SCIENCE

Published by the **American Association for the Advancement of Science (AAAS),** *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.

The American Association for the Advancement of Science was founded in 1848 and incorporated in 1874. Its objectives are to further the work of scientists, to facilitate cooperation among them, to foster scientific freedom and responsibility, to improve the effectiveness of science in the promotion of human welfare, to advance education in science, and to increase public understanding and appreciation of the importance and promise of the methods of science in human progress.

Membership/Circulation
Director: Michael Spinella
Deputy Director: Marlene Zendell
Member Services: Rebecca Dickerson, *Manager*; Mary Curry, *Supervisor*; Pat Butler, Helen Williams, Laurie Baker, *Representatives*
Marketing: Dee Valencia, *Manager*; Jane Pennington, *Europe Manager*; Hilary Baar, *Associate*; Angela Mumeka, *Coordinator*
Research: Renuka Chander, *Manager*
Business and Finance: Jacquelyn Roberts, *Manager*; Robert Smariga, *Assistant Manager*
Administrative Assistant: Nina Araujo de Kobes
***Science* Member Services**
Marion, Ohio: 800-347-6969;
Washington, DC: 202-326-6417
Other AAAS Programs: 202-326-6400

Advertising and Finance
Associate Publisher: Beth Rosner
Advertising Sales Manager: Susan A. Meredith
Recruitment Advertising Manager: Janis Crowley
Advertising Business Manager: Deborah Rivera-Wienhold
Finance: Randy Yi, *Senior Analyst;* Shawn Williams, *Analyst*
Marketing: John Meyers, *Manager;* Allison Pritchard, *Associate*
Traffic Manager: Tina Turano
Recruitment: Terri Seiter, *Assistant Manager*; Michael Sweet, *Production Associate*; Debbie Cummings, Celeste Wakefield, Rachael Wilson, *Sales*
Reprints Manager: Corrine Harris
Permissions Manager: Arlene Ennis
Sales Associate: Carol Maddox

PRODUCT ADVERTISING SALES: East Coast/E. Canada: Richard Teeling, 201-904-9774, FAX 201-904-9701 • **Southeast:** Mark Anderson, 305-856-8567, FAX 305-856-1056 • **Midwest:** Elizabeth Mosko, 312-665-1150, FAX 312-665-2129 • **West Coast/W. Canada:** Neil Boylan, 415-673-9265, FAX 415-673-9267 • **UK, Scandinavia, France, Italy, Belgium, Netherlands:** Andrew Davies, (44) 457-838-519, FAX (44) 457-838-898 • **Germany/Switzerland/Austria:** Tracey Peers, (44) 270-760-108, FAX (44) 270-759-597 • **Japan:** Mashy Yoshikawa, (3) 3235-5961, FAX (3) 3235-5852
RECRUITMENT ADVERTISING SALES: US: 202-326-6555, FAX 202-682-0816 • **Europe:** (44) 0223-302067, FAX (44) 0223-302068 • **Australia/New Zealand:** Keith Sandell, (61) 02-922-2977, FAX (61) 02-922-1100
Send materials to *Science* Advertising, 1333 H Street, NW, Washington, DC 20005.

Information for Contributors appears on pages 37–39 of the 7 January 1994 issue. Editorial correspondence, including requests for permission to reprint and reprint orders, should be sent to 1333 H Street, NW, Washington, DC 20005.
Internet addresses: science_editors@aaas.org (for general editorial queries); science_letters@aaas.org (for letters to the editor); science_reviews@aaas.org (for returning manuscript reviews); membership@aaas.org (for member services); science_classifieds@aaas.org (for submitting classified advertisements)

LETTERS

Parasitology Issues

The extensive coverage given to parasitology in the issue of 24 June (pp. 1857–1886) was an important, positive gesture, and the articles and news items were informative and well presented. The topics discussed are among those which represent major directions of research and development in this field and are well suited to attract the attention of the wider scientific community. What neither the introductory editorial (p. 1827) nor the rest of the issue makes clear to the nonspecialist reader, however, is that parasitology is more than tropical medicine and hygiene, more than the study of molecular biology of pathogens causing tropical diseases. Parasites are also of major public health importance in the temperate zones. Waterborne parasitic infections (giardiasis and cryptosporidiosis, for example) represent significant challenges for municipalities, while toxoplasmosis and microsporidiosis are sadly prevalent in immunocompromised patients with, primarily but not exclusively, acquired immunodeficiency disorder. Research and development in these areas is of critical importance. The significance and economic role of veterinary parasites should also be mentioned. Research on the latter is economically rewarding for the pharmaceutical industry, with spinoffs for human parasitology. The successful fight against African river blindness was made possible by the generous free supply of a drug that has been developed for the veterinary field and has been successfully marketed.

As the special issue makes clear, a formerly unexpected plethora of unusual mechanisms of cellular processes is revealed in parasitic organisms. Study of the biology of parasitic organisms provides an insight into the limits of specialization of eukaryotic cells. While the expression and processing of genetic information in parasitic organisms are of interest, one should be aware that the diversity of many other aspects of their organization is equally pronounced. It remains to be established which of their peculiarities represent adaptive changes elicited by a parasitic mode of life and which are relics of their earlier evolutionary history, necessarily encompassing free living ancestral forms. Some major parasitic protists are probably descendants of the earliest, possibly premitochondrial, branches of the eukaryotic tree. These organisms might harbor clues about what the earliest eukaryotes looked like. Biochemical and cell biological studies clearly show that mitochondria are not obligatory constituents of eukaryotic cells. They also disclose the existence of unusual organelles of metabolism (glycosomes and hydrogenosomes) and unusual metabolic processes in certain groups of parasites. These results demonstrate that the eukaryotic cell mode of life is much less stereotyped than hitherto assumed. Further studies of parasitic organisms thus promise a clearer view of eukaryotic evolution in addition to benefits to human and veterinary medicine.

Miklos Müller
Laboratory of Biochemical Parasitology,
Rockefeller University,
1230 York Avenue,
New York, NY 10021–6399, USA

■

"Culture Wars"

Bennett M. Berger's critique (Book Reviews, 13 May, p. 985) of *Higher Superstition: The Academic Left and Its Quarrels with Science* by Paul R. Gross and Norman Levitt (Johns Hopkins Univ. Press, Baltimore, MD, 1994) effectively neutralizes the polemic of authors Gross and Levitt. Nevertheless, the review and its reference to "culture wars" can only exacerbate the perceived discord between social scientists and the scientific disciplines they study. To the extent that he portrays the extreme views of Gross and Levitt as representative of mainstream science, Berger offers a caricature that is as inaccurate as the leftist, antiscience bias attacked by the authors. Rational discourse requires mutual respect born of a desire to unite these divergent cultures.

My dual hard-soft (wet-dry?) graduate training in chemistry and science and technology studies at Rensselaer Polytechnic Institute has made me painfully conscious of the gap that often divides the social sciences and humanities from the physical and biological sciences. Instead of hostility, the prevailing relationship is benign indifference. Natural scientists, barely aware of the existence or content of science studies, do not bother to question the legitimacy of such scholarship; it is considered irrelevant to the practice of science. If history, philosophy, and sociology are ever to be regarded as fundamental rather than "ornamental,"