interactions. All three independent variables yielded statistically significant effects. The interaction between masking condition and number of target segments was also significant ($P < .01$); this interaction reflects the decreased detectability of the multisegmented targets and their decreased susceptibility to masking.

The reliability of the backward enhancement effect was assessed by simple *t*-tests, comparing the mean ratios of masking to nonmasking thresholds with the hypothetical ratio of 1.00 for the 16-segment target under both adapting-field conditions and for the 8-segment target under the light adapting-field condition only. Enhancement would be indicated where these ratios had values significantly less than 1.00. While the mean ratios associated with the 16-segment targets were both statistically significant ($P < .02$), the ratio associated with the 8-segment target was not ($P = .10$).

As a further test of the reliability of the enhancement effect for the 16-segment target, we combined data from the present study for the light adapting-field condition with that from the preceding one (*9*). Of the 12 subjects, 10 had ratios less than 1.00, a distribution which departs significantly from chance as assessed by a simple sign test ($P < .05$).

We are by now fairly confident in the reality of backward enhancement. How might it be interpreted? We favor at this point the following explanation. Any target generates both excitatory and inhibitory effects. Some targets, such as those with many internal contours, generate more inhibition than others, perhaps through the mechanism uncovered by Hubel and Weisel (*10*) in their electrophysiological investigations of retinal receptive fields. For such targets, the masking stimulus serves as a disinhibitor (analogous to the function of the second mask in the case of target recovery). That is, the mask acts primarily to reduce, or transform, the target-generated inhibition, leaving the excitatory component dominant and thereby yielding "backward enhancement." For simple targets, which generate little inhibition (relative to excitation), the mask serves primarily to reduce or transform target-generated excitation, thereby yielding the conventional backward masking effect.

WILLIAM N. DEMBER
MARY STEFL
Department of Psychology, University of Cincinnati, Cincinnati, Ohio 45221

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Buffer Systems and PAGE

The applicability of polyacrylamide gel electrophoresis (PAGE) to the entire *p*H range has recently been achieved. By use of the theory and computer program of Dr. T. M. Jovin we were able to generate 4269 multiphasic (discontinuous) buffer systems and give a complete physical description of these systems which operate at 0° and 25°C, in the cationic and anionic direction of migration. The systems are available in magnetic tape form from the National Technical Information Service (NTIS), Springfield, Va. (PB 196085–196089). The background and significance of this advance has been discussed and a portion of the output for a single, representative buffer system was shown [figure 7 in (*1*)].

A catalog of these multiphasic buffer systems (PB 196090) and instructions for its use (PB 196091) are also available from NTIS at a cost of $3. This catalog allows the user to determine the buffer system number of his choice.

The hardbound copy printout of all these buffer systems requires almost 15,000 pages of full-size computer output. Thus the distribution of these systems was, until recently, greatly hindered by cost, space requirements, and labor involved in printing and storage of the information available in magnetic tape form.

A retrieval program has now been formulated that makes it possible for the user of PAGE to obtain a copy of the system of his choice by entering the desired system number into the computer console (IBM 2741) or teletype machine stationed in the laboratory. Upon request, the desired tape is entered from the tape library into the active memory of a IBM 360 computer, the buffer system is typed out instantly in the user's laboratory, and the tape returns to the library until called again. This service is operative now at the National Institutes of Health only, but should become available over the various time-sharing companies when users will express an interest in the buffer system formulations. To the user of PAGE equipped with computing facilities the new retrieval program is available from NTIS (PB 203016).

M. L. DANTE
National Institutes of Health, Bethesda, Maryland 20014
A. CHRAMBACH
National Institute of Child Health and Human Development, National Institutes of Health, Bethesda, Maryland 20014

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Aerosol Concentrations: Effect on Planetary Temperatures

Rasool and Schneider (*1*) have presented a model for planetary radiation balance which predicts that an increase in the atmospheric burden of aerosol would result in decreased planetary temperatures. We wish to point out that this conclusion is critically dependent upon the assumptions of their model, and that other reasonable assumptions can produce an opposite conclusion.

Specifically, they assume 50 percent cloud cover with aerosol effects operating only in the cloudless fraction; that is, the top of their aerosol layer is confined below the cloud tops. If, however, an aerosol is present above the cloud