News of Science

Advance Payments for Subscriptions

"Long term advance payments for subscriptions," an article in the 15 Oct. issue of the *Library Journal* by William H. Kurth of the Library of Congress, calls attention to the possibility of important administrative savings for the publishers of periodicals and journals and for subscription agencies and libraries, if the present annual payment-in-advance arrangement were replaced by a longer term payment schedule. The article stresses the enormous volume of expensive paper work now necessary, under the 1-year term, to expedite the movement of periodicals from publisher to library. It also emphasizes that the library is actually not a year-to-year purchaser of a modest number of periodicals and journals but rather a consumer of periodical literature on a regular continuing basis, suggesting the feasibility of a long-term payment plan.

The article indicates that a saving in administrative expenses of approximately 60 percent could be achieved if a 3-year advance-payment plan were adopted. This saving would extend to renewal notices, invoicing operations, recording of payments, and correspondence; the subscription agency and library counterparts of these operations would also be subject to the same reductions in costs. Under the proposed plan, more favorable subscription rates for libraries would be possible, and for the publisher there would be a longer term guaranteed circulation. (Of 2500 periodicals and journals listed in a national subscription agency's catalog, 65 percent now list rates for no more than a 1-year term and 21 percent offer no more than a 2-year term.)

Kurth points out that the primary impetus for establishing the 3-year term must come from the libraries; he suggests further that the development of the plan could be carried out by a special committee made up of representatives from publishers associations, subscription agencies, and library associations.

The article urges prompt adoption of the proposal and presents a schedule illustrating a procedure through which libraries, over a period of years, could change from a 1-year term to the 3-year one. The schedule outlines the orderly shifting of a uniform group of 1-year payments each year until the conversion is concluded.

Mellon Institute, 1954–55

During the past year the Mellon Institute's expenditures for pure and applied research amounted to $4,784,344. Of this sum $1,033,172 was spent in support of investigations in pure science in the institute's six research departments, and the remainder supported 12 fellowships. Altogether, 147 members of the institute were engaged in various pure science research projects.

The applied science research of the institute was conducted by 390 scientists and engineers who were employed by 64 other fellowships. On all the 76 fellowships there were 479 fellows and aides.

An electron microscope laboratory was added to the department of research in chemical physics and a division of microanalysis was formed in the department of analytical chemistry. A totally new department devoted to applied mathematics was established, and the facilities for microbiological research were expanded.

Pure research investigations were conducted in the following areas: vibrational analysis of trifluoromethyl acetylene, selection rules for ethanelike molecules having free internal rotation, temperature dependence of hydrogen bonding in hydrogen chloride-ether solutions, development of crystallinity in elastomers, crystal structure of antimony pentachloride, and instrumentation in x-ray diffraction. Also, studies of separation and purification were advanced.

In instrumentation, a new recording balance, a recording friction instrument, an automatic recording sward rocker, and automatic surface tension equipment were developed. Construction of the digital computer continued.

Other pure science researches were concerned with air pollution, pharmacological and toxicological problems, orthopedic appliances, fundamental problems in glass science, the synthesis of a new series of alicyclic hydrocarbons, the properties of synthetic elastomers, special resins and solvents for the care of paintings, the study and development of components employed in digital data-handling systems, and the importance of standards in government and the industries.

Eleven fellowships were initiated in 1954–55: aerosols, bituminous coal, carbon black, electronic printing, fatty alcohols, fiber glass, film properties, food packaging, information processing, life preservers and plate glass. Five fellowships completed their research programs: agglomeration, coal-waste control, fine wire and flat strip, garment filling materials, and thread.

Holders of continued applied science fellowships investigated problems in measuring fluid flow, in developing selenium power rectifiers, in improving structural clay products and castable refractories, and in metal forming techniques. Other projects were carried out in many other fields, embracing natural gas, petroleum, foods, insecticides, corn products, textiles, and paper. Work in synthetic organic chemistry was concerned with new and improved resins and organic coatings, silicones and medicinal preparations.

News Briefs

■ Secretary of Agriculture Ezra Taft Benson recently ordered that the security risk classification be removed from the USDA file on Wolf Ladejinsky, agricultural expert who was dismissed from the department last January. Ladejinsky had conducted outstanding land reform work in Japan during the occupation; after he had been suspended he was employed almost immediately by the Foreign Operations Administration (now the International Cooperation Administration) to act as an agricultural adviser in Vietnam.

At his own request, Benson appeared on 27 Sept. before a Senate subcommittee that is conducting an investigation of Government security procedures. In response to a subcommittee counsel's statement that it had been "gratuitous and unnecessary" to disqualify Ladejinsky on security grounds, Benson replied: "Yes, I think that is essentially correct." The Secretary of Agriculture stated further that he knew that the USDA had made mistakes in its administration of the security program "but they were honest and conscientious mistakes."

With regard to Agriculture's recently revised security procedure, he added: "I feel very good about the changes we've made, the committee we've set up and

the new procedures we've adopted. I feel we have made great progress in the last few months. We're in a position now to do a much better job than we were then. Certainly I am more experienced."

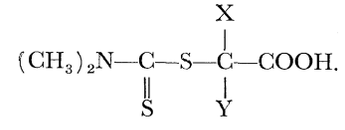
■ The following research projects were reported in the 13 Aug. issue of *Nature.*

W. J. C. Ross and G. P. Warwick, of the Chester Beatty Research Institute in London, have reported that the azo-mustards, substances that are inhibitory to tumor growth, can be chemically reduced and thereby made more effective by the enzyme system xanthine-oxidase + xanthine, which can be obtained from cow's milk. The mechanism of this reaction suggests that azo compounds reducible by xanthine oxidase should be particularly effective against neoplasms that are high in xanthine oxidase content, for example, hepatomas.

A comparative study of the contractile vacuoles of protozoans such as *Vorticella* and *Paramecium* with the Golgi apparatus of the simple sponge *Grantia,* and with the Golgi apparatus of mouse cells from the epithelium of the epididymis, indicates that these structures are homologous. According to a team composed of J. B. Gatenby of Trinity College, Dublin, and A. J. Dalton and M. D. Felix of the National Institutes of Health, Bethesda, Md., the golgi apparatus of the sponge cells and of the mouse cells consists of Golgi granules, a system of double membranes, and some large vacuoles. The contractile vacuoles of the protozoans studied show the same elements.

Norman I. Bishop and John D. Spikes of the University of Utah have reported that they now have evidence that the Hill reaction in photosynthesis ($H_2O \rightarrow 2H^+ + O_2$) is inhibited by cyanide, provided that no oxidant such as ferricyanide is present in the system.

A team of four Dutch scientists, G. J. M. van der Kerk, M. H. van Raalte, A. K. Sijpesteijn, and R. van der Veen, has found a new type of plant-growth-regulating substance. These are the dithiocarbamates, such as



To be active as a plant-growth regulator, either X or Y, or both, must be H atoms. Unlike other substances with growth-regulating activity, the dithiocarbamides possess no basal ring structure with a high surface activity. Their action is weak, being only 1 to 5 percent of that of indole-3-acetic acid in standard pea and *Avena* tests.

The record sensitivity in taste appears to have been set by a Malayan Negrito boy tested with phenylthiocarbamide by J. W. H. Lugg of the University of Malaya. The boy successfully discriminated between distilled water and the solution of the drug in repeated trials at a concentration of PTC of only $6.5 \times 10^{-8} M$, which is about 100 times as sensitive as the lowest response to quinine that appears to be accurate. It was estimated that only 8×10^9 molecules of PTC was required to stimulate the taste buds in this individual. Two other Malayan Negrito boys were almost as sensitive. On the other hand, two women of the same tribe could not taste even a solution 2^{18} times stronger.—B.G.

■ The establishment of the first skin bank in a civilian hospital was announced at the recent meeting in Atlantic City, N.J., of the American Society of Plastic and Reconstructive Surgery. In a report that described the grafting of skin from recently dead bodies, James Barrett Brown, Minot P. Fryer, and Thomas J. Zaydon of the Washington University School of Medicine, St. Louis, urged that skin banks be set up in hospitals throughout the country.

Stored postmortem homografts provide a temporary biological covering that lasts from 10 to 30 days, until the patient is well enough to have raw areas of his body covered with his own skin. Such grafts can save the lives of critically burned accident victims.

When stored at ordinary refrigerator temperature, postmortem skin can be used as long as 3 weeks after removal. It can be stored for periods ranging up to 6 months if other methods, some still in an experimental stage, are used. These additional methods include freezing at temperatures as low as −79°F, and freeze-drying, whch allows the dried skin to be stored on a shelf at room temperature.

■ U.S. Representative to the United Nations Henry Cabot Lodge, Jr., has requested that an item entitled "Progress in developing international cooperation for the peaceful uses of atomic energy: reports of Governments" be placed on the agenda of this autumn's 10th regular session of the U.N. General Assembly. In an explanatory memorandum accompanying the request, Lodge pointed out that

"During the past year, historic steps have been taken to promote the peaceful uses of atomic energy for the benefit of all mankind. In addition to the international conference on the peaceful uses of atomic energy, significant progress has been made toward the establishment of an International Atomic Energy Agency. Moreover, international cooperation in this field has been advanced by various states through programs of cooperation in developing regional and national efforts to promote the peaceful uses of the atom. All of the foregoing programs affect the vital interests of Member States of the United Nations.

"In recognition of the interest demonstrated by the General Assembly in this field, the United States believes that Member States would appreciate the opportunity to be further informed of new developments."

■ A new blood group antigen belonging to the Rh system has been reported in the *Journal of the American Medical Association.* Called V, that being the initial of the patient in whom it was discovered at St. Luke's Hospital, New York, the antigen is common in Negroes and rare in white persons. It is inherited as a dominant Mendelian characteristic. Of 150 West Africans, 60 had V; of 168 New York Negroes, 45 had it; of 407 London whites, two had V; and of 444 New York whites, two had it.

The scientists who announced the find are Albert DeNatale, Amos Cahan, and James A. Jack of New York and Robert R. Race and Ruth Sanger of London, England. Blood samples were supplied by D. A. Cannon of Lagos, Nigeria; J. N. Marshal Chalmers of London; G. M. Edington and I. Sackey of Accra, Gold Coast.

■ In an address to the Gulf Coast Industrial Health Conference on 23 Sept., Cyril Comar of the Oak Ridge Institute of Nuclear Studies said that the U.S.S.R. is ahead of the United States in research on the effects of nuclear radiation. He commented that "The Iron Curtain scientists have concentrated on learning how much radiation a man can stand and what too much does to him. They seemed pretty open about what they've learned about the peacetime uses of the atomic reactor. We actually got some valuable information from them."

Comar was a member of the United States delegation to the recent conference in Geneva on the Peacetime Uses of Nuclear Energy.

■ The Peiping Government has notified the special committee of the International Geophysical Year, 1957–58, that it would like to participate in the worldwide program of basic scientific research. In replying, the executive officials of IGY are understood to have informed Peiping that it is welcome to take part in IGY on the same basis as other countries. Communist China would be the 41st participating country.

■ On 24 Sept. the U.S. Atomic Energy Commission announced that another Soviet nuclear explosion had occurred in recent days.

■ Britain's first independent commercial television station began transmitting on 22 Sept. from Croydon, near London. The site was chosen and cleared for the construction of the buildings and tower a little more than 6 months ago.

The 10-kilowatt vision transmitter and the 2.5-kilowatt sound transmitter are both laboratory prototypes. Two further transmitters of approximately the same power outputs will be installed in the near future. These will be standard production versions.

Scientists in the News

OTTO M. SMITH ended 32 years of service at Oklahoma A. and M. College on 30 Sept. Smith, emeritus head of chemistry and chemical engineering, has served as director of A. and M.'s Research Foundation since 1946. In the course of his 9-year directorship, 90 scientists have conducted research in A. and M. laboratories and 200 students have earned graduate degrees while serving as paid research assistants.

Projects that have been developed at the college have included work on radar triangulation systems for tracking rockets and missiles; basic research in biological, physical, and the social sciences; development of anticonvulsion drugs; establishment of a laboratory for the use of radioactive materials; and the development of methods which are related to the purifying of the products from nuclear reactors. Smith has been instrumental during the past 5 years in securing contracts and grants for the college that have totaled nearly $2 million. These contracts have been supported by the Army Ordnance Corps, the Office of Naval Research, the Air Force, the Atomic Energy Commission, and a number of American industrial organizations.

Smith received the B.S. degree in 1907 from Drury College, Springfield, Mo., and the M.S. and Ph.D. degrees from the University of Illinois in 1918 and 1919, respectively. He joined the faculty of Oklahoma A. and M. in 1923 as head of chemistry and chemical engineering, a post that he filled until his retirement in 1949.

Smith served as chairman of the Committee on Tests and Measurements of the American Chemical Society from 1930 to 1946. Under his leadership, the battery of tests for 4 years of college work in chemistry has been adopted on a worldwide scale. He has also been chairman of the Committee on Teaching of College Chemistry since 1946 and is credited with introducing the college teachers' Chemistry Institute. The idea, first put into practice at A. and M. in 1950, was used in three summer institutes in 1955.

Dr. and Mrs. Smith plan a trip to Brazil, where their son is a member of the electrical engineering faculty of the Instituto Technologico de Aeronautica at São Paulo. Smith was succeeded by MARION T. EDMISON, former associate professor of chemistry at the University of Arkansas.

At a meeting on 5 Oct. of the American Academy of Arts and Sciences, Cambridge, Mass., the academy's Amory prizes were presented. These awards of $3500 each are given for the invention or discovery of measures for the relief or cure of diseases affecting the genitourinary system. The recipients were:

FREDERIC E. B. FOLEY, Lowry Medical Arts Building, St. Paul, Minn., for development of contrivances, instruments, and operations of great value in the treatment of those afflicted with urological disease.

CHOH HAO LI, University of California, Berkeley, for his work on the relationship of the anterior pituitary hormones to the maintenance and functioning of the human reproductive organs.

THADDEUS R. R. MANN, Molteno Institute, University of Cambridge, Cambridge, England, for his basic contributions to the rapidly expanding field of the biochemistry of reproductive functions and for providing basic data that stimulate research and clinical progress.

TERENCE J. MILLIN, Queen's Gate Clinic, London, England, for devising and developing the technique of retropubic prostatectomy for benign hyperplasia of the prostate and for adapting this technique to radical prostatectomy and vesiculectomy for the cure of cancer of the prostate.

WARREN O. NELSON, State University of Iowa College of Medicine, for his studies of the structural relationships of the male sex organs and of the factors that determine the functional activities of the various components thereof.

FREDERICK J. WALLACE, American Cystoscope Makers, Inc., New York, N.Y., for his cooperation with the urological profession in developing diagnostic and therapeutic instruments that have contributed materially to the technical advances in this specialty.

LAWSON WILKINS, John Hopkins University, in recognition of his contributions to fundamental knowledge of growth and development of secondary sex characteristics in man and his brilliant application of adrenal cortical hormone to their management and treatment.

A. R. DAVIS, plant physiologist and for 8 years dean of the College of Letters and Science at the University of California, Berkeley, became vice chancellor of the Berkeley branch of the university on 1 July.

ROB ROY MCGREGOR, author of *Silicones and Their Uses,* has joined the research staff of the Dow Corning Corp., Midland, Mich., as research administrative assistant. He will direct his attention to silicone applications in the medical and biological fields.

Since 1942 McGregor, one of the pioneer research workers in silicone chemistry, has worked with Dow Corning through the Mellon Institute, Pittsburgh, Pa., where he was administrative fellow of the Corning Glass Works–Dow Corning Corp. fellowship.

ALVIN M. WEINBERG has been appointed director of Oak Ridge National Laboratory. Weinberg, who formerly was research director of the laboratory, assumed his new post on 1 Oct. 1955.

EDWARD B. TRUITT, JR., has resigned as assistant professor of pharmacology and as A. H. Robins Co. fellow in pharmacology at the Bowman Gray School of Medicine of Wake Forest College, Winston-Salem, N.C., to assume the position of associate professor of pharmacology at the University of Maryland School of Medicine, Baltimore.

THEODORE C. BYERLY has been appointed assistant director of livestock research in the Agricultural Research Service of the U.S. Department of Agriculture. NED R. ELLIS, former head of the meat production and evaluation section, has succeeded Byerly as chief of the ARS Animal and Poultry Husbandry Research Branch.

In his new position, Byerly will assist B. T. SIMMS, who became director of livestock research following the retirement of OLLIE E. REED on 1 Sept. Simms was formerly head of the animal disease and parasite research branch, of which HOWARD W. JOHNSON is now the acting head.

DAVID R. GODDARD of the University of Pennsylvania is visiting the department of botany at the University of Washington, Seattle, during the fall quarter. He is giving a series of lectures on cellular metabolism under the auspices of the Walker-Ames professorship.

HAROLD S. OLCOTT, food specialist of the Western Regional Research Laboratory, U.S. Department of Agriculture, has been appointed professor of marine food technology and marine food technologist on the staff of the University of California's state-wide Institute of Marine Resources. Although the institute has headquarters at La Jolla, Olcott will be associated with the department of food technology at Berkeley, where he will direct research work leading toward advanced degrees in food science and comparative biochemistry.