in health care delivery. The version of the health manpower legislation reported out by his subcommittee and the full Committee on Labor and Public Welfare last year provided for a cutoff of basic federal aid to medical schools whose students did not agree to serve in medically underserved areas if requested by the federal government. Opponents in the Senate objected that this amounted to a doctor draft without adequate public debate, and amendments sponsored by Senator J. Glenn Beall, Jr. (R–Md.), toned down this and other provisions of the bill.

The other most controversial provisions of the committee bill dealt with the distribution of specialties and with licensure. Under these provisions a new federal authority would set limits on the residencies in each medical specialty. And federal standards for licensing and requirements for examinations for license renewal every 6 years would be established.

The rejection of his controversial proposals by Senate colleagues seems to have persuaded Kennedy to opt for a tactical delay which would enable him to make a fresh attempt in the new Congress. In a 2 December speech at the Yale University Medical Center he wrote off the manpower bill for the expiring Congress and laid out his views on the proper relationship between the federal government and academic medicine. Kennedy declared himself solidly in favor of stable funding for both biomedical research and health manpower training but observed that "Because the health care crisis has been intensifying in the past decade, the Federal Government has begun to use its ever increasing investments in you to exert some leverage for reform and innovation. As you are all acutely aware, the Federal lever on the academic medical center is substantial and its size is increasing."

In a chiding tone, Kennedy made it clear he thought academic medicine should assume more responsibility for health care delivery problems and cited several "challenges and pressures" bearing on the National Institutes of Health, concluding with the following remarks:

> Finally, the pressure for change comes indirectly from you, the academic medical community, because of your past unwillingness to engage in fundamental examinations and evaluations of some of your most sacred cows—biomedical research programs, research fellowship and training programs, and health manpower programs. Too often the lobbying effort by the national academic medical centers is indistinguishable from that of any other vested interest groups—that is, for the status quo and vigorously opposed even to serious discussion of potential reforms. In the absence of a constructive dialogue between Congress and academic medicine we in the Congress, with the best of intentions, may do the wrong things; or we may enact incomplete and inadequate measures. When that happens and when we are

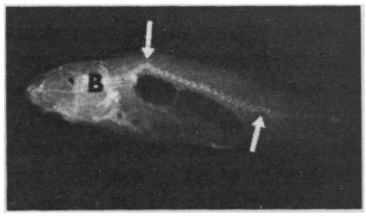
Some Bad News about Toxaphene

The domino theory may no longer be a viable formulation for Asian policy, but it may be a realistic way of viewing the current situation with regard to pesticides. The banning of DDT led to immediate increases in the use of other pesticides whose effects on the environment were even less well understood. One by one, these other chemicals have begun to totter as investigators have shown that they possess their own hazards. The latest pesticide that seems on the verge of toppling is toxaphene, perhaps the most commonly used pesticide in the United States.

Toxaphene is a complex mixture of at least 12 different compounds formed by the chlorination of camphene obtained from the southern pine. Nearly 18,000 kilograms of it are applied to U.S. fields each year. About 70 percent of the total is used on cotton fields in the South; the rest is used on cattle, vegetables, and certain fruits. The principal U.S. manufacturer is Hercules Inc.

Some scientists have suggested that toxaphene is more toxic to birds than DDT is and that it is more persistent than DDT in the environment, but the evidence for these proposals has never been conclusive. Earlier this month, however, two scientists from the U.S. Department of the Interior's Fish-Pesticide Research Laboratory in Columbia, Missouri, revealed that toxaphene produces serious damage to fish exposed to it in concentrations known to occur in ponds and streams.

Paul M. Mehrle and Foster L. Mayer told the Philadelphia national meeting of the American Chemical Society that at least three common species of fish hatched and raised in the presence of low concentrations of toxaphene exhibit stunted growth (as much as 30 percent below normal) and a skeletal fragility most often manifested in the form of broken backs. The effects appear to be attributable to a vitamin C deficiency. All the vitamin C that is naturally in the diet of the fish appears to be used for the detoxification of toxaphene and other toxic chemicals, so there is little left over for bone development and growth.



The phenomenon observed by Mehrle and Mayer is patently not a laboratory curiosity. As long ago as 1969, investigators from the U.S. Fish and Wildlife Service observed the "broken back syndrome" in fish collected in the wild. At the same time, biologists with the National Pesticide Monitoring Program observed that fish from many sites in the South contained toxaphene in concentrations comparable to those obtained by Mehrle and Mayer in their experimental species. But the recent results of the two investigators are the first evidence of a firm link between the observations.

Toxaphene use is relatively unrestricted legally. A few states have banned its use, but none of them are apparently in cotton-growing regions. The Environmental Protection Agency is conducting a continuing review of toxaphene; the Mehrle and Mayer results were, in fact, obtained under a contract from that agency. The EPA review confirms that toxaphene does have some of the problems, especially persistence, associated with other chlorinated pesticides, but the bulk of the evidence indicates that there is not the cancer threat associated with DDT, dieldrin, and perhaps chlordane. EPA's view so far is that toxaphene is an effective compound when used according to label directions and that proper application should minimize water pollution.—T.H.M.