

Letters

Beetles and Dieldrin

On 19–23 October 1968 the Michigan and U.S. Departments of Agriculture (MDA, USDA) aerially treated about 3000 acres with dieldrin (2 pounds per acre) to eradicate Japanese beetle grubs in Berrien County, Michigan. The plan was approved by several agencies and executed by trained personnel using controlled procedures. This may at first sound like a reasonable program, but there is more to the story.

Using MDA trapping data, the "infested area" averaged roughly one beetle per acre, the area being primarily nonagricultural. At this density the "infestation" did not threaten agricultural interests, but an extensive propaganda campaign by MDA frightened farmers and the public by implying that crop damage in the millions of dollars was imminent. MDA failed to mention that the beetles can be adequately controlled on agricultural land by less dangerous insecticides (sevin, malathion, and methoxychlor) and milky disease used according to USDA recommendations (1), and that these procedures are routine in many parts of the country.

It is impossible for dieldrin to eradicate the beetles, since this region is contiguous with a larger beetle population to the south, and some areas containing beetles were left untreated. The beetle, widespread in the eastern United States, will quickly reenter treated areas. Eradication should not be attempted under such circumstances, since natural control mechanisms (parasites, predators, and diseases) thereby are also eliminated, creating a vacuum into which the pest can explode. Control, not eradication, should be the goal.

MDA gave public assurance that dieldrin applied in Berrien County would not enter Lake Michigan or contaminate other areas. They either ignored, or perhaps did not know, that dieldrin enters the atmosphere by vaporization, suspension, codistillation, and by being adsorbed to dust particles; that it is moved in water by solution, suspension, and adsorption to eroded particulates; and that it has thereby be-

come distributed over much of the earth. It is found in the air, in untreated soils, and even comes down in precipitation; most animals are contaminated with it. It is absurd to claim that three tons of an inherently uncontrollable, mobile material like dieldrin will remain where applied.

Dieldrin is extremely toxic, stable, and lipid-soluble, with broad biological activity within the animal kingdom; 2 pounds per acre causes heavy mortality of nontarget organisms, including fish, birds, and mammals. It concentrates within food chains and is a powerful inducer of hepatic enzymes that hydroxylate steroids. The chlorinated hydrocarbons, including DDT, its metabolites, and dieldrin, are causing widespread degradation of ecosystems in many parts of the world, especially by interfering with reproduction among fish and birds. This pattern has been extensively documented in recent years.

In spite of these circumstances, this program was approved by various agencies charged with protection of environmental quality and the public welfare. Litigation by the Environmental Defense Fund prevented the application last year, but failed this year because MDA was ruled immune from suit. By what right does a department of agriculture, clothed in sovereign immunity, invade and destroy nonagricultural areas and values with the excuse of a beetle per acre?

The fire-ant program, similarly preceded by propaganda about the horrors of fire-ants, used dieldrin (2 pounds per acre) more than a decade ago and is generally recognized as an ecological disaster. Evidently pesticide policies have not made much progress. How long must we tolerate such dangerous naïveté, and how much of this kind of treatment can our environment withstand?

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Reference

1. U.S. Dept. Agr. *Farmer's Bull.* No. 2151 (1963); U.S. Dept. Agr. *Tech. Bull.* No. 1383 (1968).

The letter by my colleagues ("Boycott Chicago!" 1 Nov.) likening the regrettable events in Chicago during the Democratic National Convention to the Russian occupation of Czechoslovakia appears to me to be a shocking indication of the loss of perspective now prevalent, even among intellectuals. The main obligation of scientists . . . to society should be the advocacy of the scientific method and the calm evaluation of data, rather than contributions to the current flow of emotional diatribes.

Nobody was seriously hurt or penalized, to my knowledge, in Chicago. The reaction to these events only discredited and embarrassed the local "establishment." In contrast, many Czechs were killed or imprisoned; the legal regime was suppressed; and the country's policy is now determined by a foreign power. These two events are completely incomparable, in both a qualitative and quantitative sense.

The polarization of our society is already serious, and to contribute to it by means of emotional outcry and distortion of facts is highly regrettable, particularly if the source is the scientific community.

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In all the years I have been a member of the AAAS, perhaps the most unscientific item I have read in *Science* is the letter by Eigner *et al.* entitled "Boycott Chicago!" As an innocent bystander during the so-called demonstration of free speech and assembly (obviously an experience not shared by the signers of that letter), I can only say that if I had been a member of the police force, I would have been tempted to reply to the taunts of the crowd with the action they openly courted. The language used by the "peaceful" demonstrators was utterly foul. A tape made by a student spectator from Roosevelt University (not a participant) was so filthy that it could not be played in any decent mixed company (1). A man standing next to me as we waited for a cab in front of the Conrad Hilton Hotel was struck with human excrement thrown out of the hotel window. Rocks and bottles were thrown by practically half the mob.

This was no amateur job; riot inciters with bullhorns directed the mob with military precision. We have all