

DDT: In Field and Courtroom a Persistent Pesticide Lives On

In cotton fields across the South this year, the bollworms and weevils were out in force. And so were cotton growers and crop dusters, who battled these destructive pests with an arsenal of insecticides that included—as it has for two decades now—liberal amounts of DDT.

Far from having slipped into oblivion, DDT remains in substantial use by American farmers. Although government restrictions during the past 2 years have reduced the number of approved uses for the pesticide, officials at the Agriculture Department indicate that somewhere between 11 million and 20 million pounds of it were used in the United States this year to control the bollworm and about two dozen other pests of cotton, citrus, soybeans, and peanuts.

The spraying of DDT continues despite two declarations by the Nixon Administration in the past 24 months that it intends to greatly reduce or totally ban sales of the pesticide in the United States.

The first such announcement came from Clifford Hardin, then Secretary of Agriculture, in November 1969. He spoke of canceling DDT's registration as an approved pesticide and mentioned a "phasing out" of DDT by the end of 1971. At the end of 1970, however, the newly formed Environmental Protection Agency (EPA) assumed responsibility for controlling DDT when it took over the Agriculture Department's authority to regulate pesticides. Then last January, in keeping with a federal appeals court order, EPA administrator William Ruckelshaus said that his agency would begin action to cancel the use of DDT in all products that are sold in the United States.

News reports of both announcements generally left the impression that the long and emotionally charged controversy over the perils and the benefits of DDT had at last been resolved. But in important ways the

struggle had only just begun, and, from all appearances, it remains as acrimonious as ever.

The old rancor has been plainly evident lately in public hearings that the government has been conducting on the pesticide since the middle of August. The hearings are part of a complicated administrative appeals process invoked by the pesticide industry almost as soon as the EPA announced its intention to ban DDT. (Although a federal appeals court—ruling on suits brought by environmental groups—has twice asked the EPA to consider suspending sales of DDT during the current process of review and deliberation, Ruckelshaus has declined to suspend sales, on the ground that its continued use presents no "imminent hazard" to human health.)

Roughshod Hearings

Three days a week, on Tuesday through Thursday, the hearings convene in a suite of federal offices in suburban Arlington, Virginia, across the Potomac from Washington. In the 4 months since they began, the hearings have evolved into one of the most protracted—and, at times, heated—inquiries the federal government has ever made into an environmental problem.

By the time it ends next month the inquiry will have brought forth more than 100 witnesses, and the transcript of oral testimony alone is expected to run to 10,000 pages. Through it all, the presiding federal examiner, a Civil Service Commission attorney named Edmund M. Sweeney, has aroused strong criticism by his conduct of the hearings and his treatment of scientists who have come to testify. Attorneys for the EPA, as well as others who have taken part in these marathon proceedings, say that Sweeney has often failed to act impartially, that he seems to lean toward the industry's viewpoint, and that he has "insulted" some witnesses.

"There has been friction between the EPA and the examiner from the start," one attorney for the environmental agency says. Their differences began when the EPA, in an effort to expedite the appeals process, urged Sweeney to begin the hearings last June. He refused, and put DDT aside for what the agency considered to be less important business.

As the hearings got under way, EPA sources say, the four participating parties quickly aligned themselves along two opposing axes. Lawyers from the Agriculture Department and the pesticide industry cooperated in defense of DDT, while the EPA and the Environmental Defense Fund, a group that has led the legal attack on the pesticide, formed the "prosecution." From the beginning, Sweeney is said to have displayed a prickly attitude toward expert witnesses on both sides and, according to an EPA attorney, gave "inequitable treatment to our witnesses as opposed to those from the industry and Agriculture." Another attorney for the agency said that Sweeney was "doing the best job he can" but added that "he doesn't seem to comprehend the subtleties of the case against DDT, and he doesn't understand scientists or scientific methodology."

Understanding collapsed altogether on 9 November when—during a period of vigorous cross-examination—Sweeney permitted industry and Agriculture Department lawyers to badger and befuddle scientists from the Department of the Interior whose testimony the EPA regarded as essential to its case. Apparently impatient with the scientists' insistence on attaching caveats to their answers, Sweeney ordered one highly respected Interior researcher to give simple "yes," "no," or "I don't know" responses to technical questions. Then, according to an attorney who was present, Sweeney went off the record to make "insulting remarks about the scientist's research and integrity."

Furious, two other scientists from Interior's Patuxent Wildlife Research Center in Maryland refused to testify until Alan Kirk, EPA's deputy general counsel, appeared the next day to complain to Sweeney—politely but firmly—about his conduct. The hearings resumed, and the two scientists went on to testify under the protective eye of a high-ranking Interior lawyer who chaperoned them. But for Eugene H.

Dustman, the director of the Patuxent center, the experience left a residue of bitterness.

"I'm told this is a game you have to play, but I can't accept that," he told *Science*. "You can't treat scientists like criminals, and tear down morale like that." Dustman says he's worried that Perry Mason tactics of cross-examination, like those permitted in the DDT hearings, will make scientists more reluctant to testify at public hearings in the future and may even cause them to shy away from research that has obvious and thorny implications for public policy.

Dustman says he hopes the blowup will lead to some new and "more dignified" procedures for handling expert witnesses. If that does come to pass, it may be the only significant impact this public trial of DDT will have. Sweeney is to report his findings and recommendations to the EPA, but there are strong feelings within the agency that "he made up his mind a long time ago," and that his views deserve to carry little weight when the time comes early next year for Ruckelshaus to make a final judgment on the registration of DDT.

Instead, EPA officials seem more disposed toward heeding the advice of a special panel of scientists who prepared a report on DDT for the agency at industry's request. The panel, whose members were chosen by the EPA from a list made up by the National Academy of Sciences, constituted another part of the administrative appeal process open to the industry under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA).

In its September report, the seven-man panel concluded that, while DDT and its breakdown products were "serious environmental pollutants," an outright ban of the pesticide in the United States would accomplish little, since the "world burden of DDT is so high compared to the current annual use in the U.S."

The scientists agreed that it does not pose an imminent hazard to human health. Nevertheless, they said, its potential for destruction of nontarget organisms makes it "an imminent threat to human welfare in terms of maintaining healthy, desirable flora and fauna in man's environment." Use of DDT, the panel concluded, should be rapidly curtailed "with the goal of virtual elimination. . . ."

Precisely the opposite sentiments have

been voiced with increasing passion lately by Norman E. Borlaug, who won the Nobel Peace Prize in 1970 for his work on new strains of wheat. Credited with fathering the "green revolution" in agriculture, Borlaug seems deeply worried that his offspring might wither if the environmentalists succeed in beating DDT. In recent months, Borlaug has become a regular visitor to the Washington public-hearing circuit, lending a new fire to what once seemed a dying controversy.

His most widely publicized defense of pesticides in general, and DDT in particular, came on 8 November in a scathing speech at a United Nations meeting in Rome. Borlaug accused "fear-provoking, irresponsible environmentalists" of mounting a "vicious, hys-

terical propaganda campaign against agricultural chemicals" that are vital to the preservation of public health and the production of food for the world's hungry millions. He cited DDT's notable record of safety in man and its successes in curbing malaria over the past 25 years, and warned that its elimination in the United States would "almost certainly" be followed by campaigns to have it banned everywhere. Borlaug then went on to outline what he perceived as a global masterplan of "privileged environmentalists."

Borlaug said: "DDT is only the first of the dominoes. . . . As soon as DDT is successfully banned, there will be a push for the banning of all chlorinated hydrocarbons, then in order, the organic phosphates and carbamate

POINT OF VIEW

David on Neutrality of NAS, PSAC

The two most significant conduits through which scientific advice is channeled to government are the National Academy of Sciences (NAS) and the President's Science Advisory Committee (PSAC). The neutrality of these two bodies has on occasion been called into question by their critics, but seldom from within. In a philosophic but candid interview published in a recent issue of Mosaic, house organ of the National Science Foundation, Edward E. David, the President's science adviser and chairman of PSAC, suggests that the Academy and PSAC may be hindered by their government links from offering scientific advice in an unbiased and credible way.

. . . One thing that is missing is a credible group which can lay out in terms understandable to the public, Congress, and the Executive Branch too, what the scientific and technological facts are and to do it in an unbiased and credible way.

The National Academy's function comes close to this, but it may not be completely adequate simply because it operates under Federal charter. I believe we need groups which can speak in an unbiased straightforward way without the kind of adversary relationships which you inevitably run into with these complex questions.

We do not now have a group other than the National Academy which tries to perform this function. It may be that one is needed. Or it may be that the National Academy's functions in this regard need to be expanded. I do believe the scientific and engineering community itself needs to speak in more reasoned and rational ways about national problems. We need to develop a means of generating unbiased, authoritative positions on subjects which involve science and technology. There are various mechanisms which you can think of to do that. Presidential commissions are one such possibility. The Academy is one such possibility. The output from the President's Science Advisory Committee is another, but all of these have shades of advocacy about them. The best you can do is get a balance of interests rather than have no conflicts of interests at all in such groups.

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insecticides. Once the task is finished on insecticides, they will attack the wood killers, and eventually the fungicides."

If the environmentalists succeed, he declared, "then the world will be doomed not by chemical poisoning but from starvation."

Borlaug's blast brought a few retorts in kind, including one from Sisco L. Mansholt, vice president for agriculture of the Common Market's executive commission.

Mansholt, who attended the same U.N. meeting, said that European farmers were greatly—and justifiably—concerned about the adverse effects of DDT, and that Borlaug's accusations of hysteria-mongering were themselves "hysterical." It is worth noting as well that the EPA advisory panel, in its September report, saw no such malignant motives on the part of conservationists. Speaking of the World Health Organization's continuing reliance on DDT as the cheapest and most effective agent to control malaria, the panel observed that "Even the most dedicated proponents of banning DDT appear at this time to exclude this program from their recommendations," apparently because they recognize the program's benefits "in terms of conservation of human lives and the alleviation of misery." For its part, the EPA declared, in a position statement last March, that restrictions on pesticides in

this country would not affect exports of the chemicals. Ninety percent of the DDT purchased by the WHO and the U.S. foreign aid program for mosquito control abroad is manufactured in the United States.

"We do not presume to regulate the felt necessities of other countries," the agency said, and it added that control of malaria in less developed nations might reasonably require "continuing use of pesticides whose side effects would no longer be tolerable here." In 1969, the Agriculture Department banned the use of DDT against mosquitoes in the U.S., except when deemed necessary for public health.

For all the fire and spittle still being flung in the debate over DDT, however, the pesticide's latent political liability may turn out to be the deciding factor in its future, when the EPA renders a final judgment next year. "Mr. Ruckelshaus is going to have to make a determination *de novo* anyway," one source in the agency's enforcement branch says resignedly. "This decision is too important to expect the White House to leave it entirely up to the agency."

Perhaps the dominant political reality in the matter of DDT is the fact that most of it is used in the South, primarily on cotton. Close observers of the pesticide scene in Washington believe that the White House would there-

fore regard any severe new curbs on this chemical as anapolitic gesture to Southern farmers in an election year. The prospect for drastic new controls is made even poorer by the fact that Representative Jamie L. Whitten (D-Miss.), who is both chairman of the appropriations subcommittee on agriculture and one of the staunchest defenders in Congress of chemical warfare in the cotton fields, holds jurisdiction over EPA's budget. As things stand, the White House Office of Management and Budget appears unwilling to increase the year-old agency's budget by much next year and may even cut it back. Bruised relations with the Whitten subcommittee, according to one prevalent line of analysis, would only compound this setback.

Given this state of affairs, EPA officials say Ruckelshaus' most likely course of action will be to amend his promised ban and to impose "selective" new restrictions on the use of DDT, reducing to perhaps half a dozen the number of insect pests that it may legally be applied against. Enforcement of this kind of restriction is difficult at best; in any event, EPA lawyers say, the pesticide industry can be counted on to fight any such restrictions in federal courts. By the lawyers' estimates, it may be mid-1973 or later before the fate of DDT is firmly sealed, or its survival ensured.

—ROBERT GILLETTE

Community Mental Health Centers: Growing Movement Seeks Identity

The federally sponsored community mental health centers program, born in 1963, has had a difficult youth. The centers, which represent an unprecedented attempt to combine the delivery of mental health and social services, have been swept into the social turmoils of the 1960's, and their growth has been profoundly affected by the resulting realignments of power. Now, with national systems of health care delivery and financing moving into un-

charted regions, community mental health centers are entering a crucial phase.

The centers have been described as nothing short of a revolution in mental health care, but they seem to inspire the same conflicting assessments as those rendered by the blind men about the elephant. "The concept is great, the reality a disaster," says one psychiatrist. "A classic case of oversell to the public," says a National Institute

of Mental Health official. "The best thing that ever happened to this country," says a center director. "The most advanced system of health delivery in the country today," says another.

The concepts behind the centers are certainly revolutionary for the United States, although they have long since been adopted by most of the world's industrialized nations. They represent an attempt to bridge the chasm between public and private treatment of the mentally ill by providing a comprehensive assortment of services, ranging from advice to hospitalization, to all persons within a given geographical area, regardless of their ability to pay. They are the proving ground for community psychiatry—a non-Establishment approach that emphasizes preventive care and getting psychiatrists and psychologists out of