

AMERICAN ASSOCIATION
FOR THE
ADVANCEMENT OF SCIENCE

Board of Directors

CHAUNCEY D. LEAKE, *President*
THOMAS PARK, *President Elect*
PAUL E. KLOPSTEG, *Retiring President*
HARRISON BROWN
H. BENTLEY GLASS
MARGARET MEAD
DON K. PRICE
MINA REES
ALFRED S. ROMER
WILLIAM W. RUBEY
ALAN T. WATERMAN
PAUL A. SCHERER, *Treasurer*
DAEL WOLFFE, *Executive Officer*

Editorial Board

DONALD J. HUGHES H. BURR STEINBACH
KONRAD B. KRAUSKOPF WILLIAM L. STRAUS, JR.
EDWIN M. LERNER EDWARD L. TATUM

Editorial Staff

DAEL WOLFFE, *Executive Officer*
GRAHAM DUSHANE, *Editor*
JOSEPH TURNER, *Assistant Editor*
ROBERT V. ORMES, *Assistant Editor*

CHARLOTTE F. CHAMBERS, SARAH S. DEES, NANCY
S. HAMILTON, OLIVER W. HEATWOLE, YUKIE
KOZAI, HOWARD MARGOLIS, ELLEN E. MURPHY,
ELFANOR D. O'HARA, BETHSABE PEDERSEN, NANCY
L. TEIMOURIAN, DAVID A. TEMELES, LOIS W.
WOODWORTH

EARL J. SCHERAGO, *Advertising Representative*



SCIENCE, which is now combined with THE SCIENTIFIC MONTHLY, is published each Friday by the American Association for the Advancement of Science at National Publishing Company, Washington, D.C. The joint journal is published in the SCIENCE format. SCIENCE is indexed in the *Reader's Guide to Periodical Literature*.

Editorial and personnel-placement correspondence should be addressed to SCIENCE, 1515 Massachusetts Ave., NW, Washington 5, D.C. Manuscripts should be typed with double spacing and submitted in duplicate. The AAAS assumes no responsibility for the safety of manuscripts or for the opinions expressed by contributors. For detailed suggestions on the preparation of manuscripts and illustrations, see *Science* 125, 16 (4 Jan. 1957).

Display-advertising correspondence should be addressed to SCIENCE, Room 740, 11 West 42 St., New York 36, N.Y.

Change of address notification should be sent to 1515 Massachusetts Ave., NW, Washington 5, D.C., 4 weeks in advance. If possible, furnish an address label from a recent issue. Give both old and new addresses, including zone numbers, if any.

Annual subscriptions: \$8.50; foreign postage, \$1.50; Canadian postage, 75¢. Single copies, 35¢. Cable address: Advancesci, Washington.

Copyright 1960 by the American Association for the Advancement of Science.

Risk and Benefit

In any legislation affecting public health the possible risks must be considered in relation to the possible benefits, and when the risks cannot be determined with certainty, reasonable and well-informed men may disagree about the best course to be followed. One approach is to avoid risk, however slight, entirely. This is the course that has been followed for food additives since the Delaney proviso of the Amendment of the Food, Drug, and Cosmetic Act of 1958 went into effect. The proviso states that "no additive shall be deemed to be safe if it is found to induce cancer when ingested by man or animal"

Secretary Flemming of the Department of Health, Education, and Welfare, acting under this amendment, barred the sale of cranberries that had been sprayed with aminotriazole, and of fowl that had been treated with stilbestrol. He now proposes that the same proviso be extended to the companion bills pending before the House and Senate (H.R. 7624 and S. 2197), which will "authorize the use of suitable color additives in or on foods, drugs, and cosmetics, in accordance with regulations prescribing the conditions (including maximum tolerances) under which such additives may be safely used."

In support of his recommendation Flemming cites several sources, among them the statement by the Food Protection Committee of the National Academy of Sciences-National Research Council that extrapolation from the levels of carcinogens (cancer-inducing substances) in the diets of animals to safe levels for man is "currently impossible," and the conclusion in a review by G. Burroughs Mider of the National Cancer Institute that "No one at this time can tell how much or how little of carcinogen would be required to produce cancer in any human being, or how long it would take the cancer to develop."

What the Secretary is advocating in effect is that at present he be given no administrative discretion for permitting the use of possible carcinogens as food additives under any conditions and at any concentrations.

Last week the Panel on Food Additives of the President's Science Advisory Committee took issue with this position. (Excerpts from the panel's report appear on page 1596. The panel points out that for many carcinogens there is evidence for the existence of a level of ingestion at which no carcinogenesis occurs during the lives of the animals tested and that dose-response curves have been worked out which allow prediction of the probability of cancer induction from a given dose. The panel also cites evidence to show that a dose-response relationship holds in certain human cancers.

On the basis of this and other evidence, the panel differs sharply from Secretary Flemming in recommending (i) that administrative discretion is essential now, rather than in the future, for deciding whether or not the use of certain possibly carcinogenic compounds as food additives should be prohibited; and (ii) that if such discretion does not now exist, the law should be modified. The panel proposes that an advisory board be appointed to assist the Secretary in evaluating the scientific evidence.

If the panel's recommendations are followed, it will be possible to consider each case on its merits—on the basis of risk relative to benefit—rather than to condemn all without the exercise of scientific judgment.—G. DuS.

Science

Risk and Benefit

G. DuS.

Science **131** (3413), 1581.
DOI: 10.1126/science.131.3413.1581

ARTICLE TOOLS

<http://science.sciencemag.org/content/131/3413/1581.citation>

PERMISSIONS

<http://www.sciencemag.org/help/reprints-and-permissions>

Use of this article is subject to the [Terms of Service](#)

Science (print ISSN 0036-8075; online ISSN 1095-9203) is published by the American Association for the Advancement of Science, 1200 New York Avenue NW, Washington, DC 20005. 2017 © The Authors, some rights reserved; exclusive licensee American Association for the Advancement of Science. No claim to original U.S. Government Works. The title *Science* is a registered trademark of AAAS.