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The Rockefeller University

THE ROCKEFELLER UNIVERSITY

news and notes

MARCH 1976 VOLUME 7 NUMBER 7

Bronk Fund for Students

A new fund, to be called the Detlev W. Bronk General Fund for the Graduate Fellows of the University, has been created on the recommendation of Dr. Bronk's widow, Helen Bronk, President Seitz, and Mabel Bright, Dr. Bronk's longtime assistant. The amount of the fund is some $27,000 which remained at the time of Dr. Bronk's death in a special grant that had been awarded to him. It is hoped that the fund will be increased by future contributions.

The income from the fund, which should be between $1,000 and $1,500 yearly, will be used for special student academic needs or for recreational materials or events, to be decided by a student committee in consultation with Dean James G. Hirsch. The members of the committee for the current year are George Barany, Michael Brines, Scott Brodie, Lily Anne Conrad, and Margaret Kielian.

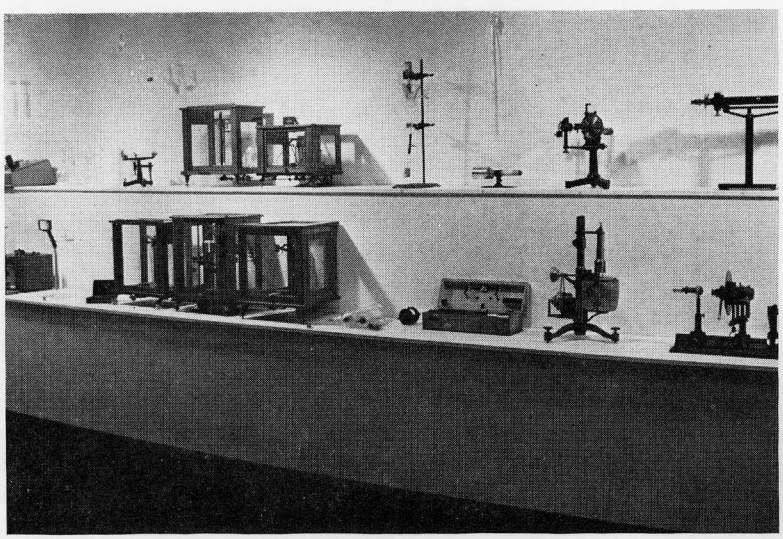
An updated Personnel Handbook has been prepared. Employees are requested to pick up copies in the Personnel Office.

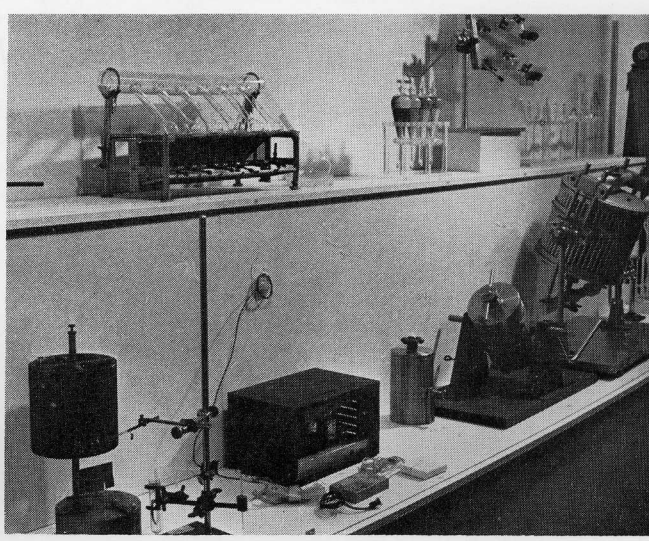
New Exhibition Highlights Journals

A new exhibition highlighting the history and contributions of the scientific journals published by The Rockefeller University Press went up this month in the Tower Building lobby as part of the University's 75th anniversary celebration.

The Rockefeller University Press publishes *The Journal of Experimental Medicine, The Journal of General Physiology, The Journal of Cell Biology, Biophysical Journal,* and *The Journal of Clinical Investigation.* In the exhibition, a large map indicates their distribution around the world. In a display case titled "Milestones of Research" are included landmark papers from the journals selected by the editors. These will be changed periodically in order to feature each journal in turn, beginning, appropriately, with the oldest, *The Journal of Experimental Medicine*, which was founded in 1896 at The Johns Hopkins University under the editorship of William H. Welch and was transferred to the editorial and publishing care of The Rockefeller in 1905. Its present editors are Professors Zanvil A. Cohn, James G. Hirsch, Henry G. Kunkel, and Maclyn McCarty. *The Journal of General Physiology* was founded in 1918 by Jacques Loeb. He and Winthrop J. V. Osterhout were its first editors. It is edited today by Professor Paul F. Cranefield. *The Journal of Cell Biology*, which was started in 1955 as the *Journal of Biophysical and Biochemical Cytology*, is edited by Dr. Raymond B. Griffiths. Professor Frederick A. Dodge is the editor of *Biophysical Journal*, which began publication in 1960 under the editorship of Professor Frank Brink, Jr. *The Journal of Clinical Investigation* was originally proposed by Rufus Cole, director of the Rockefeller Hospital from 1910 to 1937. It was first published in 1924 under the sponsorship of The American Society for Clinical Investigation, with an editorial board composed largely of Rockefeller scientists and with financial support from The Rockefeller Institute. Its present editor is Professor Jean D. Wilson of The University of Texas Health Science Center at Dallas.

Two views of Caspary Gallery where an exhibition of historic scientific instruments opened on March 1. *Story on page 3.*





At the University's party: left to right, E. G. D. Cohen, Samuel Goudsmit, George Uhlenbeck, H. B. G. Casimir of the Royal Netherlands Academy, Abraham Pais, and President Seitz.

Physicists Are Feted for 50 Years of Spin

Professor George E. Uhlenbeck, Theoretical Physics, and Samuel A. Goudsmit, formerly a visiting professor at Rockefeller and now at the University of Nevada, were honored at the annual meeting of the American Physical Society on the occasion of the 50th anniversary of their discovery of electron spin, a cornerstone of modern atomic theory.

At the special session, held on February 2 in New York, Dr. Uhlenbeck spoke on The Discovery of the Spin: Some Personal Reminiscences; Dr. Goudsmit, with characteristic humor, titled his talk It Might As Well Be Spin; Professor I. I. Rabi of Columbia recalled The Effect on a Graduate Student at Columbia University of the Discovery of Electron Spin; and Professor E. Purcell of Harvard talked about Looking Back on Spin Experiments. Professor Abraham Pais served as chairman of the session.

The work which won Doctors Uhlenbeck and Goudsmit worldwide distinction was done when both men were graduate students at the University of Leiden, The Netherlands. Dr. Uhlenbeck has been a member of the Rockefeller faculty since 1961. Before moving to Nevada, Dr. Goudsmit was associated with Brookhaven National Laboratory and was editor-in-chief of The American Physical Society.

On February 4, the University's physicists gave a party for Doctors Goudsmit and Uhlenbeck attended by colleagues and friends from across the country.

Supervisory Council Elects New Officers

The Administrative and Supervisory Council has announced the election of new officers for a two-year term which began February 1. William Hertwig, supervisor of the laundry, has been elected chairman; Robert Luckey, associate superintendent of purchase and supply service, has been elected vice chairman; and Elizabeth Straight, senior supervisor of nurses, has been elected secretary.

The Administrative and Supervisory Council was formed in 1970 to act as a representative assembly with the responsibility of making recommendations to the administration affecting the well-being of the employees of the University's offices and services. One of the activities in which the council has participated and advised was the reorganization of employee vacation schedules. Periodic meetings keep the council members informed of matters of general University concern, such as employee benefits, program planning, and energy conservation measures.

SIDELIGHT ON HISTORY

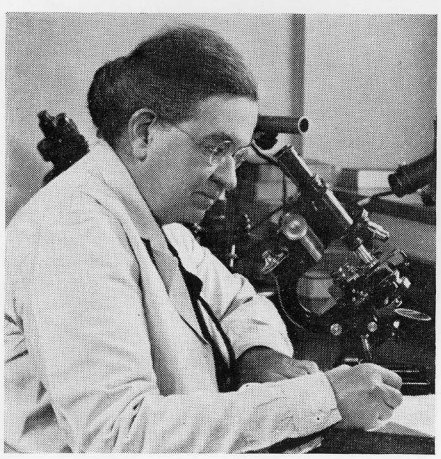
From the report of the business manager, 1914–15:

"A married man can hardly be expected to support a wife and two children in New York City on less than $800 (a year) unless he is to reduce his manner of life to a degree inconsistent with the tidiness and self-respect which it is the policy of the Institute to require of all its employees."

APPOINTMENT

Heino Prinz, Chemical Biology, as a reseach associate, effective January 15.

Florence Sabin, Great Woman of Science



On February 20, a special session of the National Meeting of the American Association for the Advancement of Science was devoted to the theme of Great Women in Science. Among those honored was Florence Rena Sabin, a member of The Rockefeller Institute for Medical Research from 1925 to 1938 and member emeritus until her death in 1953.

As a researcher, Florence Sabin made lasting contributions to the study of the vascular and lymphatic systems and related diseases, including tuberculosis. Simon Flexner, Institute director, called her the most eminent living woman scientist. Following her retirement from research, she embarked on a distinguished career in public health in her native Colorado which included service as head of Denver's health department, a post she left at the age of 81.

One of the first women to receive an M.D. from Johns Hopkins, she was the first woman to be appointed a full professor in The Johns Hopkins School of Medicine, the first woman to be a full member of The Rockefeller Institute, and the first woman to be honored by election to the National Academy of Sciences.

Historic Instruments of Science Exhibited

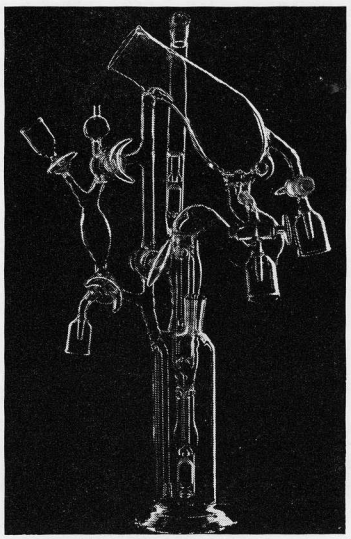
Pictured, right, is the Carrel-Lindbergh perfusion pump. With it, in 1935, for the first time, a whole organ—the thyroid gland of a cat—was cultivated outside of the animal's body. It was developed at The Rockefeller Institute for Medical Research by the surgical wizard and Nobel Prizewinner Alexis Carrel and Charles A. Lindbergh, America's flying hero, who worked for a time as a volunteer in Carrel's laboratory. It was Lindbergh, the engineer, who contrived, in the pre-antibiotic era, a way of securing pulsating pressure that circulated the fluid through the organ, without contamination. (The controls were separate units, not shown in the photograph.)

The Carrel-Lindbergh pump is one of more than 80 historic scientific instruments currently on view in Caspary Gallery in an exhibition which opened March 1 as part of the University's continuing 75th anniversary celebration.

The progress of modern science depends in large measure on the invention and refinement of tools and techniques. At Rockefeller, there is a long tradition of contributions to the development of new instruments and methodology. Many techniques and devices now in use in laboratories throughout the world originated here. Much of the success of this tradition has been due to the close collaboration of scientists with the University's many skilled craftsmen.

Two Rockefeller scientists whose inventions became part of standard medical equipment and procedures were Donald D. Van Slyke and Lyman C. Craig. Between 1914 and 1920, Van Slyke worked on an apparatus for the exact measurement of oxygen and carbon dioxide in solution, in blood and other fluids, which became a major aid in numerous chemical and therapeutic procedures. In 1940, Craig developed his now famous countercurrent distribution technique, which has made possible the isolation of many rare drugs, hormones, and vitamins in pure form. A 1925 commercial model of Van Slyke's equipment and the original Craig apparatus may be seen in Caspary Gallery. The exhibition also contains the portable pacemaker, designed by Professor Alexander Mauro and Dr. Lawrence Eisenberg, electronics affiliate, in collaboration with W. W. L. Glenn of Yale, and the original ellipsometer developed by Professor Alexandre Rothen, in the 1940s, an indispensable tool for measuring films which are only one or a few molecules thick. The ellipsometer was made by Josef Blum, who was head of the instrument shop from 1939 to 1954, and was responsible for many advances. He built a centrifuge that could operate at speeds up to 20,000 rpm—the prototype of centrifuges now in use in biological laboratories everywhere.

In 1946, Professors Stanford Moore and William H. Stein designed a drop-counting fraction collector that they used in the development of methods which facilitated the first determination of the chemical structure of an enzyme, pancreatic ribonuclease. For this work, they received a Nobel Prize in 1972. The original fraction collector, still in use, has been borrowed from the Moore-Stein lab for inclusion in the exhibition. Also included is the original model of the peptide synthesizer developed in 1966 by Professor Bruce Merrifield, in collaboration with Dr. John Morrow Stewart, and with Nils A. Jernberg, the University's present instrument design engineer. Using this equipment, Doctors Merrifield and Bernd Gutte achieved the first laboratory synthesis of ribonuclease.



Carrel-Lindbergh perfusion pump

The versatility and usefulness of glassware is apparent in every biological laboratory. A large variety and number of glass objects are shown in the exhibition, such as the equipment made personally by Nobel laureate Edward L. Tatum for use in his genetic studies of the bread mold *Neurospora crassa.* Glass electrodes, thin-walled membranes that permit passage of ions in a solution, are used universally for pH determination. They were first fabricated by Duncan MacInnes and Malcolm Dole. The examples of glass electrodes in the exhibition were made by Otto Hopf, who was the Rockefeller glassblower from 1929 to 1940. (It was he who also constructed the intricate components of the Carrel-Lindbergh perfusion pump.)

The MacInnes group, noted for its pioneering applications of physical chemistry to the study of living tissue, developed a great deal of new equipment. Theodore Shedlovsky, originally a member of that lab, has been one of the University's most adept innovators. On display are the conductivity cells he designed, for extremely precise determination of electrical conductance in solutions, and his precision quartz pycnometer, for determining specific gravity of a solution.

The exhibition also contains many objects that are significant because of their associations: Alexis Carrel's scalpels, a pH meter used by Oswald Avery, Karl Landsteiner's centrifuge, an electroscope used by Professor Fritz Lipmann, a glass desiccator for drying biological substances with P. A. T. Levine's name etched on the cover, and microscopes used by Florence Sabin (see story page 2), Professor Clara J. Lynch, and Thomas M. Rivers. Rivers, director of the Hospital from 1937 to 1955, was one of the world's leading virologists. Between 1927 and 1933, he and his group developed a simplified method for growing vaccinia (cowpox) virus on a large scale. The exhibit includes flasks used by Rivers for producing smallpox vaccine by growing vaccinia viruses in culture. Nobel Prizewinner Wendell M. Stanley was another of the University's distinguished virologists. On display is a bottle containing some of the first tobacco mosaic virus isolated, in crystalline form, by Stanley in 1935. (He believed, at first, that his preparation was contaminated. The "contaminant," he later discovered, was DNA, an integral part of the virus.)

Working scientists, busy at their benches, do not necessarily think like historians. Happy to turn to new and better equipment, they do not often concern themselves with what happens to the old. That so many historic pieces could be traced and recovered for the Caspary Gallery exhibition is a tribute to the extensive efforts of Anthony Campo, former chief pharmacist and superintendent of purchases, and his successor, James J. Stewart. The exhibition was planned and designed by Patricia C. Berlin, assistant to the president for interior design, Professor Merrill W. Chase, who also served as scientific consultant, and Fulvio Bardossi, public information officer.

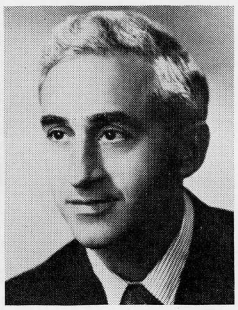
Three Elected to Board of Trustees

Seymour S. Kety, professor of psychiatry at Harvard Medical School and director of the Psychiatric Research Laboratories of Massachusetts General Hospital, Anne E. Reed, a trustee of the Charles Engelhard Foundation, and P. Roy Vagelos, senior vice president for research of the Merck Sharp & Dohme Research Laboratories, have been elected to the University's board of trustees.

Dr. Kety, a native of Philadelphia, received his A.B. and M.D. degrees from the University of Pennsylvania

'MOUR S. KETY

ANNE E. REED



P. ROY VAGELOS

and was a member of its faculty from 1943 to 1961, becoming professor of clinical physiology in the Graduate School of Medicine in 1948. From 1951 to 1956, he was scientific director of the National Institute of Mental Health and Neurological Diseases and Blindness; and, from 1956 to 1967, was chief of the Laboratory of Clinical Science of the National Institute of Mental Health. He has also served as Henry Phipps Professor and chairman of the department of psychiatry at The Johns Hopkins University School of Medicine, and as a visiting professor at the College de France in Paris. His major interest concerns the role of biological processes in psychiatric illness. His contributions have included the development of techniques for the measurement of cerebral circulation and metabolism in man and the demonstration of the importance of genetic factors in the transmission of schizophrenia. He is a member of the National Academy of Sciences and the American Philosophical Society and is a Distinguished Fellow of the American Psychiatric Association.

Anne E. Reed (Mrs. Samuel Pryor Reed) was born in France and grew up in Far Hills, New Jersey. She was educated in the United States and abroad and attended the Ecole du Louvre. She devotes her efforts to sponsoring activities in the arts and to her interests in land and energy conservation. She has traveled extensively in these regards, recently in the South Pacific, Australia, Alaska, and Turkey. She is currently serving as chairman of the Bicentennial Evening at the Metropolitan Museum of Art.

P. Roy Vagelos is a biochemist and an authority on lipids and enzyme research who is best known for his investigations of the mechanisms of lipid biosynthesis. From 1966 until he joined the Merck laboratories in 1975, he served as chairman of the department of biological chemistry at the Washington University School of Medicine in St. Louis, and from 1973 as director of the Division of Biology and Biomedical Sciences. From 1956 to 1966, he was associated with the Laboratory of Biochemistry of the National Heart Institute. In 1973, he was Sloan Visiting Professor of Chemistry at Harvard. Dr. Vagelos received his A.B. degree from the University of Pennsylvania and his M.D. from Columbia University. He is a member of the National Academy of Sciences, the American Academy of Arts and Sciences, and the Institute of Medicine of the National Academy of Sciences.

PERSONALS

Charles R. Fuhrman, order and stock clerk with the Machine Shop since 1957, retired on January 30. Mr. Fuhrman came to the University in 1954 as a temporary electrician.

DEATH

Maston Wall, 53, greenhouse helper, on January 21. Mr. Wall had been associated with the University since 1967.

GEORGE H. WHIPPLE DIES

George H. Whipple, noted pathologist and Nobel laureate, who served as a member of Rockefeller's board of scientific directors from 1936 to 1953, died on February 1 at the age of 97. Dr. Whipple was the first dean of the School of Medicine and Dentistry of the University of Rochester, from 1921 to 1952. He was a corecipient of the Nobel Prize in Medicine in 1934 for his work in treating victims of pernicious anemia with a liver diet.

PROMOTION

Kwang Poo Chang, Parasitology, to assistant professor, effective March 1.

BRIEFS

Professors **Floyd Ratliff, Bruce W. Knight, Robert Shapley,** and Adjunct Professor **Israel Abramov,** Biophysics, participated in a Workshop on Vision, sponsored by the Committee on Biochemistry and Biophysics of the Royal Netherlands Academy of Arts and Sciences, held January 4–9 in Amsterdam. Dr. Ratliff also presented a lecture at the January meeting of the Netherlands Ophthalmic Research Institute.

President Seitz served again as the principal representative of the United States delegation to the meeting of the United Nations Committee on Science and Technology for Development, held February 2–20, with delegations from 54 countries. Vice President **Rodney W. Nichols** served as deputy representative for the U.S. delegation, which included officials from the State Department, National Academy of Sciences, and National Science Foundation.

Eugene H. Kone, public information associate, has been reappointed as the representative of the National Association of Science Writers to the American Association for the Advancement of Science Section on Information, Computing, and Communication, for the term 1976–78.

Postdoctoral Fellow **Adam V. Reed,** Mathematical Psychology, spoke on Direct Brain-Computer Hookups, in a session on Man-Computer Relations: What Will They Be?, at the 142nd National Meeting of the American Association for the Advancement of Science, held February 18–24 in Boston.

Treasurer **Sydney A. Woodd-Cahusac** has been elected to the board of trustees of New York Law School, an independent institution founded in 1891.

Professor **Donald A. Martin,** Logic, spoke on Recent Results on Infinite Games, at the annual meeting of the American Mathematical Society, held in San Antonio, Texas, January 22–26.

Professor **Joel E. Cohen,** Populations, has been appointed a director of the American Association for the Advancement of Science for the 1976 term.

President Seitz has been elected to the board of trustees of The American Museum of Natural History for a five-year term.

news and notes is published from October through July. This is Volume 7, Number 7. Suggestions for articles are welcome and may be sent to *news and notes*, Box 194. Phone extension 1420. Photographs: page 1 and page 2 (top) Henrik Boudakian.