

aspermogenesis should be ample evidence of the possible tragedy which may result from having used Tris as a flame retardant in children's sleepwear. If anyone can be criticized for the Tris imbroglio, it is Congress for not requiring that flame-retardant chemicals be demonstrated to be safe, and the industry for not testing Tris before exposing more than 60 million children to it.

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#### References and Notes

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2. *Environmental Defense Fund v. Environmental Protection Agency*, 510 Fed. Rep., 2nd ser. 1292 (U.S. Cir. Ct., D.C., 1975), p. 1299 (for aldrin and dieldrin). See also *Society of the Plastics Industry, Inc. v. Occupational Safety and Health Administration*, 509 Fed. Rep., 2nd ser. 1301 (2nd Cir. Ct., 1975), p. 1308; *Synthetic Organic Chemical Manufacturing Association v. Brennan*, 506 Fed. Rep., 2nd ser. 385 (3rd Cir. Ct., 1974); certiorari denied, 96 Supreme Ct. 163 (1975).
3. *Certified Color Manufacturers Association v. Mathews*, 543 Fed. Rep., 2nd ser. 284 (U.S. Cir. Ct., D.C., 1976), pp. 297-298.
4. *Environmental Defense Fund v. Environmental Protection Agency*, 510 Fed. Rep., 2nd ser. 1292 (U.S. Cir. Ct., D.C., 1976).
5. *Ethyl Corporation v. Environmental Protection Agency*, 541 Fed. Rep., 2nd ser. 25 (U.S. Cir. Ct., D.C., 1976).
6. A. Blum and B. N. Ames, *Science* 195, 17 (1977).
7. R. W. Morrow, C. S. Hornberger, A. M. Kligman, H. I. Maibach, *Am. Ind. Hyg. Assoc. J.* 37, 192 (1976).

#### Lovins on "Lovins' Fever"

In response to Robert Nathans' three points supporting his diagnosis of "Lovins' fever" (Letters, 12 Aug., p. 618) in the excellent article by Allen L. Hammond and William D. Metz (Research News, 15 July, p. 241):

1) It is hard to make a persuasive case that appropriate design and capital-transfer schemes cannot make dispersed solar systems as attractive in cities and for poor people as in suburbs and for rich people. Higher load density may even improve the economics (1). It is also difficult to reconcile the uncited "examination" of decentralized solar systems Nathans mentions with the tenor of the Office of Technology Assessment's new study on solar energy (2).

2) Since detailed assessment of end-use-matched solar technologies has barely begun, Nathans can speculate uncon-

strainedly about their possible effects. Those he suggests, however, need not arise. The systems I have discussed, for example, need no utility backup, displace utility capacity only at the margin, and do not encourage commercial or industrial dispersion. Further, disruption in case of breakdowns would be less than for a centralized system (3).

3) I envisage continued reliance on existing, therefore largely centralized, energy facilities until they are mostly replaced—through normal attrition over the next 50 years or so—by soft technologies where these are most convenient to start with and by transitional fossil-fuel technologies elsewhere. All degrees of centralization would coexist, and their proportions would change, during the transition. In the end, the scale spectrum would match that of end-use, virtually eliminating the costs and losses of distribution. The hybrid system Nathans urges is thus consistent with my thesis—so long as he is not proposing to build *additional* centralized systems, which would be unnecessary and uneconomic.

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#### References

1. K.G.T. Hollands and J. F. Orgil, *Potential for Solar Heating in Canada* (University of Waterloo, Waterloo, Ontario, February 1977).
2. *Application of Solar Technology to Today's Energy Needs* (Office of Technology Assessment, Washington, D.C., June 1977).
3. A. B. Lovins, *New York Times*, 24 July 1977, sec. 4, p. 17.

#### Nutrition and IQ

Winick, Meyer, and Harris (19 Dec. 1975, p. 1173) have reported an interesting set of data relating the IQ's and school achievement scores of adopted Korean children in American homes to degree of early nutrition as indexed by height and weight before age 2. The purpose of this note is to question the authors' interpretations of their findings.

The authors state that their objective is to investigate whether "enriching the environment of previously malnourished children might result in improved development. To test this hypothesis, we have examined the current status of a group of Korean orphans who were adopted during early life by U.S. parents and who had therefore undergone a total change in environment." In order to test this hypothesis it is necessary to have not only a group which receives "enrichment" but also a control group that does not.

C&EN May 3, 1976

## Heart disease, cancer linked to trace metals

The possibility that variations in dietary and environmental levels of selenium, copper, zinc, and perhaps other metals influence the rate of heart disease in various parts of the world was raised in a series of studies.

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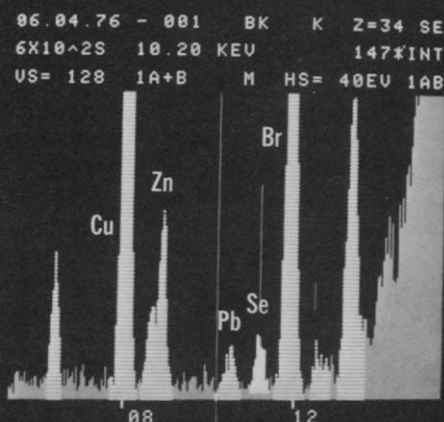
In this instance, the Kevex X-ray energy spectrometer measured the zinc-to-copper ratio and selenium concentration in two microliters of human breast fluid. A recent study shows a positive correlation between coronary mortality in 47 U.S. cities and the ratio of zinc-to-copper in cow milk of those areas. The connection between low cancer rate and high selenium diet was also reported for both cancer of the colon and breast cancer. (C & E News May 3, 1976.)

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