Miscellany

Education

Engineering graduates in the USSR have increased in number from twenty-nine thousand in 1948 to more than fifty thousand in 1954, according to M. H. Trytten, director of the National Research Council's Office of Scientific Personnel. In a paper presented on his behalf last September before the fall meeting of the American Society of Mechanical Engineers in Milwaukee, Dr. Trytten noted that in contrast the United States graduated only nineteen thousand engineers in 1954. "It seems probable," he said, "that the total number of trained engineers in Russia today is closely comparable to the number in the United States."

Drawing on information obtained from Soviet sources and statistics covering the past 30 years, Dr. Trytten stated that the number of higher educational institutions in Russia increased from about 750 in 1939 to about 900 in 1952. Enrollment in these institutions grew to 916 000, an increase of 50 percent over the same period. Even more significant is the fact that enrollment for professional training has grown sixfold in the past 25 years, while training of supporting semiprofessional personnel has grown sevenfold.

"Engineering training," he said, "lasts five to five and one-half years, and is based on about 5000 hours of lectures, classroom and laboratory instruction, attendance at which is mandatory." Soviet professional training begins early in the secondary schools where "emphasis is strongly on science and mathematics for all students. There are no electives and about 40 percent of the curriculum is devoted during the three years to science and mathematics." Noting that perhaps only 20 percent of our high-school graduates have had general science courses and only six to eight percent have had physics and chemistry, Dr. Trytten warned that local control of education, which may have been our greatest strength in the past, may become a source of weakness in the future "unless greater awareness of the importance of education is developed at the local level".

A major difference between the American and Russian educational systems was cited in the area of training below professional levels. The Russians, he said, have some 3500 technical institutes offering three and four-year curricula. These schools have more than one million students and are now turning out 350 000 graduates annually, of which 50 000 are engineering technicians. While concluding that Russia "has apparently solved the vexing problem of the role of the technical specialist in a very direct manner," Dr. Trytten urged that we should not abandon our principles of liberal and broad general education. To meet the challenge, he advised "improving the teaching of science at the high-school level; expanding the training of scientists and engineers; and the adoption of a consistent policy for the preservation of professional manpower, especially engineering and scientific personnel".

The paper is an outgrowth of nearly two years of research in conjunction with the Russian Research Institute at Harvard University. A full report is scheduled for publication shortly in book form. Dr. Trytten was formerly general chairman of the so-called "Trytten Committees" which, until 1953, served as advisory bodies to the Director of Selective Service. Among other accomplishments, the committees developed the student deferment program for the Selective Service System.

Some eight hundred students with special abilities in science will be selected for a year of graduate scientific study during the academic year 1955–56 in the National Science Foundation's fourth annual graduate fellowship program. NSF fellowships are awarded to U. S. citizens who will begin or continue their studies at the graduate level in the life or physical sciences next year. Those selected may attend any accredited nonprofit institution in the United States or similar institutions abroad. Selections will be made solely on the basis of ability. The majority of the fellowships will go to graduate students seeking master's or doctor's degrees, although about 100 awards will be made to postdoctoral applicants. Science students who are now college seniors are encouraged to apply for the awards. Predoctoral fellows will be selected on the basis of their scores on tests of scientific aptitude, their academic records, and written evaluations by faculty members and other qualified observers. Applicants for postdoctoral fellowships need not take the examinations. All applicants will be rated by special fellowship panels established by the National Academy of Sciences and final selection will be made by the National Science Foundation. Stipends range from $1400 for first-year graduate students to $3400 for postdoctoral fellows, with dependency allowances available for married fellows. The closing dates for receipt of applications are December 20, 1954, for postdoctoral applicants, and January 3, 1955, for graduate students working toward advanced degrees in science. The selections will be announced on March 15th. Applications may be obtained from the Fellowship Office, National Research Council, Washington 25, D. C.

December 10, 1954 is the deadline for applying for 1955–56 natural sciences fellowships administered by the National Academy of Sciences—National Research Council. These include: the newly created National Research Council—National Bureau of Standards postdoctoral research assistantships in chemistry, mathematics, and physics; American Chemical Society petroleum research fund postdoctoral fellowships; Lilly

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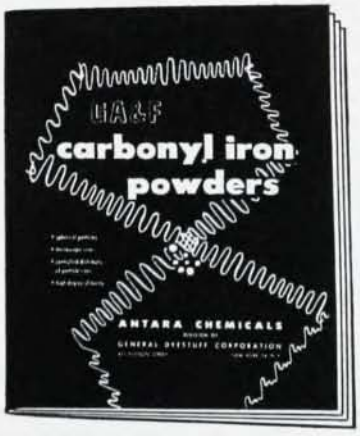

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Research Laboratories postdoctoral fellowships; Merck senior postdoctoral fellowships; and RCA predoctoral fellowships in electronics. Detailed information and application forms can be obtained by writing to the Fellowship Office, National Research Council, 2101 Constitution Avenue, N.W., Washington 25, D. C.

Excellent progress is now reported for the manual of advanced undergraduate physics experiments which the American Association of Physics Teachers is undertaking to produce as a memorial to the late Lloyd William Taylor. This book, which will cover all fields of physics on the junior-senior college level, is to represent, as far as possible, the experience, ingenuity, and inventiveness of physics teachers everywhere. Already some one hundred persons have made contributions which go far toward meeting the editors' hopes for the book, but nevertheless it is feared that many fine ideas have not yet been sent in. Since March 1 must be set as the deadline for further contributions the editors of the manual urgently request that everyone interested in laboratory work on this level send in his contributions as soon as possible. The need is for *ideas* of all kinds, relating to experiments old or new, in any field of physics. Contributions may be sent to the chairman, Thomas B. Brown, The George Washington University, Washington, D. C., or to the editor concerned. The editors are: *Mechanics*—Ralph H. Bacon, 405 Bedford Road, Pleasantville, N. Y.; *Heat*—Robert L. Weber, Pennsylvania State University, State College, Pennsylvania; *Acoustics*—Louis R. Weber, Colorado State College, Fort Collins, Colorado; *Electricity and Magnetism, Electronics*—M. C. Harrington, Drew University, Madison, New Jersey; *Optics*—Herbert A. Nye, Cornell Aeronautical Laboratory, Buffalo, N. Y.; *Atomic Physics and Spectra*—Sanborn C. Brown, Massachusetts Institute of Technology, Cambridge, Massachusetts; and *Radioactivity and Nuclear Physics*—R. Ronald Palmer, Beloit College, Beloit, Wisconsin.

An interesting proposal for student exchange has been brought to our attention by C. W. Ufford of the University of Pennsylvania, who reports that the son of Kurt Fischbeck of the University of Heidelberg wishes to do graduate work in nuclear physics, preferably in the United States. Dr. Fischbeck proposes to send his son to live with the family of some university professor here who wishes to have his own son attend Heidelberg. Dr. Fischbeck will take the American boy into his own home in exchange. Each family would presumably bear the expense of travel, books, and fees, but room and board would be furnished by the "adopted" family. Dr. Fischbeck hopes to have some exchange arrangement settled in time for his son to start work toward the doctorate next fall. His address is Ludolf-Krehl-Str. 29, Heidelberg, Germany.

Placement Service

The AIP's Placement Service Register will again be in operation this winter at the American Physical Society meeting to be held January 27–29 at the Hotel New Yorker in New York City. Physicists looking for jobs are invited to write for application forms or further information to the American Institute of Physics, 57 East 55th Street, New York 22, N. Y. It is essential that applicants register prior to the meeting; completed forms must be received at the Institute office no later than January 10, 1955 to insure their inclusion at the time of the meeting. Personal interviews will be arranged between applicants and personnel representatives from industry, government agencies, and educational institutions during the three-day meeting, and it is therefore to the advantage of the registrants to be present. Employers wishing to post notices of available positions are invited to send job descriptions (15 copies measuring 8½ x 11 inches) to the Institute office or to post them at the meeting. A complete register of applicants will be available for a nominal service charge at the meeting and thereafter.

Research Facilities

Massachusetts Institute of Technology has announced plans for the construction of a new building to house the Karl Taylor Compton Laboratories for Nuclear Science and Electronics. The new laboratories are to be established in memory of Dr. Compton, former chairman of the MIT Corporation who died on June 22nd. Designed especially for MIT's work in nuclear science, nuclear engineering, electronics, and related activities under the departments of physics, electrical engineering, and chemical engineering, the building will provide about 125 000 square feet of floor space and will be built at a cost of $3 million. A like amount of money will be provided for support of work in the laboratories. MIT's proposed nuclear reactor, to be devoted solely to education and unclassified research, will also be associated with the laboratories.

A new petroleum research center near Houston was dedicated on September 11th by the Humble Oil Company. Designed to satisfy the company's research interests in a wide variety of geophysical and geochemical problems, the new complex of laboratories ($3 million worth) provides facilities and equipment for more than 300 research personnel.

Battelle Institute's nuclear energy research facilities are to undergo a $1.5 million expansion to provide for the enlargement of the Institute's contract research programs for industry and government in the atomic energy field. Construction of a nuclear reactor, a reactor development laboratory, and a nuclear fuels laboratory is scheduled to begin shortly. Plans also call for the installation of a large cobalt-60 source. The reactor is to be of the swimming-pool type, capable of operating at 1000 kilowatts, and will be used as a neutron source and for the production of radioisotopes, the activation of chemical reactions, and the study of the effects of radiation on structural and other materials. The laboratories will be located on a 397-acre tract of land near