the rate of increase in expenditures in any other area. Authoritative statements indicate an intention to increase expenditures even more rapidly within the next few years—in fact, by a factor of about 3 during the 1970's.

The outlook for the United States is uncertain. For several years—since fiscal 1966, as a matter of fact—the trend has been steadily downward for expenditures on the space program, and more recently sharp reductions have been signaled for other areas of research and development, including reductions in the support of advanced training of personnel. Basic to all else, the prevailing national mood seems to be moving strongly against investments for the future in favor of maximum utilization of resources for the immediate betterment of conditions of life.

Conclusion

This raises a fundamental question about the management, in its largest sense, of the U.S. space program and the other activities undertaken in response to the Sputnik experience. Has the whole operation represented but another highly successful one-shot exercise in crisis management, or has it represented incorporation into American society of a new way to organize, systematically and purposefully, the development and use of scientific and technological resources to the furtherance of national goals? It is too early to discern the answer to this question. But how it is answered will heavily weight any final appraisal of the comparative results of the U.S. and Soviet space programs.

References and Notes

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3. P. L. Kapitsa, *Teoriya, Eksperiment, Praktika* (Znamiye, Moscow, 1966), p. 14.
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9. A. Amalrik, *Will the Soviet Union Survive Until 1984?* (Harper, New York, 1970), pp. 20 ff.
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NEWS AND COMMENT

Science under Nixon: Influence Has Declined in National Affairs

The scientific presence in Washington that grew up after World War II was never so potent as alarmed political traditionalists made it out to be; nor was it ever so unheeded and abused as many scientists made it out to be. But a look into science's Washington outposts after 2 years' absence quickly confirmed my impression that, however powerful the community may once have been in national affairs, 20 months under Nixon have inflicted upon it a gigantic loss of influence, visibility, and confidence. The decline, of course, can be dated from budgetary restraints under Lyndon Johnson and the frost that developed between his administration and the universities. But Johnson, as legislative architect of the space program, beneficiary of cardiac therapy, and self-styled "teacher-president," at least partially subdued his political instincts and created the impression that, however erring scientists might be in opposing the war, he at least saw an indispensable value in their profession. The recognition did not show up in the form of the continuous financial growth that researchers had become accustomed to in the postwar years, but budgetary disappointments were at least accompanied by requests for patience and expressions of sorrow from the White House.

The difference under Nixon, of course, is that, despite a few cordial words now and then, there is little to suggest that the President accords scientific activity any special or privileged role in national life, and there is a good deal to suggest that the President, as well as many of his closest advisers, regard the scientific community as having succeeded in making unwarranted claims on national resources and political sympathy.

Perhaps the first clue to this attitude came when the White House vetoed the appointment of Franklin Long as director of the National Science Foundation (NSF) after it was noted that Long was on record as opposed to the development of an antiballistic missile system. The ensuing outcry against political screening of this normally apolitical post (Alan T. Waterman, after all, was appointed NSF director by Truman, served under Eisenhower, and retired after 2 years under Kennedy) led to Nixon's making a formal apology before the National Science Board. But it should be noted that the veto was instinctive—the apology, calculated.

Both calculation and instinct, however, are to be found in a minor footnote to the early days of the administration, when Nixon circulated to his staff a paper, "Alienation and Relevance in Higher Education," by S. J. Tonsor, of the University of Michigan. Underlined and with marginal notes in the President's own hand, the paper was accompanied by a covering memo that said that Tonsor's views reflected his own and would be reflected in the administration's dealings with higher education.

Proceeding from the thesis that "the most important problem which higher education faces today is the wave of irrationality and anti-intellectualism which has caught up large numbers of both students and professors," Tonsor went on to express doubt about the suitability of much research on campus. "The only sound test," he wrote, "is whether or not research enhances or diminishes the primary teaching function of the university. And it must be confessed that in spite of the brave talk to the contrary and considerable administrative legerdemain, research has become the tail which in many instances wags the dog. Faculty members on fractional appointments who spend the greater part of their time in other than teaching activities distort and confuse the educational purposes of the

university. Foundation grants for centers and programs which are often inconsistent with the needs and basic educational directions of the institution are as dangerous to the university as government, civic and business research for which there is no clear-cut teaching mandate."

People all along the political spectrum have been saying the same thing, but what is noteworthy is that this one-dimensional view of a complex problem should be singled out by the President as a basic ingredient for his administration's dealings with higher education.

Of more significance, however, is the erosion of the tandem relationship between the White House Office of Science and Technology (OST) and the Bureau of the Budget (BOB). Enhanced by the close rapport that existed between Kennedy and his science adviser, Jerome B. Wiesner, the OST-BOB linkage guaranteed at least a sympathetic hearing for designs spawned within the scientific community. Tighter budgets and the more formal relationship between Johnson and his science adviser, Donald Hornig, diminished the role of OST. Under Nixon, and his now departed science adviser Lee DuBridge, the role of OST in budgetary affairs diminished to near invisibility. In Kennedy's time, the White House staff complex was infused with the unquestioned notion that producing more science and scientists was the goal to be strived for. Today, a top staff member of the Office of Management and Budget remarks, "Science for science's sake is out. You can't sell it any more." He added, "You once could shake people up with threats of international competition. That doesn't work any more. The Dutch are hiring American radio astronomers, and some people think that's terrible. We don't."

Nixon's Attitude

"How does the President feel about science?" he mused. "Well, we're not sure. Lots of ambiguous evidence. He's said some very friendly things, but then there's no doubt that he's hostile to the universities, and that's where a lot of science is. Anyway, we're long past the old attitude that expansion is necessary across the board. On basic research, the present attitude is that it has to ride on the coattails of what science can do for society. It's going to be more and more difficult to get into esoteric fields. But there's no reason why good science can't be done in the name of social problems." High among these, of course, is "environment," which just possibly may be supplanting "defense" as the key to the treasury.

Will DuBridge's successor, Edward B. David, Jr., bring any new policy influence to bear on this situation? One sign of the markedly changed situation regarding science in Washington is that there is scarcely any evidence to suggest an answer. David, unlike all of his predecessors, did not come up through the President's Science Advisory Committee, which, at least until Johnson began to change its character, was academic science's entrée to the high councils in Washington. His public utterances are few, but *Newsweek* quotes him as saying, "The time when the budget is cut is the best time to try to improve the work."

Another sign of science's declining influence in Washington is in the diminished relationship between OST and the National Academy of Sciences (NAS). If budgetary growth and output of unread reports were a measure of power, the NAS would indeed fulfill its own fantasies of influence. But though more elephantine and paper-productive than ever, it is as influential with Washington as it is with the city council of Tashkent.

From the perspective of the scientific community's financial interests, all is not gloomy, however. After years of cajoling and pleading, Congress appears to be following the White House in recognizing that the National Science Foundation is the most suitable centerpiece for federal support of basic research. This year, NSF's budget is going up a bit, which makes it virtually unique among federal agencies. The much-maligned Mansfield amendment has taken its toll of money for university research, but for the first time Congress has swung around to the view that NSF should be permitted to take up the slack. That's no small achievement, and, in fact, it may be the first step toward providing NSF with the resources it requires to fulfill the role that Congress intended in its creation. A lot of troublesome fictions and tensions would simply fall away if NSF emerged as the principal, though not sole, government mechanism for financing academic research. There is little evidence that the Nixon administration is planning it that way; nevertheless, in the present disarray of the science-government relationship, it might just happen.

—D. S. GREENBERG

NEWS IN BRIEF

● **AMERICAN SCIENTIST ABDUCTED:** Claude L. Fly, 65, a soil chemist from Fort Collins, Colorado, is still being held hostage by radical Leftists in Uruguay, according to the State Department. Fly, a private consultant on contract to the Uruguayan government, was abducted on 7 August while at a meeting in his laboratory with Uruguayan agronomists. The abductors, known as Tupamaros, have said that they will hold Fly and Aloysio Mares Dias Gomides, Brazilian assistant consul, until all political prisoners held by the government are released. The Uruguayan government has repeatedly rejected their demand; the Tupamaros have made no threat to harm Fly. At present there is no information on his condition.

● **STATISTICS COMMISSION:** The President has named a Commission on Federal Statistics to make the first appraisal of the federal statistical program since the Hoover Commission more than 20 years ago. The Commission will try to determine the present and future needs for statistics, the means to minimize the burden on respondents and protect individual privacy, and the ways government activities can be organized for the most effective production and use of statistics. The Commission will be chaired by W. Allen Wallis, president of the University of Rochester.

● **CBW PACT:** President Nixon has sent to the Senate the Geneva Protocol of 1925 which bars signatories from the first use of chemical or biological weapons in warfare. The President asked the Senate to ratify one formal reservation to the protocol to permit retaliatory use of chemical weapons; the use of biological weapons, however, was ruled out entirely. In the message to the Senate, the Administration says that the United States will not consider the protocol to prohibit the use of tear gas, herbicides, smoke, flame, or napalm; debate over this informal provision reportedly was the main cause of the 9-month delay between the President's announcement that he would submit the protocol for ratification and its actual submission. The United Nations General Assembly voted last December 80 to 3 that the Geneva Protocol did indeed ban the use of tear gas and defoliants.

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