Letters

Postal Service Here and Abroad

Daniel E. Koshland, Jr.'s 15 February editorial (p. 721) dealing in part with the United States Postal Service represented an unscientific departure from fact and substance into supposition and opinion. I hope this letter will give a clearer picture of the United States Postal Service and how we compare with postal services in the rest of the world. Contrary to Koshland's editorial, the United States Postal Service may be the only very large American enterprise that is cheaper, more efficient, and better than its German or Japanese counterparts. In 1989, the German postal service processed 72,000 pieces of mail per worker per year, and the Japanese had a comparable figure of 152,000 for 1990. In 1990, the United States Postal Service processed 212,000 pieces per worker per year. Domestic postal rates in Germany are 67 cents, in Japan they are 47 cents, and here they are an "outrageous" 29 cents!

Postal rates, when the United States Postal Service was formed at mid-year 1971, were 8 cents. They have gone up at almost exactly the rate of inflation to their present level of 29 cents, where they will remain for several years to come. In 1990, our operating costs went up at *one-half* the rate of inflation, due to a reduction in our workforce of some 35,000 career employees through attrition. This was accomplished by the implementation of automation, which is now only one-third of the way through our conversion.

We are measuring, for the first time, our service *externally*—through Price Waterhouse and Opinion Research Corporation. The last customer satisfaction research survey of the American people indicated that 87% rated us good, very good, or excellent and only 2% rated us poor. Obviously, we need to improve, but I question whether any very large organization in this country (and we are the largest employer and the eighth largest corporation in terms of revenues) could have a higher score.

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Response: The Postmaster General is certainly correct in his comments on first-class mail, and this editor got his eye off the ball because he has been preoccupied with the sudden increase in second-class mail costs, together with poor services. Fortunately, the latter problem is being addressed, due to the special attention of Postmaster General Frank, and it is hoped that the readers of *Science* will soon benefit from that attention.

—DANIEL E. KOSHLAND, JR.

Pesticide Use

The 1 February News briefing "The case against crop chemicals" (p. 517) contains some misleading information. Increases in tonnage of chemical pesticides used in the United States occurred primarily in the 1970s with the application of pre-emergence herbicides in corn and soybean production. There have been no increases in the use of chemical pesticides since the late 1970s. During the 1970s and the 1980s there have been significant advances in the development of pesticides that minimize the potential for health and environmental risks. Today's pest control chemicals are infinitely safer than those of the past generation.

While pest resistance to pesticides is a problem, research is actively providing the strategies necessary for the management of this resistance. All pesticides do not have resistance problems. A number of fungicides have been on the market for many years without encountering resistance problems. These are often used in conjunction with the newer, highly specific fungicides to avoid or postpone resistance.

One of the reasons the pesticide usage curve has remained flat over the last decade is the use of pest management, which combines the elements of natural control (crop rotation, resistant crop varieties, and so forth) with chemical control. The elements of pest management vary considerably depending on such factors as crop, geographical location, and local weather conditions. One cannot broadly address our complex production systems in the United States by simply stating that pesticide use could be cut in half. The needs for pesticides are based on specific situations. We need to focus our attention on continuing the progress we have made in pest control methodology through sound research and extension programs.

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Response: We agree with Ragsdale that some of today's pesticides are safer for some organisms, in particular, some predatory birds, than were DDT, dieldrin, and other chlorinated insecticides. However, the current environmental and public health problems associated with pesticides are not as insignificant as is suggested by Ragsdale (*1, 2*). Several million birds are still being killed each year by pesticides (*3*). Also, the more than 67,000 human pesticide poisonings (*4*) plus the approximately 6,000 pesticide-related cases of cancer do not suggest that the public health situation is "infinitely safer" than in the past (*5*).

In addition, substantial monetary costs result from pesticide use. The nation spends $1.3 billion annually to monitor well and ground water for pesticides (*6*). Additional costs include serious fish kills; destruction of beneficial natural enemies; honey bee kills; pesticide contamination of meat, milk, fruits, and vegetables; and other serious environmental effects. A conservative estimate is that pesticides are responsible for at least $8 billion worth of environmental and public health damage each year in the United States (*2*). Surely we should be alert to this—and develop strategies that will improve the current situation.

To date, pesticide resistance management has not been successful. At present the number of pests reported to be resistant to pesticides are insects and mites (504 species), weeds (273 species), and plant pathogens (150 species). The number of resistant species in all groups is larger than ever before according to a report on pesticide resistance management just issued (*7*). These data refute Ragsdale's position that there is less pesticide resistance than in the past.

Pesticide use, based on kilograms applied, has declined some since 1975. In part this is because of improved pest management programs. The greatest change has been in the use of highly toxic pesticides, ones that require as little as 1/100th the dosages per hectare that earlier pesticides required. Unfortunately, microdosages of potent pesticides like aldicarb (Temik) do not reduce the environmental and public health hazards, but may even increase them.

We agree that it would be helpful if detailed data on pesticide use and nonchemical controls were available for every region within each state. If these data were available, our investigation would have been easier and our report improved (*1*). But should scientists wait for complete data? We hope that our investigation will spur more research.

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