

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

DAVID M. BONNER	WILLARD F. LIBBY
MELVIN CALVIN	NEAL E. MILLER
ERNEST COURANT	PHILIP M. MORSE
FARRINGTON DANIELS	COLIN S. PITTENDRIGH
JOHN T. EDSALL	KENNETH S. PITZER
DAVID R. GODDARD	DEWITT STETTEN, JR.
ALEXANDER HOLLANDER	WILLIAM L. STRAUS, JR.
ROBERT JASTROW	EDWARD L. TATUM
EDWIN M. LERNER II	JOHN R. WINCKLER
	CLARENCE M. ZENER

Editorial Staff

Editor

PHILIP H. ABELSON

Publisher DAEL WOLFLE
Business Manager 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, ROSEMARY GALLI

Europe: VICTOR K. McELHENY, Flat 3, 18 Kensington Court Place, London, W.8, England (Western 5360)

Book Reviews: SARAH S. DEES

Editorial Assistants: ISABELLA BOULDIN, ELEANORE BUTZ, SYLVIA EBERHART, GRAYCE FINGER, NANCY HAMILTON, OLIVER HEATWOLE, ANNE HOLDSWORTH, MARCIA ISAAK, RUTH KINGERLEE, HOWARD NATHENSON, EDGAR RICH

Advertising Staff

Director EARL J. SCHERAGO
Production Manager 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 BURKLAND

Los Angeles 45, Calif., 8255 Beverly Blvd. (213-643-9817): 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.

353-0334 2
015

Some Perils of Authorship

When scientists collaborate on a paper, jealousy, grievance, and misunderstanding can seriously threaten the team effort. Few believe that authorship should not be acknowledged at all; authors enjoy seeing their names in print, and parts of their careers depend upon it. This being so, let us look at a few current practices regarding authorship that may lead to misunderstanding.

How should the authors' names be arranged? Some men almost routinely put their names first if they are the head of the laboratory. They may have done none of the so-called "bench work," but that does not matter. There can be no doubt that many an author has gotten kudos and a large reputation as a result of always being the "first" author. The other extreme is the man who is always listed last, or whose name does not appear at all.

There is thus created much misunderstanding of the significance of the arrangement of authors' names. We are apt to surmise that the first-named author did the work, that it was his own special idea, or that he was young and needed the push.

The problem of how many names to include and of the individual's position within a laboratory or clinic has been another source of trouble. Some journals simply refuse to accept a paper with more than three or four names. Others will take ten or more. Some laboratories include names of technicians or medical students, and others do not.

Editors of journals have created a jungle in regard to authorship by having no uniform system of citation in the body of an article or in the bibliography. Some American journals and authors cut references to a bare and arbitrary minimum and give the citation only by number. A few journals not only limit the number of references arbitrarily but refer in both text and bibliography only to the first author; the rest automatically become "*et al.*" This could guarantee anonymity for everyone but the one who heads the list.

These problems have caused me more conscience-searching a concern than any other scientific activity of which I can think. I have no complete answers, but I do have some suggestions.

The order of names in a by-line is important and should be agreed on before the manuscript is written. The first author should be the one most intimately concerned with both the work and the writing. This does not mean that he alone is responsible. All the authors must be capable of assuming full responsibility for the results, their presentation, and their interpretation. Authorship should not be made so diffuse, through inclusion of every possible participant, technical or otherwise, that it becomes meaningless. Editors should recognize that all authors of a manuscript are concerned to varying degrees with important aspects of the work. Consequently their names should not be relegated to limbo by use of "*et al.*" Given the opportunity, and a little experience, most people turn out to be fair. Observance of these principles should encourage cooperation among colleagues.

—IRVINE H. PAGE, *Cleveland Clinic, Cleveland, Ohio.*