

ample in the months ahead. Another NAS Committee, the Behavioral and Social Sciences Survey Committee (BASS), is due to bring in before the end of the year a state-of-the-science report, in the series that includes the Westheimer and Pake reports on chemistry and physics. An NSF commission on the social and behavioral sciences is also working in its own sector.

The state of the behavioral sciences vis-à-vis the federal government, in fact, is modestly flourishing. In the National Academy of Sciences, a section which used to harbor a few anthropologists and psychologists has been expanded, under academy President Frederick Seitz's encouragement, into a behavioral sciences division in touch with many more disciplines and displaying much more confidence and energy.

In the federal agencies the social and behavioral scientists have been expanding the beachhead they established in the statistical services and in the area

of economic analysis and advice—in the Census Bureau, Social Security Agency, and Bureau of Labor Statistics, for example. Starting with the Manpower Training and Development Act of 1962, which provided for studies of the effect of technological change on manpower needs, the education and antipoverty legislation of the Kennedy-Johnson era has created broad opportunities for behavioral scientists in both operational and research roles.

Opportunities for university researchers are likely to increase in the future, but the ground rules are likely to change. Robert C. Wood, former M.I.T. professor who is now Under Secretary of the Department of Housing and Urban Development, said at the APSA meeting that agencies will be more selective about supporting university research. The old system of "letting one's colleagues in, applauding their proposals," and awarding research contracts is passing. "There are not enough

dollars and too many colleagues," Wood noted. Behavioral science researchers face other difficulties. Longitudinal studies involving data available in various agencies are being called for, but creation of a central data file, for example, would raise misgivings about invasion of privacy.

There still are plenty of problems of ethics and economics facing behavioral scientists in their relation with the federal government. And some of the new report's proposals for improving the status and influence of behavioral scientists—like the proposal for setting up a National Institute for Advanced Research and Public Policy to make long-range analyses of national policies—will strike many as a recipe for pie in the sky. But the report also makes it evident that the behavioral scientists are well started along the road already traveled by the physical scientists, who got where they are today by making themselves necessary.—JOHN WALSH

Science Attachés: U.S. Aides Meet To Report on International Scene

Belgrade. A rare survey of research policies and politics over a good portion of the globe was presented here last month at a closed gathering of some dozen scientific and technical specialists who hold assignments at U.S. diplomatic posts in Europe, the Middle East, and India.

The meeting, called by Herman Pollock, director of the State Department's Office of International Scientific and Technological Affairs, was not inspired by any particular event, and was held here simply because the U.S. owns a hoard of Yugoslav dinars and the peculiar plumbing of the dollar drain dictates that it's cheaper to meet here than in most other places. In any case, the meeting was illuminating, though it must be reported on with a distasteful amount of discretion, since the participants, most of them science attachés at U.S. embassies, are all going back to their posts, and *Science* was permitted to attend only on the condition that no one be embarrassed by any public report of their discussions. However, even

on this restrictive basis, the proceedings are worth reporting, both because of the substance and because they give some idea of what the State Department is being told about the policy implications of science and technology abroad.

Perhaps the most striking impression to come out of the meeting is that, in this era of European concern over America's scientific and technological brawn, many long-planned cooperative efforts in "big science" are faltering on the closely connected grounds of nationalism, tight budgets, and doubts over the payoff to be had from investment in certain lines of research, particularly basic research. For the major nations of Western Europe, the gist of the reports was that Britain, yet to feel any major restorative effects from the devaluation of the pound, is proud of and supportive of her large and scientifically productive basic research establishment, but is increasingly gripped by the notion that science and technology must be steered toward producing a

better economic payoff. France remains committed to maintaining at least a "presence" in every major field of science and technology, but feels the need to juggle its accounts to make up for the economic losses and substantial wage increases that followed last spring's political upheavals. A rearrangement of priorities is inevitably in the offing. Nevertheless, France, perhaps more than any other nation, has made science and technology an instrument of domestic and foreign policy, and is currently reinforcing this design by assigning Foreign Office personnel to science policy councils and by increasing the number of science attachés assigned to the United States. Italy, though happy with the European Organization for Nuclear Research (CERN), the most successful example of European cooperation in big science, was reported to be increasingly disillusioned over the returns it is getting from other costly multinational ventures. West Germany, in contrast to the others, is prosperous to the point of talking about raising the value of the mark, and is favorably disposed to the idea of doing its share in various major ventures.

Against this background, the present status of various projects appears to be as follows. Europe's long-ailing bid for a role in space—through the European Launcher Development Organization (ELDO) and the European Space Re-

search Organization (ESRO)—is still ailing, and the assessment at Belgrade was that there are no foreseeable signs of improvement. Britain is not disposed to throw itself into the space race, especially since the past decade is strewn with catastrophic examples of big technology projects that cost several

times the original estimates. France is embarked on a Franco-German communication satellite program that is politically inspired by a desire to be independent of U.S. dominance in this field. Italy is wondering whether ELDO and ESRO are worth the cost, and the West Germans are engaged in several

costly joint ventures with the United States.

As for the long-gestating European Molecular Biology Organization (EMBO), it shares many of the burdens of other faltering ventures, plus a new one: West Germany, which would be EMBO's largest single contributor,

Budget: Status Report on the Federal Cutbacks

Scientists who have been fearful that federal budget cuts will inflict disastrous wounds on the nation's research and development community may find some comfort—though not much—in the latest budget report released by the Johnson administration on 9 September. The forecast for science remains gloomy, but not so gloomy as some of the doomsayers have been predicting. The latest figures indicate that, when all the anticipated budget cuts have been made by Congress and by the executive branch, the federal government will end up spending about the same amount of dollars on research and development in fiscal year 1969 (the current fiscal year) as it did in the previous year. Support for academic research is also expected to remain about level. The result will be a cutback in actual research activity, for the same amount of dollars will have to absorb the ever-increasing costs of performing research.

All estimates of R&D spending must be treated cautiously at this point, for neither Congress nor the federal agencies have completed their budget-cutting operations. At this writing Congress has completed action on only 9 of 14 appropriations bills, even though the fiscal year is already more than 2 months old. And to confuse the picture even further, Congress has taken the highly unusual step of ordering the executive branch to make further cuts beyond those imposed by Congress—a situation which leaves the executive branch trying to guess what Congress will do in order to plan the further cuts necessary.

The economy squeeze was ordered by Congress earlier this summer as the price for approving an increase in income taxes sought by the Johnson administration. Congress ordered a \$6 billion spending reduction from the President's proposed fiscal 1969 budget, but the latest figures indicate the cut will actually have to be closer to \$7 billion because of unforeseen increases in such "uncontrollable" programs as farm price supports and public assistance. Congress is expected to impose somewhat less than half the required cuts through the usual appropriations process, with the Johnson administration required to effect the remaining economies.

How much of the cut will be applied to R&D? The answer is "not completely clear," according to Charles J. Zwick, director of the budget bureau. The Johnson administration originally proposed to spend \$17.3 billion on R&D this year, up from \$16.5 billion in fiscal 1968. Zwick now predicts that "we'll come out pretty close to the fiscal 1968 level—maybe a little less, maybe a little more."

The budget bureau has assigned spending targets to each federal agency based on the anticipated cuts that

will be made by Congress and the additional cuts that will be necessary to meet the required reductions. Zwick said he expects a "small additional cut" will be made in the budget of the National Science Foundation beyond the drastic \$90- to \$100-million appropriations cut that will be imposed by Congress. The National Aeronautics and Space Administration would be cut some \$100 million below the estimated \$250 million expenditure cut by Congress. (This cut would not affect the manned lunar landing program.) Atomic Energy Commission expenditures would be cut \$29 million below estimated congressional reductions of \$95 million. And the Department of Health, Education, and Welfare expenditures would be cut \$380 million below congressional support levels. The Defense Department also faces a substantial cut, some of which may fall on R&D.

The agencies are by and large responsible for apportioning their cuts internally, and the amount of the cuts is currently going through an appeal and negotiation process within the administration. At this point no firm figures are available on the precise programs that agencies will cut back. Equipment and construction funds are said to be prime targets of the economy drive.

It seems clear that the budget cuts will torpedo the efforts of federal science leaders to funnel more research money into the universities. The Johnson administration originally proposed to increase federal obligations (commitments to spend, though not necessarily within the budget year) for academic research by 13 percent from the fiscal 1968 level. The proposed boost was described as an effort to heal some of the wounds caused by previous budget stringencies. But now, according to the President's Office of Science and Technology, federal obligations for academic research are expected to fall within 1 or 2 percent of last year's level, which, considering inflation, will represent an actual decline in research activity.

For those in search of silver linings, there are a few. Some agencies which had imposed a freeze on new commitments while developing their plans for budget reductions have recently turned the spigot back on, thus easing the immediate problems faced by some researchers. Moreover, some budget specialists predict that while the cutbacks will have a sharp effect on the level of spending in fiscal year 1969, they will have much less impact on the level of obligations, or commitments to spend. And there is always the slim possibility of relief. Last week the President asked Congress to take action that would reduce the cuts from the \$7 billion level back to \$6 billion. But nobody is predicting that Congress will grant such relief.—PHILIP M. BOFFEY

has proposed that German be the primary language of the organization, and, while many other problems lie ahead, EMBO remains stalled on the language question.

The reports on Eastern Europe were necessarily spotty, since U.S. scientific and technical representation there is fairly limited. In the case of Poland, it was reported that the general iciness

that prevails in relations between the two nations has made itself felt in the area of scientific and technical cooperation. The Poles were said to regard a Vietnam settlement as indispensable to any improvement of relations, though they were reportedly quite happy about a children's hospital constructed near Cracow with U.S. funds. A good deal of dismay was reported over the U.S.

Congress's cutting off of a \$1.5-million program that had enabled Poles to obtain American journals at reduced rates. Also, the Poles were said to be unhappy about the payoff they are getting from their scientific and technical communities. And in most European countries, both East and West, it was reported, student protests of the past year appear to be producing changes in the governance of higher education and research training, though no clear-cut picture was available on the effects that may be expected in the tradition-bound structures that have so long endured.

Since the inscrutable workings of the State Department foil any attempt to assess with precision just who has influence over what, it is difficult to determine the role played by the science attachés, who are now posted at some 20 U.S. embassies around the world. Some convey the impression of being resigned to writing reports that are never heeded, even if read, and also of being somewhat out of things at the embassies in which they serve. Others, however, sound as though they feel themselves to be in the thick of important affairs, with an opportunity to move matters as they believe they should be moved. Whatever the realities, it is plain that the science attaché program has emerged from a long and difficult beginning and is now an established part of the United States government's diplomatic apparatus. Shortly after the program was born, the Eisenhower administration nearly throttled it, in an economy move. It was later restored and slowly began to flourish. Then, in 1964, after the scientist who had headed it for 2 years returned to an academic post, Herman Pollack—personnel administrator at the State Department and not a scientist—was appointed acting administrator. He served in this capacity for nearly 3 years, a circumstance which suggests that the Department did not attach great significance to its science office. Eventually, however, it was recognized that he was performing remarkably well, and last year he was formally appointed to the directorship.

Under his leadership the attaché program has been acquiring some important new friends. Among them is Representative George P. Miller (D-Calif.), chairman of the House Science and Astronautics Committee. Miller, who attended the Belgrade meeting as part of his continuing tour of science-related activities in Europe, said he intends to assist Pollack and the attaché program in every way he can.—D. S. GREENBERG

Prague: Geologists' Exodus

More than 400 American geologists attending the 23rd International Geological Congress were awakened on 21 August to the disturbing sounds of low-flying jet aircraft, gun fire, and rumbling tanks as the Soviets staged their surprise occupation of Prague. The visiting geologists escaped Czechoslovakia unhurt but the experience was distressing, to say the least, and the very promising Congress was brought to a premature halt.

The American delegates interviewed by *Science* after their return to the United States expressed the highest praise for the Czechoslovak geologists. These participants reported that the Czechs had planned a Congress which was a model of organization.

After the Congress completed its first full day of real business, the Soviet troops brought normal activities in Prague to a halt on the 21st. Many of the delegates arose early that morning to unexpected military noises and went out tank-watching in the streets. Delegates who were staying in the downtown section of Prague found it difficult to get to the Congress meetings (which were held in the Technical University west of the Vltava River) because of the breakdown in the transportation system and because of the presence of the Soviet troops.

On the first day of occupation, the governing body of the Congress decided that the Congress would continue to meet through Saturday, the 24th. However, some of the delegates who had come by automobile began leaving Czechoslovakia on Thursday. These automobile convoys, reportedly, left the country without incident.

On Thursday (the 22nd), a substantial number of the delegates walked to the Technical University; several Soviet tanks were parked a block from the entrance. In front of the building which served as the headquarters for the Congress, reports Ellis L. Yochelson of the U.S. Geological Survey, an International Geological Congress motif was draped with a banner inscribed "Russian killers go home." A black flag flew at the university on Thursday and Friday.

Soviet delegates at the Congress seemed embarrassed by the actions of their government. Many removed the name badges which also listed their national affiliation.

Although the Congress continued to meet into Friday, it was difficult for the delegates to keep their minds on geology. By Thursday noon, the delegates heard that Soviet soldiers had occupied the Czechoslovak Academy of Sciences in Prague. It was reported that the Academy president had moved his office to the Technical University. By Friday, it was reported that the Soviet troops would occupy the Technical University that day, and so the Congress was brought to an end with denunciations of the Soviet occupiers by the delegations still represented.

Thomas B. Nolan, the former director of the U.S. Geological Survey, who was the head of the delegation from the U.S. government to the Congress, said that the delegates had "a great feeling of admiration for the Czech people" for their united show of resistance to the Soviets. One geologist said that the last thing he heard as his train left the Prague railroad station was a Czech shouting, "Tell everything you have seen here."—B. N.