ing the question of a tie between Science Service and AAAS is an obvious conflict of interest on the part of some of the principals involved in the discussions. Spilhaus, who seems to be the chief advocate of the idea that the AAAS should help rescue Science Service, is on the board of Science Service and consequently must be considered at least partially responsible for whatever problems that organization may be having. He is thus in the position of asking one of his organizations (AAAS) to bail out another (Science Service). Similarly, Seaborg, the president of Science Service, although he is not yet on the board of AAAS, is about to become a candidate for the presidency-elect of AAAS. If the merger question is not resolved quickly, he, too, may end up representing two organizations with possibly conflicting interests. The dilemma is one that is not altogether unusual in the clubby atmosphere of the high councils of science, but hopefully the participants in the current negotiations will come up with a solution that serves the best interests of both organizations involved, as well as the public they serve.—PHILIP M. BOFFEY

Foreign Aid: Reorganization Should Further Abet Research

The American foreign aid program with its history of frequent overhauls faces what could be its most drastic reorganization. Apparently in store for the program is separation of the loan and technical assistance functions now combined in the Agency for International Development (AID). The split-up of AID would come at a time when there are signs that the chronic research deficiency in the aid program might be remedied and with a little luck the reorganization should enhance the possibility.

An Administration message proposing the reshaping of the foreign assistance program has been anticipated since March and reportedly was ready for transmission to Congress in early August, but a decision was made to hold up the message until the House of Representatives returned from its 3½-week pre-Labor Day recess. There were rumors that a rearguard action by AID bureaucrats seeking to prevent the breakup of the agency had delayed the message and also that a patronage dispute between Senator Jacob K. Javits (R–N.Y.) and the White House over appointment of New Yorkers to some newly created AID posts had a retarding effect. Most close observers seem to agree that heavy pressure of other business simply caused the AID message to be bypassed, and they expect it to be sent to Congress this month.

The Administration proposals are said to follow in broad outline the recommendations in the report* by a Task Force on International Development appointed by President Nixon and chaired by Rudolph A. Peterson, president of the Bank of America. The task force was created in September 1969 to look at the whole range of this country's foreign economic and military assistance programs and trade and investment relations with developing countries.

The President's message on foreign aid was released at noon on Tuesday as Science *went to press. The message prescribed a reorganization of the aid program along the general lines discussed in this article.*

The group takes the view that, after a quarter of a century of foreign aid, it is desirable to make clearer separations of the three main categories of American foreign aid: (i) military assistance, (ii) welfare and emergency relief, and (iii) development assistance. The total budget for foreign aid in fiscal year 1969 was $6.5 billion, with some $3.4 billion in the category of military aid and other kinds of "security" assistance; $370 million in welfare and emergency relief; and $2.7 billion in development assistance. Development aid has followed a steadily downward trend in recent years, and the task force asks a reversal of this trend.

In administering development aid the task force urges that the United States seek to make development a "truly international effort," working in concert with other industrialized nations now able to mount substantial foreign aid efforts and also channeling more U.S. aid funds through international agencies. In U.S. bilateral programs the task force asks the government to rely more heavily on American private organizations.

A major implication of the Peterson report is that the United States should move away from an aid program built around AID "missions" involving large numbers of American specialists and administrators working abroad. If the report's recommendations are followed the Administration will be confronted with the question of what to do about the sizable development operations now in progress, which do not seem to fit into the Peterson blueprint, and about the AID employees and contract workers manning these programs. Some observers predict that the existing aid structure may be very difficult to change.

In its main recommendations, the task force concurs with the views of several recent study groups on foreign aid, including an international committee headed by former Canadian Prime Minister Lester Pearson and also a group headed by John A. Hannah, now AID administrator. Hannah, who was president of Michigan State University when he chaired a committee scrutinizing the technical assistance program, is said to have cooled somewhat in his ardor to see the AID development loan and technical assistance functions separated, but it appears that he will be expected to preside at the dismemberment of his own agency.

To replace AID, the Peterson task force envisions four institutions dealing with development problems. The Peterson groups sees a future for the Overseas Private Investment Corporation (OPIC) created last winter by Congress to mobilize participation of U.S. private capital in development. OPIC would administer a broadened investment guarantee program and a small loan fund and would handle such related activities as preinvestment survey work.

The task force also favors creation of a U.S. Industrial Development Council headed by a presidential appointee. The council's role is left rather nebulous in the report, but it would apparently be expected to pro-

* *U.S. Foreign Assistance in the 1970's: A New Approach.* Available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. The price is 30 cents.

mote policies on trade, investment, and finance which would be favorable to development.

Under the Peterson report formula, AID's principal heirs would be a new U.S. International Development Bank and a U.S. International Development Institute. The bank would make capital and technical assistance loans for "selected programs of special interest to the United States" and would also support cooperative programs worked out by developing countries and international agencies. The bank would have authority to borrow in the public money market, but its government backing would permit it to set terms appropriate to development financing.

The new development institute would administer technical assistance programs not directly linked to projects financed by the bank; its research and training objectives are outlined in the section of the Peterson report section that says the institute should ". . . seek new breakthroughs in the application of science and technology to resources and processes critical to the developing nations. The Institute would concentrate on research, training, population problems, and social and civic development. It would work largely through private organizations and would rely on highly skilled scientific and professional personnel. It would seek to multiply this corps of U.S. talent and experience by supporting local training and research institutions. The Institute would be managed by a full-time director and a mixed public-private board of trustees."

This prescription by the task force sets forth a range of R & D activities which AID has aspired to but has never achieved, in part because of the historical and political context in which the aid program developed.

In the early postwar period of aid to European countries and Japan, a combination of loans and technical assistance proved adequate to spur the reconstruction of war-damaged economies. No serious research program was necessary to make U.S. aid more effective. In the next phase, a large flow of American foreign aid funds went to less developed countries on the peripheries of the Soviet Union, such as Greece, Turkey, and Iran. Foreign aid in this era was implicitly connected to the U.S. containment policies, and, despite the shift in the nature of the problems facing the aid program, the aid mechanisms created for dealing with industrialized nations were not extensively modified and not much serious research was undertaken.

In the middle and late 1950's, as the focus of the American aid effort shifted to the underdeveloped nations in Asia, Africa, and Latin America, it became clear that economic development was being hindered by deficiencies in health and education and by the weakness of public institutions in general and that development would be a complex, long-term undertaking.

After Sputnik, most federal agencies sought to improve their efforts at applying science and technology to their problems and AID was no exception. A knowledgeable group of advisers, many of them from outside government, urged that AID establish a centralized, well-financed research office which could initiate and finance research activities and serve as a link with universities, foundations, and private industry and with other government agencies.

The idea was championed at the beginning of the Kennedy Administration by Presidential science adviser Jerome Wiesner and was incorporated in the new AID organization which was the Kennedy incarnation of the aid program. Despite official approval, several things conspired to cause the research office to come a cropper in its first year. There was a certain indifference to the research effort among AID's loan-oriented top management and a hostility from lesser bureaucrats who saw research as a competitor for funds and status. In the research community at large, research on development problems was not very fashionable and strong research proposals did not pour in.

The Administration was determined to press ahead, however, and a staff for the research office was put together hastily, a sizable chunk of funds was allocated late in the year, and a number of grants rushed through. The upshot (*Science*, 17 May 1963) was a censorious report on the research program by a House committee, which embarrassed everybody connected with the effort and severely set back research in AID. The research office was really a victim of too much too soon.

Under a new AID administrator, David E. Bell, a moderately successful rehabilitation effort for research was carried out. First Joachim Weyl, former chief scientist at the Office of Naval Research, and then Albert H. Moseman, who had been serving as head of the Rockefeller Foundation's agricultural research program, were

David Sworn in as Top Science Aide

President Nixon officiated at the swearing in of his new science adviser, Edward E. David, Jr., on 14 September, and lauded him as a champion of both basic and applied research. Noting that David, executive director of communications system research at Bell Labs, had been active in research on aircraft antihijack devices, the President said that those who blame science for the problems produced by aviation, might also consider that without science, there would be no antihijack devices. Despite the fact that he is a "very practical man," the President said, David also has "a deep commitment to basic research." To which Nixon added, "Benjamin Franklin, when a balloon was flown, was asked, 'What good is it?' And Franklin replied," the President continued, " 'What good is a baby?' "

In attendance at the White House Rose Garden ceremony was the President's Science Advisory Committee, which, according to custom, elected David as its chairman. The Committee subsequently met with the President for about an hour.

Earlier in the day, David appeared before the Senate Labor and Public Works Committee to be confirmed as director of the Office of Science and Technology, Chairman Ralph Yarborough, of Texas, after having greeted him as "David Edward," first took up the nomination of Raymond L. Bisplinghoff as deputy director of the National Science Foundation. Among other things, Yarborough pointed out, Bisplinghoff was "professor of astronomics" at M.I.T. Senator Jacob Javits, of New York, was the only other member present, and he left after a few minutes. Virtually the only questions asked of the two nominees during the 20-minute hearing related to possible conflicts of interest, and these questions were few and friendly.—D.S.G.

NEWS IN BRIEF

● **MICHIGAN POLLUTERS ON NOTICE**: Michigan Governor William G. Milliken has signed a law permitting any resident to file suit to protect the air, water, and other natural resources from being polluted by industry, state agencies, or individual citizens. The circuit courts will be able to direct government units to tighten pollution standards, as well as grant injunctions and impose conditions to stop pollution. The law will become effective on 1 October.

● **SACCHARIN LABELED SAFE**: A special panel of the National Academy of Sciences—National Research Council has concluded that "on the basis of available information, the present and projected usage of saccharin in the United States does not pose a hazard." The NAS-NRC study was requested by the Food and Drug Administration after a University of Wisconsin researcher found that saccharin injected into the bladders of rats caused cancer. The panel recommended that further studies be conducted to confirm the findings of safety and to extend the evidence over longer periods of exposure.

● **GOVERNOR'S SCIENCE COUNCIL**: John E. Mock, director of the Georgia Science and Technology Commission, has been elected chairman of the newly created National Governors' Council on Science and Technology at its first meeting late in July. The Council will report to the National Governors' Conference on means of applying science and technology to social and economic problems at the state level.

● **STATE R&D**: State agencies spent $136 million in fiscal year 1967 and $159 million in fiscal year 1968 for research, development, and supporting plant, according to a National Science Foundation survey. The survey, to be published fully later this year, showed that the funds were provided about equally by state and federal agencies. Expenditures included: 40 percent for R&D in health care; 25 percent for natural resources; 15 percent for highways; 10 percent for education; 2 percent for agriculture; 2 percent for police and corrections; and 1 percent for public welfare. There has been an average annual 20-percent increase since 1964.

brought in to pick up the pieces. Observers say that the AID research effort made modest gains. But as a result of the furor Congress had clamped a $6 million dollar a year ceiling on research funds for the central office and, perhaps even more serious, a cadre of competent AID research administrators had been dispersed through the agency so that the research effort lacked a "critical mass." In the academic community there was a lingering coolness toward research on development problems and some cynicism about AID's intentions ever to mount a serious research program. Nevertheless, research in AID seemed to be making a recovery when the agency's overall budget began to shrink, in part as a result of the Vietnam war funds squeeze.

Despite AID's declining budget a somewhat more hopeful chapter for research opened with the creation of a separate Technical Assistance Bureau and the appointment a year ago by President Nixon of Joel Bernstein to head the bureau with the title of assistant administrator.

Within the bureau is a new office of science and technology which in many respects represents a revival of the central research office. Director of the new office is Glenn E. Schweitzer, a foreign service officer with a master's degree from Caltech who was the first U.S. scientific attaché in Moscow, from 1963 to 1966.

The new office of science and technology has a broad commission but a limited budget. Its job is to help bring to bear the resources of the scientific community—both in and out of government—upon the problems of development, and it is obviously expected to provide a major point of AID contact with the universities. Schweitzer's office is supposed to operate not only with its own funds but to work with the agency's regional bureaus and specialized offices which have their own research funds to maximize AID research and development work in fields such as nutrition, health, and education.

A budget document describes one particular concern of the office of science and technology this way.

> Among the areas of science that are not a responsibility of other AID offices and are of particular relevance to economic development are chemistry, biology, hydrology, meteorology, geology, and oceanography. The areas of high investment in many countries which could benefit from applied research and more effective use of modern technology include power generation and distribution, transportation and communications and the building industry.

To accomplish its mission the new office seems to be counting heavily on AID's relationship with the National Academy of Sciences (NAS) and the National Academy of Engineering (NAE). For a number of years NAS has been involved with AID international programs mostly in arranging meetings with foreign scientists on scientific and technical subjects, but from now on AID wants to involve the academies more deeply in identifying opportunities and in planning projects. The academies' end of the program is handled through the office of the NAS foreign secretary Harrison Brown, who has himself been concerned with problems of development for a number of years.

The AID science office has an annual budget of about $1 million, of which perhaps $600,000 this year is earmarked for NAS-NAE projects. AID's total research budget is estimated at $50 million, a considerable portion of which goes to finance education and construction of educational and research facilities.

It is too early to judge the prospects for success of the science office's expanding activities, particularly since the impending reorganization of AID could seriously affect present arrangements. The expectation seems to be, however, that the reorganization would be likely to increase emphasis on research.

The case for research in a foreign aid program for developing countries has always been a strong one. By ignoring it AID has not added luster to its reputation. One of the embarrassing footnotes to U.S. foreign aid history, for example, is that the new strains of wheat and rice regarded as responsible in large part for the so-called "green revolution" were developed by private initiatives, mainly those of the Ford and Rockefeller foundations. Many people concerned with development problems both inside and outside government feel that research is increasingly important if the consequences of development—such as the effects of the use of fertilizers and pesticides on the environment—are to be anticipated and dealt with.

The Peterson task force has recognized these problems, but at another level the report represents a reaction

to the increasing difficulties that the United States faces in operating a foreign aid program mainly on its original bilateral lines in a world that has changed profoundly in the quarter century since the U.S. foreign aid effort was shaped.

In a key concluding paragraph of its recommendations, the Peterson report says "With this new institutional framework, the U.S. government should need fewer advisers and other personnel abroad. It could assume a supporting rather than a direct role in international development."

AID Administrator Hannah is a proponent of research and of greater university involvement in development problems, and he is said to be sympathetic to the Peterson blueprint. Hannah is also said to have firmer standing at the White House than his predecessors.

But the foreign aid program has been reorganized many times before without being changed very much. And the Nixon Administration could implement the Peterson recommendations to the letter and still miss the spirit.—JOHN WALSH

FDA: Efficiency Drive Stumbles over the Issue of Drug Efficacy

The Food and Drug Administration has long been one of the most overworked, understaffed, and universally criticized of all federal regulatory agencies. Since 1962, when the Kefauver-Harris Drug Act was passed in response to the thalidomide scandal, the agency has had the responsibility for ensuring the safety and effectiveness of some 7100 drugs already on the market and all new drugs that are proposed for marketing.

The drug industry has kept up an unrelenting attack on the FDA both for delay in approving new drugs for marketing and for allegedly hasty action in removing harmful drugs from the market. Congressional critics and consumer groups at the same time have accused the FDA of being lackadaisical in protecting the public from dangerous drugs. Under fire from both sides, the agency has gone through a number of changes in both operating procedures and personnel during recent years. Three commissioners have served in the last 4 years. Yet the central problem of adequate financial backing remains. Budgetary limitations have hindered the FDA in hiring the number of trained personnel that it needs to review data concerning drug safety and have opened the way for charges that its drug review procedures take too long and are often inadequate.

The most recent attempt to revitalize the FDA was initiated last year by the then Secretary of Health, Education, and Welfare Robert H. Finch. Finch ordered several structural changes in the agency and appointed a new commissioner, Charles O. Edwards. Edwards came to the FDA from the management consultant firm of Booz, Allen & Hamilton. The 46-year-old surgeon is typical of the cool, efficient managers who have filled the top posts in the Nixon Administration.

Edwards describes himself as a man who is "impatient with bureaucratic nonsense." His zeal in cutting through red tape has speeded the process of approving new drugs for marketing and softened industry criticism of the agency. At the same time it has opened the way for charges by Congress and consumer groups that the FDA is circumventing the law and its own regulations in a rush for an efficiency that is helping industry but is of doubtful value in protecting the public.

On 15–17 July, the House Subcommittee on Intergovernmental Relations, whose chairman is Representative L. H. Fountain (D–N.C.), conducted hearings to examine the "new-look" FDA's streamlined methods of reviewing the safety and effiacy of new drugs. The subcommittee, which has a reputation as a sharp-eyed watchdog of federal agencies, spent 2 of its 3 days of hearings investigating FDA's approval for marketing of a new drug called Demulen, an oral contraceptive which allegedly has a relatively low dose of estrogen. Recent studies have shown that low-estrogen pills cause fewer hazardous side effects than do pills which have larger amounts of estrogen in them.

Under the law, when a manufacturer develops a new drug it must be approved by the FDA before it can be marketed. To obtain FDA approval, the manufacturer is required to submit adequate evidence of the safety and efficacy of the drug. This evidence is submitted in the form of a New Drug Application (NDA). The FDA then examines the evidence and either approves or rejects the NDA.

In submitting the NDA for Demulen, G. D. Searle & Company, of Chicago, included two pieces of evidence—a 40-volume British study of the drug and an American study which compared some effects of Demulen with Ovulen, an oral contraceptive then on the market.

According to Delphis Goldberg, professional staff member of the Fountain subcommittee, neither study adequately demonstrated the efficacy of Demulen as defined by FDA regulations. The British study was designed to test only the safety of the drug. The American study provided a comparison of certain effects of Demulen with Ovulen but did not provide a controlled study of Demulen itself. In addition, the American study represented an examination of only 80 women over a period of about 2 years or 24 menstrual cycles. Under questioning from Goldberg during the hearings, Edwards conceded that normal FDA procedures call for the study of at least 200 women. But he said that this is one of the procedures that is "being reviewed."

The FDA approved Demulen for marketing after a 7-day review of the evidence. Normal FDA reviews take an average of 15 months. In defending FDA's decision on Demulen, Edwards cited a recent report by the FDA, which advised doctors that, in view of the evidence that high doses of estrogen cause hazardous side effects, doctors should prescribe, where possible, pills that contain a lower amount of estrogen. After this report was issued, Edwards says that he called in a group of drug manufacturers and, in an unrecorded meeting, told them that if they had any low-estrogen pills ready for marketing, FDA would "expedite" the review of their NDA's. "The Demulen review was expedited in view of my meeting with the drug manufacturers and because of my feeling that