community colleges and 4-year colleges will bear more and more responsibility in the coming years for science education because of inflation and prohibitive tuition costs at larger universities. If this trend is to continue, we will need more, not less, of Chautauqua-type programs to help the faculty in these colleges keep in touch with different branches of science.

The cuts proposed by the Office of Management and Budget for all science education programs are "jellybeans" compared to the waste in so many other federal programs. I hope that the scientific community, especially those working in small colleges, will band together and lobby for the restoration of the cuts.

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Chlorinated Drinking Water

The Environmental Protection Agency (EPA), the Council on Environmental Quality (CEQ), and now Thomas H. Maugh II (Research News, 13 Feb., p. 694) suggest that we face an imminent danger of cancer from chloroform in our drinking water. Before we are forced to spend tens of billions of dollars for its removal, someone should ask whether these estimates of risk are based on reason or on Environmentalist theology.

It is reported to be possible to produce cancer in rats and mice with carefully selected doses of chloroform, but apparently not without severe liver or kidney damage. On this basis, it is fair to consider that chloroform might be a human carcinogen. It is not appropriate to conclude that it is such and to refuse to consider evidence to the contrary. Quite a lot has been learned about the physiological effects of chloroform since it was discovered 150 years ago or first used as a human anesthetic 134 years ago. I have not reviewed the original literature, but the available reference sources indicate that: (i) attempts to produce cancer in experimental animals other than rodents have been unsuccessful; (ii) its use as an anesthetic has been abandoned largely because newer agents offer a lower risk of cardiac failure; and (iii) occupational exposure limits have been reduced several times because of concern for liver damage and related effects. These human exposures have been in the range of 0.1 to 10 grams *per day*. The exposure expected from drinking water is 0.1 to 10 grams *per lifetime*. Unless a very large

increase in cancer has been overlooked or unless the usual assumption of linear dose-effect relationship is seriously in error, the number of excess cancers from chloroform in water must be zero for the most probable case. For the worst possible case, it would still be less than the number of excess deaths from building and operating the suggested treatment facilities.

Several statistical studies reviewed in a recent CEQ report claim a 13 to 93 percent increase in certain types of cancer to be associated with water chlorination, which produces chloroform. Maugh implies that this is evidence for cause and effect. The decision to chlorinate a water supply is so closely related to other demographic variables (for example, urban or rural location) which have been separately correlated with cancer rates that a whole army of statisticians working for years could not tell us with any confidence whether an effect this small is or is not simply an artifact. Even if there were a strong, clear association, we would not know whether the water was hazardous because it was chlorinated or chlorinated because it was hazardous.

Science is so quick to suggest bias when a professor supports some of his graduate students on industrial grants that I am surprised Maugh fails to remark on the members of the Carter CEQ. Robert Harris has stated his prejudices quite clearly. Gus Speth, former executive for the Natural Resources Defense Council, should not be blamed for the advocacy of his associates, but neither would he be selected as a model of impartiality.

It has taken the EPA only 10 years to discover that outside air, for all of its troubles, is generally much cleaner than indoor air. How long will it take them to notice that tap water turns black when someone disturbs the pipes of a system treated by absorption with regenerated carbon, and what remedy will they suggest if someone observes that these fine carbon particles contain a high concentration of polycyclic aromatic hydrocarbons?

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Erratum: The correct address of Lawrence Erlbaum Associates, the publisher of *The Nature of Thought*, which was reviewed in the issue of 1 May, p. 536, is Hillsdale, N.J.

Erratum: The correct surname of the editor of *Physics of Magmatic Processes*, which was reviewed in the issue of 8 May, p. 656, is Hargraves.

Erratum: Anthropologist Louis Dupree ("Afghanistan: The politics of a tragicomedy," News and Comment, 1 May, p. 521), a member of the American Universities Field Staff, is also associated with the Pennsylvania State University, not with the University of Pennsylvania, as stated.