LETTERS

Pesticide Resistance

I congratulate Marjorie Sun for her excellent coverage (News and Comment, 14 Dec., p. 1293) of the recent Symposium on Pesticide Resistance Management and of our policy study (*1*), published just before the symposium opened. However, two points require correction.

In the article, I am said to have suggested "that EPA [Environmental Protection Agency] require a manufacturer to submit efficacy data when a new chemical is registered." Further, our study is cited as proposing that "[w]hen a company asks EPA to approve a chemical for emergency use, the firm should be required to report resistance problems with the compound it is replacing." My coauthor, Brian Croft, and I did not make either suggestion.

Our report specifically distinguished between efficacy data requirements and possible future data requirements on resistance potential. We do not take a position in the continuing debate on whether to reimpose efficacy data requirements for registration. In fact, we can envision situations where a too strict interpretation of efficacy for a new product could work against good resistance management.

On the second point, it is a state or federal agency that submits emergency-exemption requests to EPA. We recommend only that, when product failure is stated as the reason for such emergencies, these data should be made available by EPA to facilitate follow-up monitoring for resistance. No requirements would be made of chemical companies in this proposal.

MICHAEL J. DOVER
World Resources Institute, 1735 New York Avenue, NW, Washington, D.C. 20006

References

1. M. Dover and B. Croft, *Getting Tough: Public Policy and the Management of Pesticide Resistance* (World Resources Institute, Washington, D.C., 1984).

Sun raises an interesting historical issue regarding the questions of resistance and pesticide technology. The domination of the pest control industry by chemical pesticides is based largely on early "resistance" to alternative techniques, that is, biological controls and specialized farm management techniques, on the part of the farm community, the regulatory agencies, and the manufacturers themselves. These groups should recognize that problems of insect resistance can be alleviated, at least in part, by greater efforts to achieve a balance among all available techniques.

Cooperative extension service agencies are already working hard to encourage integrated pest management (IPM) programs in many states. However, they are operating with miniscule budgets and with funds that are often at risk in times of budget-cutting. It is clearly the responsibility of the federal government and, specifically, the Department of Agriculture, to foster greater efforts in the development and use of alternative pest controls, to set a goal of using less and fewer chemicals, and, if necessary, to legislate for the achievement of this goal.

Manufacturers with research programs in the development of biological pesticides should receive financial incentive grants. Land-grant universities need more funding for research, development, and implementation of IPM programs, as well as funding for research on biological pesticides. We could be looking at serious hazards to human health if the necessary legislation is not passed to regulate both the chemical industry and the farm industry in its willy-nilly production and use of chemical pesticides.

JUDITH K. MARQUIS
Department of Pharmacology and Experimental Therapeutics, Boston University School of Medicine, Boston, Massachusetts 02118

References

1. T. R. Dunlap, *DDT: Scientists, Citizens, and Public Policy* (Princeton Univ. Press, Princeton, N.J., 1981).

Heart Panel's Conclusions

As chairman of the recent National Institutes of Health Consensus Development Conference on Lowering Blood Cholesterol and as a member of the AAAS I was disturbed by the article on that conference appearing in the 4 January Research News article "Heart panel's conclusions questioned" (p. 40). First, the article contains errors of fact, which, I understand, are being corrected in an erratum (below). Second, the article exaggerates the extent of dissent from the panel's conclusions and recommendations. Kolata cites the views of three dissenters and devotes the bulk of the article to their criticisms. The *real* news was rather the remarkable *consensus*. The panel reached its conclusions unanimously and, on the basis of what we heard during the 3-day conference, both from the speakers and during the extensive discussion from the floor, there were no more than a handful among some 600 conferees who appeared to disagree with the general terms of the recommendations. There was no disagreement that a high blood cholesterol level is established as one cause of coronary artery disease and must be treated, at least by dietary means and, in high-risk patients, with drugs if necessary. There was a consensus that any cholesterol level above 240 milligrams per deciliter (values above the 80th percentile, roughly) should be treated vigorously by dietary means. Thus there was agreement that action should be taken at least with regard to almost one-fourth of the U.S. population, with obvious important implications for medical practice and public health. Surely that was newsworthy and deserved greater attention than the boxed statement on page 41.

The proposal that the American people as a whole should try to reduce their fat intake, particularly their saturated fat intake, is one that has been put forward previously and widely, although it is not universally endorsed. The diet is similar to that proposed by the American Heart Association (with full support of its Council on Arteriosclerosis) and by the Inter-Society Commission for Heart Disease Resources (jointly sponsored by the American Heart Association and the American College of Cardiology). The panel had available to it more recent evidence supporting the cause-and-effect relationship between blood cholesterol levels and coronary risks, including the CPPT data from the Coronary Primary Prevention Trial, but by no means confined to them. The panel's recommendation is sound when *all* of the evidence is taken into account. Even one of the interviewed "dissenters," Paul Meier, concurs with the dietary recommendations for the adult population. However, that only becomes clear at the end of the article.

The Research News section of *Science* is justified in spotlighting the controversy. But I believe it has an obligation to present a balanced view.

DANIEL STEINBERG
Department of Medicine, Division of Endocrinology and Metabolism, School of Medicine, University of California, San Diego 92093

Kolata's article about the recent NIH Consensus Development Conference on Lowering Blood Cholesterol is likely to give the impression that the controversy regarding the role of blood cholesterol-lowering in preventing coronary heart disease (CHD) continues. By focusing

predominantly upon the opinions of a few dissenters and by a limited presentation of the majority view, the article does not convey the extent of the consensus that was actually reached.

The NIH Consensus Development process is designed to carefully examine important medical questions by providing a forum in which various, even conflicting, points of view can be expressed. The cholesterol conference was no exception to this. Expert and comprehensive testimony was presented to the consensus panel by a series of speakers who represented the many scientific areas and viewpoints that relate to the questions under consideration. On the basis of these presentations and the resulting open discussion, members of the broad-based panel were able to reach a series of unanimous recommendations. As is the case for all consensus conferences, time was allotted for public discussion of the recommendations, which appeared to be well received by the great majority of those who participated in these discussions. It is noteworthy that there was virtually complete agreement that about one-quarter of all adult Americans have cholesterol levels that put them at especially high risk of CHD and that such people should be identified and treated. The panel's recommendations that Americans moderately reduce their dietary fat intake also drew few dissenting voices.

In questioning the panel's conclusions, the article casts doubt on the results of the Coronary Primary Prevention Trial (CPPT) through a limited review of its finding. The results for the primary end point are strongly supported by similar and significant changes in the secondary CHD end points and by various analyses within each of the treatment groups. Consistency was displayed by the similarity of the observed cholesterol-change to CHD-risk relationship to those seen in observational studies and in other clinical trials of cholesterol-lowering. These points have been published and were reported in several presentations at the conference. It has also been emphasized that the CPPT was not designed with a sample size sufficient to address the impact of cholesterol-lowering on cardiovascular or all-cause mortality.

This wide array of evidence from the CPPT for the efficacy of cholesterol-lowering in preventing clinical manifestations of CHD is impressively consistent, requires careful consideration, and cannot be lightly dismissed. It also should be noted that the panel took into account much other new information in reaching its conclusions.

CLAUDE LENFANT
National Heart, Lung,and Blood Institute, Bethesda, Maryland 20205
BASIL RIFKIND
Lipid Metabolism-Atherogenesis Branch, National Heart, Lung, and Blood Institute, Bethesda, Maryland
ITZHAK JACOBY
Office of Medical Applications of Research, National Institute of Health, Bethesda, Maryland 20205

Erratum: Two statements in the article "Heart panel's conclusions questioned" by Gina Kolata (Research News, 4 Jan., p. 40) were not accurate. The first, in the third paragraph on page 40, should have read, "But these trials failed to show that cholesterol-lowering saves lives," instead of, "But these trials failed to show that cholesterol-lowering prevents deaths from heart disease." A second statement, in the ninth paragraph on page 41, should have read, "The incidences of angina, bypass surgery, and abnormal exercise electrocardiograms all came down in the cholestyramine group. All but bypass surgery were statistically significant."

Correction

Due to a printer's error, a recent meeting of the Planetary Society in Washington, D.C., was incorrectly identified as a "Planetary Soviet" meeting in the News and Comment article by R. Jeffrey Smith, "A fresh start for arms control" (25 Jan., p. 389).