News Notes

Instrument Capsule Recovered from Orbiting Discoverer XIII; First Balloon Satellite Launched

The United States has retrieved a 300-pound instrument capsule from an orbiting earth satellite, Discoverer XIII in the Air Force series. This is the first time a man-made object has been recovered from orbit, and the recovery represents a major step toward solving the problem of returning a man from space. The achievement also raises the prestige of the United States in foreign countries.

Discoverer XIII was launched into polar orbit on 10 August. On 11 August, on command from the ground, explosive bolts and springs released the capsule some 200 miles over the North Pole. The capsule orbited briefly until retrorockets broke its course and sent it back to earth, where it fell into the Pacific Ocean some 330 miles northwest of Honolulu and was hauled aboard a Navy helicopter.

Of 13 Discoverer satellites launched since March 1959, eight have gone into orbit. There have been six ejections of the instrument payload, but recovery attempts failed in every case. (One of the capsules is believed to have landed on the island of Spitzbergen, and there is speculation that it may have been found by the Russians.)

Now the Air Force reports that the chances of retrieving future capsules have increased to about 50 percent. Within a month an attempt will be made to launch and recover a cabin containing a chimpanzee.

Communications Satellite Launched

A second major advance in space research also occurred on 11 August, when the National Aeronautics and Space Administration launched and successfully tested a balloon satellite, Echo I, as a mirror for radio waves. Folded in a 28-inch container, the aluminum-coated plastic balloon was sent aloft by a three-stage Thor-Delta rocket. Sublimating powders turned from solid into gas under the heat of the sun, and the gas inflated the balloon, which is 100 feet in diameter and is the largest, but not the heaviest, man-made object placed in orbit to date.

Echo I demonstrated its effectiveness almost immediately by reflecting a recorded message by President Eisenhower between stations in Goldstone, Calif., and Holmdel, N.J., a land distance of 2400 miles. It is hoped that not only messages but also television broadcasts can eventually be relayed across oceans by means of satellites.

Of all the satellites launched thus far, Echo is the easiest for ground observers to see. It will be in continuous sunlight for the next few weeks and is visible with the unaided eye as a bright star as it circles the earth approximately every 121 minutes. It is being seen in all countries between 47 degrees north and 47 degrees south latitude, which means that it is visible to most of the world's population. Dawn and dusk are the best viewing times. Later the sphere will be in the shadow of the earth for varying intervals until next spring, when it will return to a period of full-time sun. It is expected to have a lifetime of about a year.

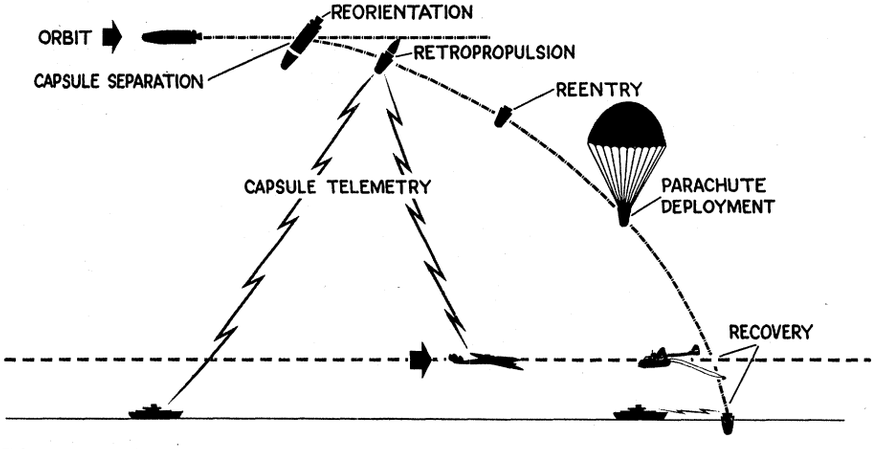


Diagram of the steps involved in bringing the Discoverer XIII capsule to earth. As it circled in a tail-first position, the satellite (upper left) tilted 60 degrees, nose down. The capsule was separated by springs and explosive bolts. A retrorocket was fired to slow it down from 18,000 miles an hour, permitting it to follow a curved path toward the earth. Airplanes and ships followed its path (by telemetry). A parachute opened to further reduce speed. Aerial recovery failed, and a helicopter from a patrol ship made the recovery.

Wartime Reports Released

The Defense Department has declassified some 30,000 technical reports, the work of the wartime Office of Scientific Research and Development that was headed by Vannevar Bush. The material was prepared by British and Canadian, as well as American, scientists. It covers such areas as proximity fuses for explosives, guided bombs, range finders, metallurgy, radar, communications, chemical warfare, and rocket ordnance. The information that is being released has been in classification categories that ranged from "Confidential" to "Secret." "Top Secret" material is to remain classified.

By 1 September the Library of Congress will be prepared to make the material available to the public through its Science and Technology Division. The Commerce Department's Office of Technical Services will offer copies of the reports for sale.

United States and Canada Plan Expanded Reactor Program

Atomic Energy of Canada Limited and the U.S. Atomic Energy Commission have signed a memorandum of understanding that establishes an expanded program of cooperation in the development of heavy-water-moderated power reactors. The new agreement provides for the exchange of detailed information, close cooperation in research and development, exchange of personnel, mutual use of pertinent research and development facilities, and the transfer of certain materials.

The program also includes the undertaking in the United States, by the commission, of research and development work that will be specifically directed toward design of the heavy-water reactors to be constructed by Canada. This work may extend over a period of 5 years, at a maximum total cost to the United States of $5 million.

A joint technical board is being established to advise Atomic Energy of Canada Limited and the U.S.

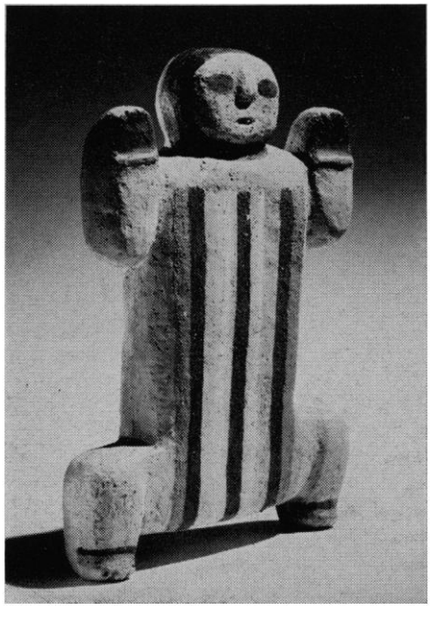
Atomic Energy Commission on the over-all progress of the cooperative program and on future requirements to meet its objectives.

Unusual Pueblo Indian Image Found

An unusual sacred image, the first of its kind ever to be unearthed, has just been discovered at a site near Vernon, Ariz., by the Chicago Natural History Museum's Southwest Archaeological Expedition. The figure was important in the religious ceremonies of Pueblo Indians living in Arizona between A.D. 1250 and 1350.

Paul S. Martin, the museum's chief curator of anthropology, reports that the stone image, very possibly a katchina, was found in a secret crypt within one of the largest rectangular kivas, or religious ceremonial chambers, ever excavated in the Southwest. He comments:

"This may well be one of the important discoveries of the 20th Century in Southwestern archaeology. To my knowledge, no one has ever before found a katchina of either wood or stone in a kiva. As far as I can determine, the image is unique." This is the fifth season in which Martin has conducted archeological work near Vernon for the Chicago museum.



Copy of the sacred stone image found in a secret crypt of a Pueblo Indian kiva, being excavated by Chicago Natural History Museum archeologists near Vernon, Ariz. The right arm, which in the original was found broken off, has been restored. [Chicago Natural History Museum]

Present-day Hopi Indians carve wooden katchina figures to represent various deities, and use them in the religious education of their children. But while the figures are more than playthings, they are not, in themselves, sacred. However, masks and other paraphernalia worn or carried by men who impersonate the katchina deities are extremely sacred and are stored in kivas when not in use. The fact that the stone katchina image was hidden in a secret masonry vault within an unusually large kiva suggests that this image was believed to possess godlike sacredness and power in its own right.

The figure, 9 inches high, is carved in sandstone and painted black, orange, green, and blue. The right arm had been broken off and was not found in the crypt, perhaps indicating that it was broken intentionally in order to curtail the powers of the katchina when the Indians who used the kiva moved away from the pueblo. With the image in the foot-square stone vault was a tiny jar, painted with red and black crosses, that contained a few beads of stone, shell, jet, and turquoise.

The crypt in which the religious objects were found appears to duplicate on a small scale the architecture of the great kiva itself. It has been suggested that the crypt may have symbolized the entrance to the underworld. According to the religious belief of the Hopi Indians, it was through such a passage that their ancestors emerged into the world from their place of origin in the underworld. Thus, the stone figure may be related to "underworld" ceremonies that are still a part of the religion of the Hopi people today.

Grants, Fellowships, and Awards

General. The American Academy of Arts and Sciences invites applications for grants from its research funds. Awards are made in support of research in any field of science whatsoever, in amounts that ordinarily do not exceed $1500. Applications for grants to be made in the fall should be filed *by 25 September* on forms that may be obtained from the Chairman, Committees on Research Funds, American Academy of Arts and Sciences, 280 Newton St., Brookline 46, Mass.

Special consideration will be given to projects in new frontiers of science; those that lie between, or include, two or more of the classical fields; and those proposed by investigators who may be on the threshold of investigational careers or who are handicapped by inadequate facilities. The committees do not provide fellowship or scholarship support, nor do they ordinarily approve grants for research the results of which constitute partial fulfillment of requirements for an academic degree.

Infectious microorganisms. The U.S. Army Chemical Corps Biological Laboratories, Fort Detrick, Frederick, Md., has announced initial awards under a new grant program planned to support basic scientific research. Areas of investigation under consideration for support include the genetic, biochemical, and physiological characterization of infectious microorganisms, the host-parasite relationship in airborne infection, and medical entomology.

Laboratory construction. The National Science Foundation has announced that the next closing date for receipt of proposals for support of renovation or construction of graduate-level research laboratories is *1 September*. Proposals received by that date will be reviewed during late fall and early winter. Disposition of approved proposals will be made during early spring, 1961.

This program will continue to require at least 50 percent participation by the institution with funds derived from nonfederal sources. Proposals may be submitted for modernization or construction of research laboratories, including laboratory furnishings but not including apparatus or equipment, in any field of the natural sciences. For the present, this program is restricted to those departments which have an on-going program leading to the Ph.D. Support of facilities to be used primarily for instructional purposes will not be considered. For information, write to the Office of Institutional Programs, National Science Foundation, Washington 25, D.C.

Scientific information. The National Science Foundation has announced that it will consider proposals during the current fiscal year for additional research projects or studies of a fundamental or general nature that may produce new insights, knowledge, or techniques applicable to scientific information systems and services. Although the foundation will consider any proposals for a project that may contribute to the general goal of improving the handling of scientific information, the following research areas are of the greatest interest at present: (i) information needs of the scientific com-

munity; (ii) information storage and retrieval; (iii) mechanical translation. Address inquiries and proposals to: Documentation Research Program, Office of Science Information Service, NSF, Washington 25, D.C.

News Briefs

Soviet Friendship University. The U.S.S.R.'s new Friendship University for young people from Asia, Africa, and Latin America has received more than 4000 applications. The university is to open in Moscow at 5 Dunskaya Street on 1 October. Classrooms and dormitories will be located in a single large building.

The entire course of training will be free, and the university will even pay the students' return fares. In addition, all students will receive a stipend and enjoy free medical services. An initial group of 500 has been accepted for the fall opening. In time, from 4000 to 5000 students are expected to enroll.

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Medical school enrollments down. For the third consecutive year, the number of individuals applying to United States medical schools has decreased. The number of medical-school applicants for the 1959–60 academic year was 6 percent less than the number applying in 1956–57. The over-all number of acceptances increased slightly (up to 3 percent over 1956–57), thereby accentuating the significance of the trend in enrollments.

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Reactor guide. The Atomic Energy Commission has published a 34-page literature search, *Selected Reactors of the Power Reactor Demonstration Program*, which is available from the Office of Technical Services, U.S. Department of Commerce, Washington 25, D.C., for 75 cents. The bibliographical listing gives the title, author, publication date, price, and availability source for 314 reports about ten power reactor projects under construction or planned.

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Cell biologists organize. A group of cell biologists has organized a new society, the American Society for Cell Biology, to further the development of cell biology and to improve communication among scientists representing diverse disciplines. Membership is expected to include biochemists, biophysicists, cytologists, histologists, microbiologists, physiologists, and others interested in the cell.

Persons having educational or research experience in this area and desirous of joining the new organization should request application forms from Dr. Montrose J. Moses, Box 2982, Duke University School of Medicine, Durham, N.C. Membership is not restricted to residents of the United States.

The 21-member organizing group, which first met in New York last January, constitutes the provisional council. The first annual meeting of the society will be held in October of 1961.

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Retirement credit for officers. U. S. Army reserve officers may obtain retirement point credit for attending specified symposium sessions of the fifth International Congress on Nutrition, to be held in Washington, D.C., 1–7 September. The sessions designated are "Evaluation of nutritional status in man," "Effects of processing and additives on foods," "Lipids in health and disease," "Animal nutrition and food production," "Nutrition in maternal and infant feeding," "Proteins and amino acids in nutrition," "Three hours around the world—new possibilities in nutrition research," and "World food needs and food resources." Lt. Col. Ernest M. Parrott has been appointed military chairman. He will have a registration book available near the entrance to the program session room.

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Radiation and the nervous system. The first international symposium concerning the effects of radiation on the nervous system will be held 7–9 September at the Northwestern University Medical School in Chicago. The meeting is sponsored by Northwestern under grants from the U.S. Public Health Service and the U.S. Atomic Energy Commission.

Russian scientists, as well as scientists from Europe, North and South America, and Japan, will participate in the conference. Some 44 research reports will be presented.

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Molecular structure. A conference on Molecular Structure and Organic Reactions, to be held 7–9 November in Houston, Tex., under the sponsorship of the Robert A. Welch Foundation, will attract approximately 600 scientists from all over the world. The principal speakers will include the following distinguished visitors from abroad: Vladimir Prelog, Laboratorium für Organische Chemie, Zürich, Switzerland; R. Huisgen, Universität München, München, Germany; J. Monteath Robertson, University of Glasgow, Glasgow, Scotland; and Derek H. R. Barton, Imperial College, London.

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Nuclear structure conference. The 1960 International Conference on Nuclear Structure will draw some 400 nuclear scientists to Queen's University, at Kingston, Ontario, Canada, 29 August to 3 September. Delegates from at least 24 countries are expected to attend, including about 150 from various laboratories in the United States and 80 from those in Canada. The U.S.S.R. has signified its intention of sending a large delegation which will include some of the principal speakers.

The sponsors of the conference are the International Union of Pure and Applied Physics and several Canadian organizations. The conference president is W. B. Lewis, Atomic Energy of Canada Limited, and the vice-president is V. F. Weisskopf, Massachusetts Institute of Technology.

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Tropical dermatologists organize. The inaugural meeting of the International Society of Tropical Dermatology was held this spring at the Rockefeller Institute, New York. More than 230 persons attended, including several representatives of federal and state governments, members of the diplomatic corps, and visitors from foreign countries. Aldo Castellani is the president of the new organization, and Frederick Reiss is secretary general. Some 50 countries are represented in the society, which has 1300 charter members. The first international congress will be held in either 1962 or 1963.

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Biologists meet. Biologists from laboratories and scientific agencies in every part of North America and 11 foreign nations will gather at Oklahoma State University, from 28 August to 1 September, when 20 biological societies will meet jointly under the sponsorship of the American Institute of Biological Sciences. More than 3500 scientists will attend. Some 1235 technical papers will be presented, and as many as 23 sessions will be conducted simultaneously.

James G. Dickson, professor of plant pathology at the University of Wisconsin, is president of the 85,000-member institute. The meeting is the first for the AIBS and its member societies to be held in the Southwest.

Scientists in the News

Vladimir V. Beloussov of the Soviet Union has been elected president of the International Union of Geodesy and Geophysics, which recently ended a 2-week conference in Helsinki. Beloussov succeeds **J. Tuzo Wilson** of the University of Toronto. **Joseph Kaplan** of the University of California and **Julius Bartels**, a West German, were elected vice presidents.

With the election of Beloussov, Russians head two of the international organizations concerned with space research. The other is the International Astronautical Federation, whose president is **Leonid I. Sedov**. The federation opened its meeting in Stockholm on 15 August.

Larkin H. Farinholt, for the past 2 years deputy science adviser to the Secretary of State, has been appointed administrator of the Alfred P. Sloan Foundation's $1-million-a-year Program for Basic Research in the Physical Sciences. He succeeds **Richard T. Arnold**, the first administrator of the Sloan program, appointed in 1955. Arnold has recently accepted the position of director of research with Mead Johnson and Company.

The first **Henry Bryant Bigelow** Medal for oceanography has been awarded to the man it honors. Paul M. Fye, director of the Woods Hole Oceanographic Institution, presented the award to Bigelow at a surprise luncheon ceremony on 10 August during the annual meeting of the corporation and board of trustees of the institution.

Bigelow was among the founders of the Oceanographic Institution. He was its first director, served later as president of the corporation, and is now chairman of the board of trustees. He is also professor emeritus of zoology at Harvard University, having taught there for nearly half a century, and is a research oceanographer and former curator of the Museum of Comparative Zoology at Harvard.

The Bigelow Medal, which is accompanied by a $2500 cash prize, was established earlier this year by the trustees of the Oceanographic Institution without the knowledge of their chairman.

Arne Engström, distinguished biophysicist and head of the Division of Medical Physics at the Karolinska Institute in Stockholm, will spend 6 months as visiting professor of medical physics at the Donner Laboratory of the University of California, Berkeley, starting in the fall semester.

Merrill M. Flood of the University of Michigan, professor of industrial engineering in the College of Engineering and senior research mathematician in the Mental Health Research Institute, has also been appointed professor of mathematical biology in the department of psychiatry of the Medical School.

Fred L. Mohler, chief of the mass spectrometry section of the National Bureau of Standards, has retired from active service after 43 years with the bureau. Mohler received his Ph.D. in physics from Johns Hopkins University in 1917. He joined the Atomic Physics Section at NBS the same year and was made chief of the section in 1928. During this period he worked on fundamental phenomena in atomic physics, including electrical discharges in gases, the study of ionization potentials, and ionization of liquids. Later, after a year with the Manhattan Project, Mohler was appointed chief of the Mass Spectrometry Section, where he has been engaged in the development of mass spectrometric methods as applied to chemical and isotope analysis and molecular physics.

Charles W. Mattison, head of the education branch of the U.S. Forest Service's Division of Information and Education, has retired after more than 30 years with the Forest Service. He will remain in the conservation-education field on a part-time basis, organizing and conducting a program for the American Forestry Association.

His successor is **Matthew J. Brennan**, who joins the Forest Service from the Department of Health, Education, and Welfare, where he has been employed by the science, mathematics, and foreign-language section of the Office of Education as specialist for elementary science.

The Helen Hay Whitney Foundation has announced that **Rebecca C. Lancefield**, member and professor of the Rockefeller Institute, will receive the third T. Duckett Jones Memorial Award. The $6500 award will be presented to Dr. Lancefield on 8 October at a dinner to be held in her honor at the Princeton Inn, Princeton, N.J., during the foundation's third annual meeting of research fellows and second Connective Tissue Conference.

Dr. Lancefield is being honored for extensive and fruitful investigations of the biology of hemolytic streptococci. Her discoveries have led to better understanding of streptococcal infections and their two most important sequelae —rheumatic fever and acute glomerulonephritis.

Robert H. Randall retired from the federal service on 11 July and is now vice president of the Aero Service Corporation of Philadelphia. During his service in government he has been a member of the National Academy of Sciences' Committee on Organization of Federal Government Surveying and Mapping; consultant to the National Resources Planning Board on State and Regional Planning, Public Works, and Urbanization; consultant on surveys and maps, Tennessee Valley Authority; U.S. member of the Committee for Public Works Planning of the International Labor Organization; and assistant on cartography with the U.S. Bureau of the Budget, Executive Office of the President.

Ruby K. Worner, textile technologist and head of product evaluation investigations of the U.S. Department of Agriculture's Southern Utilization Research and Development Division, has received a Fulbright grant for study at the University of Alexandria, Alexandria, Egypt, for the academic year 1960–61. She will be a lecturer and consultant in textile technology and research, with special reference to cotton.

John S. Griffith of the department of theoretical chemistry at Cambridge University has been appointed professor of chemistry at the University of Pennsylvania.

Alan W. Donaldson, assistant chief of the U.S. Public Health Service's Communicable Disease Center at Atlanta, Ga., has been named deputy chief. He succeeds **C. A. Smith**, who was promoted from deputy to chief on 1 July.

Andrew Gemant, research scientist and staff physicist for Detroit Edison's engineering research department, has retired after 20 years of service with the company. Gemant has won distinction for his basic research on the phys-

ical chemistry of insulating materials. He has written four physics books and more than 160 papers on various subjects, including colloid chemistry, high-voltage physics, electrochemistry of hydrocarbons, and radioactive tracers.

Two appointments at the University of Pennsylvania School of Medicine have been announced.

Harold G. Scheie, professor of ophthalmology, has been named chairman of the department of ophthalmology, and **Harold S. Ginsberg** of Western Reserve University School of Medicine, Cleveland, has been named professor and chairman of the department of microbiology.

Scheie succeeds **Francis H. Adler**, who will become emeritus professor of ophthalmology after 23 years as department chairman.

The Robert A. Welch Foundation, Houston, Tex., has announced that five well-known scientists have been selected under the foundation's competitive Visiting Scholar Program, which makes awards that range from $12,000 to $20,000 per academic year. The recipients chosen are as follows:

Edward Teller, nuclear physicist and professor at the University of California at Berkeley, who will visit the Rice Institute during the spring of 1961.

Daniel Bovet, Nobel laureate in physiological chemistry and a professor at the University of Rome, who will visit the Southwestern Medical School in Dallas during the 1960–61 academic year.

Hans Jonassen, professor of chemistry at Tulane University, who will visit the University of Texas in Austin during the 1961–62 academic year.

M. D. Taylor, professor of chemistry at Howard University, who will visit Prairie View Agricultural and Mechanical College during the 1960–61 academic year.

W. B. Smith, professor of chemistry at Ohio University, Athens, who will visit Texas Christian University during 1960–61.

Herbert B. Pahl, formerly assistant professor of biochemistry at Vanderbilt University School of Medicine, has been appointed executive secretary of the Biochemistry Training Committee in the Division of General Medical Sciences of the National Institutes of Health. He succeeds **George M. Briggs**, who has accepted a professorship at the University of California, Berkeley.

At the California Academy of Sciences, San Francisco, **Joel F. Gustafson** has been named associate director; **Robert C. Miller**, director, has been given the additional appointment of curator of the department of invertebrate zoology, of which **Allyn G. Smith** has been named associate curator of the academy.

Arthur Rose has asked to be relieved of instructional duties as professor of chemical engineering at Pennsylvania State University in order to direct the revision of the Condensed Chemical Dictionary and Distillation Literature Index and Abstracts. In addition, he wishes to engage more fully in work at Applied Science Laboratories, Inc., State College, Pa., on a freezing process for saline water demineralization and on preparation of high-purity fatty acid standards for lipid chromatography. Rose will continue to direct his graduate research program at the university.

H. Willard Davis, principal scientist with the Oak Ridge Institute of Nuclear Studies, Oak Ridge, Tenn., has resigned that position to return to the University of South Carolina, from which he was on leave of absence as head of the department of chemistry. The university has recently announced his promotion to the post of dean of the College of Arts and Science.

Recent Deaths

Pio Bianco, Buffalo, N.Y.; 68; nationally known orthopedic surgeon who was a professor of orthopedic surgery at the University of Buffalo Medical School for 20 years, until his retirement in 1950; 9 Aug.

Bernard O. Dodge, New York, N.Y.; 88; specialist in plant diseases and the genetics of fungi; plant pathologist at the New York Botanical Garden for 20 years, until his retirement in 1957; his pioneering work in the experimental breeding of fungi is credited with having led to a better understanding of the nature of heredity and inherited characteristics; 9 Aug.

Heinrich Hauptmann, São Paulo, Brazil; 55; professor of organic chemistry and head of the department of chemistry of the Faculdade de Filosofia, Ciências e Letras, Universidade de São Paulo; 21 July.

Francis A. Jenkins, Berkeley, Calif.; 61; professor of physics at the University of California and a pioneer researcher in molecular spectroscopy; 3 Aug.

William G. Lennox, Boston, Mass.; 76; authority on epilepsy, whose latest book, a two-volume work entitled *Epilepsy and Related Disorders*, was published last month; associate professor of neurology at Harvard Medical School until 1954; was chief of the seizure division at the Children's Medical Center in Boston, where he established an epilepsy training program for physicians; was former president of the International League Against Epilepsy and organized the American Epilepsy League; 21 July.

Walter F. Loehwing, Iowa City, Iowa; 63; botanist and dean of the State University of Iowa graduate college; a member of the faculty for 35 years, including 13 years as head of the botany department; 1 Aug.

James Lunny, Colonia, N.J.; 38; Weather Bureau meteorologist stationed at New York International Airport, Idlewild, Queens; 8 Aug.

Nikolai Shatsky, Moscow, U.S.S.R.; 64; geologist; since 1934 head of the Institute of Geology of the Soviet Academy of Science; specialist in tectonics; Stalin prize winner; 2 Aug.

F. Lee Stone, Chicago; 75; executive director of the Cancer Prevention Center of Chicago; associate professor emeritus of obstetrics and gynecology at the University of Illinois College of Medicine; 1 Aug.

Percival M. Symonds, New York; 67; psychologist and professor emeritus of education at Teachers College, Columbia University, who devoted his career to research in educational methods, with particular attention to the psychology of teacher-child and parent-child relationships; had just completed a book, *From Adolescent to Adult*; 6 Aug.

Oswald Veblen, Princeton, N.J.; 80; mathematician who was internationally known for his contributions in geometry, particularly in analysis situs; Fine professor of mathematics at Princeton University from 1910 until his retirement from the university in 1932; then the first professor of mathematics at the Institute for Advanced Study in Princeton and, in 1950, a professor emeritus; 10 Aug.

Ivan Yakushkin, Moscow, U.S.S.R.; 74; internationally known agronomist who was the author of more than 260 books, pamphlets, and articles on increasing yields of field crops; had been teaching at Moscow Agricultural Academy since 1932; 20 July.