the evidence of patient mismanagement at the clinics, as revealed in the patient records. For example, some patients with malignant hypertension were untreated, a woman with a preexisting kidney failure and sickle cell anemia was given phenformin (the drug was specifically counter-indicated in her case), and a man with normal blood sugar was given insulin.

In addition to the patient mismanagement, the UGDP records reveal that data were frequently erroneously recorded. This sloppiness in treating patients and recording data is passed off by UGDP supporters who say that a few errors are inevitable in a study the size of the UGDP, and that it is necessary to consider the study as a whole. They point out that, according to the FDA audit, the errors and discrepancies in recording and analyzing data do not alter the UGDP conclusions.

Supporters of the UGDP commonly say that the study's critics are intellectually and emotionally unable to accept the fact that treatment of symptomless adult-onset diabetics does no good. Both Chalmers and Thaddeus Prout, a UGDP administrator from Johns Hopkins University, draw an analogy with a large-scale trial on treatment of high blood pressure that was conducted at about the same time as the UGDP. This study, directed by Edward Freis of the Veteran's Administration Hospital in Washington, D.C., purportedly showed that anti-hypertension drugs prevent deaths and complications of hypertension. But, say Prout and Chalmers, Fries' study was no better than the UGDP. Yet his study's results were immediately accepted and Freis won a Lasker Award.

The implication is that there is a widespread tendency in the clinical and research communities to accept findings that drugs are useful and to reject findings that drugs are useless. Freis, on the other hand, says his study is not at all comparable to the UGDP. It answered the original questions it was designed to answer and there was never any doubt about the statistical analysis and significance of its results.

Casting aspersions on the motives of the UGDP critics, however, cannot stem the increasing tide of objections to the study. Recently, Charles Edwards, the former FDA commissioner who accepted the first UGDP results and proposed the warning label, said that he made a mistake in listening to statisticians and not looking at the study's quality control. Edwards, who is now President of Scripps Clinic and Research Foundation, says, "The UGDP was a bad study. Why can't anyone admit that?"

On the other hand, Paul Meier of the University of Chicago, who was a member of the Biometric Society committee, says the UGDP is no worse than any other clinical trial. It's just that no one before had ever seen so much data from a trial. If Meier is correct, what does that say about clinical trials in general? Should their quality control be improved and, if so, how? How much money, time, and resources should be devoted to them?

The FDA has not yet given up its battle to put warning labels on all oral anti-diabetes drugs. It recently proposed a label and planned to accept comments until 15 January 1979. Now, at the request of the ADA, which recently took back its original endorsement of the study's conclusions, the FDA extended its comment period until 15 March. But the warning section of its proposed label still does not reflect the scientific controversy. Perhaps, as Edwards says, this is an issue in which the FDA should not intervene, should not try to decide in the face of such a dispute whether the UGDP's conclusions are valid.

It has been rumored that the FDA may compromise on its warning label by restricting the warning to tolbutamide. Prout believes such a restriction would be a sellout because it would allow drug companies to profitably market their new anti-diabetes drugs in this country. However, Edwards and others point out that it is hard to justify extending the warning to all anti-diabetes drugs. Even Klimt says he could not scientifically justify such an extension. ("It's not my fault if the FDA over-interpreted our data," he told *Science*.)

Some medical scientists think that the UGDP battle is winding down—that the ADA's change of mind about the study means it is discredited by all but its most strident supporters. They note that now the American Medical Association says it is reassessing its position in support of the UGDP and that the comments received by the FDA on its warning label proposal are overwhelmingly critical of the UGDP. Of course, the debate will not end until the warning label controversy is resolved. This will be the final decision in a fight that, like a bad boxing match, has no sharp punches, no telling blows, no display of finesse—just a lot of clinching, shouting, glancing punches and, finally, desultory pats.

—GINA BARI KOLATA

Next week, a story on blood sugar and the complications of diabetes will appear in Research News.

OTA Director Resigns

After only a year in office, Russell W. Peterson, the director of the Office of Technology Assessment (OTA), has announced his resignation.

Peterson, OTA's second director in 5 years, is departing just as the embattled agency received a fresh wave of criticism (*Science*, 23 February). He will become president of the National Audubon Society on 1 April.

"I am reluctant to leave OTA," Peterson says, "but find an unsolicited offer to become president of the National Aubudon Society too attractive to resist. The varied experiences I have had in private and public life have led me to prefer an advocacy role rather than an advisory one."

Peterson also may have been dismayed by the reluctance of OTA's congressional advisory board to express full support for his grand list of research priorities first issued last September. The advisory board also refused to endorse his 1980 budget proposals, which called for major expansion and additional hiring in a time of fiscal austerity.

Finding a new director may not be that difficult, according to congressional staffers; the files of the last search committee are still warm.

USC President Resigns Amid Campus Quarrel . . .

Buffeted by a controversy over ties between the University of Southern California (USC) and several nations in the Middle East, the president of the university, John R. Hubbard, has announced his resignation, to be effective in 17 months.

Hubbard, who has been president of USC since 1970, had pledged several years ago to step down after a decade in office, and said his announcement was unrelated to criticism of his role in questionable financial arrangements for a Middle East study center at USC. The arrangements would have permitted extraordinary outside control of the center by a group of businessmen that trade with Middle Eastern Arab nations (*Science*, 2 February). Other well-

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placed university sources said that the timing of Hubbard's announcement was directly related to the study center venture, and was intended to defuse concern about the university's academic integrity.

. . . While New Concerns Arise About a USC Award

Even as USC president John R. Hubbard was announcing his resignation as the result of the flap over the Middle East study center, the Los Angeles academic community was buzzing about a new revelation: the award by USC of an honorary degree to the Shah of Iran at a private ceremony in Tehran 8 months after the Shah awarded the school a $1 million endowment.

The incident is not recent, but came to the attention of the Los Angeles media on the morning of Hubbard's announcement. The incident also fits a pattern set by at least four other universities that awarded honorary degrees to the Shah or members of his family, raising the broad question of which comes first—the degree or the donation?

At USC, the honorary doctorate of laws was conveyed to the Shah in April 1975 by Hubbard and USC professor George V. Chilingar. Though the trip was not kept a secret from university faculty, the degree was awarded with little fanfare. One month later, a similar degree was awarded to Manoutchehr Eghbal, then chairman of the National Iranian Oil Company; this ceremony was held in the privacy of Hubbard's office at USC. Two months later, Chilingar, who had been present at both ceremonies, and was a personal friend of the Shah, was named by USC to fill the chair in petroleum engineering that the Shah had endowed. Hubbard says the Shah's degree was given in Tehran because the Shah could not visit USC in 1975; other university sources say it was not awarded at commencement—breaking a long USC tradition—because of fears of student demonstrations.

Although the honorary degrees would not be the first ever given by a major university to a large donor, at the press conference Hubbard denied any connection between the award and the grant. He and USC have company. Similar denials have also been issued by George Washington University (GWU), which in 1974 became involved in a strikingly similar set of circumstances. A GWU professor with previous ties to Iran, Philip Grub, was approached in April 1974 by the Iranian ambassador in Washington, Ardeshir Zahedi, with an offer of a $1 million academic endowment. Grub, who was the intended and ultimate recipient of the gift, says that he was "active in initiating and promoting" the award of an honorable doctorate for public service to the Shah by GWU 2 months later. The degree was also presented to the Shah in Tehran, by Grub and the university's president, Lloyd H. Eliot.

In 1968, Harvard University also presented an honorary degree to the Shah, reportedly under heavy pressure from David Rockefeller, president of Chase Manhattan Bank and then the chairman of Harvard's Board of Overseers. The university has received only one gift from Iran, a $4000 bequest to its school of public health, but it has gotten $1.4 million in Iranian contracts since 1974.

USC has still more company. Georgetown and Johns Hopkins, two other universities that received large sums of money from Iran, gave honorary degrees not to the Shah but to members of the royal family; in both cases, however, the financial awards preceded the academic ones. Georgetown, for example, presented an honorary degree to the Shah's wife, Empress Farah Pahlavi, 4 months after reaching an $11 million agreement to exchange professors, students, and academic expertise with Ferdowsi University, which the Empress has assisted. Alternatively, Johns Hopkins did not grant its Doctorate of Laws degree to the Shah's twin sister, Princess Ashraf Pahlavi, until 2 years after the start of a $750,000 exchange program with the Reza Pahlavi College of Health Sciences, which the Princess has also assisted.

Of course, now that the Shah has been ousted from power, the carefully cultivated fruits of academic cooperation and recognition will probably wither. The new Islamic republic may be slow to embrace those who embraced the Shah. And the Shah himself, as he sits in Morocco or France and watches revolution overtake his country, will probably curtail his philanthropy; he is, after all, relegated to living on the interest from his remaining millions.

EPA Approves Ferriamicide, Then "Discovers" Toxicity

Until recently, victory seemed close at hand for the residents of Mississippi seeking refuge from the stinging bites of fire ants. In January, the Environmental Protection Agency (EPA), over the diehard opposition of environmentalists and with an admitted paucity of toxicity data, finally said they could use the pesticide ferriamicide to get rid of the ants.

Now the Mississippians must wait. On 15 February, EPA told them to delay the spraying until it has reviewed newly uncovered Canadian tests that show a chemical breakdown product of ferriamicide, photomirex, to be five times more toxic than Kepone and 10 to 100 times more toxic than mirex, the predecessor of ferriamicide and a suspected carcinogen. Environmentalists say that this latest development provides yet more evidence that EPA has acted imprudently and solely in response to pressure from southern politicians, including many members of Congress (*Science*, 5 January).

EPA learned about the tests through an atypical scientific source, the pages of the Washington *Post*, and got the details from the Occupational Safety and Health Administration, where administrator Eula Bingham has taken a personal interest in the case. EPA had prohibited women of child-bearing age from participating in the pesticide spraying, a requirement thought by Bingham to be discriminatory.

The Canadian tests were conducted by David C. Villeneuve, a scientist with the government's Health Protection Branch in Ottawa, and will be published soon in the journals *Toxicology and Applied Pharmacology* and *Toxicology*. Villaneuve says that data from his study have been circulating for more than a year, and that some of it was presented at recent conventions of the New York Academy of Sciences and of the AAAS. Somehow, the EPA never noticed.

R. Jeffrey Smith