sharpest in the Medical Research Council, which plays roughly the same role in biomedical research in Britain that NIH does in the United States.

The concern of researchers and administrators associated with MRC, as they contemplate the closer embrace of the Department of Health and Social Security, might be expressed as follows. The philosophical weakness of the White Paper is the view that there is some research relevant to the needs of the Department of Health and some that is not. The department is responsible for the operations of the National Health Service and much of the welfare system, and there is a fear that operational people will take a short-term view and that basic biomedical research will be submerged.

A specific example illustrates both the reason for concern and how compromises can be made. The department has a need for research on the delivery of health care. The MRC has traditionally supported research relevant to what a doctor does for a sick patient, rather than to the organization of health services. Research in the latter area requires a mix of skills that goes beyond the usual MRC range. An agreement is being worked out under which MRC will participate in such research, but the work will be paid for out of departmental funds other than those now allocated to MRC.

Some other conciliatory and reassuring gestures have been made to MRC, such as the appointment as first chief

Academy Panel Could Send Saccharin the Way of Cyclamates

If the recent history of food additive testing is any kind of a guide, by year's end saccharin will have joined cyclamates, diethylstilbestrol, and Violet No. 2 on the Food and Drug Administration's list of proscribed additives—another (possibly innocent) victim of the Delaney amendment that prohibits use of any food additive found to cause cancer in animals or men. FDA has made no overt motion toward a ban on saccharin, but a recent string of events is beginning to make such an outcome seem virtually inevitable. The latest additions to that string include the quiet decision of Monsanto Industrial Chemicals Company, the largest U.S. saccharin manufacturer, to discontinue its production and the disclosure by Wisconsin's Warf Institute Inc. of results indicating that saccharin in the diet of rats produces malignant tumors of both the bladder and the uterus.

Saccharin has survived many claims of hazard since substantial use began near the turn of the century, but most of the early experiments that purported to show tumors or other ill effects resulting from its ingestion have been dismissed because of uncertainties in interpretation of the results, vagaries of the experimental methods, and conflicting results from other experiments. Nonetheless, in January 1972 FDA removed saccharin from the "generally recognized as safe" list of food additives and recommended that human intake be restricted to less than 1 gram per day for an adult. FDA had by then also initiated its own long-term feeding studies to determine the safety of saccharin.

Last fall, Paul Nees of the Warf group revealed (*Science*, 18 September 1972) that in a group of 20 rats fed diets containing 5 percent saccharin several developed bladder tumors that he considered malignant. The Warf group, whose research is supported by the International Sugar Research Foundation, had earlier been instrumental in providing research that led to the ban on cyclamates.

Shortly thereafter, and without fanfare, Monsanto—which began producing saccharin in 1902, its first year of operation—abandoned ship. The company has cited rising saccharin imports (from 172,000 pounds in 1962 to 1.4 million in 1971) and falling prices (from $1.68 per pound in November 1971 to $1.25 when production ended) as the major factors in its decision; but there is a nagging suspicion in many minds that Monsanto had seen the handwriting on the wall. At the time it stopped production, Monsanto had the capacity to manufacture 2 million pounds of saccharin per year and U.S. consumption was about 4 million pounds, so the firm was obviously surrendering a market in which it had a dominating share.

Near the end of February, FDA disclosed that its own, still incomplete studies suggested the presence of bladder tumors in rats fed diets containing 7.5 percent saccharin, although there was no evidence of malignancy. This preliminary revelation was viewed by many investigators as an attempt by FDA to soften the blow that might result from a sudden ban on saccharin. Some investigators, however, criticized both the Warf and the FDA studies because of the strong possibility that, at the high concentrations of saccharin used in the studies, the sweetener might have precipitated from urine in the bladder and produced tumors simply by mechanical irritation. And still others have pointed out the great difficulties of positive identification of tumors in the bladder.

These objections may be swept aside by a paper prepared for—but not delivered at—last month's 165th national meeting of the American Chemical Society by Phillip H. Derse, an associate of Nees's at Warf. Derse, who was snowbound in Madison the day the paper was to be presented, reported not only the presence of malignant bladder tumors in 7 of 20 male rats fed diets containing 5 percent saccharin, but also the presence of malignant uterine tumors in 5 of 20 female rats fed the same diet. Uterine tumors had not previously been observed in saccharin feeding studies.

Neither the FDA nor the Warf results have been forwarded to the National Academy of Sciences panel that has been convened to review the data, and few of the panelists are familiar with the recent results. It is expected that both sets of data, along with the results of other studies, will be examined by the panel, which should have much of the information by June. It seems clear that the panel will be hard pressed to dismiss Derse's report of uterine tumors, and, if it accepts his results, it may well sound the death knell for the last of the nonnutritive sweeteners.

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