was, he thought, an ill-conceived political payoff to the National Education Association.

Califano attributes most of the anonymous White House criticism to Carter aide Hamilton Jordan and press secretary Jody Powell. Both were interested in little except feathering Carter's political nest, he reports. Neither returned phone calls nor complained to Califano directly about the political consequences of his positions. "I'm not interested in the substance. I'm interested in the politics for the President," Jordan supposedly said during a discussion of national health insurance. It seems plausible that neither Jordan nor Powell ever really took to Califano, who was after all the

> Powell and Jordan complained that "Joe was going his own way."

sort of Washington insider that Carter and the Georgians had campaigned against. Califano enjoyed good relations only with Stuart Eizenstat and Jack Watson, more liberal White House aides.

Califano's firing occurred much as it was described at the time. Carter wanted to impose greater discipline on his Cabinet, and Powell and Jordan complained that "Joe was going his own way." Carter himself explained that Califano's problem was "you and some members of the staff—particularly Ham, Jody, and Frank Moore [the congressional liaison]—have not gotten along." Califano writes that this statement rang true, and all he could say in response was, "It's your decision, Mr. President." Carter, concerned about Califano's potential defection to the Kennedy campaign, then offered him the post of ambassador to Italy, Califano says.

By the end of the experience, Califano had learned several important lessons. One is that "governing America is not only a matter of ideology. . . . Open-minded pragmatism is required." Another is that many of the Great Society programs created constituency groups that now pursue narrow interests—a circumstance, he says elsewhere, that poses "the severest threat to governing for all the people." Califano seems to acknowledge that the social experiment he helped to craft in the 1960's has gone partly awry.—R. JEFFREY SMITH

DOE Blocks Mailing of "Antinuclear" Publication

Energy secretary James Edwards has ordered a halt to distribution of a Department of Energy publication because of its allegedly antinuclear bias. The document is the January issue of *Energy Consumer*, a low-budget magazine launched in 1979, which is sent out to about 100,000 people.

The issue, which contains articles and reprints of articles by energy experts on the subject of "energy and the environment," was the last one to be compiled under Carter's energy secretary, Charles Duncan. Among articles on such subjects as solar energy and acid rain are two articles on nuclear energy. One, by a scientist with the Natural Resources Defense Council, discusses problems of radioactive waste and advocates "a cautious approach to the further development of commercial nuclear power." The other, an excerpt from writings of the Ford Foundation's Nuclear Energy Policy Study Group, is generally positive toward nuclear power, although it favors a more restrictive siting policy for plants.

This seems to be pretty moderate stuff—but not, apparently, to devotees of nuclear power, particularly constituents of Senator James McClure (R–Idaho) at the Idaho National Engineering Laboratory, who bombarded his office with letters and phone calls protesting the articles. McClure conveyed his concern to DOE that, according to an aide, the articles were "not in line with administration policy," and Edwards forthwith ordered a freeze on the copies of the magazine—about 12,000—that had not yet been sent out.

According to DOE public information officer William Greener, a "temporary hold" was put on the mailing pending a review by DOE's policy development people, who are also reviewing the contents of the next issue, on "energy and the elderly." Greener explains that it was decided in February that "things of a policy nature shouldn't come out without approval by the secretary." The DOE has also gotten angry mail, containing statements such as: "I cannot recall being so upset by anything sanctioned by the government," and "It's quite clear that the Department of Energy continues to be used as a mouthpiece for environmental organizations." McClure, who is chairman of the Senate Energy and Natural Resources Committee, wrote to the department that "my constituents characterize the issue as an anti-nuclear handbook containing technically incorrect information and negative reports about nuclear waste." An official in DOE's Office of Consumer Affairs says the public affairs office reviews every issue before it goes to print and as far as she knows the articles contain no inaccuracies. But the January issue was reviewed before the change of administrations.

Senator Mark Hatfield (R–Ore.), who had an article against nuclear war in the same issue, has expressed strong displeasure with Edwards' action. But future Idaho readers of *Energy Consumer*—if, indeed, the magazine continues at all—are unlikely to be offended as long as Edwards, an ardent supporter of nuclear power, remains in office.

—Constance Holden

House Science Panel Throws Down Gauntlet

A House science subcommittee has challenged the Reagan Administration by voting a hefty portion of the funds that the Administration wants to cut from the National Science Foundation's budget. Most conspicuous is the inclusion of some $65 million more than the $9.9 million in science education funds that the Administration requested in its revised budget.

On a party-line vote decided by its Democratic majority, the subcommittee on science, research, and technology set a total of $1160.6 million for NSF's fiscal year 1982 budget, some $127.1 million more than the Administration asked. The bill contained almost $293 million less than the Carter Administration requested in January.

Specific major additions in the bill reported out by the subcommittee, besides those for science education, were $16.5 million for upgrading university instrumentation and laboratories and $18.7 million above the $37.7 million in the Reagan budget for

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the directorate that administers international programs. The only substantial cut made by the panel of an item that appeared in both the Reagan and Carter budgets was dropping of an ocean margin drilling program which was accorded $12 million in the Reagan revised budget.—***John Walsh***

More About Cloned Mice

In January reports of the first successful nuclear transplantation experiment with a mammal attracted a great deal of attention, primarily because the achievement meant that mammalian clones—identical copies of an individual—might be produced (*Science*, 23 January, p. 375). The three mice resulting from this experiment were not themselves clones, according to a strict definition of the term. But true cloned mice have now been produced, according to Karl Illmensee of the University of Geneva, Switzerland, who described his latest experiments at a recent symposium in Keystone, Colorado.

Illmensee followed the same procedures for transplanting embryonic nuclei that he and Peter Hoppe of the Jackson Laboratory in Bar Harbor, Maine, had developed for the earlier work. This time the Geneva researcher used the nuclei of 7-day-old mouse embryos rather than the 3- to 4-day-old embryos studied previously.

He transplanted the nuclei into eggs whose own nuclei were removed and implanted the resulting embryos into foster mothers who ultimately gave birth to a total of eight mice that were products of the transplantations. Three of the mice were "triplets" and two were "twins," according to Illmensee, although he could have called them clones just as accurately.

One finding of the current research is that nuclei from only two embryonic tissues, the ectoderm and proximal endoderm, retain the potential to produce whole mice. Of these, the ectodermic nuclei, which gave rise to six mice, were the best by far.

Nuclear transplantations have been successful with amphibians such as the frog but had not been accomplished with higher animals until Illmensee and Hoppe succeeded, almost 2 years ago. The mammalian experiments have been criticized by some observers, who are opposed to the potential use of the methods for cloning humans. But Illmensee restricts his own interest to studying the development of the mouse. "Nuclear transplantation," he concludes, "is the only way to test biologically the developmental potential of the entire genome."—***Jean L. Marx***

Levy to Leave NHLBI

Robert I. Levy, director of the National Heart, Lung, and Blood Institute (NHLBI), has resigned his position, effective 23 September, to go to Tufts University. At Tufts he will be vice-president for health sciences and dean of the Tufts University School of Medicine.

Levy, an expert on lipid metabolism, has been at the NHLBI for 18 years and became its director in 1975.

Although an acting director of NHLBI has not yet been named, Levy expects that it will be Peter Frommer, a cardiologist who is currently deputy director of the institute.

—***Gina Bari Kolata***

Heroin No Better than Morphine as Analgesic

Despite public pressure on the government to make heroin available for treatment of patients with cancer pain, two clinical studies have indicated that there is scarcely any difference between heroin and morphine, either in analgesic properties or side effects.

Findings from the latest study, conducted at Georgetown University, were reported by pharmacologist William Beaver at a meeting of the Interagency Committee on New Therapies for Pain and Discomfort at the National Institutes of Health (NIH). Beaver and oncologist Philip Schein compared the effects of intramuscular injections of morphine with those of heroin in 44 cancer patients. From patients' reports of pain relief and side effects they concluded that heroin is 2.5 times as strong as morphine—that is, it takes 2.5 times as much morphine as heroin to achieve the same results. Side effects were commensurate with pain relief and did not differ markedly between the drugs.

These results are consistent with preliminary findings reported earlier by a Memorial Sloan-Kettering Institute team headed by Raymond Houde. The Houde studies, conducted on cancer patients with postoperative pain and those with chronic cancer pain, revealed that the peak of analgesic effectiveness was slightly shorter with heroin. They found that both drugs improved patients' moods when they relieved pain but there were no special euphoric effects from heroin. They concluded that there is "no indication that heroin has any unique advantages over morphine in either patient population."

Beaver, at the NIH meeting, said he believed heroin should be made available to physicians because some patients respond better to some narcotics than to others and "I like a lot of strings for my bow." But, he said, more important than heroin is the need to have existing narcotic analgesics, such as hydromorphone (Dilaudid) and oxymorphone (Numorphan), available in highly concentrated form. When a patient's pain is too severe to be alleviated by oral doses of narcotics (which are about one-eighth as potent as injections), frequent injections are required and can be very painful. The more soluble the drug, the smaller the dose can be. Heroin is sometimes preferable to morphine because of its high solubility, but other drugs could fill this need if manufacturers made them available in more concentrated form.

Beaver noted, however, that failure to adequately manage cancer pain is still due more to ignorance and lack of finesse on the part of doctors than to the absence of appropriate drugs. The primary obstacle, he asserted, continues to be fear of addicting patients to narcotics. Thus, he said, a patient's natural increase in tolerance to a drug, necessitating higher doses, may be mistaken for addiction. Doctors have also been known to assume that oral and parenteral doses of opiates are equivalent, or to load a patient down with sedatives and tranquilizers and then fail to give him enough analgesic for fear of further depressing his central nervous system.

—***Constance Holden***