Columbia University: Still at the Crossroads

New York. Last year's uprising at Columbia was a national Event, one of those historic moments like Watts or the Kennedy assassinations which compel people to seek larger meanings. College administrators believed the great beast of anarchy was on the loose; by the hundreds they wired Grayson Kirk to stand fast against the demands of the lawless hordes. Senior academicians tended to view it as a tragic and dangerous assault on all the values of the Western intellectual tradition. To radical students it was a joy and an inspiration —the beginning, they hoped, of a truly revolutionary student movement.

Whatever else the insurrection was, it was surely a clash on fundamental issues. If it was not quite the class war that the radicals imagined, it was perhaps closer to it than earlier struggles on university campuses had been. Passions were aroused that were not easily damped down. Real political and moral values were at stake.

Now the issues have receded (see box); there is little serious debate on the merits or the implications of the university's policies on IDA and the gym. These questions have been stalemated under a general (and generally successful) policy of pacification initiated by Acting President Andrew Cordier, who replaced Grayson Kirk in late summer. Confrontation and conflict have been replaced by a widespread internal politicking which makes more modest demands but promises far more limited results. Measured in one way, Columbia is doing all right. There have been no difficulties in recruiting faculty, no dropoffs in enrollment. The university's spectacular $200 million fund drive has just passed the $100 million mark. There have been few faculty resignations attributable to the crisis. Yet, beneath the surface, all is by no means well. Columbia experienced an existential moment, then retreated. The result is disappointment and cynicism. The bonds that make a university a community—shared values, a conviction of high purposes—have worn very thin.

One of the chief specific casualties of the Columbia rebellion was university president Grayson Kirk. Kirk retired prematurely after 17 years in office when it was made unmistakably clear to the Trustees by representatives of the senior faculty that he no longer enjoyed their respect.

A second victim was David Truman, former dean of Columbia College, an eminent political scientist once much loved by students and faculty alike. Truman holds the offices of vice president and provost as a result of a dramatic administrative shift in 1967 in which he acquired wide powers formerly distributed among four top executives, including the then provost, Jacques Barzun. The maneuver was widely interpreted as a prelude to Truman's succession to the presidency. In the course of the crisis Truman, too, lost the confidence of the senior faculty. Like Kirk, he seemed to have blood on his hands. During the summer, a committee of senior faculty advising the Trustees devised criteria for the selection of an acting president that deliberately excluded Truman. Cordier, a former high United Nations officer who was dean of Columbia's School of International Affairs, was elevated instead. It is generally believed that Truman will not stay at Columbia much longer.

"Faculty Power"

The chief beneficiary of the moral and practical collapse of the administration was the senior faculty. "The authority structure was really destroyed here," commented one high administrative official, "and the result was a power vacuum people rushed to fill. It would be . . . surprising if this were not so." In the context of Columbia, "faculty power" sits oddly. Most relationships before the strike were governed by the tradition established under Nicholas Murray Butler: the faculty had full freedom in academic affairs but no responsibility for institutional decisions. Prior to the uprising the faculty created satrapies within which they wielded considerable power, but there was no faculty organization—no university senate—at all.

During the occupation the faculty functioned through an ad hoc organization. The day after the "bust"—the climactic police action—there emerged a group known as the Executive Committee, elected at an emergency meeting of the faculty. Considering the faculty's previously disorganized state, its rise to power has been extraordinary. It initially consisted largely of eminent members of the senior faculty: Polykarp Kusch (Nobel prize-winning physicist), William Leuchtenberg (history), Eli Ginsberg (economics), Ernest Nagel (philosophy), Alan Westin (public law), Daniel Bell (sociology), Alexander Dallin (international relations), Walter Metzger (history), Lionel Trilling (literature and criticism), and Michael Sovern (law). There were also two junior members. Ten stood for reelection in mid-May when the committee was expanded to 18 to include representatives from all the university divisions on Morningside Heights; more junior members were also added. Elections held this fall pitted some of Columbia's more famous faculty members against each other: Roger Hilsman against Alexander Dallin, from the School of International Affairs; Richard Hofstadter and Fritz Stern against Alan Westin (from the Faculty of Political Science). (Dallin and Hofstadter were the victors.) By and large the committee members are moderate liberals whose primary interest is in restoring stability.

The tale of the Executive Committee is a case study in university politics that only a C. P. Snow could chronicle fully. The committee's role is amorphous but influential. Publicly its major function is to oversee the "restructuring" proposals developed over the summer by assorted committees of students, faculty, administrators, and trustees. Privately, it has acquired a good deal of influence with the Trustees and with Acting President Cordier. It was the Executive Committee that influenced the Trustees against making Truman acting president and persuaded them (with Cordier's help) to adopt a lenient policy toward the rebellious students.

Not surprisingly, the Executive Committee is not a very popular organization. It is, to begin with, not much beloved by members of the administration who survived the revolt. Truman believes, for example, that the committee acquired its initial legitimacy in

Uprising on Morningside Heights: Background

By its final days the revolt enjoyed both wide and deep support among the students and junior faculty and in lesser degree among the senior professors. The grievances of the rebels were felt equally by a still larger number, probably a majority, of the students. The trauma of the violence that followed police intervention intensified emotions but support for the demonstrators rested upon broad discontent and widespread sympathy for their position. —*From* Crisis at Columbia.*

From 23 April to 30 April 1968, nearly 1000 people seized and held five buildings on the Columbia University campus—an unprecedented student demonstration ultimately ended only by a bloody battle with the New York City police. The conflict emerged from the coalescence of two issues that have disrupted the rest of American society: the Vietnam war and domestic racism.

On the Columbia campus, as elsewhere, demonstrations against the war began around 1965, focusing on Dow Chemical, CIA, and Marine recruiters visiting the campus. During the 1967–68 academic year, the chief target of the antiwar activists was the university's affiliation with the military research consortium, the Institute for Defense Analyses (IDA) (*Science*, 17 May 1968). At the same time, among other students, agitation was growing over Columbia's plan to construct a multi-million-dollar gymnasium in Morningside Park, public property located between Morningside Heights, the site of Columbia, and Harlem. The chief issue here was the symbolic nature of the portion of the gym the university planned to allot to Harlem residents, a separate section with a separate entrance that was literally a back door. Other concerns focused on the justice of private use of public land and on the adequacy of the $3000 rental the university was slated to pay the city. Just as IDA represented the war, the gym also came to represent a larger issue: Columbia's relations with the neighboring community. For years, Columbia's institutional expansion—particularly its purchasing, clearing out, and management of "single room occupancy" dwellings inhabited mainly by the down-and-out—had been the object of intense criticism from neighborhood groups. In recent years it had come to be viewed not just as thoughtless or accidental but as racist, an effort to drive out the poor and the black and to sanitize the area for comfortable middle-class living. By 1968 there were many students deeply involved, with the community, in opposing Columbia's policies.

On 23 April the radical Students for a Democratic Society (SDS) called a rally to protest the university's ties with IDA and the disciplining of five leaders for their role in a previous demonstration. When the students were deflected from an attempt to enter the administration building, Low Library, someone shouted "To the gym," and the crowd went off to Morningside Park. They tore down the fence surrounding the gym construction; one student was arrested. The bulk of the demonstrators—a coalition of white SDS members and black members of the Student Afro-American Society—returned to campus, where they decided to take over a building, Hamilton Hall. That evening the blacks asked the whites to leave, and in the early dawn the white radicals marched into Low Library, where they occupied the offices of President Grayson Kirk and began Xeroxing his files. In the next 3 days, three more buildings were taken: Avery, by architecture students protesting construction of the gym; Fayerweather, by graduate students, chiefly in the social sciences; and Mathematics, by spillovers from Fayerweather and by visiting New York radicals.

During the course of the occupation a number of forces emerged which appear to be having a continuing impact.

First was the politicization of the faculty. For what end the faculty was politicized is much debated. The Cox Commission report argues that faculty actions implicitly strengthened student resistance and thereby prolonged the strike; others have complained that the faculty's stance on the moral issues was not forthright enough. Basically, their role was twofold: to encourage mediation, and to obstruct the use of force to effect a settlement. There is general agreement that the faculty was physically heroic but ineffective. Neither side trusted them.

A second continuing factor was the radicalization of the students, for whom the occupation was a new and revolutionary experience. Under the leadership of SDS they formulated their demands—an end to gym construction, withdrawal from IDA, and amnesty for all participants—and had little interest in negotiation.

A third factor was the faint stirrings of community support for the strikers among militant elements in Harlem. This was by no means as great as the administration feared (or the students hoped). But the idea influenced the situation by making the administration afraid to call the police; they could not act against the whites without acting against the blacks, and they were afraid to evict the blacks for fear of a Harlem uprising. When the police did come, city mediators intervened to assure a gentle handling of the black protestors, in bizarre contrast to the rough treatment of the whites. A lasting effect on the administration is a new awareness of community relations, which vacillates between sensitivity and paranoia.

Fourth was the police action itself. The details of the action—universally known as "the bust"—cannot be recounted here. Suffice it to say that, in part because of poor planning, in part because of simmering enmity between the police and the demonstrators, it was a violent affair. For perhaps most of the witnesses and victims, it was their first such encounter. Specific incidents paled before the general imagery. The word "Fascism" was on many lips. The scene will not be quickly forgotten.

Finally, in the aftermath of the bust, campus opinion turned against the administration with incredible passion. Administration control of the institution totally lapsed. Horror at the raid produced widespread support from faculty and students for an educational strike, which was maintained with varying degrees of solidarity; for the duration of the academic year the Columbia campus was effectively closed.—E.L.

* The details of the Columbia revolt are epic and cannot be recounted here. Interested readers should study the report of the five-man fact-finding commission headed by Archibald Cox: *Crisis at Columbia* (Vintage, New York, 1968), $1.95. Other studies of the Columbia situation are also beginning to emerge.

a turbulent period when people did not clearly understand what they were voting for. He believes that restructuring proposals emanating from the faculty consistently underrate the importance of a strong executive, and that if the faculty followed its own prescription it would spend all its time on university government. "The historic reasons for faculty withdrawal from administration still exist," he commented in a recent interview with *Science*, and he fears the faculty may set up a governing apparatus it will later abandon.

Between Truman and some members of the Executive Committee there is a feeling that the other is trying to cloak what is really an attempt to maintain or obtain power. There is also a feeling, on the part of some faculty, that the administration has tried to undercut the Executive Committee by reactivating long-extinct advisory bodies and assembling informal boards of personal advisers. The lines are still fluid; some of the senior faculty known to be Truman supporters are also on the Executive Committee. But the tension between Truman and the committee as an institution appears real. Each distrusts the other's intention. (Cordier, on the other hand, meets daily with a representative of the committee, and, on that front, relations seem harmonious indeed.)

Nor is the rest of the university community entirely pleased with the functioning of the Executive Committee. Quite a few people agree that what is going on is a thinly disguised power grab; rightly or wrongly, a number of Executive Committee members are suspected of wanting the presidency themselves. The depth of their commitment to reform is frequently questioned, and their reform proposal—for a university senate heavily dominated by senior faculty—is seen as particularly self-serving.

Among students, and among some junior faculty, there is considerable resentment over the procedures being followed in the restructuring hearings. "They operate just like Grayson Kirk," complained one scientist, "from the top down, with no participation." At first the committee's plan of operation seemed intended to limit scrutiny to its own proposal and to ignore more radical proposals developed with greater student participation. While this is no longer technically true, the spirit of the criticism—frequently heard—is accurate: the Executive Committee has no intention of vastly increasing the students' role in running the university. What concessions to student interests are being made—and these are, in some instances, substantial—are emerging not on the level controlled by the committee but within the separate departments and schools.

Unease about the Executive Committee is enhanced by general uncertainty about how reforms will be implemented. "College affairs used to be run by a small clique," complained one professor, "but at least everyone knew who they were. Now no one knows who is running what."

In fact it is no secret. Final authority on structural changes still rests with the university's absentee landlords, the Trustees. Faculty and student en-

NSF "Rescue" Fund Augmented

The budget pinch has eased slightly for the National Science Foundation and for some of its grantee institutions.

Informed Washington sources report that the Bureau of the Budget has recently ruled that NSF can increase its spending during fiscal year 1969 by about $17 million above the previously announced ceiling of $462.5 million. As a result, NSF will have considerably more money available to alleviate sharp distress caused in the scientific community by this year's budget cuts. The Foundation had previously held about $10 million in reserve to ease the most severe problems caused by assignment of spending ceilings to some 500 institutions receiving NSF funds. This previous relief fund, coupled with the new money released by the Budget Bureau, thus gives NSF a total of about $27 million for "rescue" purposes.

The Foundation has already adjusted the ceilings of about 50 institutions by a total of a few million dollars in order to alleviate extreme hardship, or remedy clear injustice. Such adjustments have been made in cases where (i) NSF clearly made a computational error in calculating an institution's ceiling; (ii) an institution had already spent more than its ceiling allowed, and the institution would thus have "owed" NSF money (these are generally small institutions); and (iii) unusual circumstances, such as a large construction program or an abnormally high rate of growth, made it unfair to treat an institution in accord with a nationally applied formula.

Among the institutions receiving quick emergency relief was the University of Massachusetts, a rapidly expanding research center that has been experiencing great financial difficulty (*Science*, 15 November). University officials report that NSF has boosted the spending ceiling at Massachusetts to $1.3 million, up from the previous ceiling of $996,000 and almost identical with last year's spending rate, but still well below the $2 million in NSF expenditures that would normally have been made at the university this year.

The additional spending authority will allow Massachusetts to meet its salary commitments to graduate students and postdoctorates, and will provide roughly $100,000 in addition to buy supplies and equipment, pay the salaries of technicians, and meet other research costs. The university had previously put a virtually complete freeze on all NSF spending except salary support for graduate students and postdocs. University officials say they still need at least $277,000 more in NSF spending authority to operate at a "marginal research level." Foundation officials say the emergency increase granted to Massachusetts was intended to bring the university even with "the level of suffering of the rest of the country."

Meanwhile, NSF has received almost 200 appeals from institutions requesting increases in their spending ceilings. The increases sought range from a few thousand dollars to the $1- to $2-million level. Foundation officials hope to complete a review of the appeals and to make adjustments within a couple of weeks. Institutions, such as Massachusetts, which were given a stopgap, emergency boost in their spending ceilings, are eligible for still further adjustments.—P.M.B.

dorsements are purely advisory. Whether this central fact has been obscured intentionally or accidentally is not clear; nonetheless, the plain truth is that few people on the campus—including those closest to the reform processes—understand it. When it is understood, it is unlikely to be very popular. The Trustees, representatives of New York and national financial and business interests, do not rule Columbia in the peremptory fashion of the University of California's Regents, but they gained little from their sudden visibility during the crisis or from the radicals' well-publicized charges that they were manipulating the university on behalf of their own personal or class interests. Executive Committee chairman Michael Sovern believes that the Trustees have been responsive to campus needs and that they will go along with any reforms endorsed by a critical mass of the faculty. The underlying question—whether the Trustees will be viewed by the university community as having the legitimacy to legislate on its behalf—will not so easily be resolved.

As a consequence of the widespread uncertainty about what procedures will be followed, across a broad spectrum of campus opinion the hearings, referenda, elections, and other paraphernalia of reform seem little more than bread and circuses. Because they are sponsored by the Executive Committee, the committee has the aura of helping to perpetuate an illusion.

Outside the Executive Committee there are two groups of faculty deeply dissatisfied with what is going on. One faction is largely inchoate, but its feeling may be widely shared, particularly by older faculty. Its position rests on a fear of seeing political issues take root and divide the university. One spokesman for this position is Eugene Galanter, a professor of psychology whose research is supported by military agencies and who has been a particular target of student attacks. Galanter believes that the intellectual values of the university tradition are threatened by "politicization" and by the absorption of the faculty in the task of running things. He himself participated in one restructuring effort over the summer but believes the effort is essentially trivial, consisting of "providing checks and balances on the assumption no one trusts each other." The faculty "should be doing its own work," he commented to *Science* recently, "teaching and scholarship and research to the best of its ability. We don't carry trash to the dump; we hire sanitation men. We don't carry guns; we hire cops. It should be the same with a university. If the government of a university isn't a trivial part of it, something is seriously wrong."

On the other side of the fence is a faculty faction somewhat more organized but about equally powerless, a collection of left-liberals (old and young) known as the Independent Faculty Group. The IFG is said to have about 200 adherents, though by no means that many activists. It includes such distinguished professors as Cyrus Levinthal (recently arrived from M.I.T. to head the biology department), F. W. Dupee (the critic), and Sidney Morgenbesser (philosophy), to name just a few. This group believes, in the words of one member, that "the university is already politicized but it is on a right-wing political course that should be altered." While the IFG has had little success as a group—it is too far to the left for the administration, too conservative for the students, and too unsure of itself internally—some of its members have been individually influential. Levinthal and arms-race critic Seymour Melman, for example, are members of a newly appointed committee whose function it is to supervise (and ultimately to end) secret research. Other members intervened during the summer when the administration began harassing SDS for its occupancy of a fraternity house to run a "Liberation School." Concerning the IFG, radical students are generally contemptuous, but its existence seems to be a comfort to the less disaffected students who still look to faculty for moral support.

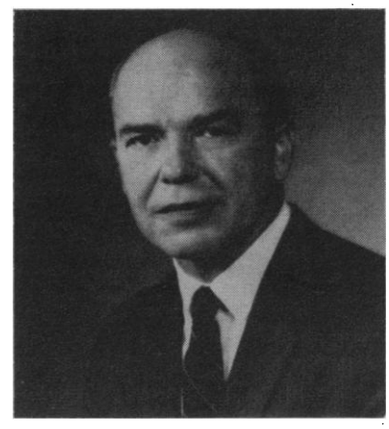
The faculty as a whole is not particularly concerned about restructuring as an end in itself. Despite objective signs of decline in Columbia's institutional viability (as measured by the American Council on Education's 1966 ranking of graduate programs, by a relative decline in salary levels, and by some important resignations), the faculty who have stayed tend to regard Colum-

Hornig Will Join Eastman Kodak

Donald F. Hornig, President Johnson's special assistant for science and technology, will join Eastman Kodak Company in an "executive capacity" in early January and will also become a professor of chemistry at the University of Rochester.

At Kodak, according to Louis K. Eilers, company president, Hornig will have "broad responsibilities" for advising management on scientific developments, suggesting new areas for research, maintaining liaison with university and government groups, advising members of the various Kodak research laboratories, and working with the marketing and manufacturing divisions on long-term developments as they proceed from the laboratory to production stage. Hornig's salary or other compensation was not disclosed.

At the university, according to W. Allen Wallis, president, Hornig will conduct courses and seminars for graduate students in chemistry, will supervise doctoral dissertations, and will conduct independent research in physical chemistry.



Hornig, who comes from a primarily academic background, told *Science* that he has always been interested in industrial and technological development and that the opportunity in Rochester provides "as nice a fence-straddling [between industry and academe] as I could devise." He called his assignment at Kodak "rather broad-gauged and freewheeling."

Hornig has been a member of the President's Science Advisory Committee since 1960 and has been special assistant for science and technology since 1964.—P.M.B.

NEWS IN BRIEF

• **NEW SCOPE FOR DARWIN:** The Supreme Court has ruled unconstitutional a 1928 Arkansas "monkey law," which outlaws the teaching of Charles Darwin's theory of evolution in the public schools. The Court unanimously held that the Arkansas statute, which permits the teaching of the biblical version of the creation of man, but not Darwin's theory, violates the right of religious freedom under the First Amendment. In Tennessee, where the celebrated monkey trial of 1925 led to the conviction of John T. Scopes for teaching evolution, the legislature repealed its antievolution law last year. This leaves only Arkansas and Mississippi with antievolution statutes. Some legal experts say that the present Arkansas ruling may be broad enough to bring down the Mississippi statute.

• **COLUMBIA ORGAN LAB:** An interdisciplinary engineering laboratory aimed at developing artificial human organs has been established by Columbia University. The Artificial Organs Research Laboratory will allow chemical and mechanical engineers to provide advanced technical resources and engineering theory to medical and biological scientists for the design of artificial organs, such as an implantable kidney. Columbia's research laboratory engineers, under the direction of Edward F. Leonard, a professor of chemical engineering, will collaborate projects with medical scientists from Mount Sinai School of Medicine, the Columbia–Presbyterian Medical Center, and other New York hospitals.

• **MINORITY REPRESENTATIVES:** Only two natural scientists are expected to be among 80 intellectuals invited to an international symposium, aimed at assessing the problems confronting the next American president. Paul Doty, Jr., professor of molecular biology at Harvard, and John Maddox, former lecturer in theoretical physics at the University of Manchester and editor of *Nature*, may be among those attending the International Association for Cultural Freedom (IACF) seminar, financed by the Ford Foundation, on 1–5 December in Princeton, New Jersey. A total of 31 Americans are expected to attend the seminar; eight are social scientists. Two other natural scientists, Vicram Sarabhai, chairman of the Atomic Energy Commission of India, and Jacques Monod, of France, were also invited to attend, but declined.

• **YALE GOES COED:** Yale University will move to full coeducation by admitting 500 undergraduate women next fall, thus breaking its 266-year-old all-male tradition. The new Yale students will be eligible for all the same courses as men and be regarded no differently by the administration. President Kingman Brewster, Jr., has announced that Yale's ultimate goal is to have at least 1500 women undergraduates without reducing the male undergraduate enrollment of 4000; the cost of the program is estimated at $55 million. Yale's decision to offer full coeducation was made 1 year after Vassar College rejected an invitation from Yale for a cooperative arrangement, whereby separate classes and administrations would have been retained.

• **CALTECH TOO:** Women will be given a greater opportunity to study in the sciences when the California Institute of Technology extends its undergraduate program to women in September 1970. It is estimated that 5 or 6 percent of its students will be women. Caltech now has 775 undergraduates. Of about 800 graduate students, 45 are women.

• **FORD FELLOWSHIPS FOR BLACKS:** The Ford Foundation has set aside $1 million for a doctoral fellowship program to help more black graduate students enter college teaching. About 35 or 40 graduate fellowships, covering tuition and living expenses, will be awarded each year to blacks interested in college careers in the natural and social sciences, and in the humanities. The fellowships, which will be available in 1969, will be renewable annually for 5 years.

• **NEW PUBLICATIONS:** *Foreign Agricultural Research Agreements Executed Under Public Law 480*, a summary of Agriculture Department sponsored foreign research projects funded with PL 480 currencies, may be obtained free from the International Programs Division, Agricultural Research Service, Washington, D.C.

bia as a satisfactory place to be. "It's a nice life," commented one researcher, "especially for the senior faculty and the scientists. We have plenty of money for our graduate students and we don't have to teach too much." New York, for all its perils, is still livable. Columbia's moral defects seem remote. Why bother to struggle for change?

The Students

As far as the students are concerned, their political leadership is almost totally demoralized; the "movement" has fallen apart. Despite the fact that polls taken during and after the uprising showed a majority of students endorsing the goals of the demonstration (only a minority approved the tactics), it took an unusual combination of circumstances to produce a coalition around the radical Students for a Democratic Society in the first place.

Many students today are angry; few are revolutionaries. For SDS, the Columbia insurrection and the world revolution were tightly linked. The buildings were not merely occupied; they were "liberated." The students were not merely students; they were acting in the name of the alienated and the dispossessed in America and across the world. For a time in the "communes"—as the liberated buildings were called—and after the bust, a large number of students briefly shared these perceptions. But the unity did not last. The majority of students were as angry as SDS, as militant, and, when the police came, as brave. But they could not for long sustain the conviction that world revolution was at hand. "Mark Rudd [Columbia SDS leader] believes there can be no free university without a free society," explained one leader of Students for a Restructured University, which split from the SDS-dominated Strike Coordinating Committee shortly after the bust. "Every time we opened our mouths we had to talk revolution. SRU people are not against revolution, they just don't believe it's very likely. We were willing to settle for an articulated student position on university restructuring."

Left to their separate paths, both SDS and SRU have considerably shrunk. Administrative action—the healing efforts of Cordier and, particularly, the dropping of trespass charges against large numbers of arrested students—has helped create a less acid atmosphere. SRU spent the summer, with the help of grants from the Ford,

Taconic, and New York foundations, working out a restructuring proposal. It calls for election of the president and trustees by the university community, with final authority in the hands of a joint legislature composed half of students, half of faculty. But not a single person could be found who believes these reforms will be adopted.

Cynicism about the whole process is a common result. Student apathy is indicated by a vote of only 411 for election to another restructuring committee last spring and by an indifferent turnout in early November for an election to various governing committees and a referendum on rules. But then, students, like the faculty, were not particularly interested in restructuring in the first place. "When I sat on the sidewalk watching the cops advance toward me I wasn't there because I wanted to vote on curriculum," commented one moderate student recently. "I was there because I was angry about the issues—mad at the destruction of the neighborhood, sick about the University's ties with IDA and CIA." The leadership of SRU has drifted away, discouraged by the gap between the reforms they think are needed and the little they know they will be permitted to achieve; last year's second-string is now in command. As for SDS, it attempted to mobilize a renewed assault on the university this fall and met with dismal failure; the organization then decentralized and is now occupying itself with smaller study and action projects. SDS leaders feel, as one said recently, that "the revolution went about as far as it could go."

It is, at best, an uneasy peace. To what extent the outside community will remain pacified is not clear. The university has hired architect I. M. Pei as master planner, and officials have said they will revise expansion plans to minimize encroachment on the neighborhood, concentrating on high-rise, multipurpose buildings. On campus, affairs are muddled. The gym issue is in abeyance, but not resolved; the IDA affiliation has been altered, but not definitively. Secret research may be on the way out. Some faculty believe that matters are improved, or at least that the situation will never again degenerate so badly; they believe that, in the future, major institutional decisions will be taken only after broader consultation. But, while administration moves may satisfy the faculty, they are unlikely to apepase many students, for whom the issues were always symbols of a deeper racism and a deeper complicity. Chicago, the Nixon-Humphrey contest, and ambiguities of the Paris peace talks, and the renewal of huge draft calls immediately following the election do nothing to suggest that, in the larger world they face, real progress toward democratic reform can be made. For Columbia—and for other universities—the question is not whether the alienation that leads to revolt exists; it is only whether and when combinations sufficiently explosive to bring the universities down can be put together.

—ELINOR LANGER

A former member of the Science *news staff, Elinor Langer is now a free-lance writer living in New York.*

Mathematics: More Funds Urged for Science's "Leading Wedge"

*The Mathematical Sciences: A Report** is the latest in the series of National Academy of Sciences surveys of the condition, prospects, and needs of various scientific disciplines. Like such predecessor surveys as those for chemistry and physics, this report, prepared under the aegis of the Academy's Committee on Science and Public Policy (COSPUP), seeks to build a case that will encourage federal agencies to lay on the dollars with a generous hand. In fact, its authors†, who are distinguished practitioners of basic and applied mathematics, statistics, and computer science (plus a Nobel laureate in theoretical physics), contend that mathematics is entitled to special treatment. In their view, not only should federal support for graduate students and academic research in mathematics be increased at 16 percent a year, overall, for some time to come but this rate of growth should not be reduced until the growth rate for other sciences which depend on mathematics has been cut back.

The survey group, called the Committee on Support of Research in the Mathematical Sciences (COSRIMS), takes the view that mathematics is the "leading wedge" of a large national scientific effort involving many fields besides mathematics itself. It observes, moreover, that the payoff from mathematical research, though sometimes long in coming, is often high, especially in relation to the comparatively modest sums required to support such research. Accordingly, the committee recommends, as an easy rule of thumb, that the growth of federal support for academic research and "research apprenticeship" keep up with the number of qualified investigators and graduate students available.

There is no doubt whatever, COSRIMS observes, that American mathematics has moved into a position of world leadership during the period in which federal support of research has grown. "Before World War II, the United States was a consumer of mathematics and mathematical talent," the committee said. "Now the United States is universally recognized as the leading producer of these." During the four most recent international congresses of mathematicians, the report points out, more than a third of the addresses presented were by American mathematicians.

"At present," COSRIMS says, "there are more first-rate mathematical centers in the United States than in the rest of the world. Nowhere else, with the exception of Moscow and Paris, is there

* Publication No. 1681, $6, Printing and Publications Office, National Academy of Sciences, 2101 Constitution Avenue, NW, Washington, D.C. 20418. A companion volume, *The Mathematical Sciences: Undergraduate Education*, Publication No. 1682, is available for $4.

† The survey group was chaired by Lipman Bers, Columbia University. Other members were T. W. Anderson, Columbia; R. H. Bing, University of Wisconsin; Hendrik W. Bode, Bell Telephone Laboratories; R. P. Dilworth, Caltech; George E. Forsythe, Stanford; Mark Kac, Rockefeller University; C. C. Lin, M.I.T.; John W. Tukey, Princeton; F. J. Weyl, National Academy of Sciences; Hassler Whitney, Institute for Advanced Study; and C. N. Yang (Nobel laureate in physics), State University of New York at Stony Brook. The executive director was Truman Botts, University of Virginia.