

## 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.

**Publisher:** William D. Carey

**Editor:** Daniel E. Koshland, Jr.

**Deputy Editors:** Philip H. Abelson (*Engineering and Applied Sciences*); John I. Brauman (*Physical Sciences*); Gardner Lindzey (*Social Sciences*)

## EDITORIAL STAFF

**Managing Editor:** Patricia A. Morgan

**Assistant Managing Editors:** Nancy J. Hartnagel, John E. Ringle

**Senior Editors:** Eleanor Butz, Ruth Kulstad

**Associate Editors:** Martha Collins, Barbara Jasny, Katrina L. Keiner, Edith Meyers, Phillip D. Szuroni, David F. Voss

**Letters Editor:** Christine Gilbert

**Book Reviews:** Katherine Livingston, *editor*; Deborah F. Washburn

**This Week in Science:** Ruth Levy Guyer

**Chief Production Editor:** Ellen E. Murphy

**Editing Department:** Lois Schmitt, *head*; Caitlin Gordon,

Mary McDaniel, Barbara E. Patterson

**Copy Desk:** Lyle L. Green, Sharon Ryan, Beverly Shields,

Anna Victoreen

**Production Manager:** Karen Schools

**Graphics and Production:** John Baker, *assistant manager*;

Holly Bishop, Kathleen Cosimano, Eleanor Warner

**Covers Editor:** Grayce Finger

**Manuscript Systems Analyst:** William Carter

## NEWS STAFF

**News Editor:** Barbara J. Culliton

**News and Comment:** Colin Norman, *deputy editor*; Mark H. Crawford, Constance Holden, Eliot Marshall, Marjorie Sun, John Walsh

**Research News:** Roger Lewin, *deputy editor*; Deborah M. Barnes, Richard A. Kerr, Gina Kolata, Jean L. Marx, Arthur L. Robinson, M. Mitchell Waldrop

**European Correspondent:** David Dickson

## BUSINESS STAFF

**Associate Publisher:** William M. Miller, III

**Business Staff Manager:** Deborah Rivera-Wienhold

**Classified Advertising:** Leo Lewis

**Membership Recruitment:** Gwendolyn Huddle

**Member and Subscription Records:** Ann Ragland

**Guide to Biotechnology Products and Instruments:**

Shauna S. Roberts

## ADVERTISING REPRESENTATIVES

**Director:** Earl J. Scherago

**Production Manager:** Donna Rivera

**Advertising Sales Manager:** Richard L. Charles

**Marketing Manager:** Herbert L. Burkland

**Sales:** New York, NY 10036: J. Kevin Henebry, 1515 Broadway (212-730-1050); Scotch Plains, NJ 07076: C. Richard Callis, 12 Unami Lane (201-889-4873); Chicago, IL 60611: Jack Ryan, Room 2107, 919 N. Michigan Ave. (312-337-4973); San Jose, CA 95112: Bob Brindley, 310 S. 16 St. (408-998-4690); Dorset, VT 05251: Fred W. Dieffenbach, Kent Hill Rd. (802-867-5581); Damascus, MD 20872: Rick Sommer, 24808 Shrubbery Hill Ct. (301-972-9270).

Instructions for contributors appears on page xi of the 26 September 1986 issue. Editorial correspondence, including requests for permission to reprint and reprint orders, should be sent to 1333 H Street, NW, Washington, DC 20005. Telephone: 202-326-6500.

Advertising correspondence should be sent to Tenth Floor, 1515 Broadway, NY 10036. Telephone 212-730-1050 or WU Telex 968082 SCHERAGO.

## The Software Review Section

If we were opening a gas station, we would have gaudy neon signs, searchlights crisscrossing the sky, and large banners announcing this new, incredibly solicitous and superior service. A scholarly journal, however, is constrained to an appropriate type size, a subdued beacon in the Table of Contents, and a muted mention of a new feature in our magazine. Nevertheless, we are enthusiastic about a new section of Software Reviews that we think will provide a service to our readers in an increasingly computerized world.

Since the dawn of civilization man has sought to extend his leverage over nature by the development of useful tools. The abacus, the slide rule, and the pocket calculator are examples of our increasing computational sophistication. In the modern world the computer is changing both life and science in qualitative as well as quantitative ways. We can now search the library from our offices, compare sequences, explore for oil, outline an organic synthesis, and organize our bibliographical references with relatively simple equipment and quite sophisticated programs. Thus it seems appropriate to broaden our Book Reviews to include monthly reviews of software programs that can be useful to scientists by increasing the efficiency of their research.

Software programs are proliferating at an incredible rate, but few individuals have either time or money to initiate comparative studies for the optimal program. Frequently individuals learn of new, more powerful programs only by chance encounter with a fellow scientist long after the program is in extensive use. Moreover, it is of little use to learn of "super" programs that are only compatible with the instrument that does not happen to be in one's own office or laboratory. Our new software reviews have been initiated after consultation with a Software Advisory Panel of experts in a variety of disciplines, who, together with our own staff, developed guidelines for the column.

Our reviews, in general, will compare several different software programs that attack the same problem. We will discuss the scientific problem, its importance, the models on which the software is based, the ability of the program to represent accurately the solution of the problem, and the performance characteristics with various types of equipment. More specifically, the reviews will include comments on the practical application of each program: speed test results, ease of input, quality of output, and problems encountered. All programs analyzed will have been tested by scientists who are using such software to study actual problems. If unexpected difficulties are encountered, the manufacturer will be given the opportunity to explain or resolve the difficulty. Periodically we may include booknote-like entries that will refer to journals that review specific computer software, because in many cases we will not have sufficient space in *Science* to discuss a particular program in complete detail.

We hope to alert scientists in various disciplines to programs about which they may not be aware but which can extend the usefulness of hardware systems that they have already purchased or are contemplating purchasing. Our reviews will also cover time-sharing databases, large multifunctional packages, and, eventually, expert systems.

With any new feature there is the expectation of growing pains and adjustments with experience. We particularly welcome readers' suggestions in regard to programs that they find especially useful. Both good and bad experiences with widely touted programs will be helpful in deciding which programs should be reviewed and what tests should be run. Our plan is to print one section each month and to vary the content and range on the basis of our own evaluations and reader responses.

We are heading into an era in which esoteric abstractions are becoming "natural products." Like natural products, software programs have a self-replicating mechanism. A good review column can provide both needed nutrients and a selection pressure. Let us hope that we can aid the survival of the fittest.—DANIEL E. KOSHLAND, JR.