vick. And there were general complaints about the inadequacy of evaluations or descriptors as they are called.

Do plant breeders see genetic vulnerability as a serious current problem? The response of those surveyed was negative. None of the sorghum breeders saw a current threat. At the other extreme, 25 percent of the wheat breeders did perceive one. A divergence worth noting is that plant breeders in the public sector were more likely to see genetic vulnerability as a problem than were those working in industry. In a major hedge on the generally optimistic view, just under half of those polled said that genetic vulnerability might cause a serious problem some day because of "the unpredictability of biological systems."

On balance, the plant breeders seem to believe that they have an adequate reserve of backup varieties to meet future threats. They indicated that the elite lines offer sufficient genetic diversity to provide an adequate spectrum of resistance. Duvick noted that the relatively short periods for which leading varieties dominate seed sales afford protection of "diversity in time."

Duvick pointed out, however, that "greater diversity does not infallibly prevent epidemics, nor does it always give protection against environmentally produced crop failures." He cited the ravages of Dutch elm disease and the blight that drove the American chestnut to near extinction as evidence.

In the future, genetic engineering techniques are expected to provide means to counter threats from insects and diseases to food crops, but informed opinion discounts early help from biotechnology.

If genetic diversity is not a guarantee against disaster, there is wide agreement that national management of germplasm resources needs attention. The NPGS has been getting some $15 million a year in federal funds; there is a broad consensus that more money and manpower are needed. In public policy terms, however, the problem of plant genetic vulnerability and germplasm preservation seems fated to be a backburner issue unless a crisis occurs. And with the present prospects of bumper crops and a lean year for the federal budget it would be particularly difficult to muster support to transform the system. An emergency worse than the corn leaf blight epidemic brought on through some doomsday mutation, however, is not out of the question. Strengthening the system to preserve and use germplasm resources, therefore, seems a prudent way to increase the odds against it.

—JOHN WALSH

R & D Agencies Brace for Budget Cuts

Confusion reigns in most federal departments and agencies following President Reagan's latest proposals to cut government spending. In a televised address on 24 September, Reagan said that $13 billion must be slashed from the fiscal year (FY) 1982 budget to keep the federal deficit in check, and he proposed that the bulk of it should come from a 12 percent across-the-board cut in federal spending. Only a few priority areas would be exempted, Reagan said, and the Department of Defense would be asked to suffer only a token cut of $2 billion.

These proposals, which were made just 6 days before FY 1982 began, face tough opposition in Congress, where skepticism about the Reagan Administration's economic program is growing. It is thus certain that no appropriations bills will be passed until FY 1982 is well under way, and federal officials will not have a clear idea which programs will be cut or eliminated.

As for R & D programs, Congress is being asked simply to approve funding levels 12 percent below the budget request submitted by Reagan last March. In some areas, such as science education, the appropriations committees have already voted to increase Reagan's original request and they are thus unlikely to agree to the new levels. The Administration has, however, threatened to veto any bill that breaks the new ceilings.

Reagan also announced that he plans to send another tax bill to Congress in the next few weeks. This will remove some tax incentives and close a few loopholes, resulting in additional tax revenues of $3 billion in FY 1982. Among the incentives targeted for reduction or extinction are tax credits for investments in energy conservation and renewable energy technologies.

Finally, the Administration plans to offer Congress a proposal in November to dismantle the Department of Energy (DOE). Such a move would save $1.5 billion by 1984, and cut 4400 jobs from the federal payroll, according to a fact sheet distributed by the White House. DOE now has some 15,700 employees and another 115,000 people are working in DOE-owned facilities operated by contractors. Secretary of Energy James B. Edwards said in congressional testimony on 25 September that the Administration is considering setting up a National Energy Development Agency to administer nuclear programs, transferring responsibility for the National Petroleum Reserve to the Department of the Interior and giving the Department of Commerce authority over energy information activities. Responsibility for DOE's basic research programs has not yet been decided.

The federal government has thus entered FY 1982 in a state of budgetary uncertainty. Moreover, even though this year's budget has not yet been decided, negotiations have started for FY 1983. The Administration has already announced that it is looking for a cut of $40 billion next year.—***Colin Norman***

Moscow Scientists Bow to Police Threats

The most recent victim of official Soviet wrath was the Fifth International Conference on Collective Phenomena, scheduled to be held in Moscow beginning on 20 September. The sponsors felt compelled to cancel the meeting at the last moment after ten Soviet participants were threatened with reprisals and ten American invitees were refused visas. Among those who lost their visas were Nobel laureates George Wald and Arno Penzias.

The meeting was an outgrowth of the "Sunday seminars," which were organized by dissident scientists in Moscow as a means of keeping abreast of new information despite official attempts to isolate them. Most of these scientists have been banished from state laboratories.

Several American groups immediately filed protests, among them the Committee of Concerned Scientists (CCS), a New York–based society of 4000 members "dedicated to the protection and advancement of the human rights and scientific freedom of colleagues worldwide." According to spokeswoman Dorothy Hirsch, the CCS sent letters to U.S. Secretary of State Alexander Haig and Soviet Foreign Minister Andrei Gromyko asking that an attempt be made to end the

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disruption of scientific meetings. The Soviets also received messages of concern from the New York Academy of Sciences, the American Physical Society, the Society of Industrial and Applied Mathematics, and the American Mathematical Society.

Hirsch says that the crisis came to a head when ten Soviet participants in the conference were summoned one by one to police headquarters and told that they were engaging in anti-Soviet activities. Some were threatened with arrest, and others were told they would lose the privilege of living in Moscow. They were reminded of the case of Viktor Brailovsky, the cybernetic who was sentenced to 5 years of internal exile last June. The threats had the desired effect.

—Eliot Marshall

Cheap Electricity May Save 200 Brookhaven Jobs

On 21 September, New York Governor Hugh L. Carey told a Brookhaven National Laboratory audience that the Power Authority of the State of New York (PASNY) would divert some of its unused capacity to supply the laboratory with electricity at a fraction of the price the local utility is charging. The lower rate will reduce a projected $18-million power bill in fiscal 1982 to $11.5 million. The savings could rescue 200 jobs that are scheduled for elimination as the result of Reagan Administration budget cuts.

Brookhaven, in common with other laboratories that house power-intensive high energy accelerators, has been hard hit by rapidly rising electricity prices. Brookhaven has screamed louder than most because its supplier, the Long Island Lighting Company, depends on the most expensive fuel of all, oil, and for some years has charged the laboratory the same rates as other customers, rather than the lower tariff it once enjoyed.

The problem was compounded this year when the Reagan budget for fiscal 1982 contained a $16-million decrease for Brookhaven; the laboratory calculated that the cut would require a reduction in force of 500 positions. In a first wave of layoffs last spring, 175 persons were let go. While more slots will go by attrition, many workers have been fearfully awaiting the expected second wave. But, thanks to the new agreement with PASNY, this apparently will not come.

Martin Blume, an associate director of Brookhaven, seems to be the hero of the moment. Together with other members of the laboratory directorate, Blume early on identified low-cost electricity from PASNY as the most fruitful avenue of financial relief. PASNY was established back in the days when Franklin Roosevelt was governor of New York and was in some respects a forerunner of the Tennessee Valley Authority. The opportunity to purchase 16 megawatts of electricity from PASNY came when an upstate New York customer of the authority could not use the power it had contracted for. An additional 14 megawatts may soon be available. An intensive educational effort by Blume and his colleagues helped to convince Governor Carey and PASNY that Brookhaven's economic, technological, and educational importance to New York made the laboratory a worthy recipient of the low-cost electricity, for which there is a great demand.

—Arthur L. Robinson

Researcher Charged with Cruelty to Monkeys

Edward Taub, the scientist whose monkeys were seized from his laboratory after an animal rights group alleged mishandling, has now been charged with violation of Maryland's Animal Cruelty Law. Trial has been set for 27 October.

Events have been moving swiftly since police removed the 17 macaque monkeys from the Institute for Behavioral Research in Silver Spring on 16 September on the initiative of Alex Pacheco, a young animal rights activist who had been doing volunteer work at the laboratory. Police acted on the basis of an affidavit from four scientists Pacheco asked to survey the lab in Taub's absence in August (*Science*, 2 October, p. 32). The court placed the animals in the care of Ingrid Newkirk, a Maryland humane official who, in turn, had them deposited in the basement of the home of Lori Lehner of the county humane society. Both women are associated with Pacheco's group, People for Ethical Treatment of Animals.

The animals did not stay at Lehner's long, however. On 18 September Taub obtained a court order to have the monkeys returned to the laboratory. Shortly thereafter, the monkeys were kidnapped by persons who apparently did not want them sent back to Taub. Distraught, Taub held a press conference at which he said his monkeys might be killed and offered a $450 reward for their return.

Meanwhile, negotiations were being carried on in secret between law officers and unnamed animal rightsers. Geza Teleki, a George Washington University primatologist who was one of the four to sign the affidavit, acted as an intermediary in the negotiations. Finally, on Saturday, 26 September, the animals were brought back to the laboratory, unharmed, by persons whose identities have been withheld.

Taub is now charged with animal cruelty, presumably on the basis of reports by two zoo veterinarians who examined them before they were kidnapped from their temporary quarters. The vets, Janis Ott, of the Brookfield Zoo in Illinois, and Phillip T. Robinson, of the San Diego Zoo, reportedly found that several of the monkeys require special care in the form of antibiotics and vitamin supplements. The state's attorney's office confirmed that there were problems with the monkeys, but said no details were being publicly released.

Taub has been using the monkeys in limb deafferentation research designed to benefit stroke victims. He says only about ten people in the country understand the problems attendant to the procedure in which nerves in one arm are severed, and that the charges are based on "a total misunderstanding of the nature of the research we have been doing. . . ."

The week before he was formally charged with violation of the Maryland law, Taub expressed the fear to *Science* that his reputation would be ruined in what he regarded as a set-up by animal rights activists. He called them a "reckless and ruthless group of people . . . who will stop at nothing to achieve their objective [halting all animal experimentation]." The group describes itself as being opposed to all painful research with animals.

—Constance Holden