

program—which are collectively known as the Environmental Research Laboratories—report to a scientific director based in Boulder, Colorado. The reorganization plan would essentially have grouped the labs into three areas: one concerned with marine research, one with atmospheric research, and the third consisting of the existing Geophysical Fluid Dynamics Laboratory at Princeton. The management layer at Boulder would have been eliminated.

The plan was agreed to by both Byrne and Calio, and Calio was given the job of seeing it through. It was therefore perceived by many in the labs as Calio's plan. It ran into opposition on two counts: elimination of the overall management responsibility in Boulder was seen as eroding the scientific autonomy of the labs, and some of the labs would have been downgraded in title, if not in status. George Ludwig, who was then director of the Environmental Research Labs, complained to Byrne, who aborted the plan. "That is where John and I came apart," says Calio, who believes the plan should have been implemented. "You have to go through some pain to get where you want to be," he says.

Calio's relations with the labs suffered another setback early last year when Ludwig resigned in protest over budget cuts and what he claimed was a continuing attempt to reduce the autonomy of the labs. He made no secret of his belief that Calio was to blame.

All this has taken its toll. "Morale throughout NOAA is the lowest I have ever seen it in my 30 years here," says Fred White, who follows the agency closely from his vantage point as director of the American Meteorological Society. The problems have reached the point where the Office of Science and Technology Policy (OSTP) has finally begun to pay some attention.

For the past few months, OSTP has been taking a close look at NOAA's research programs and has apparently found something of a mixed bag. In recent remarks to reporters, OSTP director and presidential science adviser George Keyworth II said that although there is some "first class science" being done, "there is also some poor quality work in what we call research." He also sent some shivers through the agency by referring to "pork barrel programs" in NOAA's research activities, an apparent reference to programs such as Sea Grant that Congress has always protected in part because the funds are distributed throughout many congressional districts.

In a recent interview with *Science*, Keyworth likened NOAA's research

programs to those of the Department of Agriculture, suggesting they are in need of a shake-up but that the needed reforms would be difficult to steer through entrenched interests in Congress.

To many people, Byrne included, one solution to NOAA's problems would be to remove the agency from the Department of Commerce. Indeed, when NOAA was first proposed in the mid-1960's, it was envisaged as an independent agency much like NASA, and many of its supporters would like to see it finally gain that status.

Last year, the Reagan Administration itself made such a proposal when it drafted a plan to establish a Department of Trade and Industry. Because NOAA would not fit into the proposed department, the Administration decided to make it independent. The plan died on Capitol Hill, but Baldrige is reported to be keen to resurrect the idea of a Department of Trade and Industry next year.

Would independence really help NOAA? Opinions are divided. To many, the experience of the past 4 years indicates that anything would be better than continuing under Commerce's jurisdiction. But a small agency without a broad base of political support may not fare any better. One long-shot solution would be to make NOAA part of a Department of Science and Technology. OSTP has been working on a proposal for such a department, which would combine most of the federal government's nondefense R&D, but the chances of it becoming reality are slim.

Whoever gets the job as NOAA's next administrator will thus have to give NOAA a new sense of purpose, cement relations with the Department of Commerce, and work with Congress to recapture the initiative for setting policy, which has been largely surrendered to Capitol Hill in the past few years.

Calio would at least have the advantage of starting off on the right foot with the department. His relations with Congress would, however, need to be improved considerably. Senators Bob Packwood (R-Ore.) and Ernest Hollings (D-S.C.) have both opposed his nomination. They are, respectively, the chairman and ranking minority member of the Senate Commerce Committee, which would have to approve Calio's appointment. However, Calio has been making the rounds on Capitol Hill in the past few weeks and is shoring up his support. As one staff member has remarked, "He's got the department behind him, he's touching the right bases up here, and no other strong candidate has yet emerged."—COLIN NORMAN

NRC Urges Destruction of Chemical Weapons

A panel of experts convened by the National Research Council (NRC) has suggested that the government destroy aging and obsolete chemical weapons stored at eight sites around the country "as soon as possible," citing a need to shield nearby populations from the risk of a potentially serious accident.

The panel, which reviewed both the condition of the chemical weapons stockpile as well as the technology for its disposal, concluded that the U.S. Army has managed the weapons well in recent years. But it said that the age of the weapons had resulted in their deterioration. Some have even begun to leak, creating "a finite risk both to off-site civilian populations and to those who must work" with them.

The weapons, some of which were produced between 1942 and 1945 in response to widespread fear of chemical attacks by Germany and Japan, include rockets, mortars, artillery shells, bombs, spray tanks, and mines. According to the panel, many of them are useless because the Army lacks the equipment needed either to fire them or to remove the chemical agents for deposit in new munitions.

The panel, which was chaired by Norton Zinder, a professor of genetics at Rockefeller University, also concluded that the technology needed to ensure safe destruction is now largely in hand, and is unlikely to be much improved upon in the near future. Eschewing proposals for chemically neutralizing the munitions, or destroying them in a controlled nuclear explosion, the panel recommended that they instead be chopped into pieces by special machinery and incinerated in furnaces to be constructed at the present storage sites. The cost has been estimated at roughly \$2 billion to \$4 billion over the next decade.

The panel said the Army should assign the highest priority to prompt incineration of so-called M55 rockets, which contain highly lethal nerve gas, as well as live propellants and explosive devices. Many require repeated handling to control leaks, creating the risk of a sizable accidental explosion that could cause numerous deaths in

downwind populations. At present, the M55 rockets are stored in depots at Anniston, Alabama; Richmond, Kentucky; Pine Bluff, Arkansas; Tooele, Utah; and Umatilla, Oregon.

Due to uncertainties about the stockpile's exact rate of deterioration, the panel urged the Army to take additional safety precautions until most of the stockpile can be destroyed. It recommended, for example, that exhaust vents at each storage depot be monitored continuously instead of periodically; that safety procedures and evacuation plans be redrawn to take into consideration the possibility of extremely serious accidents; and that onsite medical personnel receive training in toxic chemicals.

In two of its harshest criticisms, the panel said that the Army had been observed using forklifts to transport M155 rockets "in a manner that was not as safe as it could have been," and that it had not used the "maximum care expected" during the installation of new explosive charges into chemical munitions that are old but not yet obsolete.

The panel went on to say that the installation of such explosives should be stopped, on the grounds that it will greatly complicate the eventual destruction of the munitions involved. An Army spokesman says that the purpose of this effort, known as "uploading," is to increase U.S. readiness to fight a war with chemical weapons, and that the effort has been under way since 1983. However, a well-informed member of the NRC panel speculates that the real purpose is merely to add to the stockpile of so-called "usable" chemical weapons, in anticipation of a congressional requirement that two older, but "usable," chemical weapons be destroyed for every new binary chemical weapon produced. (Congress has thus far refused to authorize binary production.)

In a brief statement, the Army said that it was "pleased to receive an endorsement" of its previously announced plans to incinerate some of the chemical weapons stockpile, and that it would study the other recommendations carefully. According to a spokesman, the Army plans to obtain public comment on the stockpile destruction at a series of hearings to be held near the depots next year. A final decision may not be made until 1986.

—R. JEFFREY SMITH

Biogen Cuts 13 Percent Including Scientists

Biogen, one of the best known of the new breed of biotechnology companies, recently announced its first major staff cutbacks. The firm cut 56 employees, or 13 percent, of the company's total staff "across the board," according to Biogen spokesman Peter Feinstein. The layoff was distributed about evenly between the company's U.S. operations in Cambridge, Mass. and its European center in Geneva, Switzerland, Feinstein says. Although he declined to say how many scientists have been laid off, other sources indicate that at least ten are affected so far.

Biogen, like many other start-up biotechnology companies, has gone through a rapid expansion during the past few years. Since 1979, when the company consisted of three employees, the staff increased to a peak of about 430 earlier this year. Although the decision to reverse this growth was "very carefully considered," Feinstein says, it "occurred rapidly." The cuts, which have affected all levels of staff except senior management, "have not cut any corporate activities," he says. The move was an "adjustment for over-hiring."

Biogen's overall position remains "quite healthy," Feinstein says. "This act strengthens the company." The company reported cash assets of \$69.4 million at the end of the third quarter, 30 September, with a 9-month operating loss in 1984 of about \$11 million.—JEFFREY L. FOX

France Proposes Shuttle Competitor

Paris. France is proposing to its fellow members of the European Space Agency (ESA) that they jointly finance the development of a reusable manned space vehicle that would operate in direct competition with the U.S. space shuttle. Details of the five-seater, 17-tonne spacecraft, known as Hermes, were described last week by Jean-Louis Lions, the new president of France's National Centre for Space Studies (CNES), which has

been working on preliminary ideas for the past 4 years. It would be one-third the size of the shuttle. Development costs are currently put at \$1.4 billion, and CNES officials estimate that it could be launched by 1996.

Lions said that the proposal for a European shuttle was directly in line with the desire that had been expressed "at the highest political levels" in France for a space policy that was independent of the United States "in all the major fields of the future." This would include both the servicing and retrieval of satellites, and perhaps construction of a European space station.

France is proposing Hermes as one of three major development projects to be undertaken by ESA over the next decade, the other two being participation in the U.S. space station and the development of an entirely new version of the Ariane launcher powerful enough to put Hermes and its five-person crew into orbit. However, the Hermes project is expected to be the most controversial of the three.

—DAVID DICKSON

Comings and Goings

At the National Institutes of Health, **Anthony S. Fauci** has been named director of the National Institute of Allergy and Infectious Diseases, where he has been doing research on immunoregulation since 1972. The top post in the National Institute of Arthritis, Diabetes, and Digestive and Kidney Diseases is expected to be filled by endocrinologist **Mortimer Lipsett**. Lipsett, another long-term NIH'er, is director of the National Institute of Child Health and Human Development.

When **Daniel E. Koshland** accepted the editorship of *Science* last summer, he announced his resignation as editor of the *Proceedings of the National Academy of Sciences (PNAS)*, effective the first of the year when he picks up the *Science* reins from **Philip H. Abelson**. Koshland, a biochemist at the University of California at Berkeley, will devote 50 percent of his time to *Science*. Abelson becomes science adviser to the AAAS. And **Maxine F. Singer** of the National Cancer Institute will succeed Koshland in the *PNAS* post, which is a part-time position.