House Cuts Science Foundation Budget; Major Programs Endangered

On 20 April the House of Representatives approved a 1961 budget of $160 million for the National Science Foundation, reducing the Administration's proposal of $191,600,000 by $31,600,000 and cutting the foundation's original request of $214,835,000 by $54,385,000. Four major areas of support are seriously affected: basic research, reduced from the Administration's $78,800,000 to $70,283,000, a cut of $8,517,000; development of graduate research laboratories, reduced from $15 million to $2 million, a cut of $13 million; maintenance and operation of the National Radio Astronomy Observatory and the Kitt National Observatory, reduced from $5 million to $1,800,000, a cut of $3,200,000; and the dissemination of scientific information, reduced from $7,335,000 to $5,335,000, a cut of $2 million.

Some Effects

Despite growing recognition of the urgent need for more basic research, the House Appropriations Committee approved a budget that would eliminate the means of support for approximately 1000 advanced graduate students who would participate in such research. Even with the funds the President requested for basic research, the foundation would be able to support only 38 percent of the meritorious proposals that are received each year from more than 300 colleges.

Closely linked with the basic research program is the foundation's program to share with colleges and universities the very high cost of modernizing graduate research laboratories. At present, adequate laboratory facilities are not available in a majority of this country's institutions of higher education. The foundation launched a pilot matching-fund aid program last year, to which there was a vigorous response. The planned program will have to be radically curtailed if the present reduction from $15 million to $2 million is allowed to stand.

The appropriation that has been recommended for the two new national astronomical observatories, built at a cost of some $20 million, would provide only enough funds to continue the interim pre-operational support allowed in 1960. In 1961 major new instruments should be in full use, others should be tested, new programs should be launched and a new staff employed. One of the new programs that would have to be canceled would be that for the space telescope, which is expected to constitute one of the most significant advances in astronomy ever achieved.

Throughout the year much attention has been given, both nationally and internationally, to the ever-growing problem of dissemination of scientific information, of obvious fundamental importance. The development of more efficient electronic searching and retrieval techniques is essential if the research results are to be effectively utilized.

The National Science Foundation budget was included in the Independent Offices Appropriation bill (H.R. 11776), which received an over-all cut of approximately 3 percent. However, the foundation's appropriation was reduced by about 16.5 percent. The Senate will soon have an opportunity to modify the NSF budget reductions.

Promising Isotope with Short Half-Life Now Available

During the last 2 years the International Atomic Energy Agency has made special efforts to promote the production of calcium-47, which has a half-life of only 4.9 days, for use in medicine and radiology. Limited amounts of the isotope may now be obtained in England and the United States.

Because of the present method of production—the Ca^{46} (n, γ) Ca^{47} reaction—the isotope is unavoidably contaminated with calcium-45, which has the hazard-producing half-life of 164 days, prohibiting experiments on normal, healthy people. Work is now going on at Oak Ridge National Laboratory to increase the Ca^{46}/Ca^{44} ratio until the fraction of calcium-45 at pile-out time will be so low that it will not contribute to the radiation dosage.

Pure Samples Have Been Prepared

Laboratory samples of pure calcium-47 have been prepared both here and abroad—generally by means of fast neutrons or accelerated particles and a target, such as a separated titanium isotope. However, a spokesman for the Atomic Energy Commission explains that these samples are laboratory curiosities, for the methods used are far too expensive for routine production purposes.

Meanwhile, calcium-47 in its present form is considered satisfactory for diagnostic and research work in certain special patients and for agricultural and other applications. The International Atomic Energy Agency is now developing a research contract program to help researchers obtain the isotope and to coordinate further work on applications as well as work on the development of new production methods. Requests for calcium-47 should be sent to the United Kingdom Atomic Energy Authority's Radiochemical Centre, Amersham, Bucks, England, or to the Atomic Energy Commission's Oak Ridge National Laboratory, Oak Ridge, Tenn.

Grants, Fellowships, and Awards

Heart. Applications from research investigators for support of studies to be conducted during the fiscal year beginning 1 July 1961 are now being accepted by the American Heart Association. The deadline for applying for research fellowships and established investigatorships is *15 September.* Applications for grants-in-aid must be received by *1 November.*

Stipends in all categories have been increased this year, on the basis of the rising cost of living. Further information and application forms regarding research awards may be obtained from the Assistant Medical Director for Research, American Heart Association, 44 E. 23 St., New York 10, N.Y.

NATO institute travel. Under the sponsorship of the North Atlantic Treaty Organization, a number of Advanced Study Institutes will be held in NATO countries during the summer of 1960. These institutes, covering advanced specialized fields, vary in length from 2 weeks to about 2 months. The National Science Foundation has announced that a limited number of travel grants, including only transportation costs, will be available to U.S. citizens who have been accepted by the institute directors.

The 1960 summer program of Advanced Study Institutes will include the following.

"Elementary particles," Les Houches, France (director, Professor Cecile DeWitt, Department of Physics, Univer-

sity of North Carolina, Chapel Hill).

"Physics of microwaves," "Biophysics," and "Nuclear processes at low energies," all in Varenna, Italy (director, Professor G. Polvani, Societa Italiana di Fisica, Via Saldini 50, Milano, Italy).

"Thermal vibration in solids: specific heat and x-ray," Corfu, Greece (director, Professor Kessar Alexopoulos, Solonos Str. 104, Athens, Greece).

"Structure and evolution of the galactic system," Breukelen, Netherlands (director, Professor J. N. Oort, University of Leiden, Leiden, the Netherlands).

"Constituents of proteins," Göttingen, Germany (director, Dr. H. Stegemann, Medizinische Forschungsanstalt, Die Max Planck Gesellschaft, Bunsen Strasse 10, Göttingen, Germany).

"Physics of plasma," Risø, Denmark (director, Professor T. Bjerge, Danish Atomic Energy Commission, Risø Research Establishment, Risø, Denmark).

"Modern methods of structure determination," Manchester, England (director, Professor H. S. Lipson, Department of Physics, College of Science and Technology, Manchester 1, England).

"High-energy physics," Edinburgh, Scotland (director, Professor M. Kemmer, Tait Institute of Mathematical Physics, 1, Roxburgh St., Edinburgh 8, Scotland).

"Recent advances in food science," Glasgow, Scotland (director, Professor J. Hawthorn, Department of Food Science, Royal College of Science and Technology, 1, Horslethill Rd., Glasgow, W.2, Scotland).

"Fuel elements for water-cooled power reactors," Kjeller, Norway (director, Dr. Gunnar Randers, Institutt for Atomenergi, P.O. Box 175, Lilleström, Norway).

"Physics of upper atmosphere," Corfu, Greece (director, Professor M. Anastassiadis, Department of Physics, University of Athens, Athens, Greece).

Scientists in the News

Guerdon D. Nichols, dean of the College of Arts and Sciences at the University of Arkansas, has received the third annual Alexander Meiklejohn Award for Academic Freedom of the American Association of University Professors for having publicly led opposition to the Arkansas requirement that teachers employed by the state disclose their organizational affiliations. An Arkansas statute, known as "Act 10," requires every teacher to file a sworn affidavit listing the organizations to which he has belonged or contributed for the past 5 years. Presumably aimed at members of the National Association for the Advancement of Colored People, Act 10 applies to membership in all types of organizations—political, religious, social, and professional.

Addressing members of Phi Beta Kappa at the University of Arkansas a year ago, Nichols denounced the act as discriminating against the teaching profession and as an invasion of individual privacy. "But perhaps the greatest objection to Act 10," he declared, "is the contribution it is making to the atmosphere of fear and insecurity, and the consequent threat to academic freedom and the proper functioning of a true university."

Objecting to the act on principle, a number of Arkansas faculty members have refused to sign the affidavit and consequently have been compelled to leave the university. Some have been aided in finding new posts by the AAUP, and others are receiving financial support from the association. Review of Act 10 by the United States Supreme Court is scheduled.

Among the new fellows of the Royal Society are the following from the United States and Canada:

R. H. Dalitz, professor of physics in the University of Chicago's Enrico Fermi Institute for Nuclear Studies, distinguished for his numerous contributions to nuclear theory and the physics of elementary particles.

M. J. S. Dewar, professor of chemistry at the University of Chicago, distinguished for his studies of chemical structure and for his contributions to the application of quantum theory to organic chemistry.

D. K. C. MacDonald, principal research officer, Division of Pure Physics, National Research Council of Canada, Ottawa, distinguished for his investigations on the thermal and electrical properties of metals, with particular reference to the study of electron interactions.

Francis Birch, Sturgis Hooper professor at Harvard University, has received the William Bowie Medal of the American Geophysical Union for his 30 years of distinguished contributions to geophysical research. He was honored for having shown particular competence in engineering, in physical science, and in geology, and for "having brought the full power of these disciplines to bear" on his studies of the properties of rocks under the extreme conditions of heat and pressure that exist within the mantle of the earth.

The gold-headed cane of the American Association of Pathologists and Bacteriologists has been presented to **Eugene L. Opie**, 87-year-old pathologist. Although officially retired in 1941, Opie works almost daily on liver cancer research at the Rockefeller Institute for Medical Research, New York.

Dael Wolfle, executive officer of the AAAS, will deliver the Bingham Lecture at Columbia University on 10 May; he will discuss "Diversity of Talent." Wolfle was selected by a special committee of the American Psychological Association, sponsor of the annual honorary lectureship, in recognition of his "unique contributions to the study of human capacities and abilities and the manpower problem."

John B. Youmans, technical director of research in the Office of the Army Surgeon General, will receive the Groedel Medal of the American College of Cardiology on 27 May. As recipient of the award, Youmans will address the college on the humanities in medicine.

John H. Lupinski has been appointed physical organic chemist at the General Electric Research Laboratory, Schenectady, N.Y.

Fifteen awards for outstanding contributions to chemistry and chemical engineering were presented on 9 April in Cleveland at a general assembly of the American Chemical Society's 137th national meeting.

Wallace R. Brode, scientific adviser to the Secretary of State, received the Priestley Medal for distinguished services to chemistry. Brode—on leave of absence from his post as associate director of the National Bureau of Standards—is an authority on the scientific requirements for national defense and the international exchange of scientific information.

The Garvan Medal, recognizing outstanding service to chemistry by a woman chemist, went to **Mary L. Caldwell**, professor emeritus of chemistry at Columbia University and an internationally