Rocco declines to name the members of the review panel, on the grounds that organizations not represented on it will feel left out; he says that in selecting the panel, "Anybody who has ever expressed an opinion on how the cancer agency should be run was contacted and encouraged to participate." In addition to the ordinary review panel, Rocco has set up a scientific group to assess the research competence of the candidates.

Malek's talent search system must ultimately stand or fall by the quality of the candidates it has helped to select, but the least that can be said for it is that it is thorough. Whatever the merits of creating an independent cancer agency (which most scientists believe are few), it is no bad ideal to give every potential candidate in the country a chance to be chosen director. To what extent is Malek's approach an improvement on the previous system? "The people before Fred were highly political and they were not professional recruiters," says a former Nixon aide; "the general practice of recruiting people has now shifted. Originally, they tried to find *the* candidate for the job and then approached him. But Fred Malek has tried to develop a list of qualified candidates for any given job, in order to give the President the greater number of options."

Asked what changes he has made in the recruitment system, Malek stresses the professionalism of his staff: "They know who to contact, who to check out, how to do background research. We are devoting more professional time to recruitment and doing a more thorough job. As a result, we are not as dependent as we were in the past on those recommended by special interest groups."

According to Rocco, there are several important advantages in the Malek system. "Before Malek, people were brought to Washington mostly by colleague recruiting. A man would offer a job to his friends or ask them to suggest candidates. So all the names you got would tend to come from the same population of thought. There is no way to measure how good or bad the new system has been, but at least it makes for diverse inputs in terms of ideas."

Another advantage of the Malek system is that it provides an alternative route into Washington. "Before Malek, the only way you could get to Washington was if you had friends," a White House aide observes. "Now, this still works, but there is also the chance that if you are good in your field someone in Malek's group will hear about you. For example, none of the top ten candidates for the cancer job really has any pull in Washington. And someone who comes in because he is good has no obligations to pay off to the friends who brought him in—he can call the shots as he sees them."

—NICHOLAS WADE

ACS: Disgruntled Chemists Seek New Activism from an Old Society

A great many of the American Chemical Society's 112,000 members work for corporations that have been widely accused, rightly or wrongly, of fouling the environment and of merchandising death in the form war materials. But to the continuing amazement of its leadership, the ACS slid through yet another national meeting in Washington last week, utterly undisturbed by the acrimonious confrontations on social issues that have shaken up the meetings of other national scientific organizations lately, notably the AAAS.

Nevertheless, "There is a revolution going on in the American Chemical Society," in the view of Alan C. Nixon. And Alan Nixon, a retired industrial chemist from Berkeley and one of three candidates for the presidency of the society, ought to know. In large measure, he started it.

The Nixon brand of revolution (he is not related to the President) is a gentlemanly affair; but still, it is having its effect on the character of this staid and rather donnish organization. For one thing, Alan Nixon has thoroughly politicized the society's largely honorific presidential election process, in which a nominating committee customarily taps two distinguished scientists for a polite contest, and in which blatant electioneering is considered the worst indiscretion. This year, Nixon, who by his own description is not a distinguished scientist, is on the ballot by popular demand and not because the nominating committee wanted him there. Even worse, he is campaigning vigorously, and as a consequence, so are his opponents, George S. Hammond of the California Institute of Technology and William F. Mosher of the University of Delaware.

The central issue of this unlikely match is not war or pollution, but the economic plight of the nation's 186,000 chemists and chemical engineers and, by implication, that of the scientific community at large. Backed by an ill-defined but apparently sizable constituency of discontented chemists, many of whom are among the embittered jobless, Nixon is striving to prod the society into stepping beyond its present role as a passive forum for research in the Renaissance tradition of scientific societies and to adopt a second, activist, role as an advocate for chemists and as a protector of their livelihood. "I want to build a system in the ACS to take care of chemists' professional needs—a system that concerns itself with the human problems of chemists as employees," he says. He eschews any notion of unionizing chemists, but he feels that the ACS ought to be using the weight of its prestige to push for better job security, higher salaries, and improved fringe and separation benefits—particularly for industrial chemists who lack the protection of tenure.

Nixon is unabashedly in favor of lobbying on the part of large scientific bodies, much in the fashion of the American Medical Association, and he went so far as to suggest last week that the ACS assess its employed members $5 or $10 to establish a political arm for just that purpose. "Most legislators haven't any idea who we are and what our problems are," he said. "They think the ACS is a branch of the

Manufacturing Chemists Association."

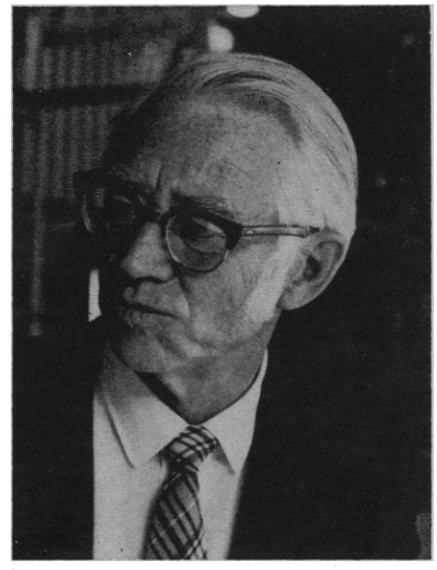
Alan Nixon's opponents say their views are not "diametrically opposed" to his. But they are concerned that more than a modicum of forthright activism might detract from the society's prestige, harm the publishing business that supports it, and jeopardize the society's tax status. Both Hammond and Mosher say they are deeply concerned for their unemployed colleagues, but they seem to feel that the interests of chemistry would be better served by discreet and selected contacts with legislators rather than by a barrage of political activity.

Debates of this nature are not new to the ACS or to other scientific organizations, but they have traditionally been conducted in a much lower key. For years, the chemical society has tussled with the problem of defining its "scientific" responsibilities as opposed to its "professional" role. In the past, it has satisfied its professional instincts chiefly by such innocuous activities as composing a credo for chemists and conducting public affairs programs to tell laymen about the wonders of "Men and Molecules," and to entice bright students into chemistry. But times have changed, the market is glutted with chemists, unemployment is soaring, and, to an increasing number of the society's members, the scientific merits of the ACS don't mean much without a job.

Sobering Surveys

To some extent, the society itself exacerbated the identity crisis that was evident at its meeting last week by its own detailed documentation of the profession's economic plight. This past spring and summer, the ACS staff surveyed thousands of society members to determine how the current slump in R & D support has affected them and the profession as a whole. The data suggest that things have rapidly regressed from bleak to grim this year, especially for recent graduates, and that the prospects for 1972 are still more dismal.

The early results of one survey show, for instance, that unemployment among this year's graduates in chemistry and chemical engineering now exceeds 10 percent—more than twice that for last year and nearly four times the overall unemployment rate in the scientific community. Between 3 and 4 percent of all chemists are believed to be out of work, a situation only slightly better than that of physicists. But the ACS says another 4 percent of chemists and chemical engineers consider themselves



Alan C. Nixon

under- or ill-employed. The society maintains that somewhere between 11,000 and 17,000 new jobs are needed in order to employ fully and satisfactorily the nation's 186,000 chemical scientists and engineers.

What's more, other ACS surveys show that chemists' salaries are barely keeping abreast of the cost of living and that this year, for the first time in two decades, starting salaries for new graduates failed to rise—and in some specialties actually declined. To make matters worse, yet another survey by the ACS predicts that, for each of the next 2 years, the nation's chemistry departments will generate 23,000 new chemists to fill an estimated maximum of 15,000 available jobs.

Although the production machinery is winding down slowly, the "academic pipeline is still full," and its supply of new chemists may not abate to the level of demand until 1980, according to Robert Henze, the ACS membership director and one of the society's manpower specialists. Henze presented these and other figures to a symposium on manpower at last week's meeting in the Washington Hilton Hotel.

These circumstances have generated a great deal of frustration and bitterness among chemists, particularly, it seems, among those left jobless by layoffs carried out during the past 2 years by some 30 major industrial firms. Unemployed an average of 3 to 6 months, many of them have vented their accumulated emotions at the ACS, beseeching it in letters to take a more forceful interest in manpower problems and berating it for failing to do so. (ACS officials say that a series of "poison-pen" letters has also been circulated by an anonymous group in New York and New Jersey accusing the society of deliberately conspiring with industry to create a manpower surplus and thereby "produce docile, servile, timid, and insecure scientists and engineers . . . unable to stand up to their corporate bosses. . . .")

For many of the discontented, Alan Nixon is a convenient rallying point. Although he says he doesn't subscribe to conspiratorial views of the society, he does assert that the ACS "has left control of the chemical profession to the academics and the industry," with the result that industrial chemists' jobs are relatively insecure or poorly rewarded.

Apparently, a large number of ACS members agree. Drafted by the society's California section for last year's election, he drew a third of the votes cast, despite a minimal campaign. This year he has equipped himself with a campaign manager—a frenetic Berkeley chemist of Hungarian extraction named Attila E. Pavalath—and he has the backing of a loyal opposition party in the society which numbers about 2500 and calls itself the "Chemical Grassroots."

"I was drafted, but I want the job," Nixon told an unprecedented candidates' night at the Washington meeting in which all three contenders took to the stump. "The society is moving in the right direction, but not fast enough, he said. "I can do a better job of needling as president-elect." Whether he has the chance to try will be settled by mail ballot in November.

Despite the amateur aspects of the campaign, the ACS leadership is taking Alan Nixon, and the ground swell of "professionalism" in the society, with considerable seriousness. Last spring, ACS president Melvin Calvin, a Nobel laureate from the University of California at Berkeley, established a committee to determine precisely what new professional activities the members wanted the society to pursue, and to recommend any new courses of action it considered desirable. Calvin termed this action "the most important self-examination we have undertaken since our reorganization in 1948." Nixon is on the committee.

In addition, the society has investigated the circumstances of recent layoffs by industrial firms (and found them by and large "humane"); it is spending an average of $500 on job

placement assistance for each unemployed member who seeks help (most of the money goes for an ACS job clearinghouse and free ads in *Chemical and Engineering News*); and the society has formed a committee on economic status to seek out opinion on the most effective means for using the society's multitude of expensive manpower and salary surveys. These and similar moves run along the lines of programs advanced by Nixon and his supporters but are considerably less aggressive than the professionalists' proposals. Nevertheless, Nixon's success as a gadfly candidate has earned him the reputation, in the words of one ACS staffer, as the "George Wallace of the American Chemical Society."

Kindlier acquaintances called him an "unquenchable idealist," and Alan Nixon is that, if nothing else. Although he is having a tangible effect on the policies of organized chemistry—to the extent that chemistry is organized—any drastic transformation of the ACS is about as remotely probable a feat as radicalizing the National Academy of Sciences.

The entrenched leadership and the paid executives of the society see themselves as severely limited in their role as advocates for chemists—partly by the necessity of preserving the society's pristine image as a scientific body and partly by the more mundane necessity of preserving its tax status as a purely educational institution. And right now the tax status is of utmost importance: Even though dues were increased 2 years ago, the ACS is facing the prospect of a worrisome deficit next year. This year its publications—the primary source of income—barely broke even, and the society's main news publication, *Chemical and Engineering News*, is in deep financial trouble. Frederick T. Wall, the executive director of the ACS, told the society's governing council last week that *C&EN* will probably lose $650,000 this year, despite a 30 percent cut in staff and a 20 percent reduction in content. Wall said that the loss was due to severely reduced advertising. To offset its deficit next year, the society plans to raise the nonmember subscription rates of its journals by 50 percent.

Such stringencies augur poorly for any aggressive new campaigns by the society to shore up the sagging economic status of the chemical profession—even if the society were so inclined.

Ironically though, it may well be that those who stand to gain the most from new professional activism on the part of the ACS—the recent graduates—really care the least.

Otis Rothenberger, an articulate young chemist who received his doctorate from the University of Delaware last June, took part in two symposiums on employment arranged by the society, and he told them both that he and a lot of other young Ph.D.'s just aren't interested in the affairs of large scientific organizations. Rothenberger, who said he spent a year before and after graduation looking for a job, told one manpower panel:

"I respect the ACS as a publishing organization, but as a 'people' organization I don't care if it lives or dies.

"The society doesn't owe me or anyone else a job," he said. "I think we are just going to have to accept the fact that some of us aren't going to be able to play chemistry as we'd hoped."

—ROBERT GILLETTE

Race for Human Cancer Virus: Odds against Houston Team Lengthen

Immunology is part science, part black art, and contributions from the latter source underlie the controversy that now swirls round a promising claim to have discovered a human cancer virus. Early in July, scientists at the M.D. Anderson Hospital and Tumor Institute in Houston announced they had found a virus in a culture of cells derived from a cancer patient. Just as other laboratories were gearing up to study the role of the Houston virus in causing human cancer, a research team based at the National Cancer Institute undermined their hopes with the suggestion that the virus was simply a contaminant of the cell culture, since it appeared to be of mouse, not human, origin.

The argument about the virus's origin, which is still far from closed, hinges on the interpretation of advanced immunological techniques that are being stretched to the limits of their range. The development of the controversy also reflects the pressure of the present political maneuverings to legislate a cure for cancer, under which the already brisk pace of competition in molecular biology has been accelerated to near breakneck speed.

Although Peyton Rous first showed some 60 years ago that a kind of cancer in chickens is caused by viruses, and many other animal cancers have since been proved to be viral in nature, the only type of uncontrolled growth in humans that has so far been nailed down to a virus is the common wart. Two categories of virus, herpes-type viruses and C-type particles, have been found in association with a number of human cancers—last month brought news of the discovery of herpes-type viruses in the cells of patients with Hodgkin's disease. But chiefly for lack of plentiful supplies of the virus, the association has never been raised to causal status. This is why considerable excitement attended the news that the cancer cell line established at Houston was producing virus in quantities sufficient to interest virologists.

The Houston team is led by Elisabeth S. Priori and her former supervisor Leon Dmochowski, both of whom have devoted many years work to the search for human cancer viruses. Their cell line—designated ESP-1 after Priori's initials—was established from the tissue of a 5-year-old child suffering from the type of cancer known as Burkitt's lymphoma. (The child died, in fact, from chicken pox in June 1970.) C-type particles began to appear in the ESP-1 cells 4 months after the culture had been established.

The Houston team delayed announcement of their finding in order to check that the virus was a genuine component of the ESP-1 cells and not a