NEW WORLD

Another Pesticide in Trouble

by our Washington Correspondent

THE series of battles that have been taking place in the United States over the safety of pesticides bears a strong resemblance to the interminable run of James Bond films: the same cast of characters appears in the same situations, and each successive production is as absorbing as its predecessor. Last year, the big attraction was the trial of DDT; this year, the trial of aldrin and dieldrin will soon begin its opening run in Washington. Unlike the James Bond films, however, there is more at stake than mere entertainment value, and the outcome is not always as predictable.

A trailer for the aldrin and dieldrin epic was given in Washington last week, when lawyers for the parties in dispute over the risks and benefits of the pesticides submitted their prehearing briefs to a hearing examiner. A public hearing will open soon—the date has not yet been decided—but the pretrial briefs outline the arguments which will be used by the Environmental Protection Agency and the Environmental Defense Fund, who want to get the pesticides off the market, and the Department of Agriculture and the Shell Chemical Company who want to continue using them. The public hearing will be the latest—perhaps the final—stage in a prolonged dispute over the pesticides.

The story so far is that in June last year, William D. Ruckelshaus, then Administrator of the Environmental Protection Agency, cancelled all registered uses of the pesticides except for mothproofing, termite control and some nursery uses. Shell, the sole manufacturer, objected to the cancellation notices and asked for a public hearing. The issues which will be debated are remarkably similar to those which came up in the prolonged dispute over DDT.

Aldrin is an organochlorine pesticide which is degraded fairly rapidly to the epoxide dieldrin, which is extremely long lived. It is used as a pesticide in both forms, and they will be considered together in the forthcoming public hearing. The chief use of the pesticide is to control pests in the soil to prevent damage to corn, and other uses in dispute are the treatment of seeds and the control of soil pests in the cultivation of citrus fruit in Florida. According to the brief from Shell, about 8 million acres of corn fields are treated with aldrin each year at a cost of about \$1.50 per acre, and it is also used in about 30,000 acres of citrus. In all,

some 10 million pounds of the pesticide is used each year, which is, less than the 20 million used in 1966.

In short, the problems with aldrin stem from the extreme persistence of its breakdown product, dieldrin, which leads to the familiar biomagnification in the food chain, alleged damage to wildlife and, what will undoubtedly be the crucial point in the hearings, its chronic toxicity to man. As with DDT, the most hotly debated topic is likely to be the possible cancer hazard.

Lawyers for Shell will argue at the hearings that the pesticide only poses a problem because of incorrect or careless usage. Their prehearing brief points out that when used to control soil insects in corn growing areas and in Florida, the pesticide is buried three inches below the surface, which should be sufficient to prevent it from being transported by agricultural runoff. They will also argue that there are no alternatives, and that there is no way of telling which fields are likely to be attacked by soil pests, hence farmers must use it before an outbreak as insurance.

But lawyers from the EPA will beg to differ. Their brief promises to reveal evidence of heavy concentrations in water, and in many aquatic species and in some birds. As further evidence of transportation, they will show that dieldrin is found in Antarctic penguins and whales. More important, an EPA study in 1971 turned up evidence of dieldrin residues in adipose body tissues of 99.75 per cent of the US population, and another study found residues in 83 per cent of the composites of meat, fish and poultry and 80 per cent of all milk samples consumed in the US.

Those figures will be the starting point for the EPA's arguments about the possible chronic toxicity of dieldrin to man. The evidence for possible carcinogenicity derives chiefly from long term feeding studies conducted on mice and one study (which the Shell brief curiously neglects to mention) conducted by the Food and Drug Administration on rats. Most of the key mice experiments were in fact conducted in Shell's own laboratories, but Shell and its opponents differ in the interpretation of the results, and the public hearing seems destined to develop into another debate about the applicability of animal studies to man. In many respects, the arguments are similar to those which continually circulate about the safety of food additives.

The EPA and EDF lawyers take the

position that it is usually impossible to prove with absolute certainty that a chemical is carcinogenic to man, but if it is found to be carcinogenic to test animals then it must be regarded as a danger to man. As the EDF brief points out, "only a human catastrophe can prove conclusively that a chemical is carcinogenic to man". In the case of dieldrin, several mouse feeding studies have turned up evidence of liver tumours, while the FDA rat study suggested an increase in the incidence of tumours at various sites.

Shell's lawyers maintain, however, that the evidence of liver tumours in mice "says volumes about the mouse, (but) is not evidence of human tumorigenicity . . . the mouse liver tumours here are naturally occurring. Dieldrin merely increased their incidence". Shell backs up its case with data derived from a study of workers in an aldrin/dieldrin production plant, exposed to high concentrations of the pesticide. The study has turned up no evidence of liver tumours, or other signs of disturbance of liver function. But the EPA document points out that this study was carried out on "presumably healthy adults and the duration of their exposure is insufficient for an assessment of important chronic effects".

In many respects, the forthcoming hearings will boil down to a debate over the important philosophical distinction between socially accepted level of risk, and safe level for man. It should be remembered that in the case of DDT, the hearing examiner determined that use of that pesticide constituted a socially acceptable level of risk, and consequently recommended that DDT should continue to be used. Mr Ruckelshaus decided, however, that there was no safe level for man, and banned DDT. Whether the arguments over aldrin/dieldrin will be as finely balanced remains to be seen.

NIH

Unknown Quantity

by our Washington Correspondent

FOR the past few months, several scientists at the National Institutes of Health have been up in arms about the health policies of the Administration. Their disaffection first set in last December when Dr Robert Q. Marston was informed by the White House that he was being fired as the NIH Director, and it