partment at Marquette University; authority on earthquakes; 12 Dec.

MARTIN GIL, Buenos Aires, Argentina; 86; astronomer; 9 Dec.

HORACE P. LIVERSIDGE, Bryn Mawr, Pa.; 77; electrical engineer; 9 Dec.

EGAS MONIZ, Lisbon, Portugal; 81; developer of cerebral angiography and prefrontal leucotomy; 1949 winner of the Nobel prize for medicine for having been the first man to cure a mental disorder by surgical operation; professor of neurology at the University of Lisbon from 1911–44; 13 Dec.

WOLFGANG PAULI, Zurich, Switzerland; 85; colloid chemist; professor emeritus, University of Vienna, Vienna, Austria; 4 Nov.

ROBERT E. SHELBY, Teaneck, N.J.; 49; vice-president and chief engineer of the National Broadcasting Company, New York; pioneer in the development of television; 9 Dec.

HERMANN WEYL, Zurich, Switzerland; 70; mathematician; one of the founders of the Institute for Advanced Study, Princeton, N.J. and professor emeritus since his retirement in 1951; author of many books, he was also recognized as an eminent historian in the philosophy of science; 8 Dec.

Education

■ The Atomic Energy Commission and the National Science Foundation have announced joint sponsorship with the American Society of Engineering Education of a special Summer Institute on Nuclear Engineering for engineering college faculty members. The AEC has approved use of the Argonne Laboratory School of Nuclear Science and Engineering for the institute, which will continue for 2 months beginning the latter part of June. Courses will be given in nuclear physics, nuclear engineering, metallurgy, instrumentation and other subjects. Sixty students will be enrolled.

NSF has approved establishment of a fund to provide cost-of-living stipends of about $600 to those attending the institute and to defray their travel expenses. These funds will be administered by Northwestern University. The American Society for Engineering Education will arrange for the selection of the students and make the necessary housing arrangements.

Purpose of the institute is to broaden the nation's educational base in atomic energy by equipping more college faculty members to teach students of nuclear sciences. In addition to the need for more fundamental-research scientists in nuclear energy, the AEC estimates that the developing American civilian atomic energy industry will create an annual demand for nearly 2000 trained nuclear scientists and engineers during the next 3 years and that the demand after that period will be even greater.

It will be the policy of the institute to accept from a single university or college two to four faculty members representing various engineering fields. This policy will permit spreading nuclear technology into the existing disciplines and make possible a better integrated program of nuclear training in the schools. No tuition will be charged. Inquiries concerning enrollment may be addressed to the Dean of Engineering, Northwestern University, Evanston, Ill. Applications must be submitted *by 1 Mar.*

■ The University of Wisconsin will build an $800,000 addition to Sterling Hall on the Madison campus to house the Mathematics Research Center of the U.S. Army. The general objective of the center is to ". . . provide a nucleus of highly qualified mathematicians who will carry on investigations in mathematics of interest to the Army and who can be called upon for advice on specific problems beyond the capability of Army facilities. In addition to fulfilling an Army need, the center will aid the national effort in mathematics research and will increase the availability of trained mathematicians."

R. E. Langer, professor of mathematics, will be the first director of the center. Investigations to be carried on at the center will be primarily concerned with four general fields: mathematical analysis and applied mathematics; statistics and probability; numerical analysis and the technology of high-speed electronic computing machines; and operations research, decision theory, optimization problems, and programming.

■ Sets of 156 drawings to enable schools in tropical countries to build low-cost science teaching laboratories have just been issued by UNESCO. The drawings cover equipment needed in primary and secondary science teaching and in the training of science teachers. They are intended to be particularly useful to countries that are short of science teaching equipment and lack foreign exchange to import apparatus, yet which have craftsmen and vocational schools where the equipment might be manufactured locally at low cost.

■ The 23rd session of the Norelco X-ray Diffraction School will be held at the North American Philips Company, Inc., 750 South Fulton Ave., Mount Vernon, N.Y., during the week of 30 Jan.–3 Feb. Registration will be limited to 125 for the first 4 days and to 150 on Friday, the day devoted to actual application problems when guest speakers discuss methods currently in use by researchers and industrial plants.

On Monday through Thursday, the sessions will be devoted to extensive classroom and laboratory work during which participants discuss their own problems and become familiar with the use of the various types of equipment. The basic subjects to be considered include x-ray diffraction, diffractometry, and spectrography. There will also be discussion of new high- and low-temperature camera techniques, electron microscopy, and electron diffraction.

Application for attendance at the three Norelco X-ray Diffraction Schools held last year far outnumbered the available accommodations. It is recommended that those planning to participate in the coming meetings make their reservations at the earliest possible date. There is no registration fee.

Grants, Fellowships, and Awards

■ The American Therapeutic Society has announced its annual Oscar B. Hunter memorial award contest. The award is made in recognition of an outstanding contribution or series of contributions to therapy by an individual or a team of workers. The term *therapy* is used in a broad sense to include the use of any drugs, procedure, or device of benefit in the treatment of patients.

One object in making the award is to bring recognition to those who have not received awards for their work. The award consists of a bronze medal engraved with the name of the recipient. The winner will be expected to deliver a paper when the award is presented at the society's annual meeting; this paper must cover the work that forms the basis for the honor. Travel expenses to the meeting will be furnished.

The deadline for receiving nominations is *1 Feb. 1956.* For information write to the chairman of the award committee, Harry E. Ungerleider, 393 Seventh Ave., New York 1.

■ Grants from the Permanent Science Fund of the American Academy of Arts and Sciences are made in support of research in any field of science whatsoever in amounts that ordinarily do not exceed $1500. Applications for grants to be made next March *should be filed by 1 Feb.* on forms available from the Chairman, Permanent Science Fund Committee, American Academy of Arts and Sciences, 77 Massachusetts Ave., Cambridge 39, Mass.

Special consideration will be given to projects on new frontiers of science, those that lie between or include two or more of the classical fields and those proposed by investigators who may be on

the threshold of investigational careers or who are handicapped by inadequate resources and facilities. The committee does not ordinarily approve grants for research the results of which constitute partial fulfillment of requirements for an academic degree.

■ The Explorers Club has adopted a new rule under which grants from the Exploration Fund may be given to scientists who are not members of the club. Application blanks may be obtained by writing to the Explorers Club, 10 W. 72 St., New York 23.

■ The department of biochemistry, University of Washington, announces the availability of teaching and research assistantships for the academic year 1956–57. These assistantships carry a stipend of $150 per month and remission of tuition and laboratory fees.

In addition, a number of research assistantships are offered for the summer months. Applicants having a bachelor's degree in chemistry, or its equivalent, are invited to apply *before 15 Mar.* by writing to the executive officer, Dr. Hans Neurath, Department of Biochemistry, University of Washington, Seattle 5.

In the Laboratories

■ Vitro Laboratories, a division of Vitro Corporation of America, plans to build a $1-million laboratory near Silver Spring, Md. The new laboratory will replace the present leased facilities of the Silver Spring Laboratory of the division, and will allow for greatly increased expansion and many improvements. Vitro has purchased 35 acres in Montgomery County, 7 miles north of the present laboratory. Ground will be broken early next year and the first building will be ready for occupancy by 1957.

The initial laboratory structure calls for 55,000 square feet of usable floor space, suitable for 350 persons, as well as storage and other auxiliary features. The design will permit an early expansion to 100,000 square feet of floor space.

The Silver Spring Laboratory carries out research, development, and engineering contracts for both Government and industry, chiefly for the Navy and largely in the field of weapons systems, including underwater ordnance and guided missiles.

■ The entry of Raytheon Manufacturing Company, Waltham, Mass., into the atomic energy field was announced on 8 Dec. with the publication of its pamphlet, *Nuclear Reactor Data.* The booklet lists all significant data on every nuclear reactor that is known to be already built or under construction anywhere in the world, including six in the Soviet Union.

The study that resulted in the booklet was carried out under the direction of William A. Robba, head of the firm's nuclear power group in the research division. Material was gathered from a wide variety of sources, including scientific journals and other published works in many languages. The entire project was aided greatly by the declassification of significant quantities of information for the Geneva Conference.

A feature of the pamphlet is a comprehensive chart listing all reactors built since Enrico Fermi constructed the first one in Chicago 13 years ago, and including those that are partially constructed or definitely planned and engineered for future construction. Facts and figures were checked against two or more sources wherever possible. The chart shows up to 50 principal characteristics of each of the nearly 100 reactors listed. These characteristics include the function, builder, location, and important technical features of the reactors.

■ A new chemical plant will be constructed by the Glidden Company at Port St. Joe, Fla., to utilize the crude skimmings created as a by-product by the St. Joe Paper Company and other southern kraft paper mills. The new unit will produce crude and distilled tall oil, high grade fatty acids, premium-grade tall oil rosins, and by-product pitch. The Port St. Joe facility will be the fourth chemical plant to be operated by Glidden in the South.

Miscellaneous

■ Installation of a Foucault pendulum is now nearing completion in the main lobby of the General Assembly Building at United Nations Headquarters in New York. The pendulum, a gift to the U.N. from the Government of the Netherlands, utilizes the principle first demonstrated by the French physicist, Jean Bernard Leon Foucault, in Paris in 1851, when he suspended a heavy sphere from the dome of the Pantheon by a 220-foot wire. A pin was attached to the underside of the large ball, and at each swing the pin swept over a ridge of sand arranged on an inner railing inside a spectators' circular railing. At each swing the pin cut into the sand pile. It was almost immediately observed that the plane of vibration shifted slowly in a clockwise direction, the rate of deviation being some 11 degrees an hour. Actually the floor was turning around under the pendulum because of the earth's daily rotation.

For the U.N. installation, a 200-pound gold-plated sphere is being suspended from the ceiling 75 feet above the floor of the Assembly lobby, and directly above a stair landing connecting the lobby with the main entrance to the General Assembly hall. A stainless steel wire will hold the sphere in such a manner as to allow the weighted ball to swing freely in any plane.

The sphere, 12 inches in diameter, will swing directly over a raised metal ring, some 6 feet in diameter and containing an electromagnet in the center. When activated, the electromagnet will cause an impulse in the ball sufficient to overcome the resistance of the air and friction at the suspension above. The sphere will thus swing continuously as a pendulum, its plane shifting slowly in a clockwise direction, as it did in Foucault's original experiment.

Installation of the pendulum is under the supervision of William Bahler, a physicist of the Phillips Company, Eindhoven, Netherlands. Inscribed on the shaft supporting the electromagnetic ring is the following message: "It is a privilege to live this day and tomorrow. Juliana."

■ The U.S. Information Agency's pamphlet *Atomic Power for Peace* has been printed in 35 languages for a total of almost 6½ million copies since May 1954.

■ The *Engineering Societies Directory,* a complete list of all engineering societies in the United States, together with pertinent information about them, will be published by the Engineers Joint Council. The tentative release date is 1 June 1956. The *Directory* will be a new publication, not a revision of the *Engineering Societies Yearbook,* which has been discontinued.

Questionnaires will be mailed to all known societies about 16 Jan. and should be returned to EJC *by 1 Mar.* If a society has not received such a questionnaire, it should write the Engineers Joint Council, 29 W. 39 St., New York.

■ The University of Western Australia is establishing a medical school and invites applications for the chairs of anatomy, biochemistry, medicine, microbiology, pathology, physiology, obstetrics and gynecology, and surgery. Closing date for receipt of applications is *31 Jan.*

■ A competitive examination for appointment of medical and dental officers to the regular corps of the U.S. Public Health Service will be held on 20, 21, and 22 Mar. at various places throughout the United States. A candidate will be tested at the examining center nearest his home. Applications must be received in the Public Health Service, Washington 25, D.C., *no later than 10 Feb.*