

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

ROBERT L. BOWMAN	WILLARD F. LIBBY
MELVIN CALVIN	GORDON J. F. MACDONALD
JOSEPH W. CHAMBERLAIN	EVERETT I. MENDELSON
FARRINGTON DANIELS	NEAL E. MILLER
JOHN T. EDSALL	JOHN R. PIERCE
DAVID R. GODDARD	COLIN S. PITTENDRIGH
EMIL HAURY	KENNETH S. PITZER
ALEXANDER HOLLAENDER	ALEXANDER RICH
ROBERT JASTROW	DEWITT STETTEN, JR.
EDWIN M. LERNER, II	EDWARD L. TATUM
	CLARENCE M. ZENER

## Editorial Staff

## Editor

PHILIP H. ABELSON

*Publisher* Business Manager  
DAEL WOLFLE HANS NUSSBAUM

*Managing Editor*: ROBERT V. ORMES*Assistant Editors*: ELLEN E. MURPHY, JOHN E. RINGLE*Assistant to the Editor*: NANCY TEIMOURIAN*News and Comment*: DANIEL S. GREENBERG, JOHN WALSH, ELINOR LANGER, MARION ZEIGER, JANE AYRES*Europe*: VICTOR K. McELHENY, Flat 3, 18 Kensington Court Place, London, W.8, England (Western 5360)*Book Reviews*: SARAH S. DEES*Editorial Assistants*: JAMES BLESSING, ISABELLA BOULDIN, ELEANORE BUTZ, BEN CARLIN, SYLVIA EBERHART, GRAYCE FINGER, NANCY HAMILTON, OLIVER HEATWOLE, ANNE HOLDSWORTH, MARCIA JODLBAUER, RUTH KINGERLEE, KATHERINE LIVINGSTON, ELLEN SALTZ

## Advertising Staff

*Director* Production Manager  
EARL J. SCHERAGO RAYMONDE SALAMA

Sales: New York, N.Y., 11 W. 42 St. (212-PE-6-1858): RICHARD L. CHARLES, ROBERT S. BUGBEE  
Scotch Plains, N.J., 12 Unami Lane (201-889-4873): C. RICHARD CALLIS

Chicago, Ill., 6 W. Ontario St. (312-DE-7-4973): HERBERT BURKLUND

Los Angeles 45, Calif., 8255 Beverly Blvd. (213-653-9817): WINN NANCE

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. ADVERTISING CORRESPONDENCE: Rm. 1740, 11 W. 42 St., New York, N.Y. 10036. Phone: 212-PE 6-1858.

## Not by Truth Alone

As a humanist I lived in contented ignorance of mathematics until, a few years ago, I read a little book by Sir Charles P. Snow, entitled *The Two Cultures*. Sir Charles had become alarmed about the growing gulf between science and the humanities, resulting in the creation of two publics that could not speak each other's language. It struck me that he had raised an important issue, albeit in a rather strident tone.

A well-read friend of mine told me: "Oh, don't bother with Snow. Go back a few years and read what George Sarton said about this in his great Colver lectures of 1930." I obeyed, and was delighted with the amiable, smooth-flowing prose of that charming historian of science. Sarton was already proposing what he called "the New Humanism." "The New Humanism," he said, "will not exclude science; it will include it and . . . it will be built around it. Science is our mental armature; it is also the armature of our civilization. It is the source of our intellectual strength and health, but not the only source. However essential, it is utterly insufficient. *We cannot live on truth alone.*"

You can imagine how this relieved me. In gratitude to Sarton I felt that I should lend a hand at building this desirable bridge between the two cultures.

But when I looked at science I was immediately perplexed. There seemed to be not one science-culture but a host of highly specialized groups that were not speaking each others' languages. In a general way they could communicate, but specifically they had little time for, or interest in, each other. There is the man of pure science, and there are the many of the applied sciences. Maybe, before the great bridge is built, the scientists will have to construct some small ones in their own domain.

I now have the conviction that pure science is pure art. I find the appreciators of the great mathematicians and physicists using the same terminology that I employ when I express my feelings about the loveliness of Plato's *Crito*, or the supreme poetry of Shakespeare. Sarton spoke of the explanation by Eudoxos (of the motions of celestial bodies) as *elegant*. Selig Hecht, writing of Frederick Soddy's theory of the mixtures of isotopes in most natural elements, says that it was "sublime guesswork of the kind that *gives one's heart a lift*" (italics added). P. A. M. Dirac uses language like this: "Schrödinger got this equation by pure thought, looking for some *beautiful* generalization of De Broglie's ideas. . . ." It sounds like one artist paying his respects to the creative power of another.

"Not by truth alone," said Sarton, speaking, naturally, of scientific truths. No, truly we cannot so live. But what if, after all, truth and beauty are just two words describing (with those other abstractions, like love and justice) aspects of a sublime essence that was postulated twenty-five hundred years ago by Socrates?

If this (or "something like it," as Plato would have said) be true, then the gulf is not as deep as it might seem. We who are not equipped with the kind of mind required for the pursuit of science (the *exact* sciences, I mean) are still free to follow beauty where our nature seems to lead us while the scientists pursue beauty in their realm. We may not understand the details of each other's work but we are united in the creative spirit and we already have the rudiments of a common tongue for the creation of Sarton's new humanism.—FREEMAN TILDEN

[Condensed and adapted from a guest editorial in the April 1965 issue of *Trends in Parks & Recreation*. Mr. Tilden, a writer and lecturer on conservation and author of *The National Parks*, resides in Arlington, Virginia.]

# Science

## Not by Truth Alone

Freeman Tilden

*Science* **148** (3676), 1415.  
DOI: 10.1126/science.148.3676.1415

**ARTICLE TOOLS** <http://science.sciencemag.org/content/148/3676/1415.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.