aspermatogenesis 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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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 unconstrainedly 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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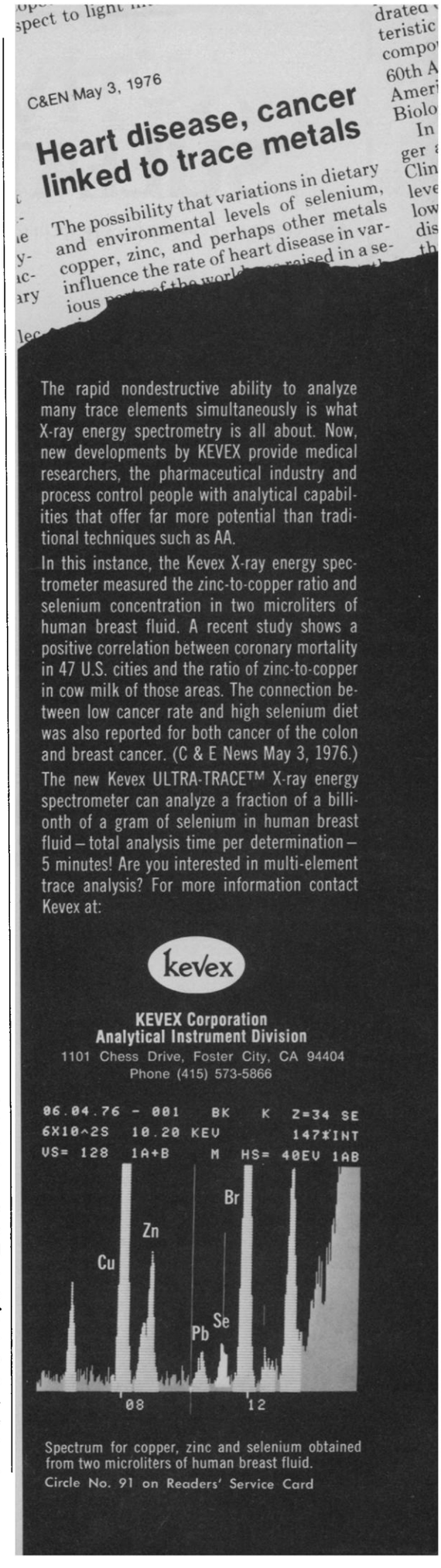
Nutrition and IQ

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.



There was no such control group in the study and therefore no conclusions can be drawn from it about these authors' enrichment hypothesis.

A second problem concerns their defining as "malnourished" all the children in their study who were below the 3rd percentile of a "Korean reference standard" for both height and weight when admitted to the adoption agency. There may be various reasons not related to nutrition differences why some children are the smallest. For example, different Korean populations, with differing norm values for height and weight, may have been disproportionately represented in the sample of adopted children. Such considerations raise the reasonable possibility that one or more variables associated with low weight and height, exclusive of malnutrition, are also associated with IQ, and might account for some of the difference found between the IQ's of the smallest (mean IQ, 102) and the largest (mean IQ, 112) children. It should be noted that, since the IQ of the smallest group is equal to the American average, there is no evidence of long-term deleterious effects of malnourishment upon intellectual performance.

One thing we can reasonably infer from the article is that these children were well fed after they were adopted, and that at least some of them had been poorly fed before being taken in by the adoption agency. Therefore, a reasonable conclusion from these findings is that in a group of children in whom nutritional rehabilitation occurred prior to 3 years of age there is no evidence of subsequent intellectual impairment as measured several years later by IQ or school achievement tests. These data can be viewed as an empirical extension of the Dutch findings that malnutrition during pregnancy had no measurable effect upon later intellectual capabilities (*1*).

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We are in complete agreement with Denenberg that the experimental design of our study was not perfect. Fortunately the kind of "control group" he seeks was not available. We cannot agree that our data are an "empirical extension of the Dutch findings," which were related to prenatal rather than postnatal malnutrition. The average drop in birth weight in the Dutch study was about 10 percent (9.6 percent) whereas the children we examined were by definition more than 40 percent below ideal weight. We cannot be certain from our data that the children with a mean IQ of 102 have reached their maximum potential, since the two other groups had higher IQ's. The use of height and weight data recorded at the time of admission to the adoption agency to establish nutritional status is standard practice, and all of the children in the malnourished group met the international classifications for being severely malnourished (*1*, *2*). Many studies have documented what happens to such children if they are returned to their original environment. Their IQ's and achievement scores are much lower (*2*, *3*). Finally, Denenberg states that "nutritional rehabilitation . . . prior to 3 years of age" is followed by "no evidence of intellectual impairment. . . ." Certainly adoption of Korean youngsters into middle-class U.S. families implies more than just adequate food. We don't know which other factors are important. We can only say that the new environment has in some way made the difference.

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Discovery of the *Monitor*

With the many accomplishments of the Woods Hole Oceanographic Institution and the submersible *Alvin*, it is definitely not necessary to cite a newspaper report which credits them with an extra one (News and Comment, 26 Aug., p. 848). The Civil War ship *Monitor* was found by a team of scientists based at Duke University using Duke's ship *Eastward*. The team was headed by John Newton (Duke), and included Doc Edgerton (Massachusetts Institute of Technology), Bob Sheridan (University of Delaware), and Gordon Watts (North Carolina Department of Archives and History).

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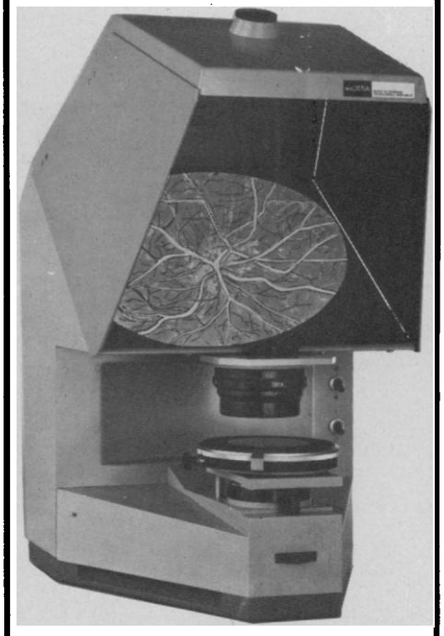

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