Foreign Research: Reuss Criticizes Projects Supported by the United States

Ridiculing federally supported scientific projects is an ancient congressional pastime based on the fact that, ridiculous or not, scientific inquiry often can be made to look ridiculous when cast in lay terms. The practice invariably brings press notice and gives the congressman the politically desirable image of watchdog over federal spending.

Last month, Representative Henry S. Reuss (D–Wis.) made his debut in the business, charging, in a press release, that "despite our balance of payments difficulties, the United States government is adding to the dollar drain by paying foreign scientists some $70 million in support of foreign research projects."

Among the projects, the congressman said, was "$11,000 given this year (total support to date $78,000) by the Office of Naval Research to a Canadian scientist to continue his investigations of the smells of ocean fish." The Canadian, an inquiry reveals, is working on shark repellents for the Navy, and is one of the few, if not the only, researcher conducting comprehensive studies of fish scents. A member of Reuss's staff said the projects were selected from Science Information Exchange listings on the basis of "whether it seemed the work had to be done out of the country," and that no further effort was made to obtain information about the research.

Also assailed by Reuss was $8000 given this year (total support to date, $40,000) by the Army to Australian scientists to "continue their study of perspiration characteristics of Australian aborigines." The Army explained, in response to an inquiry from *Science*, that the study is aimed at determining how aborigines survive and work under extreme environmental conditions, a subject which may have some value for the comfort or survival of troops in harsh climates.

Reuss also raised questions about U.S. support for Lwoff, Monod, and Jacob, the French recipients of last year's Nobel prize for their work in genetic control of enzyme and virus synthesis. Starting in 1949, for two periods totaling approximately 10 years, the three received about $200,000 in support from the National Institutes of Health. Following Reuss's criticism, the private response of NIH officials was that they must be doing something right if 15 years ago they selected for support a team that went on to win the Nobel prize. They point out that a generation of American researchers was trained under the French, and that, for $200,000, the U.S. has won vast affection from the French scientific community at a time when political relations between the two countries have been strained.

The Reuss press release said that, during a major period of support for the French team, "France was prospering and showing large payments surpluses, while the United States was making a determined effort to cut all unnecessary spending abroad. In these circumstances," the congressman was quoted as saying, "surely France should support the research of its scientists." In pure economic terms, the point is a sound one, and the administration has been clamping down on support for foreign scientists. Harsher criteria apply to foreign research proposals, and there is a general rule that work will be supported only if it is of high scientific value and the competence and interest are not available in the United States. However, it is hard to see why NIH should get anything but warm praise for its triumph in France.

As for the $70 million that Reuss charged is spent abroad for scientific

NIH: Freeze on Awards Ends, but Prospect Is for Funds Squeeze

Some uncertainties about National Institutes of Health support of research (*Science*, 31 December) have been cleared away since the first of the year, but the developments will not bring cheer to all aspirants for NIH support.

An order delaying awards of grants recommended in the November meetings of the NIH advisory councils has been rescinded, and notices of awards made with funds from the current budget have been sent out.

The NIH decision to hold up the awards seems to have been prompted by two main considerations: (i) the necessity of shifting agency funds to cover costs of the federal pay raise which went into effect in October and (ii) the advisability of reviewing agency plans in light of the prospective tightening of budgetary reins because of the rising costs of the Vietnam war and Great Society legislation.

The total of funds to be requested for NIH for the fiscal year 1967, which begins 1 July, remains an enigma wrapped in the President's budget. There are signs, nevertheless, that the agency will be allocated a sum very close to this year's billion-dollar budget, with perhaps some cuts in construction funds. Many NIH programs have built-in cost-escalation factors, however, and no increase in money would mean a decrease in activity. The freeze at NIH is likely, therefore, to be followed by a squeeze, particularly affecting research and training programs which are newly proposed or up for extension this year.

Conversations with investigators familiar with NIH-supported work in several universities indicate that the word is already out on the cutting off of "lower-priority" proposals, which in other years probably would have been financed. The greatest visible effect is likely to be on training programs financed by the National Institute of General Medical Sciences and the categorical institutes. Departments in bigger, richer universities and medical schools, it is observed, may be able to absorb the reductions by making shifts in funds and assignments. But in smaller institutions with slimmer resources, the implications for graduate students could be serious.

The President's budget, it must be remembered, is a request for funds. Congress does the appropriating and in the past has been generous to NIH. It remains to be seen how Congress will react in a year when military demands are probably a greater stress factor in the budget process than at any time since Korea.

—JOHN WALSH

research, examination shows that $13 million was spent by the Defense Department for aircraft, weapons, and equipment, including a tank that is being developed in cooperation with West Germany and a short-takeoff aircraft developed in cooperation with Great Britain; that NASA spent $6 million for tracking stations; and that the AEC spent $3 million for long-term medical follow-up of radiation effects in Hiroshima. Another $11 million was in counterpart funds from agricultural sales abroad, and $7 million went abroad but came back to the U.S. for purchase of equipment. That leaves $30 million in hard cash going abroad—a large sum, but can it be reasonably argued that dollar-drain considerations, rather than the effects in terms of scientific results and foreign goodwill, should dominate the use of this money?

Reuss's first press release was followed last week by a statement listing four additional research projects and charging that "four major agencies awarded over $25 million in research contracts to foreign scientists for research outside the United States." The congressman was quoted as saying, "I love science and I love the world, but I think prudence is in order until our balance of payments are under control."

The congressman issued the statements in his capacity as chairman of the Research and Technical Programs Subcommittee of the House Government Operations Committee, which opened hearings last week on the allocation of federal funds for research and development.—D.S.G.

Earthquake Prediction: ESSA and USGS Vie for Leadership

The Environmental Science Services Administration (ESSA), an ambitious new agency established last July (*Science*, 11 June 1965), is receiving questioning glances, and sometimes anxious ones, from the U.S. Geological Survey (USGS). ESSA, an agency of the Department of Commerce, and USGS, an agency of the Department of the Interior, are rivals for the management of the earthquake prediction program recommended in October by a panel of distinguished scientists.

The stakes could be large. Although no program has yet been defined and approved by the Johnson administration, it is difficult to conceive of a major earthquake prediction effort costing less than $100 million. This is big money for agencies such as ESSA and USGS, which for the current fiscal year are receiving, in direct federal appropriations, $144.7 million and $72.7 million, respectively.

President Johnson has said that ESSA will "provide a single national focus to describe, understand, and predict the state of the oceans, the state of the upper and lower atmosphere, and the size and shape of the earth."

Just how this mandate should be interpreted is likely to be the subject of a good many man-years of disputation and debate. Interagency rivalries in the earth sciences, oceanography, and perhaps other fields, such as weather modification, can be expected. Federal interest in science-oriented programs is growing as productive scientific activity increases. But, because some programs do not fit easily into conventional agency-mission categories, they often are up for grabs.

ESSA was formed by consolidating three Department of Commerce activities—the Weather Bureau, the Coast and Geodetic Survey (CGS), and the Central Radio Propagation Laboratory (CRPL). Though now under consolidated management, the Weather Bureau and CGS each continues to function under its own name. ESSA also has an Environmental Data Service, a National Environmental Satellite Center, and the Institutes for Environmental Research, made up of the Institute for Telecommunication Sciences and Aeronomy (formerly CRPL), the Institute for Atmospheric Sciences, the Institute for Oceanography, and the Institute for Earth Sciences.

The Administrator of ESSA is Robert M. White, former chief of the Weather Bureau, who is highly regarded among meteorologists. A prime mover in ESSA's formation was the Commerce Department's Assistant Secretary for Science and Technology, J. Herbert Hollomon, a dynamic official who sets a fast pace for science advisers and administrators in other government departments.

If the Johnson administration decides to undertake an earthquake prediction program, Hollomon wants ESSA to manage it, though he says no campaigning is being done to get ESSA the job. The need for a prediction system was pointed up by the Alaska earthquake of 1964. Donald F. Hornig, President Johnson's science adviser and director of the Office of Science and Technology, appointed a panel headed by Frank Press, geophysicist and now a departmental chairman at M.I.T., to study the problem.

The Press committee issued its report in October (*Science*, 15 October 1965). It recommended a $137-million program of earthquake research and earthquake engineering, which would require 10 years to complete. Although conceding that success was not assured, the panel expressed the belief that its proposal offered a fair chance of developing an earthquake warning system. The effort would be focused on Alaska and California, the nation's two most seismic regions. Instrumentation would be placed in fault zones, and field studies would be conducted. More than half the $137 million would be spent on instrumentation.

Hornig's office still has the panel's recommendations under study, but a decision on the kind of program to be undertaken is expected within a few months. Although budgetary pressures generated by the Vietnam war make the time unfavorable for the launching of costly new programs, some initiatives in earthquake research are likely. The first year's outlay under the Press proposal would be comparatively modest—about $13 million, with $7.2 million for instrumentation. Earthquake research already has been stepped up by both ESSA and USGS, in part by the reprogramming of available funds.

If the White House and Congress authorize the initiation of a large earth-