, California, and from Baja California, at Punta Banda, San Antonio del Mar, and Punta San Jose.

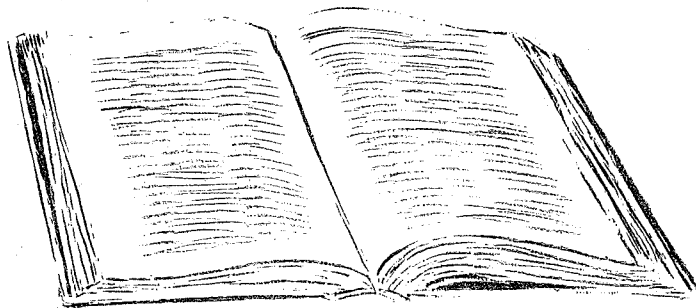
Takeo Susuki, Museum Scientist, is continuing studies of Triassic faunas. Extra-hours work with a local amateur Earth Science group, led to a public showing at the Santa Monica Civic Auditorium in October.

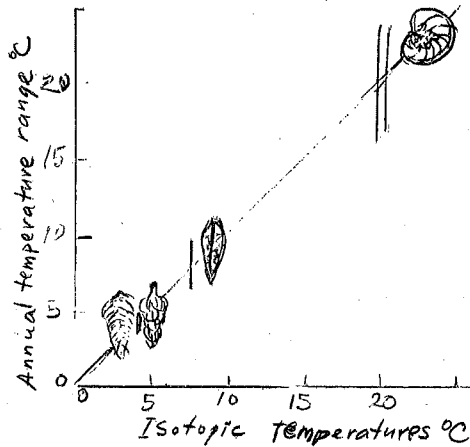
David L. Weide, Museum Scientist, in charge of rock collections, is putting final touches on his master's thesis, "The geography of fire in the Santa Monica Mountains". He will continue work for the Ph. D. in the Department of Geography, hence will be working for the Department of Geology only half-time. During the summer (1968) field work will be done in the extensive Quaternary terrace deposits of the Agate Basin in Wyoming. A paper on the control exerted by rock fabric in the manufacture of stone tools will be presented at the Great Basin Conference at Pocatello, Idaho in August.



LIBRARY

The departmental library serves three departments, the Department of Geology, Institute of Geophysics, and the Department of Planetary and Space Sciences. Two full-time librarians are assisted by 13 part-time student assistants. The department library contains a total of more than 51,000 volumes, and has current subscriptions to 1596 journals. In addition, exchanges are maintained with some Soviet bloc countries, and the Library Farmington Plan helps to obtain current European monographs. Among larger additions to the reference section is the USGS Catalogue of Books in the Survey Library. Although the University library budget has been reduced during both of the past two years, preventing the completion of some desired sets, back issues of some journals have been obtained, and other sets hopefully will also be completed as available. The current proliferation of new journals in all fields and many specialities, compounds the difficulties of working with reduced budgets.





New Graduates, 1967-1968

Oxygen isotopes*
Forams and belemnites
Lived in the ocean and
Died there en masse

Building their shells out of
Calcium carbonate,
Leaving a record of
temperatures past.

* If you don't agree that this is a nonsense phrase, you'll have to consider it poetic license!

BACHELOR OF ARTS

Year ending June, 1967

(Omitted from list in
previous newsletter)
Barker, Philip L.
Hart, Robert Louis
Waldbaum, Raymond P.

Year ending June, 1968

Chris, Terry
Clemens, Jan
Herring, James
Hill, Robert L.
Holman, William
Jensen, Gwen
Kopel, Jerry
Lister, Ken
Livingston, Robert
Richards, John
Wilson, John

MASTER'S AND PH. D.'S

(Where no thesis or dissertation title is listed, the Master of Science was received by examination.)

Adams, Herbert G., M. S., 1968

Continuing studies toward the Ph. D. Having a B. A. from Pomona, Adams was a Shell Oil Fellow during 1967-68.

Barrows, Allan, M. S., 1968

An A. B. from Dartmouth, and UCLA Shell Oil Fellow during 1967-68, he is presently continuing studies toward the Ph. D. at UCLA.

Bertholf, Harold Wyman, M. S., 1967

"Geology and oil resources of the Timber Canyon area, Ventura County, California." He received the B. A. from U. C. Santa Barbara, his current position and activities appear in the alumni news.

Filice, Alan Lewis, M. S., 1967

"Geology of a part of the Stillwater Mountains, Nevada." He came to UCLA from San Jose State College where he obtained a B. S.

Hu, (Mrs.) Chin-Nan Lee, M. S., 1967

"Rb-Sr Age determinations on the younger Precambrian igneous intrusions, Needle Mountains, Colorado."

Kern, John Philip, Ph. D., 1968

"Early Pliocene paleoecology of the Eastern Ventura Basin, Southern California." A UCLA graduate A. B., Kern held an NDEA-IV Fellowship.

Konigsberg, Richard Leonard, M. S., 1967

"Geology along the San Francisquito Fault, Los Angeles County, California."

Meade, Robert Francis, Ph. D., 1967

"Molluscan Paleoecology of the Fernando Group of the Southern Ventura Basin, California." Meade is Assistant Professor of Geology, Cal State Los Angeles.

Miller, Richard Harry, M. S., 1967

"Silurian conodonts from the Starcke Limestone of Central Texas." Continuing graduate studies at the University of Texas, Austin.

Neumann, Else Rahnild, M. S., 1967

"Comparison of preferred orientations of calcite and dolomite in experimentally and naturally deformed rocks."

Nickle, Neil L., M. S., 1968

"Geology of the Southern part of the Buena Vista Hills, Churchill County, Nevada." He had obtained a B. S. from Cal State Los Angeles.

De Quadros, A. Mel, M. S., 1968

"The distribution and occurrence of copper in the Karmutsen Group, Vancouver Island, British Columbia." Had a B. S. C. from Hous, London.

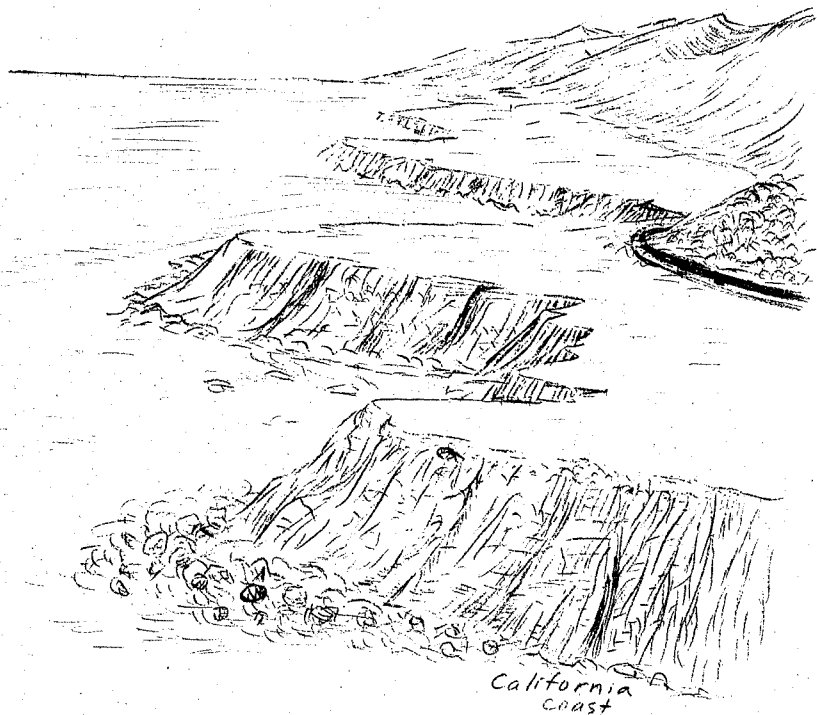
Ritchey, Joseph L., M. S., 1968

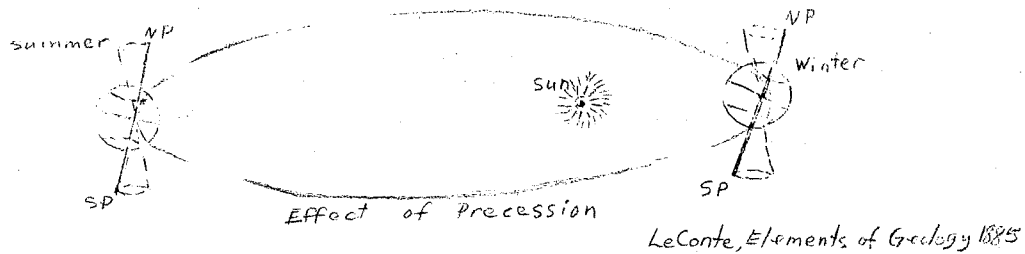
"Significance of Piezobirefringence around minerals included

in Pyrope from Diatremes, Four Corners Area, Arizona." A. B. also from UCLA, and a teaching assistant during 1967-68.

Roohi (Mrs.) Mehrangiz P., M. S., 1968
Obtained her B. S. from the University of Teheran.

Tullis, Terry E., M. S., 1968
Had a B. A. from Carleton College, and was NSF Fellow during 1967-1968; continuing studies for the Ph. D.





ALUMNI NEWS

Higgledy piggedy
Why glaciation?
Ice-covered oceans and
Migrating poles?

Temperature, rainfall, and
Sun's radiation? Did
Earth's inclination and
Orbit play roles?

The most frequent suggestion for change in the newsletter from last year, was that more news be given of alumni, their present locations and the type of work they are doing, as well as their addresses. Although we attempt to keep our address file up to date, some alumni may not have received the first issue. All those who replied to the editor's request for information are included below, a total of nearly 100, but not a very high percentage of those to whom the first newsletter was mailed. Some information was sent in by others. We particularly encourage any that are not listed below to notify us of present addresses, and supply information as to current activities for the next edition. Future letters will not repeat these same addresses, but hopefully will include new items concerning these and others, and will give changed addresses. You might like to save this section for future reference. To all who sent in data, news, suggestions and comments, our sincere thanks. Other data was gleaned from American Men of Science, newspapers, journals, etc., although as a "spare time" project, the editor was limited in the extent to which this could be done. The following are in alphabetical, not chronological order, as colleagues' names are more readily remembered than dates of graduation.

Harold A. Allen, B. A., 1950

Geologist, with the U.S.D.A. Soil Conservation Service, 5263 Emerald Street, Boise, Idaho, 83707. Harold was recently promoted to state Staff Geologist. He is engaged in engineering geology studies relative to the design and construction of several dams in Idaho.

Bailey, William C., B. A., 1931

Deputy State Oil and Gas Supervisor, Department of Conservation, Division of Oil and Gas, 830 N. La Brea Ave., Inglewood, Calif., 90302.

Bain, Roland, J., B. A., 1952; M. A., 1954
Geological Consultant (Petroleum), 2844 Latham Drive, Sacramento, Calif., 95825. Since leaving UCLA, Bain held a Fulbright scholarship in Paris (1956-57), at the Institut Français de Petrole, and Université de Paris. He was president of the Geological Society of Sacramento in 1960-1961.

Barron, Bruce M., B. A., 1953
Geologist, Field Manager, Oilwell Research Inc., 1539 W. 16th St., Long Beach, 90813. Barron writes that the Long Beach geologists meet for luncheon on the first Wednesday of each month at the Elks Club, 4101 E. Willow, Long Beach. The gathering is informal, and all geologists or friends are invited.

Barry, William, B. A., 1943
Instructor in Geology, Santa Ana College, 1530 W. 17th St., Santa Ana, California, 92706.

Berkoff, Eugene W., B. A., 1953
Geological Engineer (Computer applications), Ore Reserves Branch, Mining Division, U. S. Atomic Energy Commission, Grand Junction Office, Grand Junction, Colorado, 81501. He writes that his current work involves computers and their application toward the solution of problems in ore reserves, mining and geology, using statistical and other mathematical methods. He is mainly working with the Sandine Corp. IBM 7090 in Albuquerque but hopes his office will soon acquire its own computer.

Bertholf, Harold W., M. A., 1967
Senior Petroleum and Mining Appraisal Engineer, State of California Board of Equalization, Box 1799, Sacramento, California, 95814. Bertholf was recently transferred from the Ventura area, where in 1965 he served as Treasurer of the Coast Geological Society, and in 1966 was Coastal Section Director of the AIME. He also was technical program chairman in 1966 for the California Coastal section convention.

Beus, Stanley S., Ph. D., 1963
Chairman, Department of Geology, Northern Arizona University, Flagstaff, Arizona. Beus has just received a grant from NSF for research on Devonian stratigraphy and paleontology of northwestern Arizona.

Blanc, Robert P., B. A., 1953; M. A., 1958
Minerals Exploration Manager, Getty Oil Company, 3540 Wilshire Blvd., Los Angeles. His work is largely in international minerals exploration, he is on the Executive Committee, Mining Branch, Southern California Section, AIME, and has in press an article with George B. Cleveland on "Geology related to natural slope stability, San Clemente, California."

Bonham, Harold F. Jr., B. A., 1954

Associate Mining Geologist, Nevada Bureau of Mines, University of Nevada, Reno, Nevada, 89507. He obtained the M. S. in 1962 from the University of Nevada, and was promoted from assistant to associate geologist July, 1967. Current research concerns the geochemistry of ground water in mineralized areas (with the support of an OWR grant), and the geochemistry of epithermal ore deposits. Recent publications include two maps for the Nevada Bureau of Mines, Nos. 32 and 33 (1967), on the Silver Producing Districts and Gold Producing Districts of Nevada. In press (1967) is "Geology and Mineral Deposits of Washoe and Storey Counties, Nevada."

Briggs, Colver R., B. A., 1937

Since 1952 has been with Ford Motor Co. in Dearborn, working on research and engineering programs and currently Director of Automotive Safety Research for Ford. Address: 642 Meadowlane Road, Dearborn, Michigan, 48124.

Brown, James B., A. B. 1955

Staff Assistant, Pacific Lighting Service and Supply Company, 720 West Eighth Street, P. O. Box 54790, Terminal Annex, Los Angeles, 90054. Brown also did graduate work, completing the equivalent of a B. A. in Geography, at Cal State Los Angeles. In press in the two-volume AAPG "Natural Gases in North America", is Brown's chapter on the Los Angeles Basin.

Brumbaugh, Robert M., B. A., 1956

Staff Engineer, Lockheed Missiles and Space Co., Sunnyvale, Calif. Brumbaugh was promoted to a Systems Test Specialist in the Space Systems Division last August. He writes that he has taken engineering and mathematics courses at UCLA and at San Jose State, and is within 25 units of completing an Electrical Engineering degree, B. S. E. E., from San Jose State. We also thank him for news of another graduate, but as he will see from this report, Jim Hart is back in California from his Texas sojourn.

Bush, Gordon L., M. A., 1956

Bush is now Senior Geologist, Shell Canada Ltd., Box 186, Edmonton, Alberta, Canada.

Canut, A. Louis, B. A., 1954

Since February 1, Vice President and General Manager, Sage Oil Company, Inc., 3424 Wilshire Blvd., Los Angeles, 90005.

Champeny, Jon D., M. A., 1962

He had received his B. A. in geology in 1959 from U. C. Santa Barbara, and was with the Humble Oil & Refining Co. in Corpus Christi until last August (in the Exploration Dept.). Present address is with Production Department, Humble Oil & Refining Co., P. O. Box 672, Kingsville, Texas, 78363. He writes that UCLA grad W. D. Burton is now with the Humble Minerals Dept. in Reno, Nevada.

Cooper, Jack C., B. A., 1939; M. A., 1941
Senior Geologist, Continental Oil Co., 4247 Telegraph Rd.,
Ventura, California. Cooper was recently transferred to
Ventura (last October), after a 20-year absence, 10 spent
in the Rockies, and 10 in the Permian Basin and the Gulf
Coast. He is an Honorary Life Member of the Four Corners
Geological Society, and its Past President, and has also
served as President of the Fort Worth Geological Society
and the Southwest Federation of Geological Societies.

Crowell, John C., Ph. D., 1946
As he moved from UCLA to UC Santa Barbara last year, he has
also moved from the staff news to alumni news section! John
writes that the first newsletter made him somewhat nostalgic
for the "old halls down south". I fear that the nostalgia
would pass quickly, after a glance through the window @t
their beautiful smog-free coast. He is Professor of Geology,
Department of Geology, U. C. Santa Barbara, Santa Barbara,
California, 93106.

Diehl, Andrew Lee, B. A., 1948
Senior Staff Production Geologist, Shell Oil Co., Offshore
Production Dept., P. O. Box 60193, New Orleans, Louisiana,
70160. Diehl had been in Exploration and Production Research
in Houston until 1964, with research oriented toward salt
domes and sedimentation. The last part of his stay in
Houston was as Section Head of Production Geology Research.
In his present position in New Orleans, he is involved in
offshore development operations.

Dohlen, Howard G., B. A., 1950
Logging Technician, Pacific Oil Well Logging, Inc., Box 53,
Santa Paula, California, 93060. He is a member of the AAPG,
and the American Numismatic Association. Just proves that
oil men are interested in money!

Dudley, Paul H., Jr., M. A., 1955
Assistant Division Exploration Manager, Humble Oil and Refining
Co., P. O. Box 60626, New Orleans, Louisiana. Dudley was busy
working on the GSA convention, which we all enjoyed so much in
New Orleans in November.

Elam, Jack Gordon, B. A., 1943; M. A., 1948
Consulting Geologist, 205-A Gulf Building, Midland, Texas,
79701. After leaving UCLA, he obtained the Ph. D. from
Rensselaer Polytechnic Institute, 1960. He is currently
doing research on the tectonic style in the Permian Basin
and its relationship to cyclicity. He was President of the
West Texas Geological Society 1966-67, first Vice Pres. 1965-
1966, Treasurer in 1964-65; Secretary of the Permian Basin
Section of SEPM, 1962-63; Chairman of Midland Chapter of
S.I.P.E.S., 1965-66, and Editor and member of Board of Direc-
tors of the Society of Independent Professional Earth Scientists.

Ellis, J. H. Northrop, B. A., 1929

Supt. of Operations, Pacific Lighting Service and Supply Co., 720 W. Eighth St., Los Angeles, 90017. He writes that he has been with the same company since August 1931, and is responsible for natural gas compression and storage in depleted or semi-depleted oil and gas fields. Articles on gas storage have been written for the American Petroleum Institute, American Gas Association, and Pacific Coast Gas Association.

Exum, Frank A., B. A., 1956; M. A. 1957

Geologist, Marathon Oil Company, Denver Research Center, P. O. Box 269, Littleton, Colorado, 80121. He is working as an intra-company consultant, specializing in detrital rocks. He received the "best paper" award at the 1967 S.E.P.M. convention in Los Angeles, for a paper (co-authored with J. C. Harms), on "Comparison of Marine-Bar with Valley-fill stratigraphic traps, western Nebraska". (The newsletter editor, one of the best-paper-award judges that year, can attest to the high quality of the presentation, although not then aware that it was by an alum. of UCLA!)

Fernow, Donald, M. A., 1960

Oil Industry Analyst, Lord, Abbett Co., Inc., 63 Wall Street, New York, N. Y., 10005. A Chartered Financial Analyst, New York Society of Security Analysts, he has published articles in the Financial Analyst Journal, and the Commercial and Financial Chronicle.

Fine, Spencer F., B. A., 1941; M. A., 1947

Manager for Exploration Research, Far East, ARCO Ltd., Box. 2521 GPO, Sydney, N.S.W., Australia. Formerly Southern District Geologist, stationed in Long Beach, Calif., he has been in Australia since Nov., 1966. He has been on the AAPG Membership committee, and is past president of the Pacific Section, AAPG.

Fothergill, Harold L., B. A., 1941

Personnel Coordinator, Union Oil Company of California, P. O. Box 7600, Los Angeles, California, 90054. He is Secretary of the Pacific Section, AAPG.

Fritsche, A. Eugene, B. A., 1958

Assistant Professor, Department of Geology, San Fernando Valley State College, 18111 Nordhoff Street, Northridge, California, 91324. He is continuing his research on the Miocene geology of the central Sierra Madra Mountains, Santa Barbara County, California.

Graves, Doyle T., B. A., 1941

Formerly in Sydney, New South Wales, Australia, with Union Oil, he has been transferred back to Union Oil Co., Great Falls, Montana.

Gross, David (Beppi), B. A., 1954; M. A., 1958
Project Geologist, Oroville Dam, California State Department of Water Resources, P. O. Box 939, Oroville, California, 95965. Gross was recently promoted to Senior Engineering Geologist.

Guynes, George E., M. A., 1959
Exploration Geologist, Mobil Oil Corp., P. O. Box 1770, Shreveport, Louisiana, 71102. He is involved in petroleum exploration in Mississippi, Alabama, and Florida.

Haines, R. B. (Dick), B. A., 1931
Senior Geologist, Continental Oil Company, P. O. Box 3357, Ventura, Calif., 93003. Haines has just completed 30 years with Continental Oil Company, all in California. Past President of the Pacific Section, AAPG, and past Treasurer and Editor of Pacific Petroleum Geologist, he has also published papers on the San Miguelito Oil Field, Ventura County in the Bull. AAPG, and Calif. Division of Mines Bulletin.

Hall, Charles E., B. A., 1949
Regional Geologist, Bureau of Reclamation, Region 7, Building 20, Denver Federal Center, Denver, Colorado, 80225. Hall was promoted to his present position in 1966. He has published articles on the Union Valley Damsite, El Dorado Co., Calif., and with J. W. Carlson, "Stabilization of soils subject to hydro compaction", A. E. G. Bull., v. 2, 1965, "The Las Aguilas Land Surface" was his contribution to the Sacramento Geol. Soc. Guidebook, Ann. Field Trip, May, 1963; and he contributed "The Las Aguilas Land Surface" and "San Luis Dam" for the Guide Book for Field Conference I, INQUA VIIth Congress, 1965.

Hall, Francis R., M. A., 1953
Associate Professor, Department of Soil and Water Science, University of New Hampshire, Durham, New Hampshire, 03824. From UCLA he went to Stanford, for a Ph. D., 1961, then on to the east coast.

Hall, K. B. "Pete", B. A., 1938
After 20 years with Richfield Oil Corp., as Scout-Geologist and Exploration Supervisor for the Coastal area, he retired from Atlantic-Richfield in 1966. Currently he is a consultant and rancher, at 11999 Santa Paula-Ojai Rd., Ojai, California, 93023.

Hart, Earl W., B. A., 1950
Associate Geologist, California Division of Mines and Geology, Ferry Bldg., San Francisco, 94111. Currently mapping the Nacimiento fault zone in the San Luis Obispo 15' quad and vicinity, he is also acting as Geologic Names Editor for the

Division of Mines and Geology, and attending U.C. Berkeley part time. He published "Mines and Mineral Resources", Calif. Div. Mines and Geology County Rept. 5, and "Economic Mineral Deposits of the Great Valley" in Geology of Northern California, Calif. Div. Mines & Geol., Bull. 190. Both appeared in 1966.

Hart, James M., B. A., 1956; M. A., 1959
Geophysicist (Senior Interpreter), Texaco Inc., 1215 E. San Antonio Drive, Long Beach, California, 90807. He was transferred to California from Bellaire, Texas in Feb., 1968.

Hartman, Donald C., B. A., 1954; M. A., 1957
Geologist, Texaco, Inc., Box 664, Anchorage, Alaska, 99501. He has been in Anchorage since 1962. As resident geologist for Texaco, his work includes field projects from the Western Arctic to Gulf of Alaska, as well as the Cook Inlet exploration and development. He is past treasurer of the Alaska Geological Society, and he and his wife Mary have 3 boys, ages 11, 4, 3.

Hatheway, Allen W., B. A., 1961
Graduate Research Assistant, Lunar and Planetary Laboratory, University of Arizona, Tucson, 85721. After leaving UCLA, he obtained the M. S. in Geological Engineering (Univ. Arizona, 1966), and is working toward the doctoral degree in Geological Engineering, investigating the formation of collapse depressions in basaltic lava flows. In press is an article, "Engineering Geology of subsidence at San Manuel Mine, Arizona", in Geol. Soc. Amer. Case Histories in Engineering Geology, v. 6.

Hayes, Paul L., B. A., 1940
Coordinator of Disaster Services, City of Anaheim, P. O. Box 3222, Anaheim. Also does some consulting in geology, and is Gen. Partner, Sespe Explorations. Interested in subsurface water studies and geologic hazards, he published "Earthquake risk in Southern California", a limited distribution brochure for the County of Orange, City of Anaheim and Southern California Civil Defense and Disaster Association. He is Co-Chairman (Southern Area), California section, AIPG.

Heard, Hugh C., B. A., 1956; M. A., 1958; Ph. D., 1962
University of California, Lawrence Radiation Laboratory, P. O. Box 808, Livermore, California, 94550.

Hershey, Alan R., B. A., 1950
Paleontologist, Shell Oil Company, Box 999, Bakersfield, California, 93302. A member of the San Joaquin Geological Society, Continuing Education Committee, Hershey is also C.P.G. 325 AIPG.

Hsu, Liang-chi, Ph. D., 1966
Research Associate, Department of Geochemistry and Mineralogy,
Pennsylvania State University, University Park, Pennsylvania,
16802. Before coming to UCLA, Hsu had obtained the M. S.
from National Taiwan University (1963). Current research
involves phase relationships in the system $Fe_3Al_2Si_3O_{12}-H_2O$
and properties of aqueous solutions and fugacity of water
in magma at high pressure and temperature. In press are
"Melting of fayalite up to 40 kilobars", J. Geophys. Research;
and "Selected phase relationships in the system Al-Mn-Te-Si-O-H,
a model for garnet equilibria", J. Petrol.

Hubbard, William F., B. A., 1953
Staff Geologist, Marathon International Oil Company, G.P.O. Box
687K, Brisbane, Queensland, Australia. Hubbard was recently
transferred to Australia from Ireland, where he had published
two articles on the Carboniferous stratigraphy of N.W. Ireland.

Hudson, Edward W., B. A., 1955; M. A., 1958
Geologist, Texaco, Inc., P. O. Box 2168, Bakersfield, California,
93303.

Irving, Earl M., B. A., 1934; M. A., 1935
Chief of Party, U. S. Geological Survey, U.S. AID-QCDPE, c/o
American Embassy, Bogota, Colombia. After leaving UCLA, was
a J. D. Dana Fellow, Yale University, 1936-1938; spent seven
years in Central America, 11 years in the Far East (Manila,
Philippines), 6 years in Brazil, and has been in Colombia
since 1963.

Johnson, Bradford, B. A., 1950; M. A., 1952; Ph. D., 1954
Geologist, Marathon Oil Co., 550 South Flower, Los Angeles,
90017.

Johnston, Robert L., B. A., 1936; M. A., 1938
Exploration Manager, Nigerian Gulf Oil Company, P.M.B. 2469,
Lagos, Nigeria. Johnston is on the committee of the Institute
of Petroleum, Nigerian Branch.

Kahan, Stanton F., B. A., 1956
Project Engineering Representative, Southern California Gas
Co., P.O. Box 3249, Los Angeles, 90054.

Kahle, James E., M. A., 1966
Geologist, Metropolitan Water District of Southern California,
Box 54153, Los Angeles, Calif., 90054.

Kane, Henry E., Ph. D., 1965
Associate Professor, Department of Geography and Geology, Ball
State University, Muncie, Indiana. Current research is on the
Strath terraces along the Kentucky River (for which a research

grant was made by Ball State Univ.), and glacial mapping of Delaware County, Indiana, A GSA Fellow, he attended the NSF Short Course in Geology of the Gulf Coast, at Rice University in Houston, and a short course in shallow seismic exploration and instrumentation, Soiltest, Baraboo, Wisconsin. Publications include "Some aspects of the Drainage Geography and Sedimentation of a portion of SE Texas", Proc. Indiana Acad. Sci., v. 75, 1965, "Sediments of Sabine Lake, the Gulf of Mexico and adjacent water bodies, Texas-Louisiana," J. Sed. Petr., v. 36, 1966, and "Recent microfaunal biofacies in Sabine Lake and environs, Texas and Louisiana," Jour. Paleont., v. 41, 1967.

Kiessling, Edmund W., B. A., 1950; M. A., 1958
California Division of Mines and Geology, 107 South Broadway, Room 1065, Los Angeles, Calif., 90012. Recently transferred to Los Angeles from the San Francisco office of the same division, his particular interest lies in California gypsum deposits.

Kistler, Phillip S., B. A., 1940
Partner with Bear and Kistler, Consulting Geologists, 1952 West Sixth Street, Room 336, Los Angeles, California, 90017. They have been in their new office since April, 1968, current activity primarily being in petroleum geological consulting, in domestic (mostly California) and foreign areas.

Knapp, Robert M., B. A., 1949
Division Development Geologist, Standard Oil Co. of California, P. O. Box 606, La Habra, California, 90633.

Kovinick, Mark, B. A., 1954; M. A., 1957
Exploration Geologist, Pauley Petroleum Co., Ten thousand Santa Monica Building, Los Angeles, California, 90067. Research is company oriented, on the structure and stratigraphy of the Santa Barbara Channel.

Lamar, Donald L., M. A., 1959; Ph. D., 1961
President, Earth Science Research Corp., 1543 3rd Street, P. O. Box 5427, Santa Monica, California, 90405. He is principal investigator on a NASA contract to study the shape and internal structure of Moon, using Lunar Orbiter data; together with Paul Merifield, he provides consulting for a wide range of clients. Recent publications have been on the shape and internal structure of Moon, and possible tidal effects early in the history of the Earth-Moon system that are registered in the geologic record.

Larson, Edwin, E., B. A., 1954; M. A., 1958
Associate Professor of Geology, Department of Geology, University of Colorado, Boulder, Colorado, 80302. He obtained

the Ph. D. from Colorado in 1965 and is interested in rock magnetic properties, paleomagnetism, and its application to geologic problems.

Lee, A. Theodore, B. A., 1934

Geologist, Texaco Inc., 3350 Wilshire Blvd., Los Angeles, California.

Lindsay, Donald R., M. A., 1952

Staff Production Geologist, Shell Oil Company, 1008 W. 6th Street, Los Angeles, Calif., 90054. Promoted from Senior Production Geologist, he was recently transferred from Bakersfield to L.A. (1967). Earlier he had been with Shell Development Co. in Houston (1961-1963), and is currently working on detailed studies of sandstone reservoirs for supplemental oil recovery.

Lipps, Jere H., B. A., 1962; Ph. D., 1966

Department of Geology, University of California, Davis, California, 95616. Jere writes that an interdisciplinary curriculum in paleobiology has been initiated at Davis, with participating faculty from the departments of Geology, Zoology, Botany, Genetics, and the Institute of Ecology. In addition to teaching at Davis, Jere also gives a summer course in marine geology and paleobiology at the University's Bodega Marine Laboratory. He is continuing his research on living and fossil Cenozoic foraminifera, calcareous and siliceous nannoplankton.

Lonsdale, Richard E., B. A., 1949

Obtained the Ph. D. in geography at Syracuse University, 1960, and is Assoc. Prof., Dept. Geogr., Univ. N. Carolina, Chapel Hill, N.C. 27514. He published Atlas of North Carolina, U. NC Press, 1967, and North Carolina Report, First Union Nat. Bank, Charlotte, 1967; present editor for The Southeastern Geographer.

McGill, John T., B. A., 1943; M. A., 1948; Ph. D., 1951

Chief, Engineering Geology Branch, U. S. Geological Survey, Denver Federal Center, Colorado, 80225. Has been in Denver since moving from the USGS project office at UCLA in August 1964. His current position in research administration leaves little time for other activities, according to Jack.

McJannet, George S., B. A., 1950; M. A., 1957

Geologist, Standard Oil Co. of California, Box 5278, Oildale, California, 93308. Recently transferred to the San Joaquin Valley after 10 years in the Rockies and Plateau States with Chevron West in Casper, Wyoming. Currently in development geology, he had two articles and was map editor for the Guidebook, "Geology of East Central Nevada", Eastern Nevada Geol. Soc. and IAPG, 1960.

McNey, Jerrold L., B. A., 1962

A news item in last October's Fullerton News Tribune, entitled "Geologist turns up live shell" invoked thoughts of frozen mammoths, live bacteria in salt deposits, awakened Egyptian mummies, and similar science fiction. It seems instead that McNey, geologist with Moore and Taber Engineering Co., Fullerton, Calif., turned up a live 20-mm cannon shell on a construction site near Moulton Parkway and the west end of Miguel Road, in the South Coast Regional Civic center, Laguna Niguel. The recovered "shell" was deposited with the El Toro Marine Air Facility, although they said the area where it was found had never been used for gunnery activities. Personally, I prefer hatching Protoceratops eggs!

Mann, Herbert, B. A., 1950

Senior Geologist, Shell Oil Company, Box 1200, Farmington, New Mexico, 87401. Has been senior geologist since July, 1967, is making structural studies of the Colorado Plateau, and occasional visits to western schools for Shell recruiting.

Marder, Kenneth A., B. A., 1958

Coordinator, Douglas Aircraft Co., 3000 Ocean Park Blvd., Santa Monica.

Maxwell, James M., B. A., 1958

Senior Geologist, McCulloch Oil Corporation of California, 6151 West Century Blvd., Los Angeles, California, 90045.

Meade, Robert F., Ph. D., 1967

Assistant Professor of Geology, California State College Los Angeles, Los Angeles, California, 90032

Merrifield, Paul M., B. A., 1954; M. A., 1958

Received Ph. D., University of Colorado, 1963, presently a partner of Lamar-Merrifield, Geologists-Geophysicists, and Director, Earth Science Research Corporation, 1543 3rd Street, P. O. Box 5427, Santa Monica, California, 90405. Prior to this he was a research scientist with Lockheed-California Co. (until 1964), and has taught during the summer quarter (1967) at Cal State Los Angeles. At present is principal investigator for a NASA contract to study satellite photography, and for two Navy Dept. contracts in connection with undersea laboratories; co-investigator on Kaiser Alum. and Chem. Corp. to search for placers, and on a NASA contract to study lunar orbiter data, as well as consultant to TRW Systems. During 1965-1967 published 8 articles and 3 abstracts, in J. G. R., Photogrammetric Engineering, Limnology and Oceanography, and Bull. GSA. A paper on large-scale cross-bedding and early Earth-Moon history was given at the national GSA in 1966.

Michael, E. D., M. A., 1960

Now in Saigon, with Pope, Evans and Robins, PERIL Box 124, A.P.O. San Francisco, 96214.

Miller, Clarence J., B. A., 1950; M. A., 1952

Senior Geologist, Shell Oil Co., 1700 Broadway, Denver, Colorado, 80202. Interested in petroleum geology, SW Wyoming, NW Colorado, and NE Utah, having moved to Denver in 1967 from Bakersfield.

Miller, Holmes O., B. A., 1932

Reservoir Engineer, Intex Oil Co., Box 1848, Bakersfield, California, 93303. He attended graduate school in Petroleum Engineering at USC in 1932-1934.

Mirsky, Arthur, B. A., 1950

Assistant Professor, Department of Geology, Indiana University, Indianapolis Downtown Campus, 518 N. Delaware Street, Indianapolis, Indiana, 46204.

Morris, Anthony E. L., B. A., 1942; M. A., 1962

President, Morris Petroleum Inc., and Petroleum Consultant, 10680 West Pico Blvd., Room 230, Los Angeles, California 90064. Resigned as Vice President of Pauley Petroleum Inc., 1965 to open his own office. He is continuing studies in Middle East tectonics, and is associate editor, Pacific Coast, AAPG.

Murphy, Michael A., B. A., 1950; Ph. D., 1954

Professor, Department of Geology, University of California Riverside, Riverside, California, 92502. Research concerns the Lower Cretaceous biostratigraphy and paleontology of California, and the Silurian-Devonian stratigraphy of Nevada.

Myron, Kenneth E., B. A., 1946

Division Manager, Ecuadorian Division, Texaco Petroleum Company, Apartado Postal 1006, Quito, Ecuador.

Newton, Robert C., Ph. D., 1963

Assistant Professor, Department of Geophysical Sciences, University of Chicago, Chicago, Illinois, 60637. Also was married in 1967.

Norris, Robert M., A. B., 1943; M. A., 1949

Associate Professor, Department of Geology, University of California Santa Barbara, Santa Barbara, California 93106. Received the Ph. D. from Scripps Institution of Oceanography (1951) and his research interests concern marine sedimentation and desert dunes, or Quaternary geology in general. Had a short article with UCSB grad students Floyd McCoy and Warren Nockleberg in Bull. GSA, concerning Algodunes of SE Calif. He will spend a sabbatical at the New Zealand Oceanographic

Institute, from July 1968-Feb. 1969, and be at the CSIRO Division of Soils (Dune Study), Adelaide, South Australia, from Feb. to August, 1969.

Oberste-Lehn, Deane, B. A., 1956

Physical Scientist-Research Staff, The RAND Corporation, 1700 Main Street, Santa Monica, California, 90406. Deane is working on remote sensing techniques for the detection of subsurface cavities, studies of the physical environment parameters pertinent to the deployment and siting of military weapon systems, and geophysical and geological experiments for lunar and planetary exploration. She published "Gravitational fields of earth models and the structure of the earth's interior", RM-3642-PR, the RAND Corp., May 1963, but most other reports are classified. Was assistant editor of Pacific Section AAPG Newsletter, 1966-1967.

O'Brien, Jerome J., B. A., 1932

Petroleum Consultant, 1434 Westwood Blvd., Los Angeles, California 90024. President, Colonial Production Co.; Director and Manager of Gas Supply for Western States Pipe Line Co.; Director, Texas Independent Producers and Royalty Owners. Was also director, Office of Oil and Gas, Department of Interior, Washington, D. C., until his resignation in January, 1964.

Orwig, Eugene R. Jr., Ph. D., 1957

Research Geologist, Mobil Oil Corp., 10737 Shoemaker Avenue, Santa Fe Springs, California. Was District Geologist in Alaska prior to last years' move to California; past president of the Pacific Section AAPG.

Paschall, Robert H., B. A., 1938

Principal Property Appraiser, State Board of Equalization, 1020 N Street, Sacramento, Calif. Talked this year at the AAPG national convention on "The influence of sedimentation on structure--the Ventura Basin, an example", is currently president of the California section, AIPG, and was recently promoted from the position of Senior Petroleum and Mining Appraisal Engineer (July, 1967). He writes that his "new job is in, of all things, property appraisal and property tax administration. Just shows what a geologist can adapt to. We might call geology the chameleon of sciences on the basis of my own recent experience".

Pearson, Ray E., B. A., 1938

District Explorationist, Atlantic Richfield Company, 5900 Cherry Ave., Long Beach, California 90805.

Perry, LeRoy, M. A., 1955

Now with ESSO, London, England.

Pine, Gordon, B. A., 1961

Is completing his Ph. D. at the University of Arizona, with a dissertation on the Martin Formation of central Arizona.

Proctor, Richard J., M. A., 1958

Chief Geologist, Metropolitan Water District of Southern California, Box 54153, Los Angeles, 90054. Was promoted from Assistant to Chief Geologist in 1963; current work is exploration for 52 miles of tunnels for distribution of surplus Northern California water ("Feather River project") into Southern California, including mapping, core drilling, pump tests, exploratory shafts, etc. Is Chairman, Los Angeles County Engineering Geologist Qualifications Board; Vice-Chairman, Los Angeles Section, Assoc. Engineering Geologists; Co-editor, "Engineering Geology in Southern California", published by Assoc. Eng. Geol., 1966, 389 pages.

Rammelkamp, James, B. A., 1954

In Saigon, with Pope, Evans and Robins, PERIL Box 124, A.P.O. San Francisco, 96214.

Redwine, Lowell, B. A., 1935; M. A., 1937

Research Associate, Union Research Center, Union Oil Co., P.O. Box 76, Brea, California, 92621. Advanced to candidacy for the Ph. D. in 1963, Lowell is also a registered graduate student at UCLA.

Reyes, G. Rafael A., M. S., 1967

Resident Geologist, Orito Field, Putumayo, Colombia, with address as c/o Texas Petroleum Co., Ado Aereo 3622, Bogota, Colombia. Recently promoted to Resident Geologist, Orito Field, he had previously been Assistant Hard Minerals Coordinator (for Hard Mineral exploration in Colombia).

Robitaille, Andre R., B. A., 1954

Superintendent, Field Operations, Holmes and Narver Inc., Pacific Test Division, 1126 Uluopihi Loop, Kailua, Hawaii, 96734. Until July, 1967 was Chief, Program scheduling, Pacific Test Division, for all AEC/DOD projects in the Pacific area. All work for the past 6 years with Holmes and Narver Inc. has been for the Atomic Energy Commission on both underground and surface nuclear testing experiments. Certificates granted: PERT/CPM 1963 by AEC; Management Supervision, 1964 by EG & G, Fallout shelter analysis 1964, by DOD. Member of AAPG, AIPG (CPG 1634), and Society of Military Engineers.

Ross, Donald C., Ph. D., 1952

Geologist, U. S. Geological Survey, 345 Middlefield Road, Menlo Park, California, 94025. Studying the granitic basement along the San Andreas Fault Zone, with hopes of correlations

across the fault, being able to trace clasts in gravels to their source, and learning more about chemistry and petrology of Coast Range granitics.

Roth, James C., B. A., 1956; M. A., 1959

Now a Staff Geologist for Texaco, in Trinidad, with a territory covering about one third of South America.

Scanlin, Donald G., M. A., 1958

Consulting Geologist and Real Estate Investment Broker (self-employed), P. O. Box 935, Santa Paula, California 93060. UC (Berkeley) B.A. 1956, worked as geologist for Union Oil from 1958-1964 in Santa Paula, Whittier, Bakersfield and Sacramento, and Olympia, Washington; currently involved in leasing and drilling activities in Ventura County, member of AAPG and AIPG.

Scott, Edward W., B. A., 1932

Manager, Exploration Research, Union Oil Co. of California, P.O. Box 76, Brea, California, 92621.

Shahnazarian, Arsen A., B. A., 1961

Petroleum Engineer-Geologist, moved in October, 1967, to the "Bay District", address: Standard Oil Co. of California, Western Operations, Inc., Box 876, Rio Vista, California, 94571.

Slade, Richard C., B. A., 1966

Now works for the Metropolitan Water District of Southern California, P.O. Box 54153, Los Angeles, California 90054.

Smith, Jay L., B. A., 1959

Project Engineering Geologist, Converse, Davis and Associates, P.O. Box 2268-D, Pasadena, California 91105. Consulting work in heavy construction in U.S. and Japan; residential development in southern California; research on "active" faults. Past Chairman, Los Angeles Section, Association of Engineering Geologists. Publications include "Geology of nuclear plant sites", in The Importance of the Earth Sciences to the Public Works and Building Official, Assoc. Eng. Geol. Spec. Publ. 1966, p. 367-386, and two articles with A. L. Albee: "Earthquake characteristics and fault activity in southern California", Assoc. Eng. Geol. Spec. Publ. 1966, p. 9-33; and "Geologic site criteria for nuclear power plant location", Trans. Soc. Mining Engineers, Dec. 1967.

Smith, Richard J. Jr., B. A., 1956

Senior Development Engineer, Long Beach Oil Development Co., 925 Harbor Plaza, Long Beach, California, 90802. Was Production Engineer for 8 years, transferred to Development Engineering in 1965 and promoted to present position in 1966. Current work is on oil well completion, while the production work

involved following water flood program progress, and individual oil well performance evaluation. Member AIME and API.

Smith, Victor M., B. A., 1948; M. A., 1951

Real Estate Appraiser, Utah State Dept. of Highways, Salt Lake City, Utah. He states he has been "out of geology since early 1960," but with the diversification in geology, can anyone really be out of it?

Stager, Harold K., B. A., 1948

Field Officer, Office of Mineral Exploration, U. S. Geological Survey, 345 Middlefield Road, Menlo Park, California, 94025. Was in Dahomey (West Africa) Project, 1963-1964, then transferred from the Branch of Foreign Geology; now in charge of Mineral Exploration assistance to mines in OME region II (California, Nevada, Alaska, Hawaii). Published geology of four quadrangles in SE Kentucky in 1962 and 1963, and an official report on "Mineral Reconnaissance in Northern Dahomey, West Africa", June, 1967.

Sullwold, Harold H., B. A., 1939; M. A., 1940; Ph. D., 1959

Geologist, George H. Roth & Assoc. (Consulting Petroleum Geologists), 3161 Oakdell Lane, North Hollywood, California, 91604. For the past seven years has specialized on the geology of the Sacramento Valley, is still interested in turbidites, and led a field trip in the Central Santa Monica Mountains for the 1967 AAPG meeting. Also became a grandfather Sept., 1967.

Taylor, James B., Jr., M. A., 1963

Staff Geologist (Regional studies, wellsite supervision), Ecuadorian Division, Texaco Petroleum Company, Apartado Postal 1006, Quito, Ecuador. Was in Bogota, Colombia, Ventura, California and Alaska before coming to Quito in 1965; taught course (in Spanish) of "Petroleum Geology" at Univ. Central de Quito. Work in Ecuador has involved Sub Andean Basin field geology of Upper Amazon area, regional studies, log analysis; was closely involved in Texaco's major oil discoveries in the Oriente of Ecuador, six producers, no dry holes to date--an unique experience. Member AAPG, GSA, Associate of Soc. of Prof. Well Log Analysts.

Thompson, Warren C., B. A., 1943

Professor of Oceanography, Department of Meteorology and Oceanography, Naval Postgraduate School, Monterey, California 93940. Received M. S., 1948 at Scripps Inst. Oceanogr., and the Ph. D. at Texas A & M, 1953. Has been in Monterey since 1953.

Trace, Robert D., M. A., 1947
Geologist, U. S. Geological Survey, 208 South Darby St.,
Princeton, Kentucky, 42445; also part time instructor for Univ.
Kentucky Hopkinsville Community College, Hopkinsville, Kentucky.
Work concerns geologic quadrangle mapping of Kentucky, CaF₂,
ZnS, PbS district and adjoining areas. Was president of
Kentucky Geol. Society about 1962.

Truex, John N., B. A., 1941; M. A., 1950
Senior Geologist, THUMS Long Beach Co., 100 Long Beach Blvd.,
Long Beach, California, Home address: 5430 Donne Ave.,
Tarzana, California, 91356.

Valentine, James, M. A., 1954; Ph. D., 1958
Acting Chairman, Department of Geology, Univ. California Davis,
Davis, California 95616. Jim has received a Guggenheim Fellow-
ship for the coming year for study of "The ecological architec-
ture of the marine biosphere."

Wagner, Holly Clyde, B. A., 1941; M. A., 1947
Research Geologist, USGS, 345 Middlefield Road, Menlo Park,
Calif. 94025. Wagner is making a paleoenvironment study of
Tertiary rocks bordering the San Andreas Fault, between Cholame
on the north, and Cuyama to the south. Recent publications
concern "Geology of western Washington" (with P. D. Snavely,
Jr.), "Geology of western Oregon north of the Klamath Mountains"
(with Snavely and MacLeod), "Petroleum Resources of Washington",
and "Petroleum Resources of Oregon".

Weber, Ernest M., B. A., 1953
Senior Engineering Geologist, California Department of Water
Resources, 909 South Broadway, Los Angeles, California, 90055;
recently promoted to acting chief of Water Resources Develop-
ment section; was on a special assignment for United Nations
in Iran serving as a consultant in geohydrology on a water
development program. Publications include "Computer simula-
tion of Ground water basins", ASCE, v. 90 (1964), and "Planned
utilization of ground water basins", TASH, no. 72, as well as
numerous departmental bulletins.

Weber, Harold, B. A., 1952; M. A., 1956
Geologist, California Division of Mines and Geology, c/o
Department of Geology, UCLA, Los Angeles, 90024. Working
on the geology of the Calico silver district and vicinity,
Mojave Desert; geology of California barite deposits; and
detailed geology of Thousand Oaks Quadrangle, Ventura and
Los Angeles Counties. Publications include Calif. Div.
Mines Geol. County Rept. 3, Geology and Mineral resources of
San Diego County.

Weissberg, Byron G., Ph. D., 1964
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