

psychological study of the reasons why scientists refuse to participate in research in chemical and biological warfare. Ten years ago I might well have offered my services to groups seeking to overcome objections to major freeway proposals. Today I would not participate in such a project. How often are such questions discussed in graduate psychology or sociology training programs or at the annual meetings of the relevant professional associations?

College students are increasingly inquiring about our society's utilization of its highly sophisticated technical skills and knowledge. Protests against war-related research have occurred on numerous campuses. Is the scientist similar to the oft-described worker on the Detroit assembly line who is concerned only about the particular operation which is his responsibility? Should he not be concerned about the end-product which results from his efforts?

Social scientists often can contribute to the understanding of complex group and individual behavior. Clearly, however, the caveats that increasingly are being raised about the uses (and misuses) of science in general apply equally to the behavioral sciences.

THOMAS F. A. PLAUT

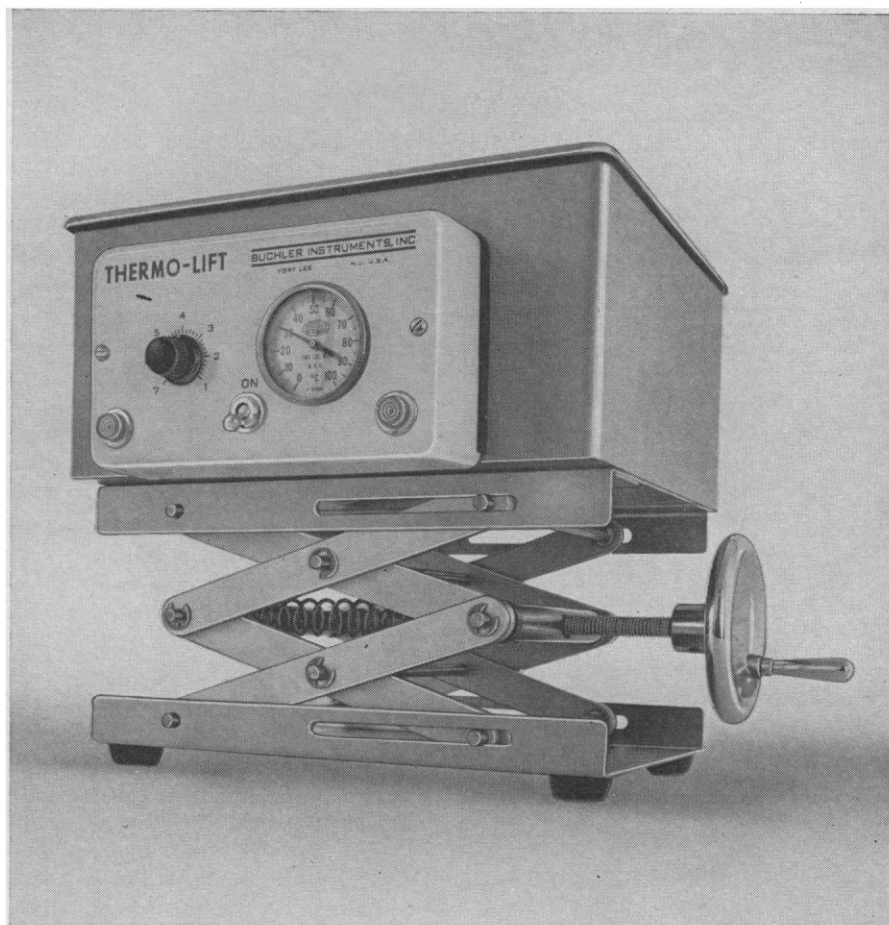
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Lysine Enrichment:

Do We Need It?

Paul B. Hamilton's letter (16 May) regarding the value of fortification of wheat with lysine was sharply critical of the Food and Drug Administration and other governmental agencies for failing to expedite a formal lysine fortification program. Hamilton failed to mention several key facets of the problem—facets which bear strongly on the wisdom of decisions on public policy in dealing with both domestic and international nutritional problems.

As a general principle, two broad types of data can justify serious consideration of enriching basic food commodities in attempting to control malnutrition. One of these consists of thorough and reliable survey data showing widespread deficiency of the nutrient in question among the population. With the B-vitamins, vitamins A and D, iron and iodine, such data were available for the United States prior to our enrichment and fortification programs for wheat, corn, and salt. Absolutely no such data indi-

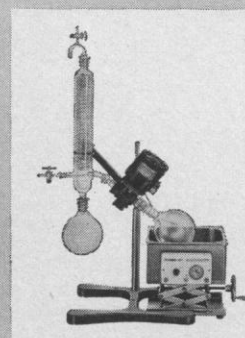


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cating widespread lysine deficiency have appeared, however.

The second type of data justifying fortification consists of field demonstrations that fortification of the type proposed yields a significant public health response among the population groups in question. The advocates of lysine fortification also have not produced data of this type. They do have voluminous data showing that lysine enrichment of wheat protein is beneficial to the rat under rigidly controlled dietary conditions and very limited data on infants, again under rigid metabolic ward conditions and restricted diets, showing a lysine response. There are, however, no field demonstrations of a significant lysine response on the part of either adults or children. The equivocal data resulting from such a study in which I participated [*American Journal of Clinical Nutrition* 12, 36 (1963)] are typical.

Those of us who hesitate to recommend lysine fortification of cereals do so because data indicating potentially significant public health benefits to be derived from such a program are lacking. Until positive results of this kind are available, it seems to us to be poor public policy to launch a program at home or abroad on the basis that lysine fortification might, rather than would, contribute to alleviation of the world food deficit.

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Reprint Clearinghouse

Potter's proposal (Letters, 7 Mar.) that "reprints should be paid for by the laboratory that requests them and not by the laboratory that generates them" indicates the widespread feeling of scientists that responsibility for dissemination of results does not extend beyond publication of an article. A practical solution would be for publishers to sell and distribute reprints through one central clearinghouse operated jointly on a prepaid basis by cooperating publishers of all scientific journals. If reprints cost less than making a copy (perhaps 3 cents per page with a 20-cent handling and mailing charge) and were mailed rapidly with a guarantee that all orders would be filled, the volume would be very high, yielding a substantial return even though per item profit would be

low (the reverse of some existing and proposed systems).

Scientists would buy 10-cent coupons in advance and send them with a mark-sense form-card giving a single order number (taken from the published article) identifying the document and the number of coupons required. Order cards would be automatically processed with payments credited to cooperating publishers. The cards would then be sorted by order number to match the arrangement of articles on the shelves. Clerks could pull several thousand articles from shelves in one sequential pass, fold each article to reveal a preprinted postage-paid authorization on the blank back page, turn the request form over to show a return address, attach it to the reprint, and mail it at low bulk rates. Total clerical time should be less than one minute per reprint mailed.

This system has potential advantages to all. Authors would no longer need to process reprint requests or pay related postage costs, but instead would be required to pay the publisher a standard amount similar to current payments for reprints as a subsidy for printing and supplying reprints to the central office. The payment is a simple and inexpensive way to discharge an important, often overlooked, responsibility to society of dissemination of results.

Publishers, with a centralized mailing operation, use of standardized prepaid coupons, automated processing of fiscal information, and a small subsidy from authors, should realize about 1.5 cents profit per page distributed out of the 3 cents charged. For 250 orders of twenty 7-page articles in one issue of a monthly journal, 1.5 cents profit per page would be equivalent (assuming a 50 percent profit) to income from 420 subscriptions to a journal costing \$30 per year.

Librarians and administrators could reduce the expense and staffing of sizable copying operations. These are widespread because there is no alternative cheap method of obtaining single copies of papers. (The average number of reprints obtained by each of 108 active research scientists at the M.D. or Ph.D. level in a recent survey I made was 17 per month or 204 per year.)

Serious users of reprints would benefit most from this proposed system, since they would be assured of receiving in a matter of days reprints at less than total copying cost. A more complete description is available on request.

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