

*John P. Buwalda*

**DR. JOHN P. BUWALDA**, Professor of Geology and founder of the Geology Division at Caltech, died suddenly on August 19, while on a field trip with his son, Robert, in Frazier Mountain Park, Ventura County. He was 67 years old.

Dr. Buwalda came to Caltech in 1926 to organize the Division of Geological Sciences. He assembled the staff, worked out the instruction and research programs in geology, paleontology, and geophysics, and supervised the design and construction of the Charles Arms and Seeley W. Mudd Laboratories on the campus.

Born in Zeeland, Michigan, he was graduated from the University of California at Berkeley in 1912. After he got his doctorate there in 1915, he remained for two years as instructor in geology, then transferred to Yale University as an assistant professor of geology. In 1921 he returned to Berkeley as an associate professor, and stayed until 1926, when he came to Caltech.

Dr. Buwalda served as chairman of the Caltech Division of Geological Sciences until 1947, when he resigned to devote more time to research in structural geology. He continued with his teaching duties, however.

In addition to teaching, he had a distinguished career as a consulting geologist. He conducted the geological surveys for the dams and tunnels of the Colorado River Aqueduct of the Metropolitan Water District in southern California. He served as a consultant to the State Highway Division on the seismic safety of the San Francisco East Bay Bridge, and for 30 years he worked to convince the California public of the necessity of earthquake-resistant construction methods.

For many years he served on the board of expert

## THE SUMMER AT CALTECH

advisers for the National Park Service, as a consultant to the U. S. Geological Survey, and as a research associate of the Carnegie Institution in Washington. From 1951 to 1953 he was president of the Seismological Society of America.

"For 40 years," said Robert P. Sharp, now chairman of Caltech's Geology Division, "John Peter Buwalda has been a major figure among geologists on the Pacific Coast. His distinguished career has combined education, administration, scientific work and public service.

"Through his work on earthquakes and as an engineering geologist on numerous large construction projects he has made a major contribution to the development and growth of the southern California community. The great sense of loss felt by his family, colleagues, students, and many friends and associates, is partly offset by the satisfaction derived from a review of his many accomplishments."

### JPL Director

**DR. WILLIAM H. PICKERING**, Professor of Electrical Engineering, was appointed new director of the Jet Propulsion Laboratory last month, succeeding Louis G. Dunn, who resigned to join the staff of the Ramo-Wooldridge Corp. of Los Angeles. Dunn will be associate director of the firm's guided missile research program.

Dr. Pickering, a native of New Zealand, received his BS from Caltech in 1932, his MS in 1933 and his PhD in 1936. He has been a member of the teaching staff here since that time. He was associated with the late

Dr. Robert Millikan and Dr. Victor Neher in pioneer cosmic ray studies, and during World War II he served on the Scientific Advisory Board of the U. S. Air Force. He joined the Jet Propulsion Laboratory staff in 1944 as a section chief, and in 1951 was appointed chief of the Guided Missile Electronics Division.

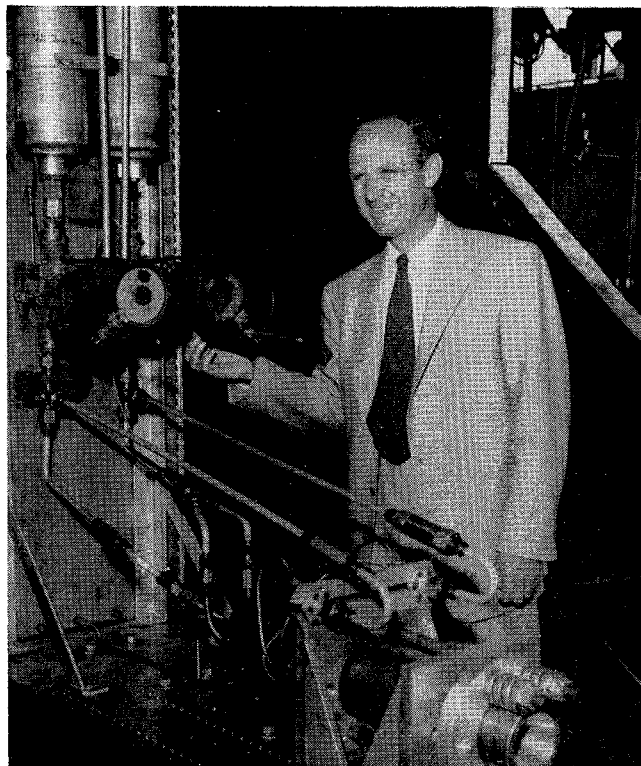
Dr. Dunn, also a Caltech graduate (BS '36, MS '37, MS '38, PhD '40) became director of the Jet Propulsion Laboratory in 1945, having served previously as a member of the faculty of Caltech's Guggenheim Aeronautics Laboratory.

John J. Burke, still another Caltech graduate (BS '46) has succeeded Dr. Pickering as chief of JPL's Guided Missile Electronics Division. He came to the Lab in 1948 as a research engineer, and had been serving as section chief of Component Developments.

### New Trustees

**T**HREE NEW MEMBERS were elected to the Institute Board of Trustees last month: Robert L. Minckler, President of the General Petroleum Corporation; Alden G. Roach, President of the Columbia-Geneva Steel and Consolidated Western Steel Divisions of the United States Steel

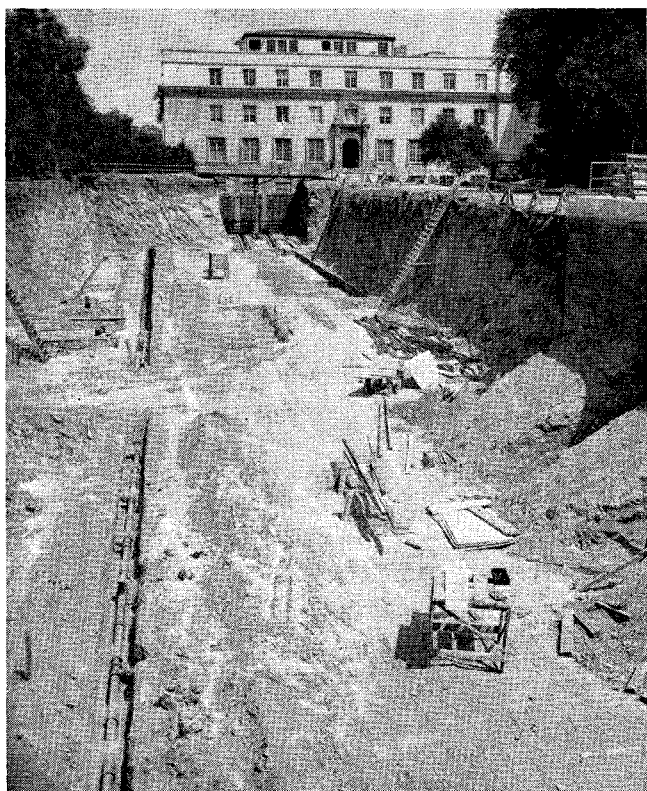
CONTINUED ON PAGE 20



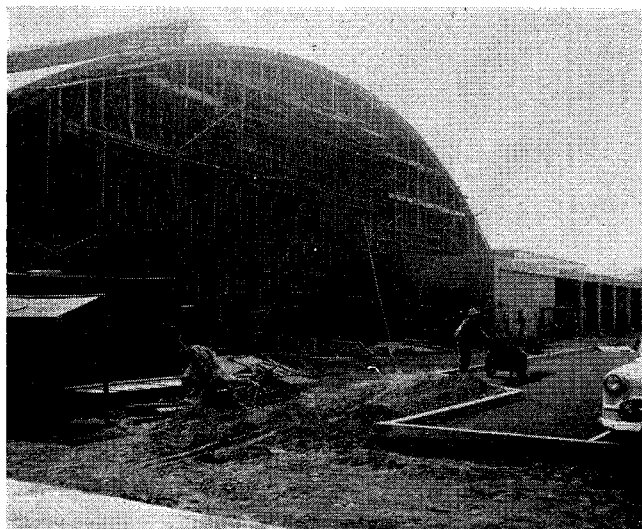
*William H. Pickering, new Director of JPL*

---

## GOING UP



*Construction is now under way on the two latest additions to the Caltech campus—the Norman Church Laboratory of Chemical Biology (left) and the Scott Brown Gymnasium. The gym is scheduled for completion by mid-December, in time for the opening of the basketball season. The adjoining Alumni Swimming Pool should be finished by January. The Church Laboratory will be ready for occupancy next summer.*



Corporation; and Howard G. Vesper, Vice President of the Standard Oil Company of California.

Mr. Minckler, a native of Minneapolis, and an alumnus of the University of Washington, has been associated with the General Petroleum Corporation since 1924. Following wartime service as Director of Petroleum Supply of the Petroleum Administration for War, he returned to General Petroleum and became president of the company in 1948. He also serves as director of the Western Oil and Gas Association, director of the American Petroleum Institute and as a member of the National Industrial Conference Board. He is active in southern California community affairs and since 1948 has been a member of the California Institute Associates, serving as a director of that group since early this year.

Mr. Roach, a native of St. Louis, and a civil engineering graduate of the University of Illinois, has been in the steel business for 28 years. He was associated with the Union Iron Works of Los Angeles which in 1929 merged with two other steel fabricators to become Consolidated Steel Corporation. In 1941 he became president of this company which, on acquiring Western Pipe and Steel, became Consolidated Western Steel Corporation. When the United States Steel Corporation acquired Consolidated in 1948, Mr. Roach was named president of the Columbia Steel Company in addition to continuing as president of Consolidated Western. Mr. Roach has been a member of the California Institute Associates since 1952.

Mr. Vesper has been with the Standard Oil Company of California ever since he was graduated from Caltech with a BS degree in Chemical Engineering in 1922. (He is the second alumnus of the Institute to become a trustee—Arnold O. Beckman, PhD '28, having been elected to the Board in 1953.) In 1938 Mr. Vesper became manager of Standard's sales of lubricating products. Later as manager of gasoline, Diesel fuel and fuel oil sales, he was responsible for most of Standard's supplies of these products to both civilians and the military during the war years. Mr. Vesper was elected to his present position in 1952. He served for several years as a civilian consultant to the work of the former Research and Development Board of the Department of Defense, and until recently had served in the same capacity to the Assistant Secretary of Defense. He is currently president of the Industrial Research Institute, Inc., a member of the Board of Directors of the Atomic Industrial Forum, Inc., and a member of the Permanent Council of the Fourth World Petroleum Council.

### Wedding

**EARNEST C. WATSON**, Professor of Physics and Dean of the Faculty, now on his first extended leave from Caltech in 35 years, is to be married this month to Miss Jane Werner of New York. The wedding will take place in Scotland, and the Watsons will return to Pasadena sometime in November.

### Caltech's 3-2 Plan

**REED COLLEGE** of Portland, Oregon, has entered a co-operative "3-2 plan" with Caltech, whereby recommended students from Reed will be admitted to Caltech as juniors after three years of study in an agreed-upon program. After the student successfully completes two years at Caltech, he will be awarded the bachelor of arts degree by Reed and the bachelor of science degree by Caltech.

Four liberal arts colleges are now cooperating with Caltech in this plan—Reed, Occidental, Pomona, and Whitman College in Walla Walla, Washington. The plan may be extended to other schools if it works out to the mutual benefit of the students and colleges involved in this initial trial period.

### News Bureau

**MR. JAMES R. MILLER** was appointed Director of the Institute News Bureau this summer. A graduate of Trinity College, Hartford, Connecticut, Mr. Miller has worked on the editorial staffs of *The Literary Digest*, *Scribner's Magazine* and *Look Magazine*. From 1942 to 1945 he served in the Navy as Anti-Submarine-Warfare officer on a destroyer-escort. In the years since the war, he has worked as a free-lance writer, as a staff writer for *This Week Magazine*, and has done general public relations and publicity on industrial accounts for the public relations office of Vernon Pope, New York City.

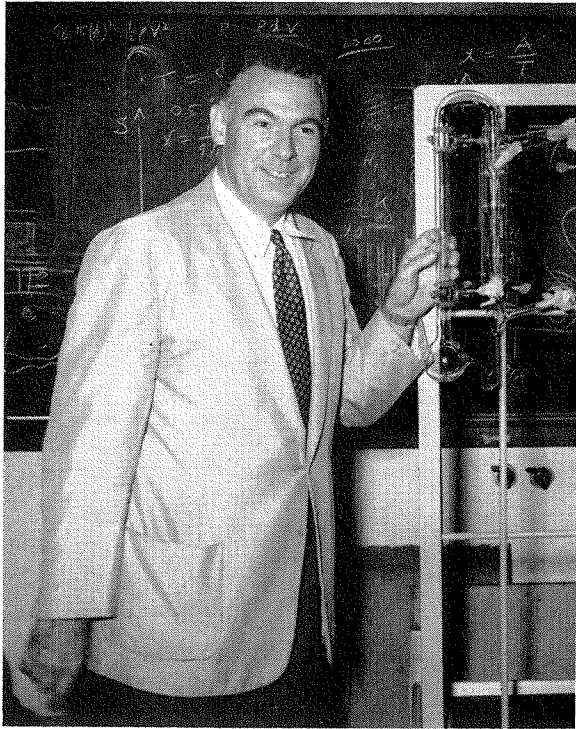
### New Faculty

**NEW MEMBERS** of the Institute's Staff of Instruction and Research for 1954-55 include:

**JOHN R. PELLAM**, Professor of Physics, and an outstanding investigator in the field of low temperature physics. Dr. Pellam, who was chief of the Cryogenic Physics Section of the National Bureau of Standards, is noted for his studies of liquid helium, which he has carried close to absolute zero. He was graduated from the Massachusetts Institute of Technology in 1940 and received his PhD there in 1947.

**ROGER W. SPERRY**, Professor of Psychology, who comes to Caltech from the University of Chicago and the National Institutes of Health at Bethesda, Maryland, where he has held a joint appointment as research associate in psychology and chief of the Development Neurology Section at the National Institute of Neurological Diseases and Blindness. Dr. Sperry studied at Oberlin College, and received his PhD from the University of Chicago in 1941.

**GEORGE P. MAYHEW**, Assistant Professor of English and Master of the Student Houses. A Harvard graduate, Mayhew also received the MA and PhD degrees in English language and literature there. Before coming to Caltech, he served as Assistant Dean and as Assistant to the Dean of Admissions at Harvard.



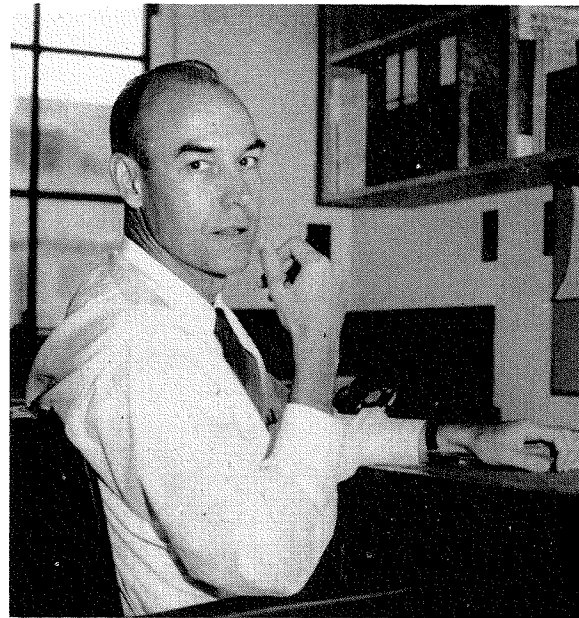
*John R. Pellam*



*Lt. Col. Lyle F. Johnston*



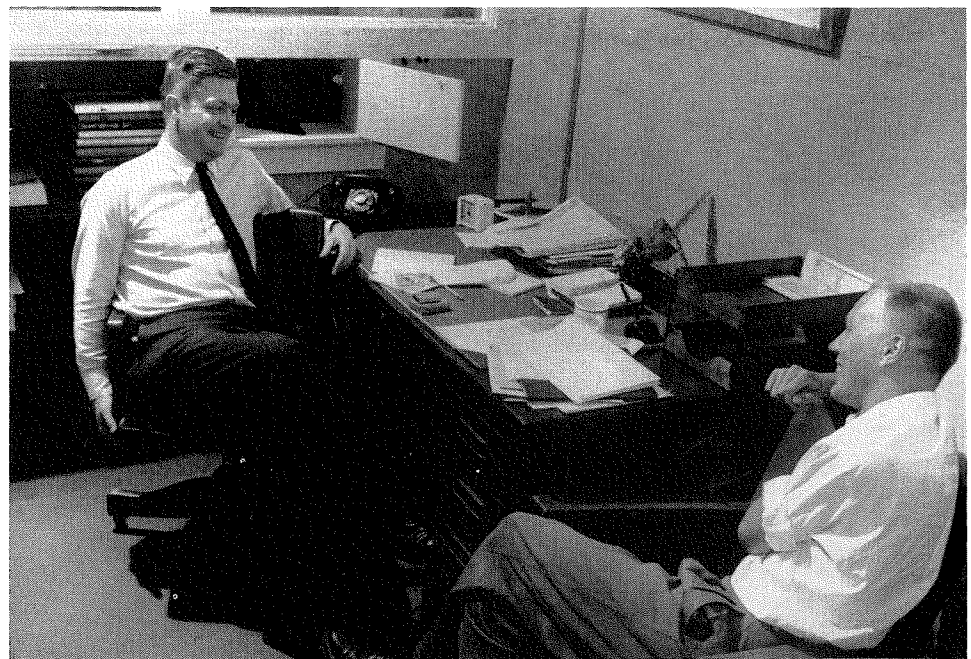
*James R. Miller*



*Roger W. Sperry*

## NEW FACES

*George P. Mayhew*



ALLEN LEIN, Visiting Professor of Chemistry, on leave of absence from Northwestern University Medical School, where he is Associate Professor of Physiology. He will be working with Dr. Linus Pauling on problems of the application of chemistry to biology and physiology.

ERIK HALLEN, Visiting Professor of Electrical Engineering, will continue his research in the field of classical electromagnetic theory while here at Caltech. He is on leave of absence from the Royal Institute of Technology in Stockholm, Sweden.

LYLE F. JOHNSTON, Lt. Col., USAF, will be Professor of Air Science and Commandant of the Air Force ROTC at Caltech, succeeding Lt. Colonel Arthur Small.

ARTHUR L. GREY, Assistant Professor of Economics, on a two-year appointment.

EUGENIE CALABI, Assistant Professor of Mathematics, on a one-year leave from Louisiana State University.

EDWARD P. CLANCY, Research Associate in Physics, on a one-year leave from Mt. Holyoke, where he is Associate Professor of Physics and Department Chairman.

### Honors and Awards

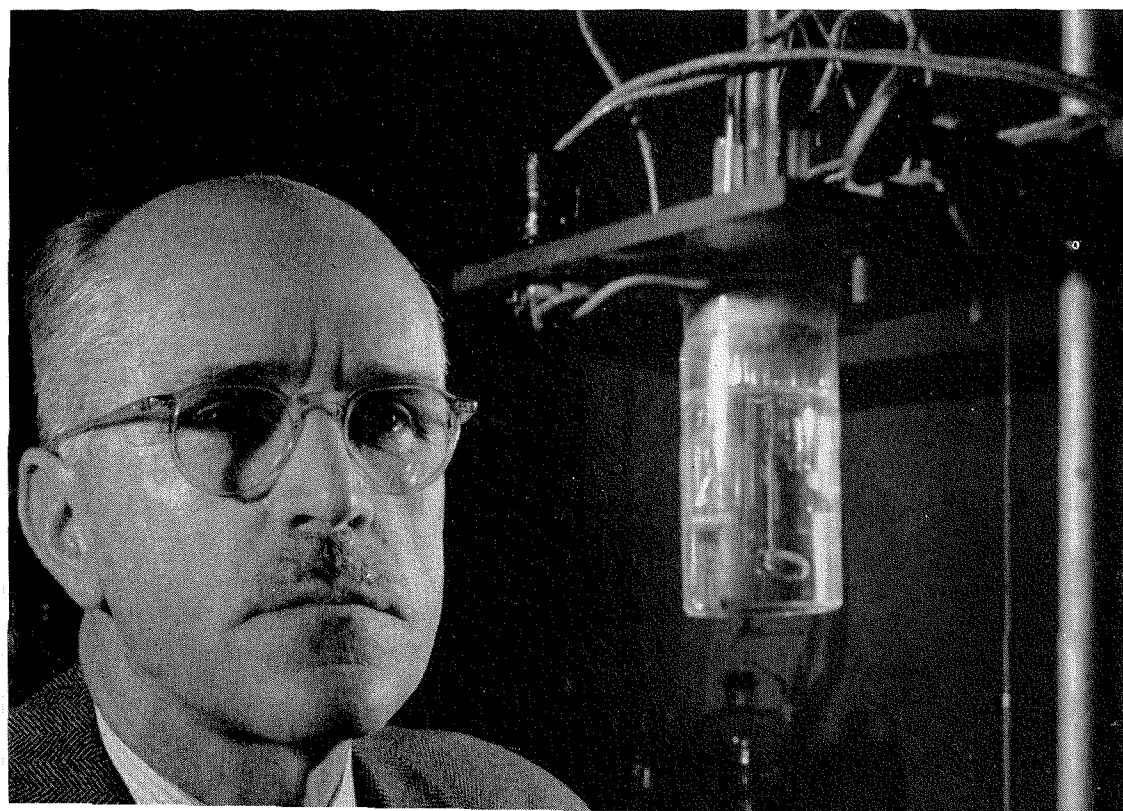
**NORMAN R. DAVIDSON**, Associate Professor of Chemistry, has been chosen 1954 recipient of the California Section Award of the American Chemical Society.

The award is made annually to a young chemist living in one of the 11 western states, who has done his major work in the West. The award, a gold medal, will be presented to Dr. Davidson at a dinner to be held October 11 in the San Francisco Bay area.

Professor Davidson is to be recognized specifically for his investigations of the rates of very fast chemical reactions. This study, which has been his major re-



*Norman R. Davidson, 1954 winner of the California Section Award of the American Chemical Society*



*Ernest H. Swift, named recipient of the 1955 Fisher Award of the American Chemical Society.*

search project at Caltech, involves reactions that take place in less than a thousandth of a second. He has done pioneering work in developing techniques to initiate and study such reactions.

**ERNEST H. SWIFT**, Professor of Analytical Chemistry, has been named recipient of the 1955 Fisher Award in Analytical Chemistry of the American Chemical Society.

The \$1,000 award is made annually in recognition of outstanding contributions to the science of pure and applied analytical chemistry in the United States or Canada. It will be presented to Dr. Swift at the spring meeting of the ACS in Cincinnati.

**BENO GUTENBERG**, Professor of Geophysics and Director of the Seismological Laboratory, has been elected a foreign member of the Geological Society of London. This award is in recognition of Dr. Gutenberg's "great contributions to seismological science, aiding in our understanding of the earth and its structure."

Dr. Gutenberg's contributions to geophysics include investigations of the structure of the earth and its core, seismic waves, the structural differences between continents and ocean bottoms, and the magnitude of earthquake shocks.

## Faculty Changes

**T**HE FOLLOWING PROMOTIONS have been made in the Caltech faculty for 1954-55:

### TO PROFESSOR

*C. Hewett Dix*—Geology  
*Renato Dalbacco*—Biology  
*A. E. J. Engel*—Geology  
*A. L. Klein*—Aeronautics

Dr. Dix came to Caltech in 1947 after 13 years as a geophysicist with the United Geophysical Co., the Socony-Vacuum Oil Company, and the Humble Oil and Refining Company. He received his BS in physics from Caltech in 1927 and the MA and PhD degrees from Rice Institute in mathematics. After teaching mathematics at Rice for several years, he turned to geophysical studies and has since remained in that field.

Professor Dalbacco received the MD degree from the University of Turin, Italy, his native country. He has served on the Turin faculty and at Indiana University. His major investigations have dealt with animal viruses, and at Caltech, where he came in 1949, he developed a new technique to simplify virus research by growing a virus on a specially prepared culture of living cells. This technique has been used to isolate, for the first time, genetically pure strains of the known types of polio virus.

Dr. Engel came to Caltech in 1948 to teach physical geology. He has directed his research toward unraveling the origin of some of the oldest rocks in the earth's crust. The Guggenheim Memorial Foundation has awarded him a grant to continue these studies in the Carribean and Red Sea areas, the Pyrenees, and the Italian and Swiss Alps. He received his PhD from

Princeton in 1942, and joined the Caltech faculty after six years with the U. S. Geological Survey.

Dr. Klein, a Caltech alumnus, has been on the staff of the Institute since 1921. He supervised the design of the wind tunnels and other apparatus at the Guggenheim Aeronautical Laboratory, and is also a member of the design group of the Southern California Cooperative Wind Tunnel. Since 1931 he has been consultant to the Douglas Aircraft Company.

### TO ASSOCIATE PROFESSOR

*J. Kent Clark*—English  
*Eugene W. Cowan*—Physics  
*Samuel Epstein*—Geochemistry  
*Samuel Karlin*—Mathematics  
*Guido Münch*—Astronomy  
*Charles H. Papas*—Electrical Engineering  
*George K. Tanham*—History

### TO SENIOR RESEARCH FELLOW

*Charles A. Barnes*—Physics  
*James C. Keck*—Physics  
*Marguerite M. Vogt*—Biology  
*Anatol Roshko*—Aeronautics

### TO ASSISTANT PROFESSOR

*Norman H. Brooks*—Civil Engineering  
*Thomas K. Caughey*—Applied Mathematics  
*Henry Aroeste*—Jet Propulsion, Applied Math.  
*Thad Vreeland, Jr.*—Mechanical Engineering

### ON LEAVE OF ABSENCE, 1954-55

*Ray E. Untereiner*, Professor of Economics, to serve as a member of the California Public Utilities Commission on a four and a half year term.

*Howard J. Lucas*, Professor of Organic Chemistry, to serve as Visiting Professor at Ohio State.

*William A. Fowler*, Professor of Physics, to conduct research at the Cavendish Laboratories in England.

*A. C. Ingersoll*, Assistant Professor of Civil Engineering, to serve with the Technical Cooperation Administration in India as advisor on engineering problems.

*Norman Horowitz*, Professor of Biology, to study in France on both a Guggenheim and Fulbright Fellowship.

*H. P. Robertson*, Professor of Mathematical Physics, to act as Scientific Advisor to the Supreme Allied Commander in Europe (General Alfred M. Gruenther), SHAPE.

*Guido Münch*, Associate Professor of Astronomy, to act as Visiting Professor of Astrophysics at Harvard University for the fall term.

*Harrison Brown*, Professor of Geochemistry, on a six-months leave to conduct research throughout Europe, and to make a study of India's mineral resources, on a Rockefeller Foundation Grant.

### RETURNED FROM LEAVE OF ABSENCE:

*Henry Dan Piper*, Assistant Professor of English, after a year in France, where he taught American literature at the University of Lille.

*Harold Wayland*, Associate Professor of Applied Mathematics, from the University of Strasbourg, France, where he was studying on a Guggenheim Fellowship.