

Getting into gear on U.S.-Soviet science

A six-member delegation led by Presidential science adviser Edward E. David Jr. was to arrive in Moscow Sunday for a week of formal discussions on implementation of the recent United States-Soviet agreement on scientific and technological cooperation (SN: 6/3/72, p. 357). Accompanying David were James B. Fisk, president of Bell Laboratories, and Eugene Fubini, a former vice president of IBM. Both have had long experience in dealing with the Soviets on technical matters. Staff members from the Office of Science and Technology and from the State Department rounded out the group.

As David said May 24 when the Moscow agreement was announced, the purpose of the trip is to discuss guidelines and procedures for the joint commission that will be set up to oversee cooperative programs. The members of the commission will not be named until David and the Soviets have had this opportunity to exchange views about its ideal composition. The negotiations, July 2-8, will lead to working groups to discuss areas of deliberation to be presented at the first meeting of the commission, which will be held this fall.

While in the Moscow area, David's group will visit several research facilities, including an experimental 25 megawatt magnetohydrodynamic (MHD) generating facility. Soviet progress in energy technology, especially in controlled fusion and MHD, are among the many areas of interest to the United States. In preparation for the Moscow meeting, a group of prominent U.S. scientists met at the White House June 21 to discuss with David's delegation their ideas about fruitful areas of cooperation. Weather modification, polar research, fisheries management, forestry management, high-energy physics and urban planning were among the subjects discussed.

At a briefing afterward, David again emphasized that the agreement envisions not just exchange of scientists but joint research programs. As for the more distant future of U.S.-Soviet science relations, David said, "It is not at all inconceivable that we could have joint laboratories."

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A team of five American cancer scientists, led by Dr. C. Gordon Zubrod of the National Cancer Institute, were in the Soviet Union this week to exchange information on drug treatments of cancer with leading Soviet scientists. The exchange is part of the recent U.S.-Soviet health agreement to share research results from cancer, heart disease and environmental health. □

At Ft. Detrick, cancer research is on

On Oct. 18, 1971, President Nixon announced the decision to convert the Army's former biological warfare facilities at Ft. Detrick, Md., to research on the causes, treatment and prevention of cancer. Last week Frank J. Rauscher Jr., director of the National Cancer Institute, announced that the NCI has awarded \$6.85 million to Litton Bionetics, Inc. to renovate, manage and operate the facilities during the coming year as the NCI Frederick Cancer Research Center. This is the largest contract the National Institutes of Health has ever awarded. However, the sum is modest compared with the \$400 million NCI will be spending in fiscal 1973.

Litton won the contract over competing bidders because it had already done a lot of contract work for NCI and offered NCI top science management. The new center will be headed by Robert E. Stevenson, a Litton employe and formerly chief of NCI's viral carcinogenesis branch. It will be staffed with both Litton scientists and scientists formerly employed by Ft. Detrick. The center is scheduled to begin operation in October.

Goals of the center will include large-scale production in tissue culture of viruses that cause cancer in animals; development of procedures for production of many viruses suspected of causing cancer; studies of cancer-inducing substances such as chemicals and radiation; production and chemical analysis of pure preparations of cancer-causing materials; establishment of a laboratory with the latest equipment and safety features; maintenance of a large animal farm for research purposes and development of cancer drugs.

Ft. Detrick is well suited for these undertakings. Not all the 750,000 square feet of laboratory space will be used the first year, but Litton will employ those buildings designed for microbiology research and development. They have air flow needed for work on viruses and chemicals, also tight hoods to keep potentially dangerous materials from infecting scientists, other specimens or the community at large. "It is an ideal environment for establishing a baseline on which a lot of fundamental work will have to get done," Stevenson told SCIENCE NEWS.

The states, EPA and nitrogen oxides

It is not possible to pick a single air pollutant and say its abatement is more problematical than any other. They have all created large problems, and interactions between them cause yet more problems. But if there is a single pollutant that is most vexing, it may be nitrogen oxides (NO_x). The acrid, brown nitrogen dioxide is highly corrosive. And NO_x reacts with hydrocarbons and sunlight to form photochemical smog.

On a nationwide basis, about half the NO_x comes from stationary sources and about half from mobile fuel-burning sources. But specific local proportions vary greatly. In many Eastern cities only about 25 percent of the NO_x comes from autos, but in Los Angeles the figure is nearer 80 percent.

Recent studies indicate that about 75 percent of the stationary-source NO_x can be abated cost effectively from any given industrial plant, through techniques for changing combustion. But auto-caused NO_x is another story. Strict abatement from new cars is scheduled for 1976, but the Environmental Protection Agency admits there is still no cost-effective way to do it; the cost per auto with projected tech-

nology could go as high as \$750, and the controls would require an impossibly high level of maintenance.

In June, however, EPA in a confusing two-pronged action announced it had set stationary emission standards for NO_x in nine states (and for hydrocarbons in three others) and at the same time had given all states a year's extension for beginning to enforce the 100-microgram-per-cubic-meter ambient air standard for NO_x. The reason for the second action, according to EPA's Robert Fri: EPA's previous testing methods for NO_x in ambient air were often inaccurate on the high side, and thus new, more accurate, testing may allow less strict abatement procedures.

But Fri admitted he had no knowledge of recent work done on vertical distribution of NO_x by researchers from the National Aeronautics and Space Administration and the University of California at Riverside. This work indicates that, contrary to EPA's new findings, the NO_x problem may be worse than thought. UC's James Pitts and NASA's Ronald Reinisch reported that airborne testing showed far higher levels than did surface testing, even over rural areas (SN: 4/8/72, p. 234). They say that "drastic revision" toward stricter, rather than more lenient, abatement standards may be necessary. □