News of Science

President and Congress Still at Loggerheads on Education

On 7 July President Eisenhower vetoed the $1.4 billion omnibus housing bill (S.57), declaring it to be "so excessive in the spending it proposes, and so defective in other respects, that it would do far more damage than good." Among the provisons of the vetoed bill was a loan fund of $62.5 million to cover construction or rehabilitation of college classrooms and laboratories and purchase of new equipment.

The veto, according to observers, reflects the impasse which Congress and the Administration have reached over the government's role in education. The result, despite attempts at accommodation on the part of congressional leaders, is inaction.

The Administration wants a bill that will help colleges secure loans from private sources. The vetoed bill provided for the financing of the new program through the familiar practice of authorizing colleges to borrow funds for housing construction from the government at federal interest rates. This, the Administration feels, would be less sound fiscally than its own proposal.

Under the Administration proposal, the colleges would sell bonds to private investors to raise funds for construction. The government would guarantee payment of interest and principal on the bonds and would provide debt-retirement assistance in the form of commitments to pay 25 percent of the principal on long-term bonds issued by the colleges to finance construction of science and engineering facilities. Only such a bill, says Arthur Flemming, Secretary of Health, Education, and Welfare, has a chance of presidential approval.

Aid for Local Schools

Differences in administration and congressional thinking are evident in other areas of education as well. In the area of public school support, Congress has come up with the $4.4 billion Murray-Metcalf bill, which would authorize outright grants to the schools for 4 years on a "nonmatching" basis, while the Administration proposes that the government help needy school districts amortize bonds issued locally by the districts. Again, according to observers, the fundamental issue behind the education controversy is fiscal. Should the government *give* to help schools, and thereby spend to a degree the current Administration believes dangerous, or should it *facilitate* fund-raising action by school districts?

In the mind of administration officials such as Flemming, there is no question but that the second alternative is the better one. Faced with this conviction, congressional leaders such as Lyndon Johnson, trying to get some action on the critical education programs, have trimmed fund requests in an attempt to placate the President. To date, this kind of accommodation has resulted in considerable loss to the congressional leadership. Bills on which concessions have been made have not been signed; the congressional leaders, particularly Johnson and Rayburn, have come under attack by Democratic spokesmen such as Paul Butler, National Democratic Committee chairman.

The only possible eventual gain for the Democrats lies in the value of administration rebuffs as campaign issues in the coming election. Democrats can say that, despite their efforts to meet the Administration's requests, their "reasonable" proposals were turned down. Thus, if a paralysis on important legislation results from the conflict between a Republican president and a Democratic congress, the responsibility for it, the Democrats can claim, rests with the President.

Defense Education Act

If the new education programs are running aground in the storm between the Administration and the Congress, it can be said at least that an established program, set up under the National Defense Education Act of 1958, is proceeding well. The various provisions of this act, which was generally regarded last year as a foot-in-the-door for federal aid to education (critics said it was the camel's nose under the tent for federal control of education) are now being implemented. Recently, President Eisenhower signed a supplemental appropriation bill which allocates $4.5 million for graduate fellowships under the 1958 act. This action brought to a total of 1000 the number of fellowships authorized for the first year of the program. The graduate fellowships are designed to increase the supply of college teachers and scholars and to expand graduate education in all fields. Under the provisions of the NDEA, 1500 additional fellowships may be granted for each of the three academic years following the one that begins in September. The fellowships, which run for 3 years, carry stipends of $2000, $2200, and $2400 for the first, second, and third years of study, respectively. Under the act, applicants who plan to go into teaching must be given preference.

In the same bill, appropriation of $30.5 million for student loans was authorized. Under this provision of the National Defense Education Act, undergraduate students can borrow up to $1000 a year to defray the costs of education. One year after the student has completed full-time study, he must begin repaying the loan and the 3 percent interest on it. Student borrowers who, on graduating, teach in public elementary and secondary schools will be eligible for cancellation of up to 50 percent of the loan if they teach full-time for at least 5 years. As in the fellowship program, special consideration in granting loans must be given to students who plan to teach.

To evaluate requests for such student loans, the Office of Education set up on 9 July a consultant panel of college administrators. This panel will study the requests for funds made by colleges and universities. Under the NDEA, loans are not granted directly by the government. Rather, funds are allotted to educational institutions, which then make the actual loans to qualified students.

Implementing another provision of the Defense Education Act, the Office of Education has recently issued the first federal loan to strengthen the science-teaching program of private nonprofit schools. The Tennessee Military Institute, the first of 186 schools to receive such a loan, borrowed $7500 to purchase

equipment for science teaching. To date, applications for loans from schools in this category total $2,431,000. Private schools which are operated for profit are not eligible for loans under the act.

Exotic Language Programs

Under other provisions of the act, the Office of Education has completed arrangements to open 19 centers for instruction in languages rarely taught in this country. Persian, Singhalese, and Swahili are among the languages to be offered next fall at some of the new centers. The instruction offered at the various centers will not be limited to languages. Courses on economic conditions and cultures of the countries or areas where these languages are spoken will also be offered.

The centers will be located at various universities throughout the country and operated by the universities. Some of the centers will offer instruction in only one language; the center at the University of Kansas, for example, will offer only Chinese. The two centers at Harvard will offer seven languages—Chinese, Korean, Tibetan, Arabic, Persian, Turkish, and modern Hebrew. The center at the University of Chicago will offer five. Other languages offered by one or more of the 19 centers for the coming academic year include Russian, Hindustani, Japanese, Portuguese, Bengali, Burmese, Finnish, Hungarian, Polish, Turkish, Vietnamese, and Indonesian. Among the most rarely taught languages are Gujerati and Marathi (spoken in South Asia), Yoruba (spoken in Africa), 25 Uralic-Altaic languages (spoken throughout Asia and Eastern Europe), Khalkha (spoken in Outer Mongolia), Thai, and Telugu (spoken in India).

Computers and Automatic Stations To Speed Weather Forecasting

Under a contract recently awarded, work will start on the development of a new weather forecasting system that will employ computers and automatic observation stations. The new system, which is being sponsored by the Air Force, the Federal Aviation Agency, and the Weather Bureau, is expected to reduce by two-thirds the interval between observation and forecast. Such a reduction, if achieved, would result in much more accurate predictions of rapidly changing weather conditions.

The saving in time will be accomplished primarily by the substitution of automatic devices for human observers, telegraph operators, and forecasters. Data on pressure, temperature, humidity, and wind direction, which are now collected largely by human observers, will be gathered by automatic weather stations. These data will be transmitted by telegraph printers operating at 600 words a minute—about ten times the speed of the human operators in the present network. The system will be controlled by a large electronic computer, which will signal each station when to report. The computer, replacing the human forecaster, will process the data and transmit its prediction to automatic display devices in airport control towers, pilot briefing rooms, and local Weather Bureau offices.

This system, which will be virtually automatic, is expected to reduce the interval between observation and forecast to 2 hours or less. With the present network, this interval is sometimes as long as 6 hours. It is expected that use of the automatic system will eventually reduce the interval to 20 minutes.

Test Network Set for 1963

A test network, employing the new system, is scheduled to go into operation in the northeastern United States by 1963. Ten stations, eight of them major civilian or military airports, will be linked together in the test net. The stations are: L. G. Hanscom Field at Bedford, Mass.; Westover Air Force Base at Chicopee, Mass.; McGuire Air Force Base at Wrightstown, N.J.; New York International Airport (Idlewild); Suffolk County Air Force Base at Westhampton, N.Y.; the Atlantic City Weather Bureau; Washington National Airport; Oceana Naval Air Station at Norfolk, Va.; Teterboro (N.J.) Airport; and the National Meteorological Center in Suitland, Md.

Salt Mine Sought for Nonnuclear Detection Shot

The Atomic Energy Commission is negotiating with the Carey Salt Company for use of the company's mine near Winnfield, La., for detonation of several nonnuclear, high-explosive charges. The purpose of the firings is to check the seismic records of such explosions. It is expected that there will be about ten detonations of charges ranging up to 5 tons in size.

As was pointed out in the summary of the "Findings of the Panel on Seismic Improvement," which was released on 12 June, it is possible that seismic signals from underground explosions could be reduced through decoupling techniques by a factor of 10 or more. (Theoretically, the signals might be reduced by a much greater factor than this.) In view of its importance to the current Geneva discussions, it is hoped that the results of the high-explosive tests in the Carey salt mine will be of help in evaluating this theory.

Instruments will be placed at various locations within the mine and on the surface relatively close to the mine. The U.S. Coast and Geodetic Survey will assist the Atomic Energy Commission in placing and operating the instruments, and in analyzing the signals received. It is expected that the firings will commence late this summer. Preparation for, and conduct of, the work will be the responsibility of the test manager of the Atomic Energy Commission's Albuquerque Operations Office; the project will be under the technical direction of the Lawrence Radiation Laboratory, operated for the Atomic Energy Commission by the University of California.

AAAS To Hold International Oceanographic Congress

The AAAS will hold another special meeting this year, the first International Oceanographic Congress, according to Dael Wolfle, executive officer. UNESCO and the Special Committee on Oceanic Research of the International Council of Scientific Unions are cosponsoring the meeting, which will be held at the United Nations headquarters in New York from 30 August through 11 September. Participants are expected from all parts of the world. Oceanographic vessels from France, the U.S.S.R., and the United States will be in New York harbor and may be visited by those attending the congress.

The AAAS committee, consisting of Mary Sears (chairman), Gustaf Arrhenius, John Cushing, Fritz Koczy, Gordon G. Lill, George S. Myers, Roger Revelle, Henry M. Stommel, and Lionel A. Walford, has been at work for over a year on the arrangements and has planned an excellent and very full program. This will be the first full-fledged oceanographic congress ever to be held and will bring together both biological and physical scientists interested in prob-