saccharin, seems to have cleared OTS. That being so, some scientists argue, the previous rat studies are validated retroactively, thereby strengthening the FDA's present position On the other hand, it can be said that the contaminants in the Canadian saccharin just muddy things more.

Rats

Complicating the picture even further, there is the question about rats. Many scientists point out that when it comes to bladders, rats are a special breed. Rats concentrate their urine to a very high specific gravity, which means that chemicals in the urine are apt to remain in the bladder for comparatively long periods before being excreted. As a result, rats frequently develop bladder stones which some investigators believe may cause tumors from physical irritation of the bladder wall. Furthermore, saccharin is not metabolized by the body but is excreted unchanged. Although there is no absolute proof, toxicologists interviewed by *Science* said that most known carcinogens are metabolized. In rats fed saccharin in large quantities, this means it is all the more probable that accumulated stores of unmetabolized saccharin could be a physical irritant. (However, Kennedy says—on the basis of information not published in the first draft of the Canadian study—the frequency of bladder stones in the rats was generally low and not all of the animals that had tumors had stones.) Yet another complicating factor is the common presence of certain parasites in rat bladders—parasites associated with tumors.

There have been repeated suggestions that saccharin be tested in other species. As far as *Science* has been able to determine three such experiments are going on in the United States, though others are being conducted abroad. Here, one is being conducted by toxicologist Philip Shubik at the Eppley Institute of the University of Nebraska. Shubik reportedly has found no evidence of tumors in hamsters who have been fed saccharin for a year and a half now. Another study has just been completed at Albany Medical College where Frederick Coulston has been feeding saccharin (200 milligrams per kilogram body weight) to rhesus monkeys for 7 years. He found no tumors or other forms of toxicity. A third monkey study is in its seveneth year at the National Cancer Institute. Richard H. Adamson is feeding saccharin 5 days a week to a group of ten monkeys. At doses of 25 milligrams per kilo, his animals are consuming about 40 times what an average person might consume. Because Adamson intends to follow them for their lifetime, he has no histopathological data, but a variety of clinical tests indicate the animals are perfectly well.

Adamson's studies obviously are not definitive. Neither, for that matter, are Coulston's, involving as they did fewer than a dozen animals. But they are suggestive, and what they suggest is that saccharin does not cause cancer. In addition, a recent report from Britain indicates once again that saccharin is not metabolized in rats, rabbits, or human beings. Epidemiological studies in man, though admittedly imperfect, provide no evidence that bladder cancer occurs more frequently in saccharin users.

Saccharin's Alleged Benefits

A few of these issues were raised at the recent FDA saccharin hearings—especially the point about the validity of rats—but, in general, attention focused on the other important part of the saccharin equation. Is saccharin medically beneficial? Should it be classified as a drug? Should the Delaney amendment be changed or should Congress grant saccharin a special exemption?

Representative James Martin (R–N.C.) led off with a plea to FDA to "allow an extended grace period before the ban falls shut," so that Congress can "refine our food additives policy free from the pressure of the extreme public reaction of which we have had only a taste." Martin, who has received 6000 prosaccharin letters from constituents, estimates that altogether legislators have heard from a million angry citizens. He is chief sponsor of a House bill (193 representatives are cosponsors) that would "modernize" the Delaney amendment

Briefing

Bishops Keep Tabs on Science

Sister Ann Neal comes perhaps as close as anyone to being the Catholic Church's official science-watcher. She is secretary of the Committee for Human Values, a group of bishops which monitors scientific and technical developments likely to raise ethical or religious issues.

The committee, Neal explains, does not go out looking for issues on which to take stands; its purpose is more to keep abreast of what is going on in fields such as energy policy, human experimentation, and recombinant DNA.

Neal took her degree in philosophy, concentrating in bioethics, from Georgetown University in 1976. Her committee, part of the National Conference of Catholic Bishops in Washington, D.C., was established in 1975 by Bishop Mark Hurley of Santa Rosa, California, who serves as its chairman.

Energy policy has been one of the Committee's principal concerns. Wasteful consumption habits, economic justice, and informed citizen participation are among the issues which the committee considers within its purlieu. The concept of energy independence is one that Neal describes as "morally insensitive" because it embodies a greedy attitude to a precious commodity in which other countries find it hard to satisfy even their minimum requirements.

Her committee recently drew up a statement on recombinant DNA research. Approved by the bishops' administrative board at their meeting last month in Chicago, the statement commends several aspects of the debate that has taken place so far, and offers some "guidelines in moral reasoning" about DNA research.

Science is not value-free, the statement observes, but carries ethical and public policy implications that require reflection. "The Church, while recognizing its limitations in scientific matters, has something to contribute to this reflection," says the committee. It warns against judging the research by the strictly utilitarian perspective implied in risk-benefit calculus. While implicitly reserving its position on recombinant DNA research, the committee observes in principle that "There might well be a worthy scientific goal which ought not to be pursued if it unjustifiably violates another human good. In other words, ethical constraints might slow down, or even preclude, some scientific advances." On the other hand it is possible, say the bishops, "to harm future generations by negligently omitting to accomplish some things via science."

By administrative happenstance, Neal also serves as secretary to another committee, one that is in charge of the church's relations with nonbelievers. Asked if there is any significance in her stewardship of the two committees, she says firmly there is no implication at all that scientists are nonbelievers.—N.W.