tions Commission (FCC), the Commerce Department's National Telecommunications and Information Administration, (NTIA) and the State Department in the Executive Branch. And the private sector is the repository of much of the requisite technical expertise.

Although the ORB 85 meeting is still more than a year away, the United States faces a crucial rendezvous this summer at a preparatory meeting in Geneva which is expected not only to define the technical issues for the 1985 meeting but also to set the tone. An advisory committee mustering private and public sector talent was established by the FCC in 1981 and submitted its first report in December projecting demand and laying out technical issues and policy choices. And NTIA is lead agency for an interagency task force working to coordinate the U.S. preparations. But old WARC hands are worried that unless a U.S. head of delegation is named soon to ringmaster the effort, the U.S. side next year could be set back on its a posteriori.—JOHN WALSH

Sleight of Hand with EPA's R & D Budget

The President's support for the environment is less than meets the eye, according to his total budget

"Though this is a time of budget restraints, I have requested for EPA one of the largest percentage budget increases of any agency," President Reagan announced last month in his state of the union address. And with those words, Reagan left many with the impression that the Environmental Protection Agency (EPA), and the environment in general, finally have found favor with the Administration. But a close examination of the budget proposals suggests that the Administration's support for environmental programs is less than meets the eye.

The increase that EPA is to receive under Reagan's fiscal year 1985 proposal is 9 percent, raising the agency's operating budget to $1.2 billion. But even at this level, the agency's budget would still be 9 percent *less* than when the Carter Administration left office. Elsewhere in the federal government, the picture is worse, for the Administration plans to slash the environmental research budgets of other agencies. Some of the same cuts have been proposed in previous years, but Congress has usually restored the funds. Nevertheless, Reagan keeps trying.

Under his budget proposal, EPA's research and development budget would increase to $278 million, a boost of 13 percent or $33 million. But this level of funding is 24 percent less than the FY 1981 budget under Carter. Furthermore, Reagan's proposed increase of $33 million would be canceled out by reductions in the environmental research budgets of the National Oceanographic and Atmospheric Administration (NOAA) and the U.S. Geological Survey. Depending on how environmental research is defined, the cuts would range from roughly $50 million to $90 million. The Department of Energy's division of biological and environmental research and the research program within the Department of the Interior's Fish and Wildlife Service fare a little better, with token increases of about $5 million apiece. The environmental budget for the National Science Foundation would increase about 5 percent or $16 million, but it is unclear whether the additional money represents new research or simply compensates for inflation, according to a budget official at the foundation.

The $50-million cut in NOAA and the Geological Survey is based on an estimate derived from government figures and interviews with budget analysts at the agencies, who were asked to break out environmental research from the total R & D budget. (Only NOAA and the Energy Department routinely differentiate environmental research from the rest of the budget.) The $90-million reduction relies on the assumption that the total R & D budgets of these agencies are, to some degree, environmentally related.

> The Administration plans to slash the environmental research budgets of other agencies.

Aside from NOAA, where several programs would be eliminated, no single program within an individual agency bears the brunt of the cuts. In most instances, the Administration is seeking to trim a few million dollars here, a few million there. The most vulnerable programs subject to the Reagan budget ax are the ones perceived to be of regional interest.

For the third year in a row, the Administration is proposing to chop a major portion of NOAA's research and development budget, although Congress has previously blocked such proposals. The agency's R & D money would be cut by 31 percent, from $242 million to $167 million. Almost half of the $75-million cut would result from the proposed termination of the $36-million Sea Grant program, of which $20 million is designated environmental research by the agency. The program, which supports university education and research in the marine sciences at 19 institutions, is a big favorite of Congress, however, and the Administration is unlikely to get its way.

Among the other programs threatened with reductions or elimination are the following:

- Marine fisheries research. A $10-million fisheries research program that provides grants would be terminated, along with a $5-million aquiculture program. A total of $20 million would be cut from several other programs related to marine fisheries research.
- Great Lakes research. Reagan said in his state of the union address that "we will take additional action to restore our lakes. . . ." But the proposed budget would eliminate NOAA's $3.6-million Great Lakes research laboratory which monitors pollution in lake waters and sponsors other types of research. In the past, Reagan has concomitantly tried to abolish Great Lakes research conducted by EPA, but this year he is proposing to leave it be.
- Ocean dumping research. Reagan plans to save about $2 million in ocean dumping research. According to NOAA's congressional budget analysis, the Administration believes that EPA and the Corps of Engineers fund adequate research in this area. But ocean

dumping research is slated for reductions at EPA too.

• Atmospheric research. The Global Atmospheric Research Program, which develops climate and weather forecasting, would be cut by $1 million; the Space Environment Service Center in Boulder, Colorado, would get $3.1 million less; and weather modification programs would be trimmed by $1.5 million.

Reductions are not as extensive at the Interior Department's U.S. Geological Survey. A budget analyst at the agency says that its entire R & D budget could be considered environmentally related. If so, the agency's environmental research funding would drop 8 percent, from $161 million to $148 million. The biggest chunk of the $13 million reduction would result from termination of the agency's $6.4-million Water Resources Research Institute, which provides funds to the states for water quality research and training.

Two Geological Survey programs concerned with research on the quality of coal and the effects of coal mining on water would be pruned by almost $3.5 million. The reductions follow several recent actions by the Administration that, according to critics, benefit the coal industry. Last week, for example, a federal commission harshly criticized Interior for losing millions of dollars in the federal coal-leasing program. Other proposed cuts at the Geological Survey include a $3-million reduction in the monitoring of volcanic hazards, a $2-million cut in earthquake prediction, and a $1.8-million drop in geothermal research. (These figures include administrative and research costs.)

One environmental program that would fare well under the President's budget is acid rain research, which is targeted for $55.5 million, an increase from $27.6 million. But critics have contended that the Administration is needlessly delaying regulatory action while awaiting research results. Even administrator William Ruckelshaus has tried twice to persuade Reagan to start regulating but was apparently overruled.

The Reagan Administration has attempted in various ways to repair the political damage resulting from the scandals that erupted during the tenure of Anne Burford as EPA administrator. The appointment of Ruckelshaus helped to improve the Administration's environmental image, and the promise of bigger budgets seemed to suggest a stronger commitment to the environment. But by saying one thing and doing another, Reagan may have failed to defuse a politically sensitive issue.—**MARJORIE SUN**

A Major Retreat on the Yellow Rain Battlefront

One of the superpowers is beating a quiet retreat in the battle over Yellow Rain, the alleged Soviet biotoxin supposedly used against guerrillas in Afghanistan and tribesmen in Southeast Asia. The question is, who is retreating: the Soviet Union or the United States?

On 21 February the U.S. representative to the United Nations submitted a new Yellow Rain report, one of a series of recent bulletins. It says that last year the United States found less evidence of biotoxin warfare than at any time since 1981, when former Secretary of State Alexander Haig first accused the Soviets of violating the Geneva Convention and the 1972 ban on bioweapons.

"There appears to have been a diminution of attacks in Afghanistan," the report says "and a decrease in the lethality of attacks in Laos and Kampuchea. At the same time, however, there is evidence of continuing use in Laos and Kampuchea of an as yet unidentified, non-lethal agent or agents."

As the report explains, there was "strong evidence of several dozen chemical attacks in Afghanistan" in 1982, but only "several reports" in 1983. "Contrary to previous years, we have not yet been able to confirm these reports as valid." In Laos, the United States found there were just as many attacks as in the past. But there were only one-third as many agent-related illnesses and deaths as in 1982, leading to the conclusion that the "use of toxic agents has actually declined." In Kampuchea, the number of reported attacks grew by 50 percent, an artifact which the government attributes to better monitoring. But the number of poison-related deaths "appears to have decreased significantly from 1982 levels." At the same time, victims said they experienced "more short-term, incapacitating effects," which may be "indicative of the use of non-lethal incapacitating or riot control agents."

It is possible that the Soviets and their allies, embarrassed by the international fuss, have cut back (but not stopped) the use of biotoxin weapons. Alternatively, it is possible that the United States has been embarrassed by its inability to come up with proof of the charges and is backing away from them.

The new U.S. report "sounds like a retreat to me," says Matthew Meselson, the Harvard biologist, expert in chemical weapons and best-known critic of the State Department. He recently won a Macarthur Foundation award of roughly $250,000, which will permit him to follow up on his Yellow Rain investigations and launch an unrelated classical archeology project. In Meselson's view, the government erred seriously when it accused the Soviets of violating the biotoxin treaty but produced only sketchy evidence to support the charge. "I am now certain that the many different samples of Yellow Rain turned in by refugees are in fact the feces of honey bees," he says. He is less certain, but reasonably sure, that trichothecene toxins such as T-2 found in samples of human blood "are of natural occurrence" and are not man-made.

"One must make all sorts of special explanations" to link T-2 found in the blood samples with alleged chemical attacks, he says. The explanations strain belief because the half-life of T-2 in the bloodstream is 15 minutes, while the blood samples from Southeast Asia were collected in some cases weeks after alleged attacks. Further, to believe the T-2 in blood came from weapons rather than from natural sources such as food, one must ignore the autopsy of a Thai soldier named Chan Man. Several of his organs contained high levels of T-2, the highest occurring in his stomach and intestine. Because the soldier was reported to be healthy shortly before his death, and because the chemical attack that allegedly felled him occurred weeks before his death, Meselson argues, it makes sense to think the source of T-2 was proximate (moldy food) rather than remote (a cloud of poisonous Yellow Rain). The hypothesis is strengthened by the fact that the soldier's organs were also loaded with aflatoxin, a mycotoxin found in moldy food.

A State Department spokesman says that a decision has been made not to comment further on Meselson's critiques because rebuttals have been made before and "it just propagates back" to continue. Nevertheless, the