closed the university for a week. In protest, students organized demonstrations in cities throughout the West Bank. The soldiers shot 11 students when they broke up the demonstrations.

An Israeli spokesman defended the action by noting the difficulty of distinguishing between stones and grenades before it is too late.

Baramki argued that Birzeit's students, being normal young people, cannot be sealed off from the political agenda that affects their lives. "We don't encourage politics," Baramki said. "Since the military government makes it illegal, we don't allow any open politicking on the campus. But, like other universities, we value our freedom and think that students should be free to choose their own direction. The Israelis don't like it, but the student interest in politics is only natural."

Yet Baramki, while disclaiming responsibility for student politicking, emphasized Birzeit's own political duties. Every university is political, he said, in the sense that it must shape the next generation of leaders for the society to which it belongs. For Birzeit, the responsibility is particularly heavy because events have not permitted local leadership to develop normally. Equally important, the society does not have a clear vision of what it wants to be.

Birzeit's special political obligations to the Palestinian people was a recurring theme in the interviews I had with university officials. Muhammed Hallaj, dean of arts and sciences, told me that Palestinian society, which has been forced by the loss of most of its land since 1948 to abandon its agrarian roots, has turned increasingly toward education for answers.

As an uprooted and transient community, Hallaj noted, the Palestinians are obsessed by the importance of university degrees. They look at the dynamic new society the Israelis have created nearby, and they attribute its success to education. Hallaj said that the responsibility of Birzeit, and of its graduates, is to prepare the West Bank for "the metamorphosis from a colonial to an independent community, with as little disorder and dislocation as possible."

Ramzi Rihan, dean of sciences, explained that many of Birzeit's problems are linked to long-standing conflicts that Arab intellectuals face in today's world. For example, Birzeit is sometimes criticized for training too many historians and poets and too few agronomists and rural planners, but the imbalance reflects the Arab intellectuals' persistent aversion to working with their hands. Birzeit is also burdened, he said, by Arabic's lack of many of the logical and linguistic forms needed for modern communication. And yet Birzeit will not go to the other extreme and follow the lead of an earlier generation's intellectuals who, in imitating the West, often abandoned Arabic and Arab culture entirely.

"Our civilization is in a transitional stage," Rihan said, "and no one knows whether it will take ten years or a hundred to make the transition. Something new needs to evolve, not an imitation of the West or an end of the East. We can't engineer cultural synthesis. All we can do here at Birzeit is open the doors and windows and trust that a culture will emerge that is modern and yet firmly Arab."

To a people who have placed an exalted premium on university education, the Israeli military government's action against Birzeit and other Palestinian colleges looks like a threat to the society itself. From the Israeli perspective, suppressing politics at Birzeit is a reasonable means of supporting public order; from the Arab perspective, it is an outrage.

"The Israelis say that everyone in Birzeit is a radical and therefore dangerous," Baramki said to me. "If you mean by a radical a person who feels a strong identity with his own people, then the university, the students, all the Arabs on the West Bank are radicals. But if you're talking about radicals as extremists, as irreconcilables, as uncompromisers, then they are a small minority. I think their numbers may be growing, however, as the occupation drags on and becomes more difficult every day."

Last year, shortly after the military government closed Birzeit, some 60 Israeli intellectuals, many of them professors at the Hebrew University, published a petition demanding that Israel "ensure that the Palestinian Arabs receive the same rights as we demand for ourselves, including the right to a higher education." They were supported by petitions from Oxford, Princeton, and other universities, and by editorials in newspapers throughout the West. The public pressure was no doubt a factor in its reopening of Birzeit. With this latest closing, it is likely that Baramki, in the name of academic freedom, will once again look for help beyond the West Bank.

—MILTON VIORST

The author is an American journalist who has traveled and studied in the Middle East on an Alicia Patterson Foundation grant.

Will Biocommerce Ravage Biomedicine?

Science is hardly a state enterprise in America, but the federal government thoroughly dominates basic research by providing the major share of financial aid in all fields. The government is a distracted patron, however, and evidently needs regular reminders of its duty. Thus a group of recent American Nobel Prize winners paid a ceremonial visit to Congress on 19 November to plug for an expanded research budget. They appeared before a packed hearing of the House science and technology subcommittee, chaired by Representative Don Fuqua (D-Fla.).

The scientists named a couple of special concerns, along with the traditional request for funds. Christian Anfinsen of the National Institute of Arthritis, Metabolism, and Digestive Diseases, winner of the 1972 Nobel Prize in chemistry, voiced a common worry when he said he hoped the Department of Defense (DOD) would not swallow all the discretionary increases in research funding. He asked the subcommittee members to help "play down our DOD and increase our DO-anything else."

President-elect Reagan has said that he plans to reduce federal taxes and the budget while increasing Defense appropriations. About three-quarters of federal spending is fixed by law. Much of the unfixed budget pays for defense. If Reagan is to keep his promise, one quick way to cut costs would be to reduce research budgets, particularly for nondefense-related work. This possibility worries people at the National Institutes of Health because Reagan's team has already said that the parent agency, the Department of Health and Human Services, contains several billions of dollars worth of fat.

Several witnesses brought up another concern—that university research centers are being depleted because they cannot compete with business in attracting and keeping talented scientists. Val Fitch, chairman of Princeton's physics department and a winner of the 1980 Nobel in physics, said that people with technical training are in such short supply that holders of new bachelor's degrees are "being offered positions

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paying higher salaries than their professors are being paid. In taking these jobs in lieu of graduate school, these talented individuals will not develop the background to do basic research." As a result, Fitch said, the next generation will not be as well trained as this one.

Hamilton Smith, professor of microbiology at Johns Hopkins University and a 1978 Nobel winner in medicine, asked for an increase in federal aid in order to "prevent the gutting of the university faculty." The biologists' commercial success caught many schools unprepared, he said. "The new companies are quickly hiring away some of the best Ph.D.'s. . . . I'm not saying this is necessarily bad," Smith added. He would like the government to help make university jobs more attractive.

Smith also worries that the new biotechnological gold rush could destroy the academic environment for basic research. "Free exchange of scientific information . . . may suffer, and long-term progress may be traded for short-term financial gain . . . . We still do not know the structure of human chromosomes, how the genes are arranged, how tissues and organs are formed, or even how any single human gene is regulated and expressed." Smith decried a tendency among young scientists pressed for cash to avoid risky and innovative projects. "They are increasingly doing routine research that guarantees publication and consequently funding and promotion."

The subcommittee members listened attentively to all of this, and to the remarks of Baruj Benacerraf of Harvard University, winner of the 1980 Nobel in medicine, and to James Cronin of the University of Chicago, winner with Fitch of the 1980 physics prize. But these witnesses seemed at a loss when confronted with the voice of the new Administration, in the person of Senator Harrison Schmitt (R-N.M.). Schmitt, who will be chairman of the Senate's science subcommittee, was invited to sit in on the hearing. He suggested that it might be a good idea for scientists to submit more funding requests to private foundations and fewer to the federal government. Benacerraf replied that that would be difficult because, in his experience, the government reduces its support when it learns that a grantee has won private aid. Fitch said that he would not know where to look because private foundations do not give away much money for basic research in physics.

Schmitt said that he hoped to explore this idea further and then departed to join the floor debate on the largest defense appropriation bill ever considered by Congress.

Hiatt Warns of the "Last Epidemic"

Howard Hiatt, dean of the Harvard School of Public Health, has been swept up in a campaign to prevent what he calls "the last epidemic our civilization will know," nuclear war. He has been involved in the effort since early this year, when a group called the Physicians for Social Responsibility held a meeting in Cambridge, Mass., on the effects of war (*Science*, 28 March).

Convinced that Americans are not sufficiently aware of the horrors that would accompany a nuclear attack, Hiatt has taken it upon himself to describe them in graphic detail to as large an audience as he can reach. He has appeared on television, spoken at conferences, written to the dean of every American medical school, and taken his message to the American Medical Association (AMA). The latter agreed to publish an editorial by Hiatt in the 21 November issue of its journal.

Hiatt's purpose, he says, is to let Americans know that they cannot expect to receive any significant aid from the medical community after a nuclear attack. It is unlikely that a nuclear war would be "limited." Second, Hiatt argues that even a strike on a single city would overwhelm medical facilities so badly that there is no point in preparing for one. Even if one makes the most optimistic assumptions, survival would be a matter of chance.

A single megaton bomb dropped on a large city, Hiatt calculates, would destroy most of the hospitals, for they are usually in the center of the city. And, in addition to the people it would kill, it would create tens of thousands of burn victims. None could expect much help, for the demand for plasma alone would be insatiable.

Waiting for Reagan

"My name is always on the list, and I never get chosen," says William Nierenberg, commenting on the rumor that he and Arthur Bueche are candidates to be the next science adviser to the President. Nierenberg, director of the Scripps Institution of Oceanography, has been an adviser to the government since his early involvement in the Manhattan Project to build the atomic bomb. Bueche, vice president of General Electric for science and technology, has been advising the White House for at least a decade.

Some of Reagan's top aides are now attending meetings in California chaired by William French Smith, the probable next attorney general, to review nominations for the Cabinet. Reagan is expected to decide on the first dozen positions by December. Once this has been done, the lower ranks will be filled. No science adviser has been selected, says a participant in the Smith meetings.

Alpha SIO Photo

William A. Nierenberg

According to Nierenberg, there has been "some talk" that the President's science adviser in the next Administration may be even less noticeable than in Carter's government. If Reagan runs the presidency as he did the governorship of California, special counselors like those for science and national security may serve as coordinators rather than policy-makers. If this happens, the science post may not attract one of the heavyweights in the field.

Eliot Marshall