

around the accelerator ring. The site will also include an equipment structure located inside the ring, a laboratory and office building, and a shop and assembly structure. A tower will be provided for cooling the water necessary for operation of the giant magnet.

Image Tube

An image tube, a device which may make the new 120-inch telescope at the University of California's Lick Observatory as powerful as an even larger instrument, will be tested at the observatory in September. This was disclosed during recent dedication ceremonies for the telescope, second largest in the world, at Mount Hamilton, California. The image tube, still in the early developmental stages, is a device designed to multiply the power of optical telescopes. Speakers at the dedication were Clark Kerr, president of the University of California; Donald H. McLaughlin, chairman of the regents of the university; and A. E. Whitford, director of the Lick Observatory.

According to Whitford, major studies will be made of distant galaxies that can be studied only with the 120-inch telescope and the 200-inch telescope at Palomar, and of young stars still in their formative stage. These studies may yield new understanding of the evolution of the universe.

Through instruments and ingenuity, Whitford said, it may be possible to multiply the basic power of the telescope and "bring into view objects never yet recognized."

Soviet Patents and Inventions

For the first time since 1940, the Soviet Union is permitting export of copies of a bulletin listing patent specifications and applications. The action was authorized by the Committee on Inventions and Discoveries of the U.S.S.R. Council of Ministers. The bulletin, which is published 24 times a year, gives information on the approximately 10,000 patents issued each year. It also includes descriptions of inventions of previous years. Until recently, dissemination of such data was prohibited by a specific statute concerning inventions and technical improvements. Pergamon Press will publish a monthly translation of the bulletin under the title *U.S.S.R. Patents and Inventions*.

News Briefs

A controlled-environment laboratory for studying the effects of environment on plants and animals will be constructed at the University of Wisconsin with the assistance of a \$1,500,000 grant from the National Science Foundation. In this combined plant-study and animal-study facility, botanists and zoologists will be able to consider common scientific problems and their interaction. Present plans call for 30 artificially lit environmental growth rooms and for both conventional and controlled-temperature greenhouses in the plant-research section. There will be rooms for studying the effects of dew, rain, high air velocity, and especially low temperature coupled with high light intensity. Areas for sterilization, storage, potting, harvesting, and photography, special instrumentation, and equipment and space for nutrient-culture work will be provided.

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Atomic Energy of Canada Limited is planning early construction of a large-scale atomic power station, at an estimated cost of about \$60 million, exclusive of design and development costs. The site has not yet been selected. The station will probably be completed and in operation by late 1964 or early 1965. Known as CANDU (Canadian Deuterium Uranium), the power station will produce 200,000 kilowatts of electricity and will use a natural-uranium heavy-water system.

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Ten secondary schools in the United States have been cited by the American Association of Physics Teachers for excellence in the teaching of physics. They are as follows: John Burroughs School, St. Louis, Mo.; Bronx High School of Science, New York, N.Y.; Chamblee High School, DeKalb County System, Chamblee, Ga.; Corvallis Senior High School, Corvallis, Ore.; South High School, Denver, Colo.; Phillips Exeter Academy, Exeter, N.H.; Evanston Township High School, Evanston, Ill.; Green River High School, Green River, Wyo.; North Phoenix High School, Phoenix, Ariz.; Washington-Lee High School, Arlington, Va.

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Annual Reviews, Inc., of Palo Alto, Calif. announces the organization of a new series of reviews: the *Annual Review of Pharmacology*. The first volume is scheduled to appear in April 1961. Windsor C. Cutting of Stanford Univer-

sity has been appointed editor and Henry W. Elliott of the University of California, associate director. Members of the editorial committee, under whose direction the reviews will be organized, are as follows: Windsor C. Cutting (chairman); Bernard B. Brodie, National Heart Institute; Maynard B. Chenoweth, Dow Chemical Company; Louis S. Goodman, University of Utah; G. B. Koelle, University of Pennsylvania; Chauncey D. Leake, Ohio State University; and Maurice H. Seevers, University of Michigan.

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A center for nuclear technology will be established at Cornell University this fall. A National Science Foundation grant of \$475,000 assured construction of the center, which will include a nuclear reactor unit that can be used for both research and training. The entire project will cost \$1,550,000. The center will be under the direction of Trevor R. Cuykendall and David D. Clark of Cornell's department of engineering physics. The nuclear unit includes a zero power core for research, obtained under the National Science Foundation grant, and a training core called a TRIGA (*training research isotope general atomics*) toward the cost of which \$150,000 has been granted by the Atomic Energy Commission. TRIGA will also be used in studies involving radioactive isotopes.

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The Atomic Energy Commission plans to issue a permit to the State College of Washington for construction of a water-cooled and water-moderated pool-type reactor on the campus at Pullman. There will be laboratories and equipment for research on radiation effects and for instruction in nuclear science and engineering. The college plans to use the facility for a series of experiments on the uses of radioactivity in agriculture and biology and for experiments demonstrating the basic principles of reactor physics.

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A committee of the National Academy of Sciences-National Research Council has recommended a set of procedures for the disposal of radioactive wastes from nuclear-powered ships that would permit the operation of a fleet of 300 such vessels without undue hazard to human health from marine contamination. The recommendations are contained in a report of the committee on the effects of atomic radiation on oceanography and fisheries, part of the Academy's continuing study of the biological effects of atomic radiation. The report,

"Considerations on the Disposal of Radioactive Wastes from Nuclear-Powered Ships into the Marine Environment," may be obtained from the Printing and Publishing Office, National Academy of Sciences-National Research Council, 2101 Constitution Ave., NW, Washington 25, D.C.

Grants, Fellowships, and Awards

Geography. The National Academy of Sciences-National Research Council will conduct, in 1960, under the financial sponsorship of the Office of Naval Research, its fifth annual program of geographical field research in foreign areas. During the first 4 years awards were made to 37 young Americans to conduct field research for periods ranging up to 20 months. The objective of the program is to stimulate greater participation by young Americans in field research in areas outside the English-speaking areas of North America. Alaska, Hawaii, Canada, Bermuda, and the Bahamas are specifically excluded.

The program is very broad in scope; it includes all branches of geography as well as fields which are closely related to geography. It is designed primarily for graduate students who wish to conduct field research in connection with their doctoral dissertations, but those who received the doctorate within the last few years are also eligible. More established scholars may submit research proposals to the Geography Branch, Office of Naval Research, Washington 25, D.C. The extent of financial assistance will vary according to the need of the individual. The intent is to provide adequately for travel, field, and living expenses. Usually no stipend is provided. Preference will be shown those who plan field investigations of at least 6 months' duration; investigations of a year or more are preferred. Recipients must agree to submit a detailed report of their investigations, suitable for publication, to the Academy-Research Council.

Applications for support of field work to be initiated before 1 April 1961 must be submitted prior to 1 December 1959. Notices of acceptance or rejection will be sent as promptly as possible, probably by the end of December 1959. All applications or requests for further information should be addressed to: Foreign Field Research Program, Division of Earth Sciences, 2101 Constitution Ave., NW, Washington 25, D.C.

Medical sciences. The University of

Rochester has established a program of postdoctoral fellowships to be awarded graduates of approved medical schools to enable them to pursue research in any of the departments of the School of Medicine and Dentistry. The Buswell fellowships are made possible by the bequest of the late Ralph Hochstetter and are intended to assist well-qualified doctors of medicine to prepare adequately for academic careers.

Buswell junior fellowships will be awarded to medical graduates who have completed at least 1 year of internship or equivalent training. Research experience is not required, but interest and ability are essential, since junior fellows are expected to spend about 90 percent of their time in research or in advanced study in preparation for research. These fellowships will provide a basic stipend of \$4500 to \$6000 per year, depending upon training and experience, and may be renewed with increments for a second or third year. An additional sum of \$500 per year may be provided for each dependent.

Buswell senior fellowships will be awarded to medical graduates who have held a Buswell junior fellowship for 2 or 3 years or who have had comparable experience in medical research and wish to continue in an academic career. These fellowships will provide a basic stipend of \$5500 to \$8000 per year, depending upon training and experience, with provision for annual increments. An additional sum of \$500 per year may be provided for each dependent.

Applications may be submitted at any time. Awards will be announced periodically. Additional information and application forms may be obtained from the chairman of the Committee on Buswell Fellowships, Department of Medicine, University of Rochester Medical Center, 260 Crittenden Blvd., Rochester 20, N.Y.

Mental health. The Foundations' Fund for Research in Psychiatry announces that 15 October 1959 is the next deadline for receipt of applications for research fellowships in psychiatry, psychology, sociology, neurophysiology, and other sciences relevant to mental health. Applicants for fellowships should have completed their doctoral training and should preferably have had several additional years' experience in research.

The Foundations' Fund also makes grants in support of research in the area of mental health. Applications for research grants-in-aid should be filed not later than 10 December 1959.

Persons interested in research fellowships or in research grants-in-aid should write for details to: Foundations' Fund for Research in Psychiatry, 251 Edwards St., New Haven 11, Conn.

Neuromuscular diseases. The Sister Elizabeth Kenny Foundation is continuing its program of postdoctoral scholarships to promote work in the field of neuromuscular diseases. These scholarships are designed for scientists at or near the end of their fellowship training in basic or clinical fields concerned with the problem of neuromuscular diseases.

Kenny Foundation scholars will be appointed annually. Each grant will provide a stipend for a 5-year period of \$5000 to \$7000 a year, depending upon the scholar's qualifications. Candidates from medical schools in the United States and Canada are eligible.

Inquiries regarding details of the program should be addressed to: Dr. E. J. Huenekens, Medical Director, Sister Elizabeth Kenny Foundation, Inc., 2400 Foshay Tower, Minneapolis 2, Minn.

Petroleum. Grants and awards for advanced study and fundamental research in any field of pure science which may afford a basis for subsequent research directly connected with the field of petroleum are made by the American Chemical Society from the Petroleum Research Fund. This relatively new program is now well established and has made grants in partial support of research in chemistry, chemical engineering, physics, geology, geochemistry, geophysics, bacteriology, mathematics, metallurgy, oceanography, biochemistry, and biophysics.

During 1959-60, approximately 225 grants and awards totaling about \$1,570,000, will be in effect, the largest number being in the field of chemistry. More proposals from geology, physics, and other disciplines which may make a fundamental contribution to the field of petroleum would be welcome.

At the present time six types of grants are being made.

1) Grants-in-aid to support projects of fundamental research in the petroleum field. These are primarily for faculty-graduate-student research. They are generally made for 2- and 3-year periods, with 2- or 3-year renewals. Undergraduate participation is encouraged.

2) Grants for fundamental research in the petroleum field at the undergraduate level—educational grants to selected staff members of undergraduate departments for research designed