

# 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.

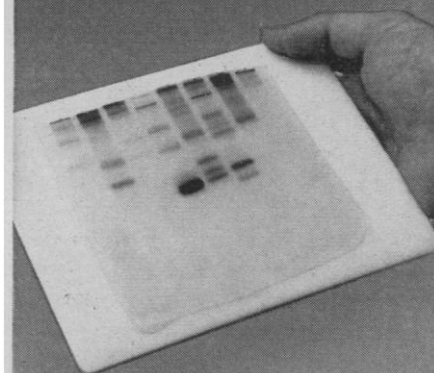
The polarization of our society is already serious, and to contribute to it by means of emotional outcry and distortion of facts is highly regrettable, particularly if the source is the scientific community.

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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

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read much about the newspaper and TV representatives who were injured by the police, but no one has reported how newsmen abetted the rioting by asking members of the mob to perform certain violent acts so they could be photographed. I saw a news photographer and his "accomplice" persuade a female to throw what appeared to be a fruit jar which broke near me and sprayed several spectators with urine. Arrests were made but only after rioters had actually struck police or bystanders with clubs or missiles. If every violation of the law had been dealt with, the entire mob could have been jailed.

After seeing these acts of violence, I can only conclude that the authors of "Boycott Chicago" have neglected the primary principle of scientific investigation—namely: first, learn the facts.

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#### Note

1. A few of the remarks: "I dare you hit me, you mother f\*ck\*r"; "Fall in your own sh\*t, you bastard"; "Go back to the station and s\*ck the sergeant's pr\*ck."

If we are to boycott Chicago as the bacteriophage workers suggest, let's do it right. We would be in a morally stronger position and would swing a lot more economic muscle if we boycott Chicago scientists instead of shifting convention sites. Manipulating meetings puts us in the position of a mobile elite applying pressure through the hotel industry and affecting most immediately the bottom of that industry's economic pyramid: busboys, waitresses, maids, taxi drivers, and so on. . . .

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Those scientists who would boycott Chicago should be aware of the following facts:

- 1) The bylaws of the professional societies that constitute the Federation of American Societies for Experimental Biology state as their purpose the following goals: extension of scientific knowledge, facilitation of personal intercourse of scientific investigators, the propagation of the results of scientific research, the promotion of knowledge in the fields of biochemistry, physiology, pharmacology, and so forth. Participation in political matters is limited to efforts that would promote both research in those sciences, and the pro-

fessional interests of its members. Since the political views of its members are irrelevant to the purposes of the societies, it follows that these political views reflect the full range of opinion, and that there will doubtless be conflicting viewpoints within the membership. If the professional society adopts a distasteful political position, the dissident member may, of course, resign. He might be forced to do this, even though he still agrees with the purposes of the society as stated in the bylaws, since continued membership serves to identify him with a political viewpoint that is distasteful to him. If he does resign, the purpose of the society as stated in the bylaws is violated. The society cannot take a political position on any matter that may result in the resignation of its members. The action contradicts the purpose of the society, and hence is unconstitutional.

- 2) The decision to meet in any city is based on questions of logistics and convenience.

- 3) A decision to abandon a meeting at Chicago constitutes a boycott that is motivated by the political views of some of the members of the society. It is a discriminatory action against the people of Chicago and its environs and is a form of political compulsion.

- 4) The argument presented for the boycott is that the "use of economic power represented by the choice of a convention site" would coerce Chicago to adopt policies more in accord with the views of the petitioners. This "power" in fact rests on federal funds. A large percentage of the total monies spent at professional conventions is charged to federal grants. The petitioners propose to use federal money, part of which has come from the taxpayer of Chicago, in order to practice a form of political compulsion directed against the people of Chicago.

- 5) If the society rules that the suppression of the demonstration was an "intolerable violation of the rights of free speech and assembly and an affront to decency," it might find it expedient to expel a scientist who publicly announces that the suppression was necessary in order to establish the conditions required to choose a presidential candidate. Obviously, the dissenting scientist would be acting "in a manner that is not in the public interest," which, according to the bylaws of the American Society of Biological Chemists, is grounds for forfeiture of membership.

It is my opinion that those scientists who petition the societies to practice

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a form of economic boycott as a means of political coercion are in fact violating the principles of free speech and dissent which they profess to support.

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### Deep-Sea Drilling by JOIDES

In his editorial, "Deep earth sampling" (8 Nov., p. 623) Abelson discussed the JOIDES (Joint Oceanographic Institutions' Deep Earth Sampling) program, but he left out an important chapter between the Mohole effort and the present deep-sea drilling project.

One important factor leading to the present program was the success of the 30-day JOIDES offshore drilling project on the Blake Plateau in the spring of 1965. Drilling and coring were carried out along a 200-mile transect southeast from Jacksonville, Florida to the eastern edge of the Blake Plateau. These results were reported in *Science* (1). Most of the tertiary section was sampled in six core holes drilled in the Continental Shelf, Florida-Hatteras Shelf, and the Blake Plateau. Water depths at the drill sites ranged from 25 to 1032 meters and penetrations into the bottom from 120 to 320 meters. Core recovery averaged 36 percent, allowing good reconstruction of the stratigraphy, which shows the continental margin as a wedge-shaped constructional feature thinning seaward. These scientific results and the demonstration that a consortium of oceanographic laboratories could work effectively together were important factors leading to the present expanded JOIDES program.

It should be pointed out that National Science Foundation funds can neither be granted to nor administered by a consortium. For this reason, a single operating institution from within the JOIDES organization is selected for each project by the executive committee which consists of the directors of the member institutions (Institute of Marine Sciences of the University of Miami, Lamont Geological Observatory of Columbia University, Scripps Institution of Oceanography of the University of California, Woods Hole Oceanographic Institution, and, since the summer of 1968, the University of Washington). Lamont Geological Ob-

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