

the NIH Record

U. S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

January 15, 1963
Vol. XV, No. 1

NATIONAL INSTITUTES OF HEALTH
PUBLIC HEALTH SERVICE

Dr. Hueper Cited For Achievements In Cancer Control

Dr. Wilhelm C. Hueper, Chief of the Environmental Cancer Section, National Cancer Institute, has been chosen by the editorial board of Modern Medicine as one of ten recipients of the magazine's annual distinguished achievement awards.

He was cited for "his identification of carcinogenic substances and his undaunted courage and perseverance in effecting control of noxious environmental agents in industry."

Dr. Hueper is a recognized leader in research aimed at identifying cancer-causing agents in the environment and cancer risks of occupational exposure to chemical and radioactive agents. He is the author of numerous research papers and the text, Occupational Tumors and Allied Diseases.

Dr. Hueper recently received a
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Dr. Hueper

PHS Announces Awards For Research Facilities Construction Projects

Award of \$21,792,940 to 54 institutions in 28 states for construction of health research facilities was announced January 4 by Dr. Luther L. Terry, Surgeon General of the Public Health Service.

These are the first funds to be awarded under this program since the Health Research Facilities Branch was transferred from the NIH Division of Research Grants last July 15, and became a part of the newly formed Division of Research Facilities and Resources.

Space Needs Cited

In the six years that have passed since the beginning of the HRF Branch program under Title VII of the Public Health Service Act as amended by Public Law 835, evidence has accumulated demonstrating the continuing urgency of the need for new research space.

As a result, one of the last pieces of legislation enacted by the 87th Congress authorized continuation of the program for another three years—through Fiscal Year ending June 30, 1966.

The program awards matching
(See FACILITIES, Page 4)

Research Support, Role of Scientists In Government, Science Communication Are Topics Aired at AAAS Meeting

By Herbert B. Nichols

Of the 1,800 or more scientific papers delivered at the 129th meeting of the American Association for the Advancement of Science in Philadelphia, December 26-30, many were of more than passing interest to scientists of the Public Health Service.

Dr. Charles V. Kidd, NIH Associate Director for Training, discussed Federal support of research in universities, which, he told the section on Social and Economic Sciences, "had its primary origin in the needs of various Federal agencies to solve problems important to the successful completion of their operating missions—most notably, the winning of wars."

Support has since been extended widely to solve the problems of

CU to Elect Officers at Annual Meeting Jan. 17

Election of officers for the coming year will take place at the annual meeting of the NIH Federal Credit Union on Thursday, January 17, at 12 noon in Wilson Hall, Building 1. Reports from the Board of Directors and committees will be presented to the membership.

Cash door prizes will be awarded at the meeting. To obtain election ballots and door prize tickets, members must present their passbooks.

In announcing the annual meeting, O. J. Wood, CU Manager, reported that the Board of Directors at their December meeting declared a 4½ percent per annum dividend for the last six months of 1962. This was posted to the accounts of members as of January 5, 1963.

New Policy Announced

It was also announced that a new dividend policy became effective on January 1, 1963. As of that date, dividends will be paid annually on share holdings as of December 31.

For the three years ending last December 31, Mr. Wood said, dividends were paid semi-annually on share holdings, on June 30 and December 31.

A review of the clerical and administrative costs required for the computation of dividends by the Board of Directors determined that it would be in the best interest of members to save nearly half these costs by returning to the practice of paying dividends annually. In 1963 this change will save over \$1,000, Mr. Wood said.



Dr. Kidd



Dr. Korchin

other agencies, he said, and the center of gravity of support has shifted to civilian agencies. Historically, he showed that with establishment and growth of the National Science Foundation and the evolution of policy in other agencies, support of science itself has become highly significant, quite apart from the operating needs of Federal agencies.

University Needs Stressed

"The national interest is being redefined to encompass the need of the Nation for a flourishing system of science in universities," he said. "The process of redefining the national interest in Federal support is continuing. The Nation needs a university system that is strong in all respects."

The present approach (providing support through grants) is not
(See AAAS MEETING, Page 6)

NIMH Study Evaluates U. S. Astronauts' Adaptation to Stress of Space Flight

Recent National Institute of Mental Health studies of the U. S. Project Mercury Astronaut team indicate that the pilots reacted to the psychological stresses of space flight by mobilizing their already well-developed defenses, and that the physical stresses involved in these flights are less than anticipated.

Research into the degree of stress in space flights and the mechanisms for maintenance of adaptive behavior under stress was undertaken at the request of the National Aeronautics and Space Administration.

Data are still being analyzed but preliminary findings show that post-flight psychometric test performances did not differ importantly from control levels.

These studies were first reported

by Drs. Sheldon J. Korchin, NIMH, and George E. Ruff, an NIMH Career Investigator at the University of Pennsylvania, at the annual meeting of the American Psychological Association and subsequently in a paper presented last month before the American Psychiatric Association at the annual meeting of the American Association for the Advancement of Science.

The studies covered three phases: personal interviews early in Project Mercury training; a battery of

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Published bi-weekly at Bethesda, Md., by the Public Information Section, Office of Research Information, for the information of employees of the National Institutes of Health, principal research center of the Public Health Service, U. S. Department of Health, Education, and Welfare.

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NEWS from PERSONNEL

INCOME TAX ASSISTANCE

Income Tax Forms are now available in I/D Personnel offices. Income Tax Assistants also are available in Bldg. 10, Rm. 1N228 and in the Credit Union offices, Bldg. 31, Rm. 1A08.

CIVIL SERVICE APPOINTMENTS

In its report, Competition for Quality, the Panel on Scientific Personnel, of which NIH is a member, identified a number of problems and factors which limit the Government's ability to recruit quality scientists.

The Panel recommended that the Civil Service Commission develop programs and authorizations to provide for the effective utilization of scientists and engineers without going through the regular appointment process and with a minimum of administrative clearance.

New Types Approved

These recommendations were recently acted upon when the Commission approved two new types of Civil Service appointments, Temporary Appointments of faculty members and Term Appointments. These new authorizations represent important forward steps in the Government's ability to more easily attract scientific personnel.

Temporary Appointments of faculty members.—This new appointment procedure enables the Government to add outstanding faculty members to its permanent staff on a short-term basis, not to exceed one year, without regard to Civil Service registers of eligibles and competitive examination procedures.

Term Appointments.—This program meets agency needs in staffing positions for projects of a limited duration. Basically this appointment is a means for recruiting individuals from Civil Service registers who are not interested in con-

List of Latest Arrivals Of Visiting Scientists

12/3—Dr. Colin Chignell, England, Benzomorphan studies. Sponsor, Dr. Everette L. May, NIAMD, Bldg. 4, Rm. 209.

12/28—Dr. Richard W. E. Watts, England, Purine Metabolism. Sponsor, Dr. Jarvis E. Seegmiller, NIAMD, Bldg. 10, Rm. 8D19.

12/28—Dr. Soili Marjatta Laiho, Finland, Kinetics of Organic Reaction and Fatty Acid Analysis. Sponsor, Dr. Henry M. Fales, NHI, Bldg., 10, Rm. 7N323.

12/31—Dr. Pier Luigi Ipata, Italy, Nucleic Acid and Protein Synthesis. Sponsor, Dr. Giulio L. Cantoni, NIMH, Bldg. 10, Rm. 2D18.

tinuing career appointments, since these appointments are not to exceed four years.

This type of appointment is especially intended for scientific and technological areas where the source of potential employees is colleges and universities or other organizations willing to lend their manpower to the Federal Service for short periods of time. Projects under this program will be completed within four years.

Guidelines Forthcoming

Implications of these new authorities to NIH are now being discussed. As soon as determinations are made, guidelines will be issued concerning the use of these new authorizations. Until these guidelines are issued, your Personnel Officer will advise you concerning the possibility of using these authorities for recruitments which are now under consideration.

NIH is continuing to work actively with the Panel on Scientific Personnel to further identify the problems of the Federal scientific community and the actions needed to improve the Government environment for research and development.

Md. County Seeks to Combat Alcoholism Through Overall Public Health Program

Rehabilitation of alcoholics as part of an overall county public health program is underway in Prince Georges County, Md., through a 4-year cooperative plan sponsored by the County Health Department and the Mental Health Study Center of the National Institute of Mental Health.

Established through an NIMH grant in 1959, the program combines clinical treatment of patients and their families with community activities in alcoholic rehabilitation.

By placing the program within the physical and administrative framework of the County Health Department, it has been possible to make advantageous use of the Department's resources and personnel.

The Department has provided home visits to alcoholics, drugs, dental services and help in the preparation of educational materials, along with well-developed procedures for data gathering and research.

Followup outpatient care is facilitated by visits of a staff psy-

chiatrist from the alcoholism clinic to patients at the Prince Georges General Hospital and by notification from the Spring Grove State Mental Hospital when patients are released.

Referrals to the clinic from relatives are as frequent as self-referrals, underscoring the emphasis on the family aspect of alcoholism. Other patients come to the program through professional sources in the community, such as physicians, clergy and social agencies.

Procedure Cited

The staff psychiatrist at the alcoholism clinic refers patients to the Prince Georges General Hospital when hospitalization is indicated. He also sees all alcoholic patients at the general hospital, and this has resulted in a marked facilitation of followup care.

Patients hospitalized for alcoholism at the Spring Grove State Mental Hospital are notified of the clinic's services before their discharge and the hospital notifies the alcoholism clinic when the patient is to be released.

Dr. Bertram S. Brown, NIMH, and Drs. Augusto Esquibel, Murray Grant, and Edward Pickford of the Prince Georges County Health Department, reported the program in Public Health Reports.

Special Job Opportunities

The Recruitment and Placement Section of the Personnel Management Branch is now accepting applications from qualified candidates (with status or eligibility on appropriate registers) for the following types of positions which will be available in the near future:

Program Administrator, Grants Financial Analyst, Management Analyst, Research Contracts Specialist.

The grades will range from GS-9 through 14, and each category of position requires different training and experience.

In general, eligibles with experience in program, budget, financial or hospital administration will meet the qualification requirements.

Interested individuals should forward an application (SF-57) to the Employment Officer, Rm. 6, Bldg. 1, for evaluation and rating. The applications will be made available to the selecting officials when recruitment for specific vacancies is begun.

NIMH has need for a full-time nurse, GS-7, with experience with new-born infants, for research concerned with early development. Typing skill is required. Applicant must be willing to work one night each week.

Further information is available from Dr. Beall, NIMH. Phone, 496-3301.

CO Association Names Lucca Exec. Director

William J. Lucca, Jr., Assistant Manager of the Association Department, U. S. Chamber of Commerce, has been appointed Executive Director of the Commissioned Officers Association of the United States Public Health Service.

A graduate of the Georgetown University School of Foreign Service and Georgetown School of Law, Mr. Lucca has had wide experience in association management and government relations. Before going to the U. S. Chamber of Commerce, he was assistant to Rep. Harold C. Ostertag of New York and to former Rep. Antoni N. Sadlak of Connecticut.

Some of the purposes and objectives of the Association, a non-Governmental organization, are to promote the interests of the PHS and its officers by advancing the professional standing and efficiency of the Corps, to observe and report legislative needs and trends, and to provide informal liaison between PHS policy makers and PHS officers.

Photosensitivity Utilized To Distinguish Poliovirus Parents From Progeny

A method of differential inactivation of parent virus, leaving intact only progeny virus in a culture harvest or, conversely, only the parent virus and destroying all the progeny, has been developed by Dr. C. W. Hiatt and Dorothy Moore of the Laboratory of Biophysics and Biochemistry, Division of Biologics Standards.

The incorporation of proflavine, an organic dye, into the ribonucleic acid of poliovirus during intracellular maturation was reported in 1960 by Schaffer, and it has subsequently been found that the virus produced in the presence of this dye is readily inactivated on exposure to light.

Used as 'Tagging Device'

The DBS workers have utilized this photosensitivity as a phenotypic tagging device for experiments in which it is desirable to distinguish between new virus and cell-associated virus persisting from the inoculum.

Monolayer cultures of trypsinized rhesus monkey kidney cells in medium 199 containing 0.2 mg percent proflavine are inoculated at 36°C in total darkness. Normal yields of poliovirus are obtained, but the virus so produced is very sensitive to light.

The fraction surviving five minutes exposure to polychromatic visible light (1 watt per cm²) is less than 10⁻⁵. However, the offspring of the photosensitized virus, being normal, are not affected. Thus it is possible to detect even one new virus particle in the presence of more than 1,000 particles of the parent generation.

Procedures Useful

These procedures are useful not only in the study of the dynamics of virus replication in various cell systems, but may also offer a means of selecting mutants with desirable characteristics. For example, to date, only primate tissue culture cells have been used for the cultivation of poliovirus.

Adaptation of poliovirus to non-primate cell cultures would offer the distinct advantage of avoiding the problem of adventitious agents of monkey origin. But if poliovirus mutants capable of multiplying in non-primate systems occur, their detection may be very difficult.

In the system devised, all the parent virus can be destroyed and the infectious particles remaining, being of the new generation, may include mutants which can be adapted to grow in cell cultures which are advantageous for vaccine production.

75TH ANNIVERSARY ATTRACTS NOTABLES



Among the many notables attending the recent 75th Anniversary observance of infectious disease research in the U. S. Public Health Service, held in the Clinical Center auditorium, were (top, left to right): Mrs. Luther L. Terry, wife of the PHS Surgeon General; Rep. John E. Fogarty of Rhode Island, and Dr. Leroy E. Burney, former PHS Surgeon General. Rep. Fogarty also was guest speaker at a dinner at the National Naval Medical Center. Above, left: Dr. Victor H. Haas, former Director of the National Institute of Allergy and Infectious Diseases, who delivered the opening address of the meeting, chats with Dr. Charles Armstrong, former Chief of the Division of Infectious Diseases (now NIAID), who spoke on "Virology in Retrospect." At right: Dr. John F. Enders of the Harvard Medical School, winner of the 1954 Nobel Prize in Medicine and Physiology, who is also Chief of the Research Division of Infectious Diseases, Children's Hospital, Boston, is pictured speaking on "Virology in Prospect."—Photos by Sam Silverman.

Study Teams to Visit 28 Universities In '63 to Review NIH Stipend Support

Study teams composed of staff members of the Division of Research Grants, and representatives from the Institutes and the Office of the Director, will visit 28 universities early this year to review NIH stipend support and to study disparities among public and private stipend programs.

The study teams will focus their interest on:

1. Variations in NIH training grant stipends and reasons for them;
2. Relationships between fellowships and training grants;
3. Effects of other types of support on the amount of training stipends; and

4. Feasibility and consequences of having NIH or the university, school, or department establish trainee stipend amounts by academic level and other factors.

The reactions and observations of deans, department chairmen, program coordinators, advisors and students will be sought by the study teams in approximately 200 departments in 100 academic and professional schools at the universities to be visited.

Results of the study are expected by April 1963, in time for consideration during the formulation of the NIH budget for F. Y. 1965.

PPLO Contamination of Cell Cultures Detected By Fluorescent Antibody

Investigators in the Division of Biologics Standards have reported a method for detecting pleuropneumonia-like organisms (PPLO) in contaminated cell cultures by a fluorescent antibody technique.

In the past, serologic studies of pleuropneumonia-like organisms have been hampered by the problem of preparing specific PPLO antisera, free from media-component antibodies.

Dr. Michael F. Barile, DBS, and co-workers, have developed a method for production of specific tissue culture PPLO antiserum, using a complete rabbit system.

Cell Cultures Used

PPLO antigen, prepared in primary rabbit kidney cell cultures known to be free of PPLO, was grown on media containing rabbit serum.

Antiserum prepared in the same rabbit species was adsorbed with both rabbit tissue powders and primary rabbit cell cultures and tested for freedom from media-component antibodies by agar gel diffusion procedures before conjugating with fluorescein.

One hundred and two tissue cell cultures from 17 separate laboratories were examined for PPLO by both fluorescent antibody and cultural procedures.

PPLO Isolated

PPLO was isolated from 48 of the tissue cell cultures that were found to be PPLO-positive by the fluorescent antibody procedure, and results of the two procedures agreed in 101 of the 102 cultures.

None of the 10 primary cell cultures examined were contaminated with PPLO, whereas 48 of the 92 continuous cell cultures were contaminated. Of the 64 continuous cell cultures grown in media containing antibiotics, 48 were contaminated, whereas only 2 of 28 cell cultures grown on antibiotic-free media were similarly contaminated.

Source of Contamination

These findings support the view that PPLO contamination of cell cultures is probably due to bacterial contaminants which revert to L-forms (filterable variants of a particular bacterium).

Of the cell cultures contaminated with PPLO, 46 of 48 were grown in media containing antibiotics, principally penicillin, an agent well-documented for inducing L-formation of bacteria.

The work was reported in *The Journal of Bacteriology*.

ASTRONAUTS

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tests administered during the training period, which measured emotional state, intellectual functioning, and endocrine functioning; and a repetition of the same test battery immediately before and after flight, as part of more detailed studies of flight effects.

General findings to date indicate that the Astronauts met psychological stress situations, such as a flight cancellation, by intensifying their usual defenses.

Men Strongly Motivated

For example, investigators concluded that "scrubbed" flights or long delays in countdowns had no adverse psychological effects because the pilots were ambitious, strongly motivated men who had attained their major goal in being chosen for the flight.

Investigators noted a lack of acute anxiety prior to flight. Concern with physical harm or death was present but these feelings were effectively isolated and secondary to the focal threat felt by the men—the possibility of failure.

Data indicate that the pilots reacted to this threat by heightened activity. They focused on the task at hand, tried harder to perfect their skills and learn more about the project, and in general concentrated upon buttressing their already high competence by further achievement.

Stress Deemphasized

The physiological stresses of flight, including reaction to heat, acceleration, and weightlessness, proved to be less important than had been anticipated. Researchers suggest that questions of physiological stress tolerance should be less emphasized in the future selection of Astronauts.

On the other hand, in reviewing the initial selection procedure in the light of knowledge gained through the flights, they feel that future selection procedures should emphasize a broad knowledge of space sciences and a high level of technical ability, since the pilots must contribute to the development of their space vehicle, its components and supporting systems.

Team Well Qualified

Investigators point out that the Project Mercury team was so homogeneous and uniformly well qualified that it is difficult to pinpoint relationships of aptitude or intelligence to successful performance in the flights.

The major factor in predicting success seems to be the individual's successful past performance in analogous jobs such as test piloting, the investigators concluded.



Newly elected officers of the Technicians Study Group are these staff members of the National Cancer Institute. They will serve 1-year terms. Left to right: Edward J. LaMontain, Vice President; Neil Deese, Delegate-at-large; Carol Menge, Secretary; Edward J. Soban, Treasurer; and John P. Folan, President. The Study Group, established eight years ago by NCI technicians, sponsors monthly meetings, classes, and seminars to help NIH technicians increase their knowledge of research developments in their own and related fields.—Photo by Jerry Hecht.

Cancer Trends Are Reported for New York State

A report on cancer trends, entitled *Cancer in New York State, Exclusive of New York City, 1941-1960*, has been published by the New York State Department of Health.

Preparation and publication of the 379-page volume was supported by a Community Cancer Demonstration Project Grant administered by the PHS Cancer Control Program which receives technical guidance from the National Cancer Institute.

The publication, covering about 175,000 cases, presents statistical information collected over 20 years of operation by the Cancer Registry maintained by the Bureau of Cancer Control.

The comprehensive report shows

FACILITIES

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funds to medical and dental schools, schools of public health, nonprofit hospitals, and other research institutions to build and equip research facilities. It is administered by the Division of Research Facilities and Resources at NIH.

Recommendations for grants are made by the National Advisory Council on Health Research Facilities. The grants are awarded following approval by the Surgeon General.

Including the grants announced January 4, 1,039 awards totaling \$229,979,795 have been made to eligible institutions since inception of the program.

that the incidence of leukemia and cancer of the lung and bronchus, large intestine, and pancreas increased significantly in both males and females from 1941 to 1960.

In the same period, a significant decrease was reported in cancer of the stomach and buccal cavity in persons of both sexes.

Deaths Increase

The death rate from leukemia and cancer of the pancreas and lung increased significantly among both males and females, while mortality from cancer of the stomach and rectum showed a significant decrease.

A significant decline also occurred in the uterine cancer death rate, and in male mortality from cancer of the buccal cavity.

Information on the probability of developing cancer, based on the annual average incidence rates for 1942-44, 1949-51, and 1957-59, shows that about one in four males and slightly more than one of every four females can be expected to develop some form of cancer.

Probability Increases

The probability of developing lung cancer has risen sharply, and slightly over three males in every hundred can be expected to develop cancer of the lung.

Breast cancer is responsible for more than one-fifth of the total cancer risk to women; about six females in every hundred are expected to develop this type of cancer.

Study Shows Instability Of Pertussis Component In Quadruple Antigen

A study by investigators of the Division of Biologics Standards of the diphtheria-tetanus-pertussis-poliomyelitis antigen shows that the pertussis component was relatively unstable during the originally prescribed dating period.

This finding was reported by Dr. Margaret Pittman, Chief of the Laboratory of Bacterial Products, DBS, in the *Journal of the American Medical Association*.

It is in contrast to the potency stability of the pertussis component in other multiple antigens (DP, DTP) which do not contain poliomyelitis vaccine.

Deterioration Cause Unknown

The cause of the potency deterioration in DTPP is not known. DTPP differs from DTP (diphtheria, tetanus, pertussis) in the preservative added, as well as in the presence of poliomyelitis vaccine.

Early observations indicated that the potency of pertussis vaccine in DTPP was satisfactory. From the date of issue of the first licenses in March 1959 and October 1960, the potency of this component in individual lots of DTPP at time of testing (prior to release) usually exceeded the required 12 units.

However, a report received from one State laboratory and later confirmed by two others, indicated that the pertussis vaccine component in DTPP might be labile.

In her investigation, Dr. Pittman tested not only samples of lots prior to and after release, but samples bought on the open market, and final-container reference samples.

Potency Loss 6 Percent

Analyses of the results of these multiple potency tests showed the overall rate of loss to be approximately 6 percent per month. The loss in potency was less in samples not exposed to variable market conditions.

Despite its instability, the pertussis vaccine component of DTPP retained some potency. Moreover, the fourth injection of DTPP, given to complete the immunization schedule for poliomyelitis, also provides a booster dose of pertussis vaccine.

The studies further validate the revisions in requirements for DTPP which were effected early in 1961.

These revisions increase the minimum potency test value from 8 to 14 units, and shorten the expiration date to no later than 6 months after the date of initiation of the latest valid pertussis potency test and no later than 4 months after date of issue from the manufacturers' cold storage.

NCI Names Bobby Boaz To Head I&E Section Of Information Office

Bobby A. Boaz, former Executive Secretary of the West Virginia State Road Commission and recently on the Public Information staff of the Labor Department's Bureau of Employment Security, has been appointed Head of the Information and Education Section of NCI's Office of Information and Publications. In dual capacity he also heads the Reference and Distribution Section.

Mr. Boaz, who assumed his new duties December 26, is responsible mainly for the adaptation of cancer information to the requirements of the public media, various segments of the public and organized groups, and the Congress and agencies of the Government. He will take a leading role in the continual development and modification of the Institute's Public Information program.

A native of East St. Louis, Ill., Mr. Boaz is a graduate of the University of Illinois with a B.S. in Journalism. He spent some 11 years in radio and TV news work in Illinois, Kentucky, West Virginia, and Iowa, during which time he served as Southern Regional Vice President and member of the Board of Directors of the Radio and Television News Directors Association.

DR. HUEPER

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joint award of \$10,000 for outstanding scientific research on environmental causes of cancer at the 17th Session of the United Nations General Assembly.

On December 29 he received a Golden Plate Award from the Academy of Achievement in San Diego, Calif., and in 1959 was the recipient of the Anne Frankel Rosenthal Memorial Award for Cancer Research from the American Association for the Advancement of Science.

The nine other recipients of the awards are Drs. Louis S. Goodman of the University of Utah; Leon Jacobson of Argonne Cancer Research Hospital; Joshua Lederberg of Stanford University; Aaron B. Lerner of Yale University; George T. Pack of Memorial Hospital for Cancer; Linus Pauling of the California Institute of Technology; Frederick Robbins of Western Reserve University; Sol Sherry of Washington University, St. Louis, Mo.; and Earle H. Wood of Mayo Clinic. Biographical material and sketches of each of the winners appear in the January 7 issue of *Modern Medicine*.

Graduate Program at NIH Will Resume Feb. 4., Registration Starts Jan. 26

The Graduate Program at the National Institutes of Health, which is conducted by the Foundation for Advanced Education in the Sciences, will open the second semester of the school year on Monday evening, February 4. Registration will begin at 10 a. m., January 26, and will continue until 4 p. m., February 2.

Thirty-three courses of instruction are being offered to NIH employees, to employees of other government agencies and all qualified persons in the Metropolitan Area.

Among the new courses in the curriculum are Neurochemistry, Some Mathematical Aids for Virologists, Readings in Scientific German, Basic English for the Foreign-Born Scientist, and Radioisotopes and Their Application in the Medical Sciences.

Students may register either for academic credit or for audit courses. All audit students, who have the privileges of class participation but do not receive a grade at the end of the semester, must meet the same prerequisites as academic students.

The policy of permitting any

student to change from credit to audit, or vice versa, within 30 days after the beginning of classes, is being continued.

The Graduate Program catalogues, with data on registration, entrance requirements, fees, credits and transfer of credits, attendance regulations, schedule of courses, and the prerequisites for the graduate courses, are available in all NIH Administrative Offices and in the office of the Registrar, Ext. 6371.

All textbooks may be ordered and purchased through the Foundation bookstore during registration. All books must be picked up by the person ordering them.

All fees are due and payable at the time of registration, although students may arrange for payment in two installments, with payments of one-half at registration and the balance, plus a service charge of \$1, by the end of the fourth week of the semester.

Announcements giving the location of the registration offices will be posted on all NIH bulletin boards not later than today.

NIH Camera Club Wins Color Photo Award

The NIH Camera Club—not yet a year old—was awarded third place in the color division at the annual inter-club competition of the Greater Washington Council of Camera Clubs held last month. Thirteen area camera clubs participated in the competition.

"This award indicates the potential that our club has," said Dr. Deiter Sussdorf, club president. "I am sure that we will continue to make good showings in these competitions as we become better photographers."

Since its organization in April 1962 under sponsorship of the NIH Recreation and Welfare Association, the club has held photo competitions among its own members every other month. Points scored by the winners of these competitions have been totaled through the year, and trophies will be awarded to the highest scorers at the end of the club year.

The club has met for two formal lectures on the art and technique of photography and has taken a field trip on the NIH grounds.

The club's darkroom, provided by R&W, affords members an excellent chance to improve their techniques in "darkroom magic."

The Camera Club, which meets on the third Monday night of each

Pierre Pallamary, DRS Retires; Serves for 24 Years in PHS

Pierre Pallamary, a translator in the Translation Section, Library Branch, Division of Research Services, retired from NIH on December 31 after 24 years with the Public Health Service.



Mr. Pallamary joined the PHS Division of Mental Hygiene as a translator in May 1938. He transferred to NIH in 1948.

Born a French citizen in Smyrna, Turkey, Mr. Pallamary served in the United States Army during the first World War. He became a United States citizen in March 1919.

Before and after the first World War, Mr. Pallamary was engaged in the import and export business. His experience also includes translating for various New York firms and participation in the Commerce Department's census of U.S. manufacturers.

During his years at NIH, Mr. Pallamary concentrated on translating biomedical literature from the Germanic and Romance languages into English. He is proficient in nine languages.

A resident of Rockville, Md., Mr. Pallamary says he plans to spend his time on his hobbies of bridge, chess and gardening.

Shortage of Male Leads Hampers The Hamsters

Rehearsals for the R&W Hamsters' spring production of "Pajama Game" are underway, Director Arnold Sperling reports, but there is a shortage of male singers for both lead and chorus parts.

Mr. Sperling is "decidedly enthusiastic" over the female singing leads and chorus and choreographer Jerry Osborn's promising dance corps.

But he said he is still seeking men to fill the roles of Sid, the romantic lead; Heinzie, comedy lead; and Max, a pajama salesman. Needed as well are male singers for several unfilled chorus parts.

Persons interested in participating in the show should contact Mr. Sperling on Ext. 2276.

Harold and Vonnice Miles, co-producers, said rehearsals are going well, and they look for even smoother sailing with the addition of several good male voices.

month, has 20 members. Membership dues consist of a \$2 initiation fee and annual dues of \$3. Interested persons can sign up for membership at the R&W office in Building 31, Rm. 1A-18.

Topics Vital to Scientists Aired at AAAS Annual Meeting

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fully satisfactory, he told assembled scientists, "but it has the over-riding advantage of providing for experimentation without total commitment in a politically sensitive area."

A joint paper on the "Personality Characteristics of the Mercury Astronauts" was presented before the American Psychiatric Association (a member organization of AAAS), by Dr. Sheldon J. Korchin of NIH and Dr. George E. Ruff, University of Pennsylvania.

Symposium Program

A large, 4-session symposium on "New Concepts Regarding Biological Control Mechanisms" was arranged in the medical sciences section by Dr. DeWitt Stetten, Jr., and Dr. Oscar Touster of Vanderbilt University. Dr. Stetten, formerly Associate Director in Charge of Research, National Institute of Arthritis and Metabolic Diseases, is now Dean of the newly established School of Medicine at Rutgers University. He is also AAAS Vice President and Section Chairman.

Under discussion during the symposium were the following subjects: "Repression Mechanisms," "Hormonal Phenomena," "Feedback Control of Enzyme Action," and "Transport across Cell Membranes."

During an evening "Distinguished Lecture," McGeorge Bundy, Special Assistant to President Kennedy, discussed the role of the scientist in government, particularly in connection with matters of national security. He said scientists should not be expected to be politically neutral, should speak up like any other citizen when they feel strongly about such things as nuclear weapons testing.

Scientists' Role Discussed

Considering the question of whether the scientist should be "on tap or on top," he asserted it is essential that the scientist be there both when important programs begin and when decisions are made. Scientists, he said, must be in key positions in government, for they alone understand the technical scientific phases of what is going on. But he added that they should not want to take over what he called "political decision making."

He built a strong case for the need for scientists to be on top of a program all the way, not coming and going, yet not expecting that their individual technical judgments and theirs alone will be accepted.

Mr. Bundy pointed out that Government programs today tend to be multifaceted. "Thus it can't be said, here is a nuclear core—that

is scientific. Here is a nuclear bomb—that is military. Here is a nuclear treaty—that is political. The fact is, they are all intermixed, and scientists and statesmen must be equally concerned with all three."

It is of highest importance, he said, that the scientist respect his calling—that he carefully limit the occasions on which he speaks ex cathedra, lest he lose his infallibility.

Mr. Bundy cited as an example, Sir Charles P. Snow's address before the AAAS two years ago in which the eminent British scientist "reduced the many-faceted problem of the nuclear bomb to a simple either-or statement. It's not that kind of a problem," Bundy concluded.

Offers Advice

As a word of advice to those called upon to express official opinions, he said "such opinions should exhibit much wisdom concerning the military, political and economic values involved, as well as the strictly scientific, and should not be so narrow as to limit the problem spectrum. A wide range of choice must be left open to the chief. He must not be presented with an either-or proposition."

In conclusion, Mr. Bundy said there is no fundamental conflict between being a scientist and being an American. He said he foresees a time when scientists will enlarge their professional contributions to Government and will be much more directly concerned with governmental operations.

Dr. Price Forecasts

On Scientific Communications, Dr. Derek J. de Solla Price of Yale University, speaking under the title "A Calculus of Scientific Information and Manpower," told luncheon guests of Section T (Information and Communication) that about 90 percent of all the scientists there have ever been, are alive now; that during the next ten years as many scientific papers will be published as have appeared in the whole of time till now; and that about 75 percent of those who write at least one scientific paper in their lifetime never do much more, while about half of all the papers written are by the 10 percent of authors who are highly prolific.

Similarly, about 10 percent of all journals account for the majority of references and 10 percent of all countries produce most of the world's scientific work.

He proposed, therefore, a working hypothesis somewhat allied to statistical thermodynamics, to account for such phenomena and to show why this sort of crude "head-

counting" appears to yield statistically meaningful, regular results.

"All indices used," he said, "show regular exponential growth with a doubling about every 10 to 15 years. It is so much faster than any population explosion that by comparison the population virtually stands still." His graphs showed that for about 300 years, science manpower and literature have increased in size by factor of 10 for every doubling of the population.

Difficulties Analyzed

He then proceeded to demonstrate that present difficulties in scientific manpower and communication are caused by a logistic decline in growth in the "over-developed countries" rather than by the apparent large size and over-abundant growth of modern science and technology.

Some of his other findings:

"The number of scientists in a field increases as the squares of the number of good scientists and amount of good work.

"The dollar cost of research increases as the square of the total number of scientists employed.

"The more scientifically mature a country becomes, the less will be its share of the world-total of scientific work.

"The scientific paper as a means of communication is fast dying," he said, "and will be replaced in part by person-to-person communication and in part by machine-handled data—perhaps also through some such device as a scientific daily newspaper analogous to the Wall Street Journal or Financial Times."

Ex-Presidents Speak

An hour later, during a meeting of the AAAS Council attended by this correspondent, two former presidents of the AAAS, Dr. Chauncey Leake and Dr. Kirtley Mather, drew attention to the fact that Section T was holding this year (1962) its first full-session-subject: "The Other Tongues of Science."

They noted that the AAAS is moving ahead swiftly in the improvement of the public's understanding of science. "This last objective may well become a main purpose of the AAAS in the years to come," Dr. Leake said.

Other significant results reported:

- Computers will never be able to replace man because they need unequivocal instructions and cannot make decisions on vague, inconsistent and incomplete information.—Dr. Richard Bellman, Rand Corporation.

- A robot expeditionary force will be sent to Mars in 1966 to

Superior Performance Cash Award Won by Helen E. Wedding

Helen E. Wedding, Secretary in the Engineering Section, Environmental Services Branch, DRS, received a cash award of \$135 for Sustained Superior Performance at



Miss Wedding

a recent ceremony. In presenting the award, Albert S. Gates, Jr., Chief of the Section, commended Miss Wedding for the consistently high quality of her work and her unique contributions to the smooth operation of the Section.

Miss Wedding's award citation praised her part in suggesting and preparing an Engineering Section Handbook for the guidance of new employees, and in developing an office layout that has resulted in more effective use of Engineering Section space.

Fellow employees attending the awards ceremony presented Miss Wedding with a cake.

bring back answers on what kind of life there is there, if any.—Dr. Freeman H. Quimby, NASA.

- Presidential advisers intimidate the individual scientist. Government ignored evidence that the effects of the July 9 blast were not as bad as previously proclaimed.—Dr. James Van Allen, State University of Iowa.

- From a study of flour beetles man can learn certain lessons on overpopulation, i. e., "overexploitation of resources and intense crowding are perilous . . . the peril increasing as the population increases . . . and the largest population, if exposed to stress, does not necessarily enjoy the best prospect of survival.—Dr. Thomas Park, University of Chicago.

- Evaluation of a 147-year-old antacid preparation called Seidlitz Powders, in laboratories of Columbia University's College of Pharmacy, showed it has considerably greater acid neutralizing and buffering capacities than any of its modern day counterparts.—Prof. Joseph L. Kanig, Columbia University.

- Man has acquired a set of mental mechanisms by which he is able to live with unwelcome truths, even though the truths may threaten the existence of a whole civilization. Denial, isolation, displacement, rationalization, intellectualization and dogmatism constitute six major psychological mechanisms used by man to bypass the acceptance of disquieting facts and to maintain his mental equilibrium.—Dr. Lester Grinspoon, Harvard Medical School.

Kathleen Harlow Retires From NHI; Serves 33 Years in Government

"I haven't really done anything so outstanding," Kathleen Harlow said, thinking back over her 33 years of Government service on the eve of her recent retirement. A quick glance at her personnel record showed otherwise.

A Civil Service Career Award, high praise from her supervisors, and outstanding accomplishments as secretary to the National Advisory Heart Council meetings are indicative of her consistent record of notable achievement.

A Grants Assistant on the National Heart Institute's Extramural Programs staff, Miss Harlow has been responsible for reviewing correspondence relating to research grants policy, serving as secretary to the Heart Council, and arranging travel plans for consultants.

These duties will be assumed by several people after Miss Harlow's retirement.

Quote Exemplified

The President's famous quote, "Ask not what your country can do for you but what you can do for your country," has been exemplified by the Harlow family. Miss Harlow's father, Charles, served the Commerce Department for 42 years, and her brother William worked for the State Department for over 40 years.

Miss Harlow was secretary to Dr. C. J. Van Slyke, first Director of the National Heart Institute, established in 1948. At that time NHI numbered three employees, compared to more than 600 now.

Miss Harlow joined the Government in 1929 and took a position in 1930 with the Hygienic Laboratory, forerunner of the National Institutes of Health.

At that time the Laboratory consisted of two buildings in Washington at 25th and E Sts., N. W. She worked at the Lab during the day and studied for her Master's degree in the evenings.

Barbershop Harmonizers Present Concert Tonight

The District of Columbia Chapter of the Society for the Preservation and Encouragement of Barber Shop Quartet Singing in America, Inc., will present a barbershop concert tonight (Tuesday) at 8 p.m. in the 14th floor auditorium of the Clinical Center.

NIH employees, CC patients, and their families and friends are invited to attend.

The show, for which there is no admission charge, will include songs by the Singing Capital Chorus, the Precisionists, and several quartets.



Standing in front of a mural of NIH, Kathleen Harlow holds a photograph of the old Hygienic Laboratory, forerunner of NIH, where she worked in 1930.—Photo by Ed Hubbard.

She received her A. B. degree from Trinity College in Washington in 1925 and her M. A. from Catholic University in 1939. She was a member of Pi Gamma Mu.

In 1950 Miss Harlow became Secretary to the Heart Council, where her exceptional abilities were recognized. Her Civil Service Award was presented in 1958.

Concerning this award, Dr. J. Franklin Yeager, NHI Associate Director for Extramural Programs said, "I can think of no person in the Grants and Training Branch whose consistently responsible performance over a number of years is more worthy of recognition than Kathleen Harlow's."

Praised by Dr. Watt

Dr. James Watt, former Director of the National Heart Institute, said of Miss Harlow in 1958, "She is engaged in a difficult, complex, and demanding field of work, involving day-to-day relations with internationally known scientists and physicians, and the expenditure of many millions of dollars. She has had an important part in the growth of a program of immense national importance—the research attack on heart disease; and is deeply deserving of national recognition for her own remarkable professional growth with the program, her extreme competence, and her devotion to duty in the Federal Service."

During her long career Miss Harlow has kept busy after working hours with her hobbies: gardening, bridge, music and travel.

After retirement she plans to do volunteer work for Seton Guild, which is affiliated with St. Ann's Infant Home, and the Washington Heart Association.

When her retirement pictures were being taken in a conference room at NIH's Stone House, Miss Harlow was seated at one end of the long, empty table.

"Well, after 33 years," she said, "I've finally made it to the head of the table."

IEDB Conducts Second B-E Seminar Jan. 16

The Instrument Engineering and Development Branch, Division of Research Services, will conduct the second in its series of seminars on Biomedical Engineering on January 16, at 8 p.m. in Building 10, Room 1S213. The series centers on prominent areas of engineering as applied to medical research.

"Semi-Automatic Measurement of Neuronal Fine Structure" will be the subject of the evening's informal discussion. The subject will be introduced by Edmund Glaser of the Department of Physiology, University of Maryland School of Medicine, and Henry Van Der Loos, Department of Anatomy, The Johns Hopkins University School of Medicine.

Patterns Described

The speakers will describe their study of the morphology of dendrite patterns using a high resolution light microscope. The axon and dendrites are the main anatomical substrate of the neuron's function for communicating information. Quantitative investigation has been made of their structural patterns.

Two ways of plotting the data are proposed. They characterize the branching patterns of the dendrite systems involved, as well as their orientation in reference to a given anatomic plane.

A specially designed microscope-computer will be described which greatly facilitates this research.

The seminar is open to the public.

NIH Basketball Team Plays Busy Schedule

The NIH basketball team, sponsored by the NIH Recreation and Welfare Association and composed of members from the six NIH intramural teams, is embarked on a busy schedule.

The squad not only is competing again in the D. C. Recreation League but it is also playing in unofficial "grapefruit" league games against both government and non-government teams.

Last year the NIH team placed second in D. C. league competition. It is led by Coach William Fisher, a technician in the Laboratory of Cardiovascular Physiology, NHI.

The NIH intramural teams, also sponsored by R&W, play each Monday and Thursday evenings in the CC gym from 5 to 8 p.m.

Many cancers can be cured if they are detected early and treated promptly. Find out more about cancer by calling SService 7-8877, at any time of the day or night, to hear a physician talk to you on "Cancer Answers."

Dr. A. Posner Appointed Head of NIDR Section On Crystal Chemistry

Dr. Aaron S. Posner, research chemist in the Laboratory of Histology and Pathology, National Institute of Dental Research, has been appointed Chief of the Laboratory's newly established Crystal Chemistry Section.

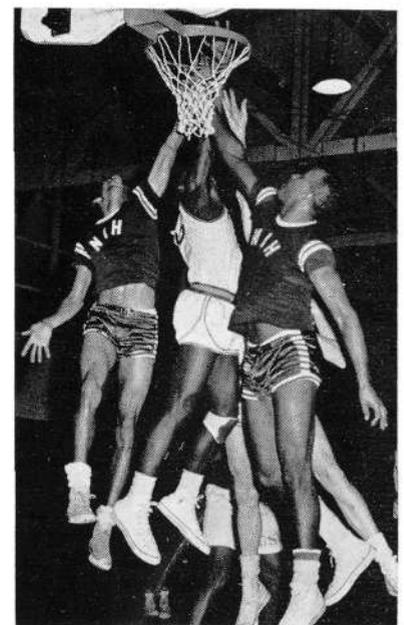
The investigation of the structure and properties of mineralized tissues by physical methods is a major activity of the Laboratory of Histology and Pathology. Establishment of the Crystal Chemistry Section further emphasizes the program significance of the crystallography projects initiated last year by Dr. Posner.

New Emphasis Possible

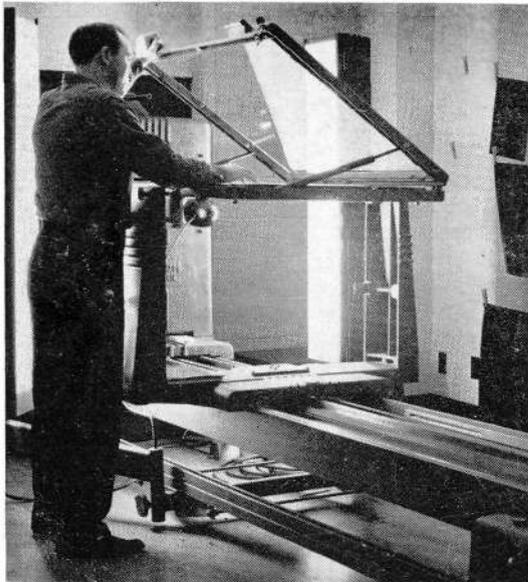
The expanded activities will allow new emphasis on crystal texture in organized tissues and on single crystal structure, and will permit investigation of apatite crystal nucleation and growth as well as the study of protein matrices.

Before joining the NIDR staff in June 1961, Dr. Posner was an American Dental Association Research Associate at the National Bureau of Standards.

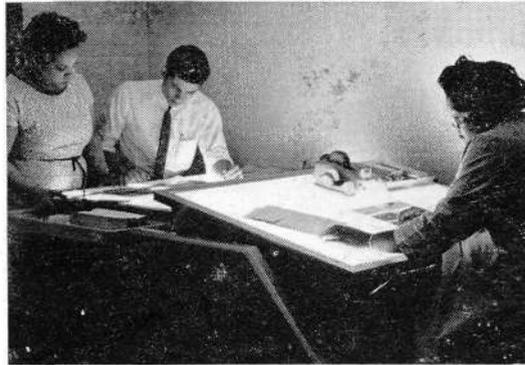
A native of Newark, N. J., he received a B. S. degree from Rutgers University in 1941; an M. S. degree from the Polytechnic Institute, Brooklyn, N. Y., in 1949; and a Ph. D. degree from the University of Liege, Belgium, in 1954.



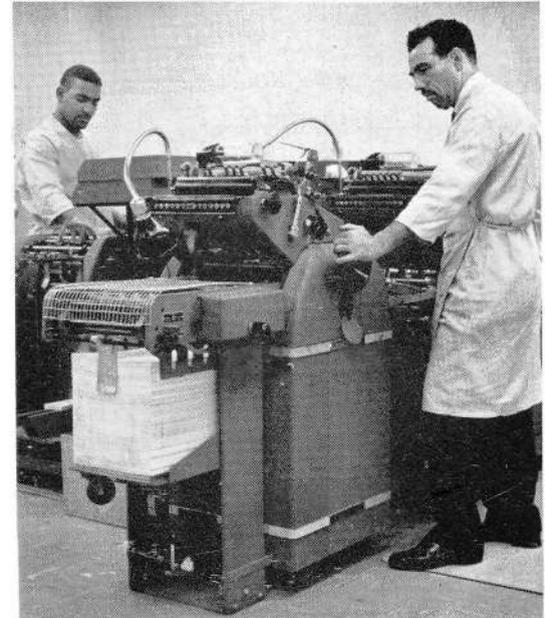
GOING UP.—Five players—four of whom are off the ground—are reaching for the rebound in this action shot taken during a recent game between NIH and the National Naval Medical Center. The NIH players are Ernest Huggs, DRG (left), and Mel Hall, CC (right).—Naval Medical Center photo.



This 24-inch camera photographs text and pictures. Plates are made from the negatives (right) for use in offset printing. Camera is loaded with film from darkroom at rear. Copy board and lens board move on track. Offset photographer is Walter Jennings.



In the film assembly room, employees correct film defects, mount negatives on tinted opaque paper, and establish margins. Left to right: Willie Blalock, Robert Swink, and Maureen Adams.



Tandem press (foreground), which prints both sides of a sheet, is used chiefly for printing of pamphlets and brochures. Rear is single press for postcards, labels. L. to R.: Clarence Jackson, William Bowman.

Print Plant in Action

IN its expanded and recently remodeled quarters in the A wing basement level of Building 31, the Offset Printing Plant of the Printing & Reproduction Section, OSB-OD, is now equipped and staffed to efficiently meet most of the printing requirements of NIH. All but one piece of the new equipment—a folding machine—are pictured in this layout. Equipment in two pictures, lower right, is not new.

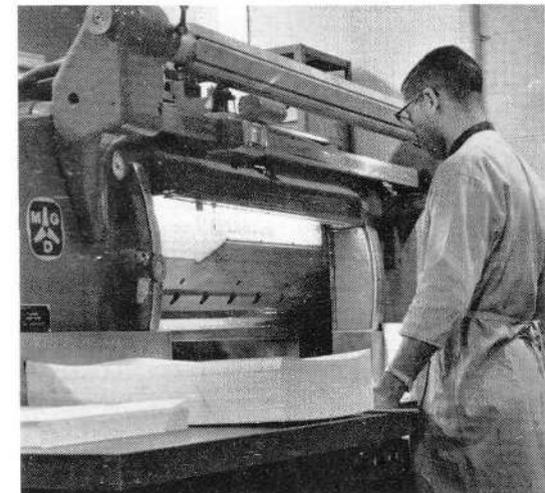
Photos by Bob Pumphrey



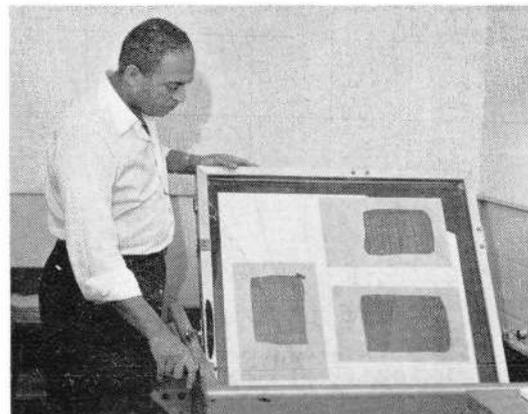
This press is used largely for color printing of pictures and text. By use of screens of varying texture, it will print one color in various shades. It prints from plates made by the machine shown below. Inspecting press work are, from left: Fred Caponiti, Chief, P&R Section; Ray Walls, Printing Plant foreman; and James Cochrane, pressman.



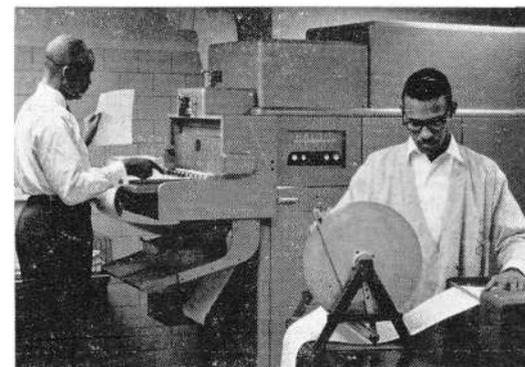
This 12-station collator, with saddle-stitching and folding attachment (left) will collate up to 48 pages at a time. From left: Charles Elliot, Frank Pruden, and Oscar Kelley.



Power-operated paper cutter cuts prime sheets, about 1,000 at a time, to required press sizes. The operator is Joseph Taylor.



This is the plate-maker. Mounted negatives are placed on top which is flipped. Light from below passes through negatives, registering on aluminum plates on reverse side. Operator is Carl Hansborough.



Copyflo machine (rear) transfers image continuously by mirror to selenium-coated copper drum which in turn transfers image to roll from which paper masters are cut electronically (foreground). From left: Vincent Wells and Robert Belton.



These automated presses print research and training grant applications. From left: Kathleen Joyce, Scheduling Clerk; Leora Rabb, Systems Coordinator; James Brown, Perry Catlett, Edwin Buggs, Sydney Murphy, and Bernard Matthews.