will establish 20 fellowships for Indian educators in the School of Education. Fowlkes is being assisted by Milton Pella in preparing the program.

The fellowship recipients will arrive in January to spend 9 months studying science teaching methods at the university, at state colleges, and in high schools throughout the state. Their training will include actual teaching assignments in high schools. Emphasis in the program will be on general science, so that general science courses may be added to the curricula of Indian high schools.

■ A technical education team from Wayne State University is leaving for Thailand this month to assist in the development of the Bangkok Technical Institute. The nine members have signed 2-year contracts for an International Cooperation Administration mission that is expected to continue for from 3 to 6 years. Specialties represented by the group are teacher education, home economics, commerce, metal technology, woodworking and building trades, electronics, automotive trades, and diesel mechanics. Members of the Bangkok team have been teaching in Ohio, Alabama, Virginia, West Virginia, and Michigan. All have done undergraduate or graduate work at Wayne.

William E. Stirton, formerly a Wayne vice president, now with the University of Michigan, went to Thailand last spring and worked out the details of the project with the Thai government. Through a special agreement, Stirton remains official administrator of the $835,000 program. The Bangkok Technical Institute is expected to be a model for southeast Asia. It produces teachers for other technical institutes throughout Thailand.

Also under the ICA contract, Wayne State will enroll 30 Thai industrial educators during the initial 3-year period. These technical institute instructors will study American methods, both technical and professional.

■ Construction has begun on the University of Connecticut's new science building, which will cost $1.2 million. The building will be given over to the physics and chemistry departments, reflecting the tremendous development of these two university programs.

■ The teaching of writing, speaking, and engineering judgment should get more emphasis in chemical engineering courses, a survey of recent graduates by the Esso Research and Engineering Company indicates. A report on the study, which covers 125 employees graduated since 1949 from 51 schools, was presented recently by John W. Packie and Charles W. Smith during a session of the 130th national meeting of the American Chemical Society. Forty-five percent of the supervisors questioned listed inadequacy in letter and report writing as the greatest weakness among employees during the past 5 years.

Grants, Fellowships, and Awards

■ The allocation of 12 grants for research on various phases of air pollution have been announced by the Public Health Service. Six of the grants, totaling $177,548, are for new projects. The remaining six grants, amounting to $141,020, will continue support of projects that are already under way.

These grants make a total of 32 that have been awarded since July 1955, when air-pollution research was made a responsibility of the Public Health Service. All told, $780,137 has now been allocated to agencies, institutions, and individuals outside the Federal Government for such investigations.

■ The John Hay Whitney Foundation has announced its Opportunity Fellowships Program. Its purpose is to broaden opportunities in America and, specifically, to give opportunity for special experience or advanced study to persons of exceptional promise who otherwise might not be able to reach their fullest development or make their fullest contribution.

The competition for opportunity fellowships is open to any citizen of the United States (including residents of territories) who has given evidence of special ability and who has not had full opportunity to develop his talents because of arbitrary barriers, such as racial or cultural background or region of residence. Awards have been made principally to the following groups: Negroes, Spanish-Americans, Chinese- and Japanese-Americans, American Indians, and residents of the Virgin Islands, Puerto Rico, Hawaii, Guam, Alaska, Samoa, and the Appalachian Mountain area.

Candidates are expected to be mature enough to have given positive evidence of exceptional promise, yet young enough to have their careers before them; in general, they should be between the ages of 22 and 35 and have completed their general undergraduate education. Candidates under 35 are given decided preference.

The fellowships are open not only for academic study (graduate) but for any kind of training or experience (journalism, industry, labor, the arts, and so forth) which may be most useful in developing varied talents and varied forms of leadership. Applicants for apprenticeships in such areas as agriculture, industry, and labor will be welcomed.

Awards are expected ordinarily to range from $1000 to $3000 depending on the nature of the proposed project and the financial need of the candidate. It is hoped that in many cases funds from other sources may supplement the awards.

Awards are made annually by a special committee on the basis of formal written applications by the candidates on forms provided by the foundation. Completed applications must be filed *not later than 30 Nov.* For further information, write to: Opportunity Fellowships, John Hay Whitney Foundation, 630 5th Ave., New York 20, N.Y.

■ Longwood Gardens of the Longwood Foundation, Inc., has announced a grant to the Department of Agriculture's Plant Introduction Section in Beltsville, Md., to support the exploration and introduction of new or little known plants of potential value to ornamental horticulture in the United States. The introduction of agricultural plants has long been the primary objective of this country's foreign plant exploration. The Longwood grant will now permit full-time search for ornamentals. Under the cooperative agreement recently consummated, the USDA will undertake exploration for ornamental plants in Japan, Yokushima, and the Ryukyu Islands during 1956 and 1957.

■ Grants from the Rumford Fund of the American Academy of Arts and Sciences are made in support of research in the areas of heat and light, including thermodynamics and radiation of any frequency, in amounts usually not exceeding $1000. Applications for grants should be filed *by 1 Jan. 1957* on forms available from the Chairman, Rumford Fund, American Academy of Arts and Sciences, 77 Massachusetts Ave., Cambridge 39, Mass.

■ The U.S. Atomic Energy Commission has announced the award of 48 unclassified life-science research contracts in medicine, biology, biophysics, radiation instrumentation, and special training. Twenty-one of the 1-year awards are new projects; five are in the field of medicine, 12 in biology, one in biophysics, and three in special training. Twenty-seven of the awards are contract renewals; 14 of these are in the medical sciences, ten in biology, two in biophysics, and one in radiation instrumentation.

■ The Scholar in Medical Science program to aid young men and women planning careers in academic medicine has been conducted since 1948 by the John and Mary R. Markle Foundation, in cooperation with approved medical schools in the United States and Canada. The general qualifications for candidates for the scholar grants are (i) nomination by an approved undergraduate medical

school; (ii) full-time faculty appointment to a medical school staff; (iii) fellowship training, already completed, in an area of science that is related to medicine; and (iv) a major interest in the teaching of medical students or in research in any science basic to medicine, or both, rather than in the private care of patients.

Candidates trained at any institution and holding any degrees acceptable for faculty rank in the nominating medical school are eligible. Each school is invited to submit the name of one candidate. For every scholar finally selected, the foundation will set aside $30,000, to be used over a 5-year period toward his support or his research or both. The grant will be paid to the cooperating medical school at the rate of $6000 annually, and in most cases will be supplemented by the school from its own budget or from other sources.

The number of scholars appointed annually has varied from 13 to 25. It is not likely to exceed the latter figure in any year. The directors of the foundation, in making the final selection, consider three factors: (i) the competence and promise of the candidate in medical research or teaching, as indicated by the medical school making the nomination; (ii) evidences of an environment conducive to well-rounded professional development, as stated in plans for the scholar by the medical school; and (iii) certain intangible qualities of the candidate indicative of the true scholar and leader.

Advance notice in the autumn as to whether a school intends to make a nomination will be appreciated. Nominations should be submitted by *1 Dec.* to the John and Mary R. Markle Foundation, 511 5th Ave., New York 17, N.Y.

In the Laboratories

■ Fifty years of industrial alcohol and chemical production is being celebrated on 17 Oct. by U.S. Industrial Chemicals Company, division of National Distillers Products Corporation, New York. The company's history closely parallels industrial chemical growth in the United States.

Today U.S.I. manufactures a wide range of products, including polyethylene resins, metallic sodium, alcohols, esters, ethers, ketones, agricultural chemicals, animal feed products, intermediates, and fine chemicals—with production of zirconium, titanium, phosphoric acid, and isosebacic acid scheduled for the near future. But at its founding on 17 Oct. 1906 the company planned only for production of alcohol to serve industrial users under the Tax Free and Denatured Alcohol Act of that year.

■ The U.S. Atomic Energy Commission has available a limited supply of spent fuel elements from its materials testing reactor for rental to licensees as sources of gamma radiation. A flat charge of $100 per year, or fraction of a year, will be made for the use of each fuel element. The user will also pay handling and transportation costs.

The materials testing reactor is located at the National Reactor Testing Station near Idaho Falls, Idaho. Because the supply of irradiated fuel elements from the reactor is limited, they are available primarily for research and development purposes, and generally no one user may possess more than four elements at any one time.

■ Hughes Aircraft Company of Culver City, Calif., has announced that it is awarding 200 fellowships to M.S. degree candidates in engineering and physics so that they may continue their education while employed part-time at Hughes. Fellowship recipients will take advanced courses at the University of Southern California, the University of California at Los Angeles, California Institute of Technology, or at Stanford, Purdue, or West Virginia universities. The students, as members of the technical staff of the Hughes laboratories, will be considered professional engineers and scientists and will receive salaries as well as payment for tuition, books, and fees.

■ The Atomic Energy Commission has received 11 proposals from industrial firms to participate in the design, development, and construction of a food irradiation reactor for the Army Ionizing Radiation Center. The firms that made proposals follow: ACF Industries, Inc., Washington, D.C.; AMF Atomics, Inc., New York, N.Y.; Atomics International, Conoga Park, Calif.; Bell Aircraft Corporation, Buffalo, N.Y.; Blaw-Knox Company, Pittsburgh, Pa.; Burns and Roe, Inc., New York, N.Y.; Ebasco Engineering Company, New York, N.Y.; H. K. Ferguson Company, Cleveland, Ohio; Goodyear Tire and Rubber Company, Akron, Ohio; Kaiser Engineers, Oakland, Calif.; and Rust Engineering Company, Pittsburgh, Pa. A preliminary design concept is being completed for the AEC by the Internuclear Company of Clayton, Mo. A site for the center has not yet been selected.

■ A large industrial science center will be opened this month on a 15-acre tract in Morton Grove, Ill., by the Cook Electric Company. The new Cook Technological Center will be operated by more than 1000 scientists, engineers, technicians, and other staff members working in seven single-story buildings.

Cook divisions include: Cook Research Laboratories (basic and applied research in nuclear physics, servomechanisms, weather reconnaissance, radar, sonar, rockets, guided missiles); Inland Testing Laboratories (testing of components for the company, other manufacturers, and the Defense Department); Electronic Systems (engineering and production design of components and test equipment for military aircraft and guided missiles); Diaphlex (aircraft components manufacture); MagniLastic (stainless steel and alloy specialties manufacture); Wirecom (wire communications equipment manufacture); and Air-Mod Corporation, Vandalia, Ohio, wholly-owned subsidiary (aircraft modernization and modification). Initial occupancy of the new center is being made by advance teams from the Cook Research Laboratories and Inland Testing Laboratories.

Miscellaneous

■ Results of a 5-year study of the metallurgy of molybdenum are summarized, evaluated, and interpreted in a research report for the Navy that has just been made available to industry through the Office of Technical Services, U.S. Department of Commerce. The work was conducted by Battelle Memorial Institute between 1949 and 1954. The final report, which was written by S. L. Case, contains an appraisal of the entire accumulation of data and their significance as applied to the three major phases of the investigation. *A Metallurgical Study of Molybdenum* may be obtained for $2.75 from OTS, U.S. Department of Commerce, Washington 25, D.C.

■ *Results of 1955 Fungicide Tests,* reprinted from a series of articles that appeared in *Agricultural Chemicals,* April through June, may be purchased in bound and covered form for $1 per copy by sending orders with remittance to Dr. A. G. Newhall, Department of Plant Pathology, College of Agriculture, Cornell University, Ithaca, N.Y. The publication of these results is under the sponsorship of the American Phytopathological Society. The new pamphlet is a continuation of the publication of results formerly provided through a supplement of the *Plant Disease Reporter,* Plant Disease Epidemics and Identification Section, U.S. Department of Agriculture.

The Temporary Advisory Committee on Collecting and Disseminating Data on New Fungicide Tests of the American Phytopathological Society has arranged for the publication of recent data and the continuation of a program for annual publications of fungicide test results in the future. Newhall is in charge of this project for the current year.