a recommendation to put off a resumption of the Geneva test-ban negotiations for about 6 months. This was part of a recommendation to avoid doing or saying anything much about disarmament until the new Administration could reach some firm decisions on a disarmament policy.

The delay on the general question was expected, for more than any other policy area the new Administration's policy on disarmament necessarily requires breaking new ground, and consequently time to develop a policy to which this country feels it can commit itself.

For the most part, this is easy enough to do: when nothing has been happening nothing is easier than to let nothing happen a little longer. But assuming its advisability, it will be awkward for Kennedy simply to postpone resumption of the test-ban talks. Opposition to continuing the present unpoliced ban has been growing throughout the year, and Kennedy, during the campaign, promised a prompt effort "with a reasonable but definite time limit" to see if the Russians are willing to come to realistic terms on the question. Dean Rusk, the incoming Secretary of State, said last week he expected a prompt effort to be made.

Kennedy would be opening himself to strong attack at home if he were to ask for a lengthy postponement. It is more likely that the talks will be resumed on schedule even if the Administration may feel that it will not have much to say until next summer, although this, too, would lay Kennedy open to criticism; he would hardly be in a position to set a "reasonable but definite time limit." We will know soon enough which course he decides to take, for scheduled resumption of the talks is only 3 weeks off.

There has traditionally been at least one scientist among the five Atomic Energy Commissioners, and there has therefore been an opening for a scientist since last summer, when John Williams, director of research at AEC before he was appointed a commissioner, resigned because of poor health.

But except for 2 weeks in 1958 when Willard F. Libby served as acting chairman, there has never been a scientist commission chairman. This week Kennedy chose Glenn T. Seaborg, chancellor of the University of California and a Nobel laureate in chemistry, as a commissioner, and designated him as chairman.

Apparently Kennedy wanted the chairmanship to go to a scientist, for the other man to whom the post was reportedly offered was also a scientist, James Fisk, president of Bell Telephone Laboratories and, like Seaborg, a member of the President's Science Advisory Committee.

All members of the Science Advisory Committee, incidentally, have submitted *pro forma* resignations as a courtesy to the new president, even though their terms do not expire with the old Administration. The offers of resignations are expected to be declined.

Of other major science posts, Herbert York has been asked to stay on as chief of research and engineering in the Defense Department; Keith Glennan has resigned as head of the National Aeronautics and Space Administration, but his successor has not been appointed; James A. Shannon apparently will continue to head the National Institutes of Health.

These three offices, together with the AEC chairman, are the chief ones responsible for overseeing more than 95 percent of the government's investment in research, and over 60 percent of the entire nation's research funds. A rough breakdown of figures: Defense, $7.4 billion; AEC and NASA, $1 billion each; and NIH, $500 million.

So far, virtually everyone is agreed, Kennedy has done very well. His appointments have been almost universally praised as the most intelligent, competent, and experienced group of officials Washington has seen in some years. Kennedy has achieved a principal preinaugural goal of broadening his base of support by bringing a number of widely respected Republicans into the top levels of his administration, giving weight to his claim that what he wants to do is not based on either doctrinaire liberalism or fuzzy do-goodism, but on a tough-minded appraisal of what the national interest demands.

Arthur Krock reported in the New York *Times* that there was more sense of excitement in Washington as Kennedy's inauguration drew near than he could remember since Franklin Roosevelt's first in 1932. Times have changed and problems are different. No one expects a very exact repetition of FDR's hundred days. But there is a feeling around that life will be interesting on the New Frontier.—H.M.

News Notes

Cockcroft Selected for $75,000 Atoms for Peace Award

Sir John Cockcroft, Nobel Prize winning British physicist, research administrator, and educator, has won the $75,000 Atoms for Peace Award, established as a memorial to Henry Ford and his son Edsel. Cockcroft will receive the gold medallion symbolizing the award at a ceremony to be held at the Massachusetts Institute of Technology on 6 April. In making the announcement, James R. Killian, Jr., chairman of the award trustees, said:

"Sir John's contributions to the peaceful uses of the energy within the atom range from the first demonstrations that this energy can be released by man's ingenuity and skill to the direction of the development of full-scale nuclear-powered generating stations supplying electricity to England. He has taken a leading part in the development of large-scale test reactors, in the organization and direction of one of the great research centers for the exploration of the peaceful uses of atomic energy at Harwell in England, in the distribution of radioactive isotopes for research and for medical therapy to many countries throughout the world, in the organization of a Middle Eastern Atomic Research Center in Teheran, in the organization of the Geneva Conferences on the Peaceful Uses of Atomic Energy under the sponsorship of the United Nations, in the training of scientists and engineers from many parts of the world at the school for the study of isotopes

Sir John Cockcroft. [Elliott Fry, Ltd.]

founded at Harwell, and in the discussions among scientists and diplomats about the ways in which the potential for benefiting mankind made available through atomic power can best be realized. . . ."

The award, set up in response to President Eisenhower's 1955 appeal at Geneva for international efforts to develop nuclear energy for peaceful purposes, is granted "solely on the basis of the merit of the contribution where ever found in the world and without regard for nationality or politics." Nominations for the 1961 award were received by the trustees from persons and learned societies in 24 countries.

Committee on Africa Formed; African Festival in West Germany

The creation of a National Advisory Committee on Africa was announced recently by the Institute of International Education. The committee, under the chairmanship of Reverend Theodore M. Hesburgh, president of Notre Dame, consists of persons who were chosen because of experience, knowledge, or responsibility in relation to Africa.

They will consider trends and needs as U.S. education becomes increasingly involved in Africa's problems. Among such concerns are the growing number of African students in this country, the recruitment of American teachers for African secondary schools, and the establishment of youth service programs in Africa. The committee will weigh means of improving the partnership between the U.S. Government and private agencies and institutions concerned with Africa. The Department of State has endorsed the formation of the new committee, and policy-making government representatives will be invited to its meetings.

German Festival

Between 21 October and 4 November, shortly before the IIE announced the formation of its committee on Africa, there was a nationwide demonstration in West Germany of interest in the freedom and well-being of the African states. The Africa Festival was planned to promote mutual understanding between the African states and the Federal Republic and to allow prominent figures to exchange information and opinion about various aspects of public life in Africa and Western Germany. The African visitors for the occasion included 130 parliamentarians, journalists, trade unionists, youth leaders, and teachers.

The extensive program of the festival included a meeting of African and West German journalists in Berlin, discussions between African and German trade unionists at Bergneustadt, near Bonn, and a conference between African and German parliamentarians. Poets from Africa and the Federal Republic met in Munich, exhibitions of African art were shown in Berlin, Bonn, Darmstadt, and Dortmund, and many other German cities scheduled lectures, films, and discussions about African countries. In Berlin, the German Institute for Cinematography sponsored an African Film Festival.

Although the event was sponsored by a private institution, the German Africa Society, the government showed a keen interest. President Lübke, the German head of state, gave a reception for the African guests. Among the speakers at the formal opening of the festival were Professor Erhard, the Minister of Economics, and Dr. Gerstenmaier, president of the Bundestag and also president of the German Africa Society.

Balloon-Borne Telescope Project Enters Testing Stage

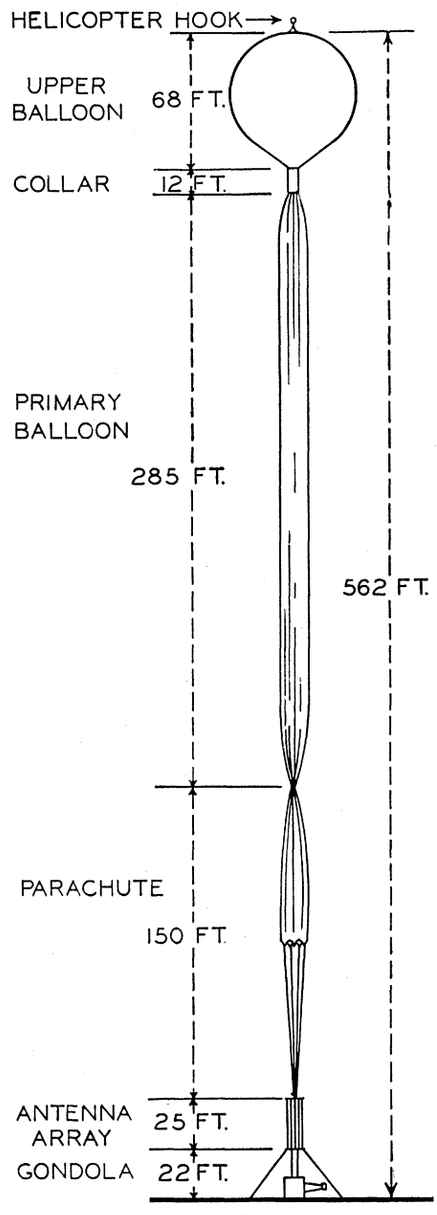
A tandem balloon system to lift the heaviest payload ever carried aloft to photograph planets and stellar nebulae is entering the preliminary testing stage, according to a joint announcement by the National Science Foundation, the Office of Naval Research, and Princeton University. Heart of the project, Stratoscope II, is a balloon-borne 36-inch telescope system weighing more than 2 tons, which will be raised to 80,000 feet (more than 15 miles), where it will be above nearly all of the atmospheric turbulence and dust that distorts or obscures ground-based observations. This permits picture-taking with a resolution three to five times higher than from the ground.

The project is under the direction of Martin Schwarzschild, internationally noted astronomer at Princeton University, who also directed the highly successful flights of a 12-inch solar telescope, Stratoscope I, in 1957 and 1959. The new program is sponsored by NSF and ONR, with additional support from the National Aeronautics and Space Administration.

Princeton has awarded a contract to a private research organization, Vitro Laboratories, Silver Spring, Md., to serve as program manager for Schwarzschild. Vitro's role is to supervise the development of the balloon system, evolve launching and recovery techniques, and plan and conduct the launches.

Objectives

The balloon will remain aloft throughout the night while observations are being made. The Princeton astronomers hope to be able to (i) analyze the divisions in Saturn's rings, possibly gaining more understanding of the factors that determine the orbits of the many particles that make up the rings; (ii) study the sudden atmospheric changes that take place on Jupiter and Venus (these studies may help to explain Jupiter's mysterious "red spot") and the possible relationships of these changes to solar



Balloon assembly for Stratoscope project.

magnetic storms; (iii) examine more closely the gaseous nebulae between stars, to gain clues as to the way in which our sun was formed; and (iv) obtain man's first look at the surface of cloud-shrouded Venus through holes that occur briefly in the cloud cover.

A proposed balloon system to lift the telescope payload, which, together with the associated electronic equipment, weighs about 4300 pounds, is under development by the G. T. Schjeldahl Co., Northfield, Minn. A new material developed by Schjeldahl, lighter and stronger than polyethylene, will be used for the balloon. It is basically Mylar plastic, reinforced with a Dacron mesh.

A method of utilizing a helicopter to capture the balloon and its payload as it descends, in order to achieve a soft landing, is also under development. An initial test of a helicopter-towed device for snagging the balloon has been completed by the Naval Air Development Test Unit, South Weymouth, Mass.

The first launch of the new system, with a dummy payload, and also testing of the helicopter retrieval method, is scheduled for this month. The target period for the first full-scale launch with the telescope is the fall of 1961.

AAAS Meeting Excerpts To Be Broadcast in New York

During the recent AAAS meetings in New York, radio station WBAI made recordings of talks and panel discussions from 16 of the symposia sessions and recordings of a number of interviews with distinguished participants. This material will be broadcast in a series of programs as follows:

23 January, 9:30–10:30 P.M., "Omnibus on Science." Chauncey D. Leake, president of the AAAS, talks with Jon Donald in the WBAI studios about the history of the organization and two of its principal concerns: communication with the public and the responsibilities of the scientist.

24 January, 9:00–9:30 P.M., "Flying Telescopes." Martin Schwarzschild of Princeton University talks about galactic structure, stellar "catastrophes," and the use of "orbiting astronomical observatories."

24 January, 10:30–11:00 P.M., "Science and the Polity." Pendleton Herring, president of the Social Science Research Council, considers this relationship in an address delivered during the symposium "Perspectives on Political Science and Science."

30 January, 9:30–10:00 P.M., "Extra-Terrestrial Communications." Physicist Phillip Morrison of Cornell talks with Paul Goodman and Jon Donald about "listening" for signals and discusses the communications patterns which could be developed by an extraterrestrial source to make its information intelligible to man.

2 February, 9:00–9:45 P.M., "The Challenge to Science of World Conditions Today." Sir Charles P. Snow delivers the meeting's principal address, in which he proposes the "moral uneutrality of science."

2 February, 10:15–11:00 P.M., "Science and Human Welfare." Margaret Mead, a member of the AAAS Committee on Science in the Promotion of Human Welfare, is joined by author Paul Goodman in a conference discussion, moderated by Jon Donald, of the role of ethics in science.

Carbon-14 Half-Life Redetermined

A more accurate value for the half-life of carbon-14—important in geological and archeological dating—has recently been obtained by the National Bureau of Standards. The new value is 5760 years, as compared with the previously accepted value of 5568 years.

In performing the redetermination, W. B. Mann and W. F. Marlow of the Bureau's radioactivity laboratory quantitatively diluted carbon dioxide of high specific activity for counting in length-compensated internal gas counters. Mass spectrometric analyses of parts of the undiluted gas sample were made by E. E. Hughes, R. M. Reese, and V. H. Dibeler, to determine the isotopic abundance of carbon-14. Experimental details of the redetermination will be published in the near future. Comparative measurements of the isotopic abundance were also carried out with H. W. Wilson of the United Kingdom Atomic Energy Authority.

The redetermined value is in fairly good agreement with the value 5900 ± 250 years obtained at the Bureau in 1953. The value 5568 years that has been in use was somewhat arbitrarily chosen. Because of the wide range in measured values of the half-life of carbon-14—from 4700 to 7200 years—a weighted average of three values determined by gas counting and by mass spectrometric analysis was tentatively accepted for radiocarbon dating of archeological samples. The present measurements have led to the conclusion that the uncertainties in the values obtained experimentally may have arisen almost entirely from adsorption effects.

The Bureau's new value of 5760 years is of particular interest in assessing the age, for example, of the Dead Sea Scrolls. On the basis of the previously accepted half-life, these scrolls were believed to be 1917 ± 200 years old—that is, to date from about 40 A.D. Their age, as estimated with the new value, is about 1983 years, and on this basis they date back to about 20 B.C. The difference in these two age values, however, is less than the experimental error originally given.

News Briefs

Air pollution. An advisory committee to the Surgeon General of the Public Health Service issued a report last month which recommends that support of air pollution research be increased from a current estimated level of $11 million annually to about $32 million a year by 1968. The report further recommends that the government assume 40 percent of this cost, industry 28 percent, and state and local governments 32 percent .

The committee was appointed by Surgeon General Leroy E. Burney, at the request of Secretary of Health, Education, and Welfare Arthur S. Flemming, after the National Conference on Air Pollution in November 1958. Copies of the report are available at the HEW Press Room, Washington 25, D.C.

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Retiring biologists. Biology professors planning to retire are asked to register with the Retired Professors' Register at 1785 Massachusetts Ave., NW, Washington, D.C. The Association of American Colleges and the American Association of University Professors have established the office with the help of a Ford Foundation grant. The registry serves as a placement service for retired college and university faculty members and administrators who wish to be considered for appointments in institutions other than those from which they have retired. The demand for biologists is apparently greater than the registry's supply. The registry is directed by Dr. Louis D. Corcon.

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TV mathematics. "Probability and Statistics," a nationally televised college-credit mathematics course, will be offered for the second semester of NBC's Continental Classroom, begin-

ning 30 January. Presented by the Learning Resources Institute in cooperation with the Conference Board of the Mathematical Sciences, the course will be taught by Frederick Mosteller, chairman of the department of statistics at Harvard University, and Paul C. Clifford, professor of mathematics at Montclair (N.J.) State College.

More than 300 colleges and universities are expected to offer the course for credit. It will be carried by 170 stations, 5 days a week, from 6:30 to 7 A.M. Those enrolled for graduate credit will view additional lessons twice weekly. Financial support for the project is provided by the Ford Foundation and by several major industries.

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Cardiovascular agents. The National Academy of Science–National Research Council has announced publication of the first volume of the three-volume *Index-Handbook of Cardiovascular Agents*, which contains information drawn from 13,427 scientific papers, monographs, and reviews. Each entry is condensed to one or more lines of essential content and indexed according to chemical and biomedical terms. More than 400 scientific journals, published from 1951 to 1955 in 20 different languages, were examined in preparing the volume. It has been labeled volume 2 of the series; volumes 1 and 3 (to appear within the next 2 years) will cover the periods 1931–50 and 1955–60, respectively.

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Frontiers in chemistry. The 20th annual Frontiers in Chemistry lecture series at Western Reserve University will cover two major topics: part 1, "The Solid State"; part 2, "The Chemistry of Large Molecules." The lectures will be scheduled on consecutive Fridays from 10 February through 21 April, with the exception of 31 March. Part 1 will be opened by D. A. Vermilyea (General Electric Research Laboratory), who will talk on "The growth of solids." Part 2 will be opened by Robert Mesrobian (Continental Can Company), who will speak on "Preparation and properties of multi-component polymer systems."

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Interdisciplinary conferences. A new program of international, interdisciplinary conferences has been initiated by the American Institute of Biological Sciences, under the direction of Frank Fremont-Smith, for many years medical director of the Josiah Macy, Jr. Foundation. Offices of the Interdisciplinary Conference Program are in the Time and Life Building, at Rockefeller Center, New York.

The conferences will consist of approximately eight series of five annual 3-day meetings. Each series will concentrate upon a significant biological problem, while each annual meeting—limited to 25 participants—will explore some one aspect of the problem in depth.

Grants, Fellowships, and Awards

Aeronautics. The Daniel and Florence Guggenheim Foundation (120 Broadway, New York) has announced its fellowship program for graduate study in rockets, jet propulsion, space flight, and flight structures. Eighteen fellowships are available for work at the Guggenheim Jet Propulsion Centers at Princeton University and California Institute of Technology and at the Columbia University Institute of Flight Structures.

The awards provide tuition and stipends ranging from $1500 to $2000 to science and engineering students who are residents of the United States or Canada, who have outstanding technological ability and qualities of leadership, and who intend to make a career in rocketry, jet propulsion, flight structures, or astronautics. Applications and credentials must be filed with the university of the applicant's choice *by 1 March.*

Ornithology. Awards for ornithological research are made in April of each year by the Frank M. Chapman Memorial Fund Committee of the American Museum of Natural History, Central Park West at 79th St., New York 24, N.Y. Applications should be received *by 1 March.*

Teacher research participation. The National Science Foundation has a summer program which enables teachers of science and mathematics to participate in research at colleges, universities, and research foundations by actually working, on an individual basis, in the laboratory or in the field with experienced scientific investigators. Requests for brochures, application forms, and other information should be sent to the director at the host school, since each school administers its own program in the light of its own requirements. Teachers are urged to apply as early as possible to the institution of their choice, and *no later than 1 March*. An announcement listing all institutions conducting research participation programs can be obtained from the foundation, Washington 25, D.C.

Travel for junior investigators. Funds to cover the cost of round-trip, air-coach travel are available to junior investigators engaged in or receiving training in the neurological, otolaryngological, and related sciences who plan to attend the following international meetings: Seventh International Congress of Neurology, Rome, 10–16 Sept.; Fifth International Congress of Electroencephalography and Clinical Neurophysiology, Rome, 7–13 Sept.; Fourth International Congress of Neuropathology, Munich, 4–7 Sept.; Seventh International Congress of Otorhinolaryngology, Paris, 23–29 July.

Letters of application should be sent *by 1 March* to the executive secretary of the selection committee, Dr. Adolph L. Sahs, Department of Neurology, State University of Iowa, Iowa City.

The letter should include a brief summary of the applicant's educational, occupational, and research background and should indicate his major field of interest. It should be signed by the applicant and countersigned by his administrative executive. The travel funds have been made available through grants to the selection committee from the National Institute of Neurological Diseases and Blindness of the Public Health Service and from the National Science Foundation.

Scientists in the News

Shannon McCune, geographer provost of the University of Massachusetts and a member of the U.S. National Commission for UNESCO, has been appointed director of the department of education in the UNESCO secretariat. He takes up his new duties in Paris this month. Greatly expanded UNESCO educational activities in tropical Africa, as well as programs in Latin America, the Middle East, the Far East, and other areas, will be under McCune's administration.

Irvine H. Page of the Cleveland Clinic, Cleveland, Ohio, has been elected a foreign member of the Brazilian Academy of Sciences.

Leo A. Goodman, professor of statistics and sociology at the University of Chicago, is on leave for the current academic year to serve as visiting professor at Columbia University.

The editorial board of *Modern Medicine*, international medical journal, has presented ten Distinguished Achievement Awards for work which has directly influenced medical progress in the United States. The award winners follow.

David P. Barr, president and medical director of the Health Insurance Plan of Greater New York, for his contributions in the fields of parathyroid disease and atherosclerosis and as a teacher of teachers. He recently retired as professor of medicine at Cornell University and as physician-in-chief at New York Hospital.

Lowell T. Coggeshall, vice president in charge of medical affairs at the University of Chicago, for his service as an administrator and medical statesman and for achievements in tropical medicine.

Julius H. Comroe, Jr., director of the Cardiovascular Research Institute of the University of California, for leadership in the investigation of pulmonary function and the clinical use of autonomic drugs.

Frank J. Dixon, Jr., professor and chairman of the department of pathology at the University of Pittsburgh, for contributions to the understanding of antibody production and diseases of connective tissue. Dixon this year will take over as director of experimental pathology at the Scripps Clinic and Research Foundation at La Jolla, Calif.

Rene J. Dubos, Rockefeller Institute for Medical Research, for fundamental work that helped usher in the era of antibiotics.

William F. Hamilton, professor emeritus of physiology at the Medical College of Georgia, for work in cardiovascular physiology and pathology that laid the basis for cardiac surgery.

Charles A. Hufnagel, professor of surgery at Georgetown University, for development of surgical techniques for treating heart and great-vessel disorders.

Severo Ochoa, professor and chairman of the department of biochemistry at New York University, for his demonstations of enzyme catalysis, ribonucleic acid biosynthesis, and muscle function.

Marion B. Sulzberger, director of the Skin and Cancer Unit of New York University–Bellevue Medical Center, for integration of basic science and clinical dermatology.

George W. Thorn, physician-in-chief of Peter Bent Brigham hospital and Hersey professor of the theory and practice of physic at Harvard, for contributions to the understanding of metabolic disease and stress patterns.

Carl S. Marvel will join the University of Arizona faculty on 1 February as professor of organic chemistry, after a long and distinguished career in teaching and research at the University of Illinois. Some 150 graduate students have earned Ph.D. degrees in organic chemistry under his direction.

Marvel, a past president of the American Chemical Society, is a specialist in the synthesis of organic compounds. He has done extensive research on the chemistry of sulfur in university, industrial, and government laboratories and has made significant contributions in work on synthetic rubber.

P. J. W. Debye, professor emeritus of chemistry, Cornell University, will be Cornell's George Fisher Baker lecturer in chemistry during the spring term. He will discuss molecular forces, between 14 February and 9 March.

Thomas A. Nevin, bacteriologist at the National Institute of Dental Research, Bethesda, Md., resigned last month to become assistant director for administration of the Germfree Life Research Center, Tampa, Fla.

Gertrude M. Cox of North Carolina State College has received the 1960 Gamma Sigma Delta Award for distinguished service to agriculture. She is recognized internationally for her outstanding contributions to statistics.

Dr. Cox has directed the college's Institute of Statistics since it was organized in 1944. In 1946 the institute became a part of the Consolidated University of North Carolina at Chapel Hill, and a department devoted to research and teaching in theoretical statistics was established on the Chapel Hill campus. On 1 July 1960, Dr. Cox became head of the Statistics Research Division of the newly formed Research Triangle Institute, a nonprofit research group supported by the three institutions of the area—Duke University, North Carolina State College, and the University of North Carolina.

Clifford F. Johnson has been named chief of the Office of Research Information at the National Institutes of Health, Bethesda, Md. For the past several months he has been chief of public information in the office he now heads. Prior to his transfer to NIH in April 1957, Johnson was assistant chief of technical information in the Office of the Army Surgeon General, where he had served for 16 years.

Recent Deaths

Edward Block, Baltimore, Md.; 58; senior vice president and general manager of the Chemicals Division, Olin Mathieson Chemical Corporation, New York; 4 Jan.

Daniel F. Brophy, Westport, Conn.; 61; psychiatrist and dean of students at City College, New York, for the last 14 years; 18 Dec.

Edith Bowen Chase, Leonia, N.J.; 61; assistant dean of faculty and associate professor of biological sciences at Hunter College; had taught at Wellesley and Hood colleges; 8 Jan.

Jefferson H. Clark, Philadelphia, Pa.; 70; chief of laboratories for Philadelphia General Hospital for 27 years before his retirement, 3 years ago; former associate professor of pathology at the University of Pennsylvania and director of laboratories for Temple University; 8 Jan.

Charles H. Heacock, Memphis, Tenn., 72; professor of radiology at the University of Tennessee Medical School; 30 Dec.

Lester S. Hill, Bronxville, N.Y.; 70; retired professor of mathematics at Hunter College and a noted cryptographer; before joining Hunter in 1927, taught at the University of Montana, Princeton University, the University of Maine, and Yale University; 9 Jan.

Leo Kaplan, Carbondale, Ill.; 42; associate professor of botany, Southern Illinois University; 2 Dec.

John A. Lapp, Macapawa, Mich.; 80; sociologist, specialist in vocational education, and labor arbitrator; former professor of sociology at Marquette University, where he wrote several high-school textbooks in civics and sociology; throughout the Roosevelt and Truman Administrations served as referee in labor disputes; 30 Dec.

Rev. **William F. Lynch**, Davenport, Iowa; chairman of the department of biology at St. Ambrose College; 5 Dec.

Roland McKee, San Francisco, Calif.; 80; retired horticulturist and agronomist; served the U.S. Department of Agriculture for more than 43 years; 19 Dec.

David Rapaport, Stockbridge, Mass.; 49; psychologist and a member of the Austin Riggs Foundation since 1948; previously was chairman of research at the Menninger Foundation in Topeka, Kan.; specialist in diagnostic psychological testing procedures, the psychology of general paresis, and the organization and pathology of memory and thinking; 14 Dec.