nomic growth, as measured from the peak of one business cycle to the next, has consistently declined, and that in more recent years a similar increase in the rate of unemployment at the peak of succeeding business cycles has also appeared.

Aside from this direct loss of economic growth, the Kennedy people say that a further increment to growth, above the normal 3.5 percent, has been ruled out by the Eisenhower policies. This increment, they say, is readily available if the nation will invest more money in such things as scientific research and education. The Eisenhower Administration has agreed in principle, but has felt the nation could not afford these investments, a feeling that was strengthened, of course, by that Administration's reluctance to raise the size of the federal budget and to increase the degree to which science, education, and other factors depend on the federal government.

The Kennedy people disagree: such investments, it is true, will unbalance the budget, which is just fine, in their view, for they feel the country needs a budget deficit. "Pledged expenditure programs that are desired for their own sake," said the Samuelson task force report, "should be pushed hard. If 1961–62 had threatened to be years of over-full employment and excessive inflationary demand, caution might require going a little easy on them. The opposite is in prospect."

So the outlook is for more money for a great many things, including science and education, and for a rousing political battle between the new Administration and the conservative opposition which is convinced that "you can't spend yourself rich." All of this has exhilarated the part of Washington that sympathizes with Kennedy, and has begun to appall his opponents.

The Kennedy people seem to glory in the size of the problems at home and abroad: they no more regret them than a mountaineer regrets that there are Everests to climb. "In the long history of the world," Kennedy said at his inauguration, "only a few generations have been granted the role of defending freedom at its hour of maximum danger. I do not shrink from this responsibility—I welcome it. I do not believe any of us would exchange places with any other people or any other generation." Whether he has his way or not is in question, but no one doubts that it will be a grand show.—H.M.

News Notes

Space: 7-Ton Sputnik; NASA Chief; Chimp's Rocket Trip; Samos and Minuteman Fired

Five days of major events in the history of space development culminated on 4 February in the Soviet launching of a 7.1-ton sputnik, the heaviest vehicle ever put into orbit. The period of space activity opened on 30 January with President Kennedy's selection of James E. Webb to succeed T. Keith Glennan as head of the National Aeronautics and Space Administration. The next day a chimpanzee made an 18-minute, 420-mile rocket flight and was successfully retrieved. On the same day, the Air Force sent a Samos reconnaissance satellite into polar orbit from Point Arguello, Calif., in the first successful launching of this experimental vehicle, designed to perform photographic missions. And on 1 February the Air Force fired a three-stage Minuteman intercontinental ballistic missile 4600 miles down range from Cape Canaveral, establishing it as the largest solid-propellant rocket ever fired in the Western world and the first major missile to be tested as a complete unit at its initial launching.

The Soviet Satellite

The new 14,000-pound sputnik was sent aloft with an "improved multistage rocket," according to the Soviet news agency Tass, which released very few details about the satellite, not even its radio frequencies. The vehicle is circling the earth once every 89.8 minutes in an elliptical path that has an apogee of 203.5 miles and a perigee of 138.9 miles. Tass reported that the orbit was "close" to the one intended, and that equipment aboard had "functioned normally." (The heaviest satellite launched so far by the United States was the 9000-pound Atlas, fired on 18 December 1959.)

NASA Head Named

The new space chief James E. Webb —a lawyer, businessman, and former government official—will relieve Hugh A. Dryden, who has been acting administrator of NASA since Glennan's resignation. Dryden will continue as deputy administrator of the space agency. [Glennan has agreed to serve as a special consultant to the Senate Space Committee, according to its new chairman, Senator Robert S. Kerr (D-Okla.), who has been a business associate of Webb's.]

Webb is at present chairman of the Municipal Manpower Commission, a study commission financed by the Ford Foundation to determine how able men and women can be attracted to public service at the local-government level. He served the federal government as director of the Bureau of the Budget from 1946 to 1949 and as Under Secretary of State from 1949 to 1952.

Chimp's Space Trip

Ham, the 37-pound male chimpanzee who was rocketed over the Caribbean from Cape Canaveral, is apparently in good condition, although his flight capsule traveled 120 miles further than planned. The experiment was a first major test of the environmental control system to be used for Project Mercury. There have been reports that one of Mercury's six astronauts would make a trip similar to Ham's in late March. However, more chimpanzee flights are expected first.

Samos and Minuteman

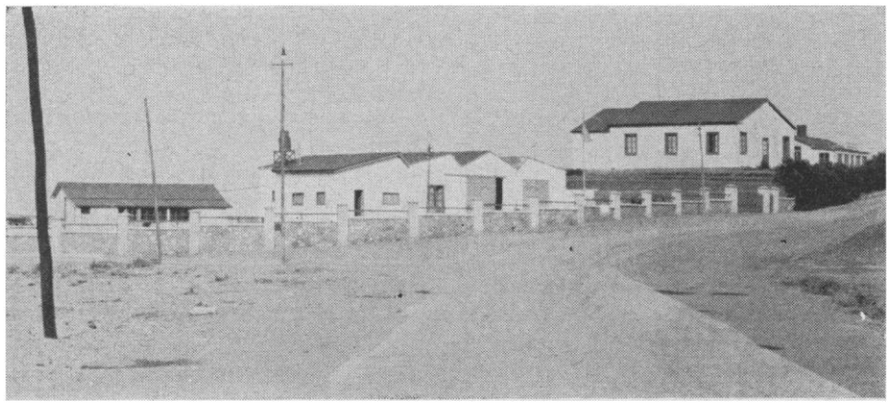
The Samos reconnaissance satellite, which is designed to perform photographic missions formerly conducted by U-2 aircraft, is circling the earth every 95 minutes in a polar orbit that has an apogee of 350 miles and a perigee of 300 miles. The vehicle is expected to stay aloft a year. The orbital weight of the satellite is 4100 pounds, and the instrument package is believed to weigh 300 to 400 pounds.

This was the second attempt to orbit Samos. The first failed last October. The Samos program has been in operation 3½ years and has cost $300 million.

The successful first test of the 60-foot Minuteman is of particular significance because this missile is intended to be the Air Force's principal weapon. It will have an eventual range of more than 6300 miles. There are reports that Air Force officials are especially elated over Samos and Minuteman because the two tests strengthen the Air Force's position in the competition for funds in the new Administration's first budget.

Atomic Energy Hearings Scheduled

The congressional Joint Committee on Atomic Energy has announced that public hearings on the development, growth, and state of the atomic energy



Argentine Marine Biological Station.

industry are scheduled for 21 February–2 March. Section 202 of the Atomic Energy Act of 1954 requires that the hearings be held within the first 60 days of each session of the Congress.

The Joint Committee will particularly consider the following subjects: (i) materials technology problems in the nuclear power industry (that is, fuel elements and materials for other reactor plant components); (ii) findings and recommendations of the recent McKinney report (particularly the need for greater coordination with atomic energy programs of our allies); (iii) industrial comments on regulatory problems (it is expected that public hearings will be held later on the Joint Committee Staff Report and other reports and recommendations on the AEC regulatory program); and (iv) industrial aspects of the nuclear space program.

It is expected that the chairman of the Atomic Energy Commission and other commissioners and staff of the AEC will lead off, beginning at 10 A.M. on 21 February and, if necessary, continuing on 23 February. Witnesses from industry and the public will be heard on 23, 24, 27, and 28 February and 1 and 2 March. This year all hearings will be held in the old Supreme Court chamber, Room P-63 of the Capitol, and with the exception of the first day's testimony by commission representatives, sessions will be scheduled only in the afternoons. Individual prepared testimony will be limited to about 15 minutes.

Letters of invitation are being sent to a number of the organization representatives, and others, who have appeared before the Joint Committee in the past, or who are active in those areas which the Joint Committee is particularly considering. The hearings will also be open to statements by other qualified persons. Comments may be submitted in writing and will be included in the record for consideration by the committee. Oral testimony will be permitted in so far as time permits.

Persons interested in submitting comments or testifying before the committee during these hearings should contact George F. Murphy, Jr., of the committee staff, Room F-88, U.S. Capitol Building, Washington 25, D.C. *before 14 February.*

New Argentine Marine Biological Station at Puerto Deseado

Under the joint sponsorship of the University of Buenos Aires and the Instituto Nacional de Technologia Industrial, the Marine Station at Puerto Deseado provides the first facilities for scientific study along the poorly known Patagonian coast. Located in the town of Puerto Deseado, on the estuary of Rio Deseado, it is now open to visiting investigators.

The station was originally founded in 1953, as a preliminary step toward the commercial utilization of marine plant resources of the area. In 1959, its organization was revised, and now its facilities are available for workers interested in all aspects of marine biology.

Although far from luxurious, the station is adequate for certain types of work. The three buildings and the prefabricated dormitory now under construction will provide sleeping accommodations for 15 people. There are three small kitchens, hot water, and heating stoves for winter use. There are eight rooms for use as laboratories. Some elementary chemical equipment, a small amount of glassware, herbarium materials, and simple collecting equipment are available. A 14-meter motor launch with sleeping facilities, a small hydrographic winch, and a new truck are at present on order. Various other basic facilities and items of equipment are being assembled as funds become available.

Work being carried out at the Biological Station includes daily recording of surface temperatures and bimonthly collection of salinity, phytoplankton, and zooplankton samples at stations within the estuary of Rio Deseado. Marine botanical work includes systematic studies, the establishment of an algal herbarium, and preparation of exsiccatae for exchange purposes.

Although occupied throughout the year, the station is utilized mainly from January to April. The summer courses deal with systematics and ecology of benthic marine algae, invertebrate zoology, and phytoplankton. Students this year have the opportunity to work with senior visiting investigators from Uruguay, Chile, and Argentina. The director of the station is O. Kühnneman of the department of botany, University of Buenos Aires; the station manager is T. Giannangili. Two laboratory assistants are in residence. In addition to the director, five biologists are at present listed as members of the summer faculty—Carmen Pujals, A. Asensi, La Coste de Diaz, R. Ringuelet, and R. Pallares.

A number of species of marine birds, including the Patagonian penguin, *Spheniscus magellanicus*, nest a short distance from the station. In strong contrast to the barren, windswept Patagonian Desert, rich intertidal areas are exposed by large tidal fluctuations.

This new marine biological station certainly deserves attention as one that provides access to an interesting and little-known part of the South Atlantic.

MICHAEL NEUSHUL
Department of Botany,
University of Washington, Seattle

Conant To Conduct Teacher Education Study for Carnegie

A study of the education of teachers will be undertaken by James B. Conant, according to an announcement on Monday by the Carnegie Corporation of New York. Two reports on secondary education have already been issued by Conant, *The American High School Today* and *Education in the Junior High School Years.*

Conant decided to enter into this

new area largely because some of the leaders in the field of teacher education feel that such a study by him would be of great importance at the present time. Among the topics to be included will be the preparation of public school teachers and the criteria for their employment, as established by local, regional, and state education authorities.

On the staff for the first year will be John I. Goodlad, professor in the School of Education, University of California at Los Angeles, who will serve on a part-time basis; Jeremiah S. Finch, professor of English and dean of the college, Princeton University; William H. Cartwright, professor and chairman of the department of education, Duke University; Robert F. Carbone, instructor in the school of education, University of Chicago; and E. Alden Dunham, a member of Conant's staff for the past 3 years. The Educational Testing Service in Princeton, N.J., will administer the $300,000 grant made by Carnegie for the study.

News Briefs

Teachers to Africa. Plans to send U.S. teachers to Africa in the next school year are being worked out by a group of foundations and educational institutions and the federal government. More than 400 teachers would be sent to Nigeria and the East African countries of Uganda, Kenya, and Tanganyika in the initial effort. The Carnegie Corporation of New York, the Ford Foundation, Columbia University Teachers' College, the African-American Institute, and the International Cooperation Administration are involved.

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Polio immunization lags. Forty percent of the population, according to the latest Public Health Service estimates, has not been vaccinated against poliomyelitis. The estimate, based on a sample survey conducted by the Bureau of the Census in September 1960, shows that although 93 million persons under 60 years of age have received some vaccine, only about 25 percent have had the recommended full course of three shots, plus a booster.

The PHS is launching a vaccination promotion campaign, pointing out that such a campaign faces several difficulties. One is the fact that the majority of the unvaccinated are among the less privileged, in health matters the hardest group to reach. Another is the imminent availability of oral vaccine, which has led many people to postpone the course of injections.

The American Medical Association is also concerned about the immunization program. At the recent AMA meeting in Washington a resolution was passed that called on physicians to cooperate in every possible way in a renewed campaign to stamp out poliomyelitis in this country.

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Secondary-school math. Yale University has received a grant of $1,184,200 from the National Science Foundation to continue support of a program to improve the teaching of mathematics in secondary and elementary schools. The School Mathematics Study Group, headed by Edward G. Begle, associate professor of mathematics at Yale, was initiated in the spring of 1958 by a grant from the foundation.

For its latest project, the group prepared teaching material which revises the curriculum for grades four through six. Some 370 teachers, operating in 27 centers from the eastern seaboard to the Far West, are teaching the new methods to more than 12,000 pupils.

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Index of declassified reports. The Library of Congress has announced that an index to the recently declassified reports of the World War II Office of Scientific Research and Development has been printed and is for sale by the Office of Technical Services, U.S. Department of Commerce, Washington 25, D.C. The index is PB 161976 *Office of Scientific Research and Development Microfilm Index,* 770 pages, $8 ($2 additional for foreign mailing).

The index is a printed document but the reports themselves may be purchased only in microfilm or photocopy from the Photoduplication Service, Library of Congress, Washington 25, D.C.

* * *

A **Roger Irving Lee** professorship has been established in the Harvard University School of Public Health, honoring the chief architect in the planning of the school. University president Nathan M. Pusey announced the founding of the professorship at a recent dinner meeting attended by members of the Harvard Corporation and by close associates of Lee.

* * *

Fast reactions session at Cambridge. A summer session on "fast reactions" will be held in the department of physical chemistry at the University of Cambridge, 12–19 August. Among those contributing to the program of lectures will be R. G. W. Norrish, A. G. Gaydon, and T. M. Sugden. Further details may be obtained from: Secretary of the Summer School, Department of Physical Chemistry, Lensfield Rd., Cambridge, England.

* * *

Government graduate fellowships. The U.S. Office of Education has announced approval of 527 National Defense Graduate Fellowship programs at 146 graduate schools for the 1960–61 academic year. These programs, authorized under title IV of the National Defense Education Act, are designed to increase the nation's supply of college teachers and to expand graduate facilities. The approved programs are in six fields; humanities, 26 percent; education, 8 percent; social sciences, 27 percent; biological sciences, 13 percent; physical sciences and mathematics, 16 percent; and engineering, 10 percent.

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National Primate Center. The Public Health Service has awarded grants totaling $1,917,275 for the construction and initial operation of a National Primate Center in Oregon. The center will be operated in conjunction with the University of Oregon Medical School, whose 100-monkey colony will form the nucleus of the 400-monkey facility.

Several additional primate centers are being planned, each to be affiliated with an established research institution. These centers are being developed as regional and national facilities and will be used by visiting scientists as well as by the permanent staff.

The chief purpose of these centers is to conduct research on primates, but they will also breed research animals.

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AEC series on radiation. The Atomic Energy Commission has published the first in a series of pamphlets describing its biomedical program, which is directed toward the accumulation of knowledge of the effects upon living things of nuclear radiation from any source—natural or man-made. The booklet, titled *Marine Sciences Research,* was prepared under the direction of the commission's Division of Biology and Medicine. It summarizes work in progress at 13 institutions through 28 research contracts.

The new publication is available at 50 cents a copy from the Office of Technical Services, U.S. Department of

Commerce, Washington 25, D.C. The second and third booklets in the series will be devoted to AEC genetics and cancer research programs.

Grants, Fellowships, and Awards

Behavioral sciences. A Creative Talent Award of $1000, and two of $500 each, have been announced by the American Institute for Research, an independent, nonprofit organization devoted to basic and applied research in the behavioral sciences. The purpose of the program is to encourage the development of creative talent and the application of such talent to the advancement of the science of human behavior. Awards will be made annually to graduate students working for their doctor's degree in psychology or in a related field.

The outstanding doctoral dissertation in each of three areas of study will be selected annually by panels of distinguished scholars. On the basis of the three dissertations selected, the candidate judged as most likely to make *creative* contributions to scientific knowledge will receive an award of $1000. The other two winning candidates will receive awards of $500 each.

Dissertations completed during the period 1 July 1960–31 August 1961 will be eligible for the first annual awards. In subsequent years, the period will be 1 September–31 August. Completed nomination forms must be accompanied by an abstract of the dissertation. The forms will be made available through chairmen of graduate departments of psychology; they may also be obtained from the American Institute for Research, 410 Amberson Ave., Pittsburgh, Pa. A candidate may be nominated by his major adviser, the chairman of his department, or any member of the American Psychological Association.

For the first year, awards will be offered in the following three subject areas: perception, learning, and motivation; development, counseling, and mental health; and measurement and evaluation of individual and group behavior.

Cancer. The Ann Langer Cancer Research Foundation has announced the fourth annual award of $500 for meritorious investigation in the field of cancer research, either clinical or laboratory. The award is being supported by the family of the late Bertha Goldblatt Teplitz and carries her name. The competition is limited to physicians and other scientists under the age of 45. Nominations should be submitted to the Teplitz Award Committee, 612 N. Michigan Ave., Chicago 11, Ill., *by 15 March*. They should be accompanied by a 1-page statement and biography.

History of chemistry. Members of the American Chemical Society's Division of History of Chemistry, and other interested persons, are urged to consider the nomination of a candidate for the division's $500 Dexter Award in the history of chemistry. The award is made on the basis of services which have advanced the history of chemistry in any of the following ways: by publication of an important book or article; by furtherance of the teaching of the history of chemistry; by significant contributions to the bibliography of the history of chemistry; or by meritorious services over a long period of time which have resulted in the advancement of the history of chemistry. Detailed information about nominees should be sent, in duplicate, *by 10 March* to the secretary of the Division of History of Chemistry, Sidney M. Edelstein, Dexter Chemical Corporation, 845 Edgewater Rd., Bronx 59, N.Y.

Physiological psychology. St. John's College, Cambridge, England, proposes by the end of April to make an election to the Kenneth Craik Research Award for the support of postgraduate research, preferably in physiological psychology. Candidates of either sex are eligible. The award recipient is not required to become a member of the college and need not reside at the university. If the college council consents, he may receive other emolument concurrently and may hold a salaried post.

The value of the award will be £450 a year. Tenure, which will date from 1 October 1961, will be for a period of not less than 1 year nor more than 3 years, as the council shall decide. Applications should be sent to The Master, St. John's College, Cambridge, to reach him *not later than 1 April*.

Radiation effects. A David Anderson-Berry Medal, together with a sum of money amounting to not less than £100 ($280), will be awarded in 1961 by the Council of the Royal Society of Edinburgh. The prize will be given for recent work on the effects of x-rays and other forms of radiation on living tissues. Published work will be taken into consideration if submitted with the application.

Application for the prize may be made directly, or proposals may be made on behalf of others. Applications and proposals must be in the hands of the General Secretary, Royal Society of Edinburgh, 22/24 George Street, Edinburgh 2, Scotland, *not later than 31 March*.

Scientists in the News

Logan Wilson, sociologist and chancellor of the University of Texas, has been elected president of the American Council on Education. He succeeds **Arthur S. Adams**, who became council president in 1951 and more than a year ago announced that he would retire as soon as a successor could be named. The new president will assume active leadership of the council not later than 30 June.

The American Meteorological Society presented six awards during its 41st annual meeting, held in New York, 23–26 January.

The Clarence LeRoy Meisinger Award went to **Verner E. Suomi**, professor of meteorology, University of Wisconsin, "for his imaginative and pioneering research work on atmospheric radiation problems in which he has effectively used both balloon and satellite observing platforms."

The society's Award for Applied Meteorology was presented to **Robert D. Elliott**, president, North American Weather Consultants, Santa Barbara, Calif., "for his effective leadership and outstanding administration in broadly pursuing opportunities for expanding meteorological research and its applications in private industry." The award is supported by the Weather Corporation of America.

The Award for Outstanding Services to Meteorology by a Corporation went to the Pacific Gas and Electric Company, San Francisco, Calif. Its citation read: "Pacific Gas and Electric Company has maintained an active support of private weather services since 1937. It is the first and probably only utility company in the United States that has made full use of weather facilities in its daily operations. It has also maintained an active interest in Meteorology research and has made substantive contributions in this area." **Francis J. Parsons, Jr.**, the firm's senior meteorologist, accepted the award for the company.

The Charles Franklin Brooks Award for Outstanding Service to the Society was conferred, posthumously, upon

Captain **Howard T. Orville**, USN, "for his devoted and long-standing service to the Society as President, Councilor and staunch supporter of all its activities. His enthusiasm, zeal and personal dedication contributed much to the expansion of the Society."

The Carl-Gustaf Rossby Award for Extraordinary Scientific Achievement was presented to **Victor P. Starr**, professor of meteorology, Massachusetts Institute of Technology, for "more than a decade of outstanding fundamental research leading to a better understanding of the general circulation of the atmosphere."

A special award given by the society for outstanding work went jointly to **William W. Kellogg**, chief, Planetary Sciences Group, Rand Corporation, Santa Monica, Calif., and **Stanley M. Greenfield**, at present on leave from Rand as scientific adviser to the U.S. Air Force Directorate of Research and Development, Washington, D.C., "for their pioneering work in the planning of a meteorological satellite."

Christopher E. Barthel, Jr., has been appointed program director for foreign science activities in the National Science Foundation's Office of Special International Programs. Before joining NSF, Barthel was assistant director of the Armour Research Foundation of Illinois Institute of Technology.

In April, **Elmer H. Bobst**, chairman of the board of Warner-Lambert Pharmaceutical Company, will receive the 1961 Rusby Award of the Columbia University College of Pharmacy Alumni Association.

The 1960 annual award of the American Society of Criminology was presented to **Thorsten Sellin**, president of the International Criminological Society, for "distinguished contributions to the science of penology," at the society's session in New York on 27 December during the annual AAAS meetings. Sellin is professor of criminology at the University of Pennsylvania and editor of the *Annals of the American Academy of Political and Social Sciences.*

In addition, two Vollmer research awards were presented, one to **Paul Bohannan**, Northwestern University anthropologist, for his study "African Homicide and Suicide," and one to **Marvin E. Wolfgang,** University of Pennsylvania criminologist, for his doctoral thesis, "Patterns of Criminal Homicide."

David H. Dunkle, Smithsonian Institution paleontologist, is in Pakistan to carry out special stratigraphic studies of vertebrate fossils, chiefly fishes, and to aid in the establishment and expansion of a paleontological branch of the Pakistan Geological Survey. Dunkle, on loan for 2 years to the U.S. Geological Survey, is a member of a seven-man Survey group sent to help the Pakistan Government improve its geological service. The U.S. team has headquarters at Quetta, where laboratories are being built for the Geological Survey of Pakistan.

Herman N. Eisen has been named head of the department of microbiology at Washington University School of Medicine, replacing **Arthur Kornberg**, 1959 Nobel laureate, who resigned in June of 1959 to head the department of biochemistry at Stanford School of Medicine. The apointment is effective immediately, although Eisen will not assume active duties as department head until July. He has been a member of the medical school staff since accepting the position of professor of medicine and head of the division of dermatology in 1955.

J. M. Burch, principal scientific officer, light division, National Physical Laboratory, England, will be in the United States from 28 February to 21 March. His itinerary includes Pittsburgh; Washington; Rochester, N.Y.; New York; Poughkeepsie, N.Y.; Norwalk, Conn.; and Cambridge, Mass.

H. J. Evans, member of the British Medical Research Council's scientific staff at the Radiobiological Research Unit, Atomic Energy Research Establishment, Harwell, is working at the Brookhaven National Laboratory for 1 year under an exchange agreement.

H. A. Gebbie, principal scientific officer, National Physical Laboratory, England, will be in this country in March to attend the Second International Conference on Quantum Electronics, which is being held at the University of California, Berkeley, 23–25 March. He will visit Chicago, Washington, and Cambridge, Mass.

Frank L. Schwartz, former professor of mechanical engineering at the University of Michigan and consultant to the Atomic Energy Commission, has been named director of engineering for Lauson Power Products Division of Tecumseh Products Corp., Tecumseh, Mich.

Mazhar Hasan, formerly assistant professor of physics at Northern Illinois Univerity, has joined the Stromberg-Carlson Division of the General Dynamics Corporation as a senior physicist. He will do work in plasma physics in the division's Basic Science Laboratory.

Marshall Clagett, director of the University of Wisconsin's Institute for Research in the Humanities, has received the History of Science Society's annual Pfizer Award for an outstanding contribution to the history of science. He was honored for his book, *The Science of Mechanics in the Middle Ages*, published in 1959.

Recent Deaths

Franklin J. Crider, Sherman Oaks, Calif.; 78; plant scientist noted for his studies of the root, especially top growth patterns; designer, planner, and first director of the Boyce Thompson Southwestern Arboretum at Superior, Ariz., which he headed from 1924 to 1934; was prominent in the establishment of the U.S. Department of Agriculture's Soil Conservation Service, which he served until retirement in 1951; Jan.

Frederick L. G. Kollmorgen, Onancock, Va.; 89; an authority on precision optics; founded the Kollmorgen Optical Corporation in Brooklyn for the development and manufacture of precision optical and electromechanical instruments, including submarine periscopes and electronic firing control systems for weapons and missiles; Jan.

Carroll R. Mullen, Philadelphia, Pa.; 60; professor of ophthalmology and head of the department of ophthalmology at Jefferson Medical College; 1 Feb.

Karl E. Paschkis, Philadelphia, Pa.; 64; professor of physiology and clinical professor of medicine at Jefferson Medical College; director of the Division of Endocrine and Cancer Research at the college, and chief of the Endocrine Clinic at Jefferson Hospital; 27 Jan.

Jerome T. Syverton, Minneapolis, Minn.; 53; head of the department of bacteriology and immunology at the University of Minnesota; well known for his research on viruses and cell structure; taught at the University of Rochester and Louisiana State University, where he became head of the department of microbiology; 28 Jan.

Hugh C. Troy, Mountainside, N.J.; 93; retired professor of dairy industry at Cornell University; 27 Jan.