

## Confusion and confrontation

A midwinter self-examination in a gloomy atmosphere

Science's annual rites of winter opened this week with the one meeting a year in which the scientific community as a whole looks inward to itself and outward to the rest of the world. What it perceived in looking inward was not a coherent image, for actually there is no such thing as a homogenous community of scientists with mutually agreed upon ideals, interests and concerns. What it perceived in looking outward was a troubled and uncertain society, looking somehow to science for answers that science alone cannot provide while at the same time believing that in some ways science itself is a cause of problems that in reality have far deeper roots.

It is a time of intense soul-searching, this week-long examination of science and society that the annual meeting of the American Association for the Advancement of Science has become. It is a time when, if there is such a thing, the conscience of science is scrutinized like a specimen under a microscope. What some see when they look through that eyepiece is the absence of conscience, or as a respected figure, the noted Harvard nutritionist Jean Mayer, put it this week at the AAAS meeting in Philadelphia, science without conscience. Members of antiestablishment groups, such as the ubiquitous Scientists and Engineers for Social and Political Action (SESPA), whose motto is Science for the People, would put it far more strongly, as in fact they did this week with their usual assortment of printed and shouted epithets and tactics of disruption.

One has a nagging feeling amidst all this that there is being generated more heat than light, although certainly the efforts of the majority are motivated by the search for wisdom and understanding.

In that search, distinctions are important. One such distinction when considering science and society is, as Joel R. Primack of Harvard puts it, between policy for science ("getting more money for science") and policy for technology (determining the proper directions for science and technology). To him, the former is not of great interest, but to many of his colleagues, the status and health of science is of considerable concern.

Nowhere is this more evident than in discussions of employment in sci-

With this study of the mood of the meeting we begin our coverage of the annual meeting of the American Association for the Advancement of Science in Philadelphia this week. Reports of specific scientific achievements follow, and still more stories of the meeting will appear in subsequent issues.

ence. Few would contend that the United States is not at or near the forefront in most major areas of science. Yet from a job viewpoint, science has been for several years a depressed industry, and the situation has not improved in the last year. About 3 percent of scientists and 3.5 percent of engineers are unemployed in the United States, and another 3 percent are what manpower specialists call underemployed, filling jobs below their qualifications.

In this regard, there is wide interest and anticipation in an activity that has been occupying the White House in the latter quarter of 1971, the set of so-called "technological initiatives" being put together by teams headed by William M. Magruder, the former chief of the Administration's ill-fated SST. The result of the effort is expected to be a list of technological challenges for society to be announced by President Nixon in his January State of the Union Address and given administration backing. Some hold hope that the

set of programs will help relieve the depressed employment situation in science and engineering, but others are skeptical.

"The word is that there will be 300 ideas the Administration will back," says Primack. "These can be grouped into three categories: old chestnuts everyone had long ago put aside, some moderately new ideas that are not very good, and some moderately new ideas that are fairly good." There are about 100 ideas in the latter category, but many expect a major effect to be merely improvements in the organization of existing efforts in applied science. Primack calls the whole thing politically inspired. "After all, the President could have done the same thing two years ago, taken more than three months to put it together and done it in a more serious manner."

The larger concern of Primack and many other scientists at the AAAS meeting is to make science more effective in improving human welfare. One way to do this is to get better scientific input into decisions of public policy, especially in high-technology areas. There is widespread satisfaction with the existing advisory structure. Even the President's Science Adviser, Edward David, recently acknowledged that the President's Science Advisory Committee, the National Science Foundation, and the National Academy of Sciences do not quite fulfill the need for independent scientific bodies to provide



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Humphrey: A call for new priorities is greeted with old vegetables.

technical advice on policy matters.

Some feel one solution is to stimulate more involvement by the professional scientific societies toward assessing the possible future impact, both beneficial and detrimental, of development in their fields. Others feel small, independent organizations of concerned scientists, such as the Federation of American Scientists (FAS), are the best future key for candid appraisal of technical problems. The value of FAS and similar groups, observers feel, is their function as technologically sophisticated adversaries of major programs (most recently the SST and the ABM) to balance out the equally sophisticated and well organized advocates of the programs within industry and government. Traditionally, advocates of a new high-technology program get together, decide what they want and emerge with a full plan. By then, it is often too late for opponents to mount a campaign against the project.

The project may be sprung on an unprepared Congress, lacking the information to determine the technological options. Several speakers at a AAAS symposium on the use of scientific information in policy making called for new kinds of efforts and institutions to provide needed technical information to legislative bodies. Bernard N. Manheimer, a program officer in the Department of Housing and Urban Development, emphasized the need to intervene very early in the decision-making process, well before elected representatives have made up their minds on the issue and before they have reached the stage of formal public hearings.

During the past year, the FAS has revitalized itself and emerged as an important influence on major technological matters debated in the national arena. It was especially vocal in gathering and presenting information opposing Administration claims on the arms race (an alleged Soviet nuclear lead, U.S. SALT-talk proposals, and a supposed gap between Soviet and American research and development). FAS also opposed the SST, the Administration's reservations on the Geneva Protocol, and the Amchitka nuclear test.

This week at its own annual meeting during the AAAS sessions, the FAS presented its first public service award. It went to Richard L. Garwin of International Business Machines and Columbia University for his testimony against the SST.

In addition to his Congressional testimony, Garwin was the chairman of a PSAC panel whose report critical of the SST was kept under wraps by the White House from March 1969 until August 1971 (SN: 9/4/71, p. 141), after the SST had been defeated. Garwin, this week, showed no bitterness



*Mayer: Is science conscienceless?*

at the Administration's handling of the report but said it did provide some lessons. "I thought that the Government was justified in holding up the report but was unwise. It was sacrificing long-term interest for short-term advantage. That's over now. What has been shown is that the public really does want the information and that the Administration didn't create a very good picture of itself by holding it back."

One of Garwin's concerns now is with the need for far more public analyses of programs. "This would be not technology assessment but program assessment." He calls for 10 independent centers outside the Government to assess such matters as the prison system, the regulation of transportation, the structure of the Armed Forces, and the nature of weapons systems.

In contrast to the FAS, which specialized in gathering and disseminating detailed technical information on technological programs, the SESPA organization prefers tactics of confrontation.

Carrying out plans made the evening before, dissidents delayed and disrupted a speech given by Sen. Hubert H. Humphrey (D-Minn.) on peace through change at a AAAS symposium on value and knowledge requirements for peace. Before the presentation, they occupied the stage and fastened to the back curtain posters and signs critical of Humphrey's association with the Vietnam War when he was Vice President. AAAS program manager, Walter Beryl, pleaded with the protesters to give Humphrey the right to speak. They left the stage and Humphrey made the presentation. Throughout the talk he was interrupted with obscenities and shouts of "war criminal!" and "liar!" from a relatively small group of SESPA members. At one point, a protester who had earlier narrowly missed Humphrey's head with a large paper airplane fired a tomato that bounced off the podium. A security guard came on stage and escorted the man out of

the auditorium. After the speech one of the group read a citizen's arrest citation against Humphrey accusing him of war crimes, but no attempt was made to carry it out physically.

The next day Harvard's Daniel Patrick Moynihan, vice president of the AAAS, issued a statement apologizing to Humphrey and lashing out at the disruption, which he termed political harassment and a threat to free inquiry. He said he objects to the politicization of the AAAS. In his own protest, he canceled his scheduled vice presidential address.

But Barry Commoner, another member of the AAAS board of directors, objected to Moynihan's statement. He said he felt it better to allow than to disallow the expression of strongly felt political emotions.

The irony was that Humphrey pointed out and criticized many of the same aspects of science that protesters had been concerned about, such as, nearly half of all research and development is devoted to, as Humphrey put it, "perfecting means of destruction." He called for alternative conception of the nation's long-run interests that would lead to different priorities.

That same theme was heard many times over during the week. □

## Psychology and noise pollution

Most studies on effects of human life of various forms of pollution have concentrated on physical effects. But the effects may be psychological as well as physical. Especially in the case of noise, environmental stimuli may affect different individuals in different ways. Some research has been done on physical effects of exposure to high intensity noise. In a session on response to environmental stimuli, scientists at the annual meeting of the AAAS discussed psychological effects of noise.

Psychologists and environmentalists are beginning to recognize that an individual's attitude toward certain noises and his perceptions about their sources may influence their effects on him. Response to aircraft noise, for example, varies according to the individual's fear of a plane crashing into his house and his opinion on whether the producers of the noise could abate it if they chose.

A group led by Paul Borsky of Columbia University is beginning a new research program in which a random sample of residents near New York's John F. Kennedy International Airport are surveyed. In addition, laboratory studies will be conducted. Subjects in an acoustical laboratory, furnished like a typical middle-class living room, will be exposed to simulated aircraft noise. The subjects will rate each