young people lose ambition. Many leave high school before graduation. Others remain to graduate but find occupations far below their potential. Only 5 percent of all Negro high-school graduates enter college, as against 25 percent of white graduates.

AAAS Theobald Smith Award

The Theobald Smith Award of $1000 and a bronze medal, which has been given yearly since 1937 (except for a lapse during the war years) by Eli Lilly and Company of Indianapolis, Ind., under the auspices of the AAAS, will be presented at the association's 125th meeting in Washington, 26–31 Dec. Nominations are now being requested for the award. They may be made by fellows of the AAAS and should be sent to the secretary of the Section on Medical Sciences, Dr. Allan D. Bass, Department of Pharmacology, Vanderbilt University School of Medicine, Nashville 5, Tenn.

The prize is given for "demonstrated research in the field of the medical sciences, taking into consideration independence of thought and originality." Any investigator is eligible who was less than 35 years of age on 1 Jan. 1958 and who is a citizen of the United States. The research is not to be judged in comparison with the work of more mature and experienced investigators.

Nominations must be received *before 1 Sept.* The secretary requests that six copies of all data be submitted. The nomination should include a curriculum vitae, a statement summarizing the nominee's scientific contributions with an evaluation of their significance, and reprints of his or her more important publications.

The committee of judges consists of Alfred Gellhorn, Institute of Cancer Research, Columbia University College of Physicians and Surgeons, New York; Horace W. Magoun, University of California Medical School, Los Angeles; Joseph L. Melnick, Baylor University College of Medicine, Houston, Texas; and Albert B. Sabin, Children's Hospital Research Foundation, Cincinnati, Ohio. Gordon K. Moe, New York Medical Center at Syracuse, chairman of Section N–Medical Sciences, is chairman, *ex officio*; Dr. Bass will serve as *ex officio* secretary.

New Electromagnet

A continuously operating electromagnet of approximately 100,000 gauss has been constructed and put into operation at the Berkeley campus of the University of California. The new machine, which was built at the university's new low-temperature laboratory, has the features of ultra-high strength, continuous operation, homogenous field, and a volume of field of about 30 cubic inches. These characteristics make the instrument suitable for precise measurement of the effect of a magnetic field on the properties of materials.

Extremely low temperature-readings are expected during the course of experiments conducted with the magnet. William F. Giauque, Nobel laureate and head of the laboratory, expects to reach temperatures below those reached in past work. In the 1930's Giauque attained a reading of −459.55°F.

The magnet is a solenoid 26 inches long and 15 inches in diameter, with a center hole 4 inches in diameter. Despite its small size, in comparison with the magnets used in cyclotrons, the new device produces a much larger magnetic field than cyclotron magnets.

Using 10,000 horsepower of electrical energy, which is converted into heat in the course of maintaining the field, the magnet requires large-scale auxiliary equipment for cooling. Approximately 300 cubic feet of kerosene are pumped each minute through annular spaces between layers of the conductor in the solenoid and then are passed through pipes over which water flows. The magnet is operated in an atmosphere of carbon dioxide and nitrogen.

The magnet will be used for study in a variety of fields, among which are: entropy measurements, solid-state physics, nuclear alignment of radioelements, temperature scale and thermometry, heat capacity, magnetic measurements, thermodynamic relationships of magnetic data, and spectroscopic observations at low temperatures.

IGY Notes

A suggestion for a 6- to 12-month extension of the International Geophysical Year was made by the vice president of the U.S.S.R. IGY Committee in a recent issue of the Soviet magazine *New Times*. Citing the late starts of many IGY participants, the atypicality of meteorological phenomena since the opening of the study period on 1 July 1957, and the waste inherent in abandoning uncompleted antarctic programs, Y. Boulanger concluded his statement by saying: "We Soviet scientists are confident that the extension of the IGY and the antarctic program and broader international cooperation in these fields would be of inestimable value to science."

* * *

Data from the antarctic phase of the United States' IGY effort will be processed at two midwestern universities. Ohio State University will analyze glaciological information gathered at six IGY stations, and the University of Wisconsin will handle material from the fields of seismology and gravity. The two data-reduction centers, designated and supported by the National Science Foundation, will be staffed largely by personnel recently returned from Antarctica where they collected the data that will now be subjected to analysis.

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Another IGY project, the Dolphin Expedition, carried out by the Scripps Institution of Oceanography and the U.S. Fish and Wildlife Service, has mapped a new subsurface current of gigantic dimensions in the area of the intersection of longitude 140° W with the Equator. Flowing east along the Equator to the Gallapagos Islands, the "river" is calculated to be 3500 miles long, 250 miles wide, and 1000 feet deep, and to lie only 100 feet below the westward-flowing surface South Equatorial Current. Held to be comparable in importance with the discovery of the jet stream in the atmosphere, the new current, it is hoped, will be named in honor of Townsend Cromwell, who discovered it in 1952 while working for the Fish and Wildlife Service.

Soviet Education

Edward H. Litchfield, chairman of a group of American educators which has just completed a survey of higher education in the Soviet Union, recently issued a preliminary report on the findings of the group.

Two aspects of the report stand out, particularly when a comparison is made with American educational patterns: first, the general attitude of Soviet society toward higher education, and, second, the physical plant of the educational system.

There is, among policy makers and students in the Soviet Union, "an almost universal belief in the value of higher education." "Students . . . regard higher education as of tremendous importance. Two to three times as many apply as are accepted. Many now and 80 percent in a few years will be required to work in industry for two years before entering the university. Those who are finally admitted are expected to work from nine to ten hours each day six days a week plus home study on Sunday in many cases. In addition, they are expected to participate actively in scientific societies and sports clubs. . . .

"Industry releases its employes at full pay for more than 250 million man hours each year in order to permit the workers to do work in universities or in

engineering and other university-level institutions. At a time of some shortage of industrial workers, more than 800,000 are each permitted two full months of study with all expenses paid."

"The superior student is regarded as a 'hero,' not as a 'grind.'

"The government shows its deep commitment to higher education in many ways. Scholarships are large in amount and given to from 80 percent to 90 percent of the students so that virtually all of the superior men and women are able to attend. Salaries and perquisites for teaching and research personnel are among the highest in the nation with the consequence that scholarship attracts a very high percentage of the country's most able people."

Supporting the desire on the part of students for higher education is the government's willingness to pay the very high costs that are involved in money, in plant, and in human effort.

"The Minister of Education claims total plant development in the next five years for a resident student population of constant size will exceed one and one-half billion dollars."

"The state's investment in capital plant and equipment has been large and apparently will continue to be. At the most cautious appraisal of the ruble, at least $200 million have been invested in during the last nine years and construction is still under way."

"Further evidence of the seriousness of Soviet commitment is found in the size and extensiveness of library collections. While a definitive appraisal ought to be undertaken by specialists, it would nevertheless appear that, judged by the most conservative standards and making ample allowance for variations in terminology, the Moscow University library collection is one of the largest in the world. Its new capacity of 12.5 million volumes may well be the largest.

"The University of Leningrad claims 4.5 million volumes, and the large polytechnical institute in the same city is said to receive over 600 foreign periodicals. A relatively small university in Georgia with 4300 full-time students boasts of more than 1.5 million volumes. The University of Middle Asia in Tashkent, established after the Revolution, has but 4000 full-time and 1000 correspondence students, but already has accumulated better than a million volumes."

The report ends its evaluation of the positive side of Soviet higher education with this statement:

"The Soviet Government and its people have dedicated themselves to higher education to a degree which must inspire their allies and give very serious pause to any nation which finds itself in a competitive position."

Grants, Fellowships, and Awards

Cardiovascular research. Applications by research investigators for support of studies to be developed during the fiscal year beginning 1 July 1959 are now being accepted by the American Heart Association. The deadline for research fellowship applications and established investigatorships is *15 September 1958,* for grants-in-aid *1 November 1958.* Applications may be made in the following categories:

Awards for established investigatorships are made for periods of up to 5 years, ranging from $6500 to $8500 yearly for independent investigators.

Advanced research fellowships are awarded for 1 or 2 years to postdoctoral applicants who are not qualified to conduct independent research. The stipends range from $4600 to $6500 annually.

Grants-in-aid are made to experienced investigators to help underwrite the costs of specified projects, such as expenses for equipment, technical assistance, and supplies.

Further information and application forms may be obtained from the Assistant Medical Director for Research, American Heart Association, 44 E. 23 St., New York 10, N.Y.

General. Applications for the regular postdoctoral fellowships of the National Science Foundation will be accepted *through 2 September.* Fellowships will be awarded in the mathematical, physical, medical, biological, engineering, and other science fields, including anthropology, psychology (other than clinical), geography, certain interdisciplinary fields, and selected social science fields. Candidates must be citizens of the United States with special aptitude for advanced training and must hold the doctoral degree or have the equivalent in training or experience. The stipend is $3800 per year. A limited travel allowance, as well as tuition and fees will be paid. For further information and applications write to the National Academy of Sciences–National Research Council, 2101 Constitution Ave., N.W., Washington 25, D.C.

News Briefs

The Army has had its third success in recovering the nose cones of Jupiter missiles fired from Cape Canaveral Air Force test center. With the latest recovery of a full-sized cone, 17 July, the Army announced that a "satisfactory solution" had been found to the re-entry problem of such missiles. With the aid of a marker balloon, a small light, dye markers, and a radio transmitter, the cone was quickly found by Navy ships in the area and recovered by frogmen.

Nose cones, which shield a warhead from the heat built up by impact with the earth's atmosphere, have been designed along two general lines, the "heat sink" and "ablation" approaches. The sink type concentrates and contains the heat in a thick copper shield while at the same time slowing the speed of descent by the utilization of shock waves. The ablation system, which is believed to be the one employed in the most recently recovered cone, depends on the gradual peeling or burning off of a number of layers of thin, nonmetallic substances on the outside of the cone.

* * *

A trust fund to honor the late Gordon F. Ferris is being established at Stanford University. The purpose of the fund will be to promote interest and research in entomology by extending financial support to promising young students. Contributions may be made payable to the Gordon F. Ferris Memorial Fund and sent to: The General Secretary's Office, c/o Richard F. O'Brien, Stanford University, Stanford, Calif.

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The population of the world may rise to 4000 million or more by 1980 and to 6000 or 7000 million by the end of the century, according to a new United Nations study on future population trends. The mid-century world population is estimated at 2500 million. The report, entitled *The Future Growth of World Population,* was prepared by the Population Branch of the United Nations Bureau of Social Affairs.

Scientists in the News

SELMAN A. WAKSMAN will retire next month as director of the Rutgers University Institute of Microbiology, the organization at which he did his Nobel Prize winning work with antibiotics. He will be succeeded in that post by J. OLIVER LAMPEN, who is currently director of the division of biochemical research at the Squibb Institute for Medical Research.

Waksman, who was born in Russia, came to the United States in 1910 and entered Rutgers as an undergraduate a year later. He took his B.S. and M.S. there and his Ph.D. at the University of California. In 1918 he joined the faculty of Rutgers and has been a member of it in various capacities ever since.

The work which resulted in the discovery of streptomycin in 1943, the basis for the Nobel award, had its roots in the soil microbiology studies which Waksman began while he was a Rutgers undergraduate some 30 years before.

JAMES L. KASSNER, professor of chemistry at the University of Alabama School of Chemistry since 1929, has been appointed to the new Robert Ramsay