lated into action. But to a surprising extent the war is getting to these leaders of the scientific establishment as individuals answerable to their own consciences.

This growth of internal anguish among some of the most influential and productive leaders of the scientific community is significant in itself. "The social compact is being broken," one researcher observed. "You have to obey society but you don't expect it to make you behave immorally. Now people are making private judgments."

What this means for politics is another question. These are not men and women who will join the hippies; they are not of the new or old left or right; they are in the mainstream of American politics where power is great but the range of action is defined more narrowly. At this writing it seems that the differences are too great to produce a unified Scientists and Engineers for anything in 1968. But a Nixon or a Reagan candidacy might stir a revival, on the one hand, and there is also the possibility, as one industrial administrator put it, that "Johnson might begin negotiations tomorrow." If he did, the mood would surely change. But it seems more likely that the individuals who led Scientists and Engineers for Johnson will find private ways of dealing with their own convictions. And the question remains: If they feel helpless, who feel in control?

—ELINOR LANGER

The Smale Case: Tracing the Path That Led to NSF's Decision

"I have hardly ever known a mathematician who was capable of reasoning." That line comes from Plato's *Republic*. But, as the controversy involving Stephen Smale, the left-wing Berkeley mathematician, simmers on, it is not unlikely that similar thoughts have occurred in the governing councils of the National Science Foundation.

For the fact is that the Foundation's elders, full-time and advisory, apparently don't quite understand why their decision on Smale's grant application is stirring up small, but significant and growing, numbers of academics across the country; why, for example, letters of inquiry are coming to NSF from M.I.T., Harvard, Columbia, Berkeley, and other institutions; or why, in this period of financial dearth for academic research, some 50 faculty members at the University of Pennsylvania, in and out of the mathematics department, affixed their names last week to a statement that reads as follows: "Unless there is an acceptable explanation of the rejection of Stephen Smale's contract application the undersigned cannot accept for personal use any funds from the National Science Foundation." The statement added, "This is not an endorsement of Smale, it is not a protest about Vietnam, and it is not intended to prevent others from receiving funds through the National Science Foundation." About half of the signatories indicated that at present they neither hold nor are in quest of NSF support. Nevertheless, the way things normally go in the academic money business, this seeming willingness to renounce NSF support, fuzzy though the wording may be, is extraordinary—in fact, it suggests a kamikaze streak that heretofore has been wholly absent from academe's dealings with the federal government. Penn president Gaylord P. Harnwell and provost David R. Goddard did not sign the mass statement. But, according to the Philadelphia *Bulletin*, they "both signed a statement that they would 'protest personally' to NSF if it developed that a 'competent individual' has been denied NSF support for political reasons."

What is going on? Did "political reasons," in fact, have anything to do with NSF's decision in the Smale case? Or is NSF perfectly justified in its contention that it gave Smale a meticulously fair shake and that neither he nor his friends have anything to kick about? The answers are worth hunting, because the quest for them not only illuminates the Smale case and the precedent implicit in the way the Foundation has handled it but, more important, reveals a good deal about NSF's image of itself in the nation's capital and its *modus operandi* in dealing with the political powers that surround it.

First of all, the agreed-upon key facts are as follows: Smale, age 37, is an outstanding topologist and a virulently outspoken opponent of the Johnson administration's policies in Vietnam. In the summer of 1966 he spent time at various academic centers in Europe; in August of that year he proceeded on to Moscow to receive the Fields award—often referred to as the Nobel prize of mathematics—at the International Congress of Mathematicians. His salary for two summer months came out of a 2-year, $91,500 grant which NSF had awarded to Berkeley for a small research group, of which Smale was principal investigator. The grant included $1000 for his travel costs to Moscow; he applied for and received another $400 in travel expenses from a fund administered by the National Academy of Sciences. While in Moscow, Smale denounced American policy in Vietnam, the Soviet suppression of the Hungarian uprising, and maltreatment of intellectuals in the U.S.S.R. While several Congressmen deplored and threatened NSF for paying for a trip that had served anti-American political purposes, Smale leisurely traveled across Europe, boarded the *France*, and took up an academic year's residence at the Institute for Advanced Study, in Princeton. NSF told Berkeley, which was administering Smale's grant, that reimbursement of funds paid out to Smale could not be assured until he clearly established that he had, in fact, devoted two summer months to scholarly purposes. Smale subsequently provided a detailed account of summer travels. NSF said it was satisfied, and Berkeley paid Smale what was due him under the grant. Informally it should be noted, NSF pointed out that Smale had violated NSF regulations by returning to the U.S. on a foreign vessel when

American carriers were available. Also, NSF informally took note of the fact that in applying for and accepting $400 in travel funds from the Academy, Smale had neglected to comply with a requirement that he inform the Academy that NSF was also providing him with travel funds to Moscow. These rules are more or less buried in the plethora of paper that accompanies government money, but there is no question that the rules are there, and, if NSF had so chosen, it could have cracked down hard on their violation. There is also no question, however, that the NSF is neither equipped for nor inclined toward policing every one of its grants, and it realized that, if it threw the book at Smale, it might be opening itself to the question, Why just him?

Finally, NSF was willing to accept, though with a good deal of private skepticism, a stringing together of time spent here and there to account for Smale's 2 months on NSF salary funds in Europe. The rules in this regard are vague, and are based, in the main, on faith in the investigator's integrity. Though NSF gagged a bit, it went along with Smale's account of his whereabouts. In response to angry inquiries from various congressmen, the most demanding of whom was Representative Richard L. Roudebush, a right-wing Indiana Republican, NSF director Leland J. Haworth issued a lengthy statement concerning the Smale case, on 20 October. The statement cited an NSF policy, dating back to 1957, titled "Considerations of Loyalty in Relation to Government Support of Unclassified Research." What it boiled down to was that avowed Communists, accused communists who don't appeal, saboteurs, and subversives are barred from consideration for NSF support, but, otherwise, all comers are considered solely on grounds of scientific merit. The statement concluded, "Under this policy the known facts regarding Professor Smale's activities do not constitute a basis for action with regard to the grant to the University of California."

Thus, when the shouting quieted down toward the end of last year, Smale, in effect, had been exonerated of improper financial or political activity. This says nothing about his sense of politics, judgment, or courtesy. For an American to denounce the Soviet government from the steps of Moscow University is neither good

NEWS IN BRIEF

● **INTERNATIONAL BIOLOGICAL PROGRAM:** Six major integrated research programs and 162 individual projects "aimed at preserving the habitability of the earth" were announced 21 September by the U.S. National Committee for the International Biological Program (IBP). The announcement was released by the National Academy of Sciences, sponsor of the National Committee. Total cost of the U.S. program has been projected at about $200 million. Fifty nations are participating in the 5-year IBP, which is designed to correlate worldwide research efforts toward understanding the biological basis of human welfare. A National Academy spokesman said the six major research programs will involve new research while the 162 individual programs will be primarily ongoing research that has been reclassified into the IBP. The reason given for the reclassification is that all individual projects for the IBP had to have funding before they were made part of the IBP. Major U.S. programs include the correlation of ongoing research and new investigations of the atmospheric dispersal of airborne biological troublemakers, such as pollen, and the establishment of a scientific task force to investigate six large ecosystems, such as drainage basins and landscapes, in an attempt to clarify the operation of an ecosystem. Other studies will include a joint United States–Canadian investigation of three Eskimo populations, an evolutionary study of animal and plant life in the Hawaiian Islands, and a phenology program to investigate and describe seasonal development of organisms that might aid in the understanding, interpretation, and prediction of biological events. A sixth study will be concerned with the ecology of migrant populations and the effects of urbanization on rural migrants. IBP entered its 5-year operational phase on 1 July following 3 years of planning. A limited number of copies of the committee's report describing the projects, *Studies Constituting the U.S. Contribution to the International Biological Program*, are available without charge from the National Academy of Science–National Research Council, Division of Biology and Agriculture, 2101 Constitution Ave., NW, Washington. D.C. 20418.

● **SOVIET–U.S. HEALTH EXCHANGE:** The second of four American health exchange missions to the U.S.S.R. scheduled for the 1966–67 biennium is currently touring mental health facilities in Moscow and Leningrad. The six-man delegation, which is sponsored by the Department of Health, Education, and Welfare, is the first U.S. mental health mission to be sent to the Soviet Union. The mission was authorized in March 1966 under terms of the U.S.–U.S.S.R. cultural exchange program that was started in 1958. Under the 1966 agreement, Soviet delegations in virology and hematology visited this country, and an occupational health delegation is scheduled to visit sometime this autumn. A U.S. veterinary medicine and public health mission visited the U.S.S.R. during June and July under the auspices of the U.S. Department of Agriculture. U.S. delegations on higher nervous activity and aging are scheduled to visit the Soviet Union sometime this fall and early next year. Both countries originally announced intentions of exchanging missions to study public health in arctic regions; however, the Soviets later declined to keep the commitment. Members of the mental health mission now in the U.S.S.R. are: Alan D. Miller, New York State commissioner of mental hygiene; Stanley F. Yolles, director, and Phillip Sirotkin, assistant director, of the National Institute of Mental Health; Walter Barton, medical director of the American Psychiatric Association; Mike Gorman, executive director of the National Committee against Mental Illness, and Harold Visotsky, commissioner of mental health for the State of Illinois.

● **NEW PATHOLOGY PROGRAM:** The department of pathology at Case Western Reserve University School of Medicine, Cleveland, has announced a new Ph.D. program which will strongly emphasize scientific training. Eight students are currently enrolled in the program which features 5 or 6 years of advanced work in one of the physical sciences or basic medical sciences along with graduate work in pathology. Case is financing the program with an $800,000, 5-year grant awarded by the National Institute of General Medical Sciences.

Hitch Succeeds Kerr at U.C.

Charles J. Hitch, an economist who helped to launch the McNamara era at the Pentagon, has been elected president of the University of California, the nation's biggest state university system and probably its most embattled, politically and financially.

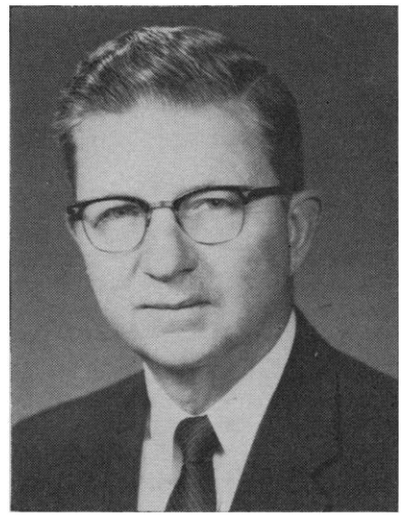
A University of California vice-president since September 1965, when he resigned as comptroller of the Department of Defense, Hitch will assume the presidency on 1 January 1968, succeeding Clark Kerr who was fired by the university regents on 20 January.

Hitch was nominated by a regents' committee after a national search and elected unanimously at a regents' meeting 22 September. California Governor Ronald Reagan, who had made a campaign issue of Clark Kerr's administration of the university, offered a mildly favorable comment on Hitch's election.

Close observers say the regents have been impressed by Hitch's quickly acquired grasp of university affairs, particularly its budgetary problems. Hitch went to U.C. as vice-president for business and finance, one of seven specialized vice-presidential posts. His rise in the hierarchy was marked last year in a reorganization, when he was made the vice-president for administration and was given general responsibility for nonacademic matters. After Kerr's departure, vice-president Harry Wellman became acting president, and Hitch, in effect, became number-two man in the university administration.

In his career, Hitch has mixed teaching as an Oxford don, government work, and an association of more than a decade with the RAND Corporation, the nonprofit, largely Air-Force–financed research organization. At RAND he developed the ideas expressed in *The Economics of Defense in the Nuclear Age*, written with Roland N. McKean, ideas which contributed significantly to the McNamara methodology of asserting control of military programs through the budgeting process.

Hitch's present reputation is that of a competent planner and financial manager rather than an educational statesman. If there is a feeling that Hitch is something of a "neutral" choice ideologically and politically, it is also pointed out that there is a trend at U.C. toward decentralization. More decisions directly affecting faculty and students are being made on the nine campuses, and action on high-level policy and financial decisions are being reserved for university administrative headquarters in Berkeley.



Charles J. Hitch

Hitch, nevertheless, inherits the explosive issues which led to Kerr's dismissal. The whole complex of problems which kindled the Free Speech Movement is unresolved, but Hitch faces an even more immediate challenge. The regents must deal with Governor Reagan's request for imposition of tuition fees. In some quarters in California, the principle of free higher education approaches a mystique. The outlook for increased state funds for the U.C. budget also looks doubtful. After a year in which the state contribution was cut to $231 million from $240 million the year before, the university is likely to ask the governor and the legislature for more than $300 million. In the coming fight for the budget, U.C. will have in its corner a president with a peerless command of his subject—J.W.

manners nor in the best interest of relations between the two countries. Nor does it actually say much about Smale's courage, which is often cited by admirers. Since the Soviet cops could conceivably have given him something to think about, Smale rates some distinction for foolhardiness, but, once he was outside the Soviet Union, he was home free, personally and professionally, fully aware that anytime Berkeley or NSF did not want him he could comfortably come to rest in any one of a number of well-cushioned academic chairs that have repeatedly been offered him.

In any case, with Smale's present grant due to expire next March, he submitted a new application for support, this time seeking nearly $250,000 to provide support—mostly for summer salaries, travel, and research assistance—for himself, as principal investigator, and an expanded research group. (Since Smale, like any other grant applicant, does not expect to get all he asks for, the great increase sought over the present $91,500 grant reflects hope and a bargaining position rather than a vast burgeoning of activity.)

Following submission of the new application, Smale and his colleagues around the country kept the pot boiling by circulating reports that NSF was being unduly sticky about the administrative details of the proposed research project. NSF responded to inquiries by offering assurances that the Smale application was routinely working its way through the mill, just like any other application.

In fact, however, NSF could not have been more agitated if it found that Klaus Fuchs had been sitting in on its board meetings over the past several years. Just why this should be so can be understood only in terms of the cautious instincts, timidity of movement, and deliberate political isolationism that characterize the Foundation leadership. The net product of these qualities has been an aloofness from the often grimy ways of Capitol Hill, a rarely disputed reputation for playing it clean with federal money—and an appalling incapacity to distinguish the gnats from the tigers in the U.S. Congress. Thus, last year, when Roudebush was thundering imprecations at NSF, one of the Foundation's commuting statesmen woefully said, "We're in for it now. Roudebush is going to hold an investigation."

When this mourner was asked

whether he had "talked to Miller?" he responded with, "Who's Miller?" Then it was explained to him that George Miller (D-Calif.) is chairman of the House Science and Astronautics Committee, of which Roudebush is a minority member; and that is was extremely unlikely that Roudebush could investigate anything without the approval of his chairman. To which the science statesman replied, "I'd better get going on this." Whatever the reason, no investigation took place.

Nevertheless, with Roudebush assailing the Foundation and demanding that something be done about Smale, NSF decided that it had a problem on its hands, and then, in the best of faith, sought to chart an honorable course. In doing so, it was not responding to political pressure, for, despite Roudebush's triumphant misreading of NSF's present stand in the case, Smale has not been turned down; he merely has been told to revise his application. But, if NSF was not responding to political pressure, it was responding to its foggy perceptions of the political atmosphere, and the product of this response was the curiously tortured formula that it came up with for dealing with the provocative and embarrassing young professor from California. With the National Science Board, NSF's highest advisory body, looking on each step of the way, NSF cooked up its decision and dispatched it to the University of California over the signature of William E. Wright, the NSF division director of mathematical and physical sciences.

"We have come to the conclusion," the letter stated, "that, in light of Professor Smale's performance in the administration of the present grant, we cannot tender a new grant to the University based on the proposal in its present form.

"This does not reflect any adverse decision on the part of the Foundation concerning the intrinsic merit of the research proposed. Rather, it reflects a decision by the Foundation that the proposed administrative arrangements are unacceptable."

Then the letter went on to state NSF's formula for navigating between its felt obligation to support someone of Smale's professional ability and its desire to demonstrate that it wasn't letting Smale get away with anything. The present application, it said, should be broken down into two or more proposals. "One of the new proposals should confine itself strictly to the needs of Professor Smale in the pursuit of his own research interests without involving NSF support of other faculty members." (It is interesting to note that 10 days after NSF proposed that Smale be at least financially parted from his research group, Donald F. Hornig, the presidential science advisor—without reference to the Smale case—reiterated his long-standing plea for greater reliance on institutional and block funds in federal support of research. Speaking 9 September at the dedication of the Stanford Linear Accelerator Center, Hornig said that direct dealing with individual investigators "becomes a monstrosity when it involves 30,000 strings to Washington.")

Smale's response remains that he will not cooperate with NSF's scheme, and, while ire and puzzlement spread through the academic community, that is where the matter remains.

Smale, of course, will come out all right, no matter what happens, but the issues involved go far beyond him or his particular situation. For, if the formula that NSF has worked out for Smale is permitted to stand, a potentially troublesome, very troublesome, precedent will have been established, and it is this: a federal agency, without offering any specific information beyond a declaration of dissatisfaction with past administrative performance, has taken it upon itself to dictate who shall not head a research group.

Smale still demands to know specifically what acts or omissions on his part support the charge of maladministration. NSF still won't say anything on this point, beyond a statement by Philip Handler, chairman of the National Science Board, (*Science,* 22 September) that "the Board . . . concurs with the director that management of this grant has been relatively loose and has not conformed to appropriate standards."

Privately, NSF explains that Smale is a fine topologist but a bad housekeeper—which is probably a fairly accurate assessment of the realities of the situation. But NSF, which is one of the best and scientifically most sensitive friends that academic research has ever had, is treading into wicked territory when it tries to dictate who's the boss on a research project, but won't tell why. The letter-writers and statement-signers who are alleging political influence may be off the track; nevertheless, they have ample grounds for concern.—D. S. GREENBERG

Privacy: How Much Need You Tell a Visiting Federal Investigator?

"People today are being forced to surrender what privacy they have left in a technological age, in order to obtain and hold jobs."—Senator Sam J. Ervin, Jr. (D–N.C.)

Individual privacy is a growing public concern. On 13 September, the Senate overwhelmingly passed Senator Ervin's bill "to prevent unwarranted governmental invasions of the privacy of civilian employees of the executive branch." Since the bill sailed through the upper chamber by a 79–4 tally, its supporters think that the chances are good for House passage of a similar bill in the 1968 session.

Among other provisions, the Ervin bill (S. 1035) protects the individual in most cases from having to take polygraph and personality tests asking intimate questions, from having to divulge race, national origin, or assets (except for possible conflict-of-interest situations), and from being forced to divulge outside activities; it also provides the opportunity for legal counsel in an interrogation which may lead to disciplinary action. Although the bill provides added safeguards for the government employee or job applicant who is being interrogated, it does not deal with another common situation—an investigator's interview of a third party about a government employee or applicant. Defining the proper limits of this interview situation has caused concern in the past and, at present, is a subject of a study by Ervin's subcommit-