

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

Science serves its readers as a forum for the presentation and discussion of important issues related to the advancement of science, including the presentation of minority or conflicting points of view, rather than by publishing only material on which a consensus has been reached. Accordingly, all articles published in *Science*—including editorials, news and comment, and book reviews—are signed and reflect the individual views of the authors and not official points of view adopted by the AAAS or the institutions with which the authors are affiliated.

Editorial Board

1970

GUSTAF O. ARRHENIUS	RICHARD C. LEWONTIN
FRED R. EGGAN	ALFRED O. C. NIER
HARRY F. HARLOW	FRANK W. PUTNAM
MILTON HARRIS	

1971

THOMAS EISNER	NEAL MILLER
AMITAI ETZIONI	BRUCE MURRAY
EMIL HAURY	JOHN R. PIERCE
DANIEL KOSHLAND, JR.	

Editorial Staff

Editor

PHILIP H. ABELSON

Publisher

DAEL WOLFE

Business Manager

HANS NUSSBAUM

Managing Editor: ROBERT V. ORMES

Assistant Editors: ELLEN E. MURPHY, JOHN E. RINGLE

Assistants to the Editor: NANCY TEIMOURIAN, PAULA LECKY

News Editor: JOHN WALSH

Foreign Editor: DANIEL S. GREENBERG*

News and Comment: LUTHER J. CARTER, PHILIP M. BOFFEY, NANCY GRUCHOW, SCHERRAINE MACK, SAMUEL Z. GOLDHABER, THOMAS P. SOUTHWICK

Research Topics: ROBERT W. HOLCOMB

Book Reviews: SYLVIA EBERHART, KATHERINE LIVINGSTON, CAROL BROWN

Cover Editor: GRAYCE FINGER

Editorial Assistants: JOANNE BELK, ISABELLA BOULDIN, ELEANORE BUTZ, NANCY HAMILTON, CORINE HARRIS, OLIVER HEATWOLE, ANNE HOLDSWORTH, MARSHALL KATHAN, MARGARET LLOYD, VIRGINIA NUSSLE, PATRICIA ROWE, LEAH RYAN, LOIS SCHMITT, BARBARA SHEFFER, RICHARD SOMMER, YA LI SWIGART, ALICE THEILE, MARIE WEBNER

* European Office: 22 Mulberry Walk, London, S.W.3, England (Telephone: 352-9749)

Advertising Staff

Director

EARL J. SCHERAGO

Production Manager

KAY GOLDSTEIN

Advertising Sales Manager: RICHARD L. CHARLES

Sales: NEW YORK, N.Y. 10036: Robert S. Bugbee, 11 W. 42 St. (212-PE-6-1858); SCOTCH PLAINS, N.J. 07076: C. Richard Callis, 12 Unami Lane (201-889-4873); MEDFIELD, MASS. 02052: Richard M. Ezequiel, 4 Rolling Lane (617-444-1439); CHICAGO, ILL. 60611: Herbert L. Burklund, Room 2107, 919 N. Michigan Ave. (312-DE-7-4973); BEVERLY HILLS, CALIF. 90211: Winn Nance, 111 N. La Cienega Blvd. (213-657-2772)

EDITORIAL CORRESPONDENCE: 1515 Massachusetts Ave., NW, Washington, D.C. 20005. Phone: 202-387-7171. Cable: Advancesci, Washington. Copies of "Instructions for Contributors" can be obtained from the editorial office. See also page xvIA, *Science*, 27 March 1970. ADVERTISING CORRESPONDENCE: Room 1740, 11 W. 42 St., New York, N.Y. 10036. Phone: 212-PE-6-1858.

Graduate Student Support

Anyone examining a curve showing the number of Ph.D. degrees conferred each year would have to conclude that the rate of increase must surely soon diminish; what now looks like an exponential curve will simply have to show a slower rate of increase in the future. Moreover, the widely publicized evidence that production has caught up with demand indicates that the inflection point must soon be reached. That production would catch up with requirements was projected 5 years ago by Allan Cartter and has since been pointed out by others. Yet, instead of an orderly adjustment to a foreseeable trend, universities and students are being confronted with drastic cuts in government programs of graduate student support.

That the universities can adapt to changes in the number of students has been amply demonstrated in the past. That universities and other employers can also adapt to changing numbers of available Ph.D.'s has also been demonstrated. Moreover, there is no reason to insist that student support programs should continue indefinitely on an ever-upward course. What should be insisted upon is that changes be substantially more gradual than the drastic reductions that are being made (*Science*, 26 June). Some government programs of support for graduate students are being reduced by half or more in a 3-year span, and it is proposed to eliminate entirely, at least for a year, the NSF program of graduate traineeships. As a specific example of what is happening, the total number of NDEA and NSF fellowships and traineeships for entering candidates for the Ph.D. in the mathematical sciences is expected to be only half as great in 1971-72 as it was in 1968-69. This overall reduction will result from an increase in the number of NSF graduate fellowships, a sharp reduction in the number of NDEA fellowships, and total elimination of new NSF traineeships. Whether or not an overall cut of 50 percent is justified, it is necessary to recognize that the reductions will be quite different in different universities. NSF graduate fellows can attend any university that will accept them. NDEA fellowships and NSF traineeships are awarded by the universities. As a consequence, the most prestigious universities will have minor reductions while universities of lesser quality will absorb most of the curtailment. A good argument can be made that most of the reductions should take place in institutions of lesser quality: if the total number of students is reduced, they should attend the universities that can give them the best education. Nevertheless, it will be hard to convince a university of average quality which this year has had funds to support, say, 50 new candidates for the doctorate that national planning which will cut that number to half or less for next year was wise. And it will not be easy to justify corresponding swings in the numbers of students receiving doctor's degrees several years from now.

Thus we have a situation in which a decline in the rate of growth is inevitable, in which a reduction in the rate of increase of graduate student support can be defended, and in which these reductions will concentrate a larger percentage of the graduate fellows in the best institutions. What cannot be justified is the speed with which some of the cuts are being made and what appears to be the basing of decisions on perturbations in the long-term trend instead of on the trend itself.

For the immediate future, there seems little hope of avoiding the impending difficulties. For the future, their recurrence could be avoided by planning on a longer time cycle. It would then be possible to plan graduate student support programs according to the trends of Ph.D. supply and requirements, to establish target numbers of fellowships and traineeships for several years ahead, and to adjust the numbers annually as we get closer to the years to which they apply. Such a sensible policy would benefit students, universities, and employers.—DAEL WOLFE