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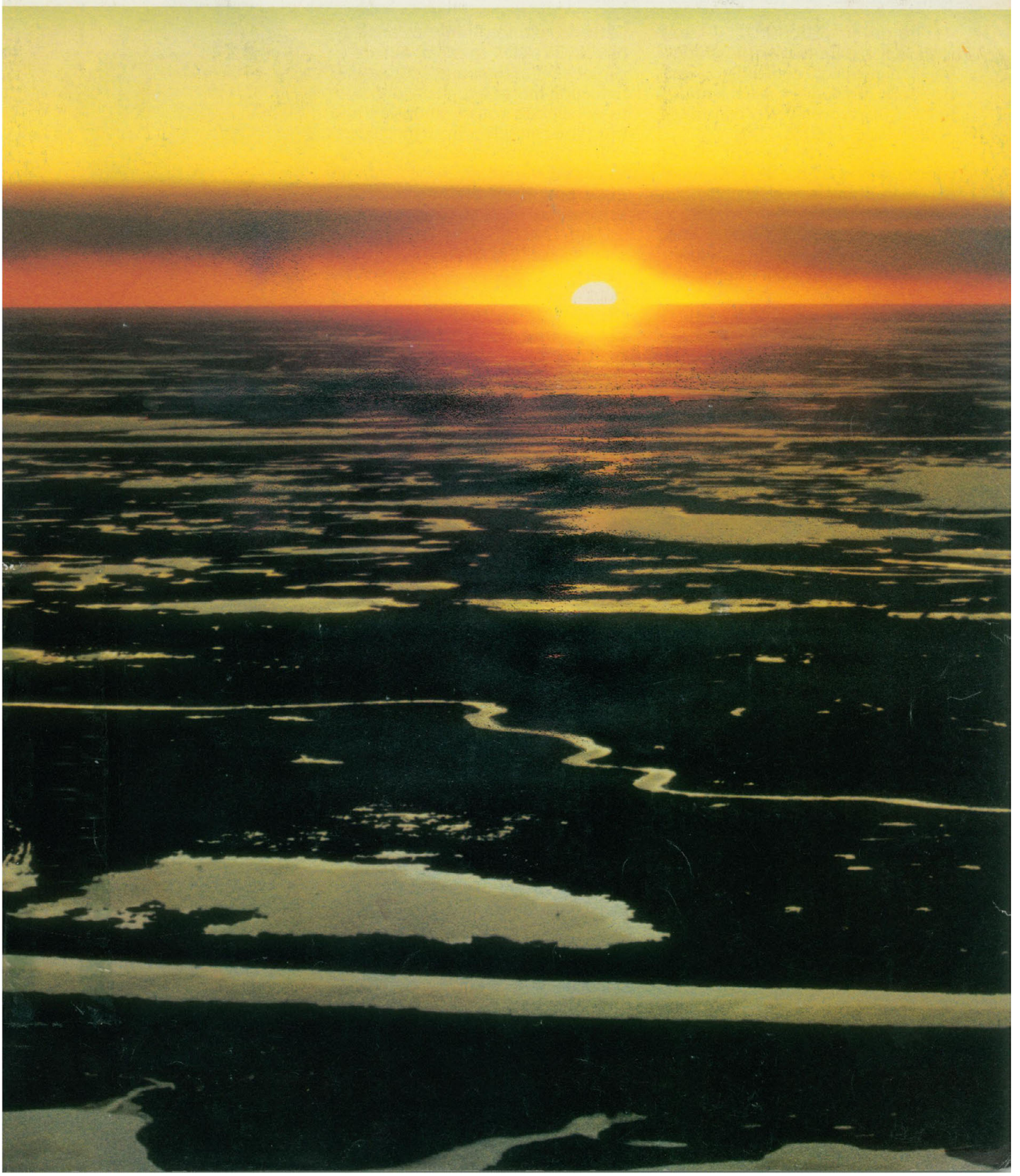

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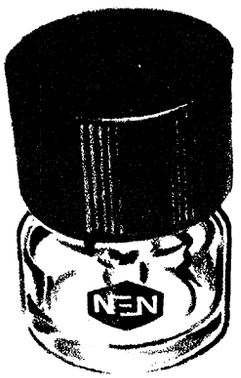

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SCIENCE

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COVER

Oblique aerial photograph of a Louisiana salt marsh dominated by smooth cordgrass, *Spartina alterniflora*. In the marsh interior, *Spartina* dieback, characterized by sparse vegetation and open water bodies, is evident. Ecophysiological studies show that roots of highly productive streamside *Spartina* (adjacent to streambanks) respire aerobically, while that of the inland and dieback sites respire anaerobically. See page 439. [R. Boyd, Louisiana State University, Baton Rouge, Louisiana 70803]

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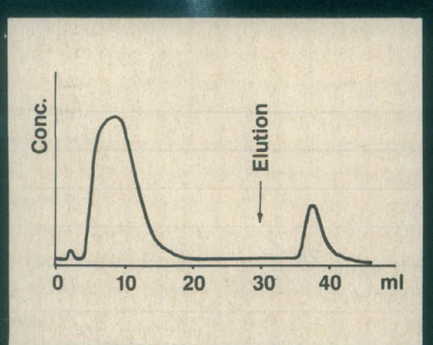

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SPEAKERS (Partial List)

John Baxter
University of California, San Francisco

Marvin Caruthers
University of Colorado

Pierre Chambon
Centre National de la Rechersche Scientifique

Gerald Fink
Cornell University

David Goeddel
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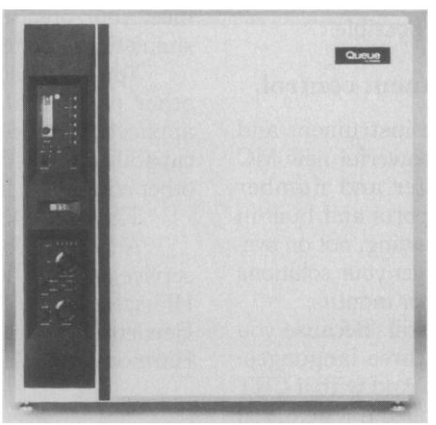

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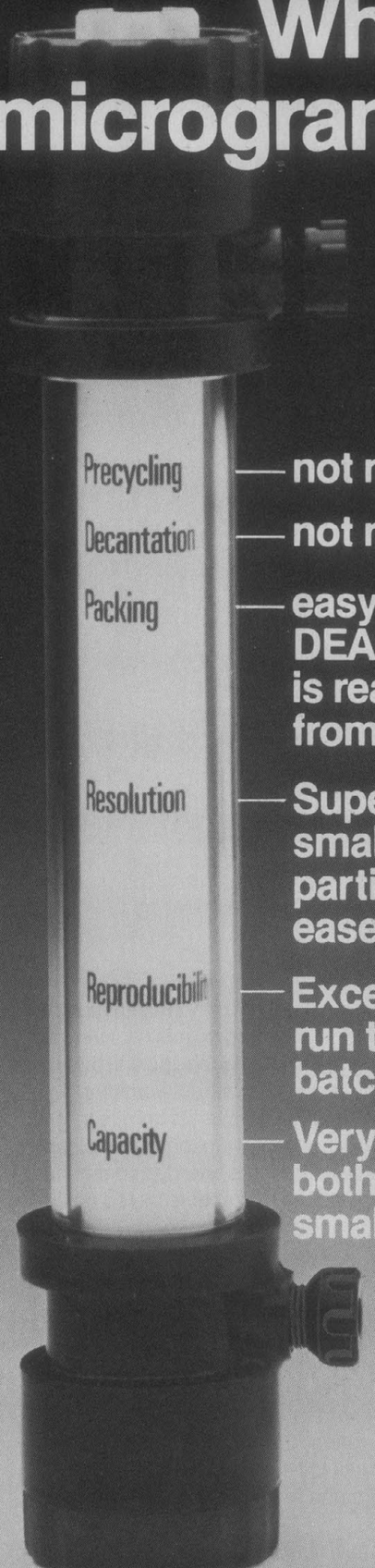

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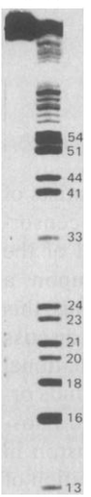

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Censorship Charge

We write to inform fellow scientists of a distressing instance of political censorship of scientific publication and of the loss of employment inflicted upon a dedicated colleague for opposing this censorship. The publication we discuss stemmed from the Second International Congress on Phosphorus Compounds organized by the Institut Mondial du Phosphate (IMPHOS) and held in Boston in April 1980. IMPHOS is an association of phosphorus and fertilizer producing companies, based in Morocco with its Secretariat in Paris, and funded mainly by North African and Mid-Eastern companies. Its declared purpose is to promote research and use of phosphorus and its compounds.

The Boston meeting focused on the occurrence and recovery of uranium and other accessory elements in phosphate rock, a subject bearing on substantial and widespread new sources of energy. It was most effectively organized by Claude Eon, then director of Technical Research for IMPHOS, and an honorary scientific committee headed by John Van Wazer of Vanderbilt University. The meeting ranged in content from crystal chemistry to recovery technology. It was highly successful, truly international in character, and conducted with unusual amicability and grace. Unfortunately the altruism of the meeting did not persist in the published proceedings (*1*), from which two excellent contributions by Israeli scientists were arbitrarily excluded. The action was taken without the knowledge of the scientific committee and over the objections of Eon. It was imposed at the last moment, after the return of galley proofs by the Israeli contributors, Z. Ketzinel and Y. Nathan. Eon has announced that IMPHOS has fired him for opposing their censorship (*2*).

The post facto intrusion of political censorship into a meeting advertised and conducted as an open gathering of scholars violates the basic traditions of science and the rights of all the participants. It places the scientific committee in the position of appearing to endorse such an act by participating, unwittingly, in a deception. It compromises all of the authors who would not wish to join in the mistreatment of their colleagues. This censorship, and the harsh punishment of Eon who honorably opposed it, demands our strongest condemnation and widespread publicity, particularly as there has been no response to numerous written objections. Failure to publicize such actions would encourage their repetition, and would permit our colleagues to participate in future IMPHOS-sponsored conferences without awareness that IMPHOS practices censorship. We hope that IMPHOS will renounce this practice.

ZALMAN S. ALTSCHULER
U.S. Geological Survey, Reston, Virginia 22092

PAUL B. MOORE
Department of Geophysical Science, University of Chicago, Chicago, Illinois 60637

AARON S. POSNER
Hospital for Special Surgery, Cornell University Medical College, New York 10021

References

1. *Impurity Elements in Phosphate Rock and Phosphoric Acid—Characteristics, Elimination, Recovery* (Institut Mondial du Phosphate, Paris, 1980).
2. J. Derogy, *L'Express*, 28 April 1981, pp. 163–164.

Hinged Teeth

In his report on hinged teeth in snakes (17 Apr., p. 346), A. H. Savitzky states that, although hinged teeth are known in fishes and lissamphibians, they "have not been reported in amniote vertebrates."

I wish to point out that hinged upper canine teeth have been described in two mammalian genera: muntjacs (*Muntiacus*) and Chinese water deer (*Hydropotes*) (*1*). This arrangement allows these ruminants to move their jaws from side to side while masticating plant foods; without hinging, the canines would interlock with the lower jaw and prevent its sideways movement.

RICHARD A. KILTIE
Department of Zoology, University of Florida, Gainesville 32611

References

1. J. Aitchison, *Proc. Zool. Soc. London* **116**, 329 (1946).

Erratum: In the report by A. Persechini and D. J. Hartshorne (18 Sept., p. 1383), the abscissa of the insert in Fig. 2 is labeled incorrectly. It should read "^{32}P incorporation/kinase (μg/ml)."

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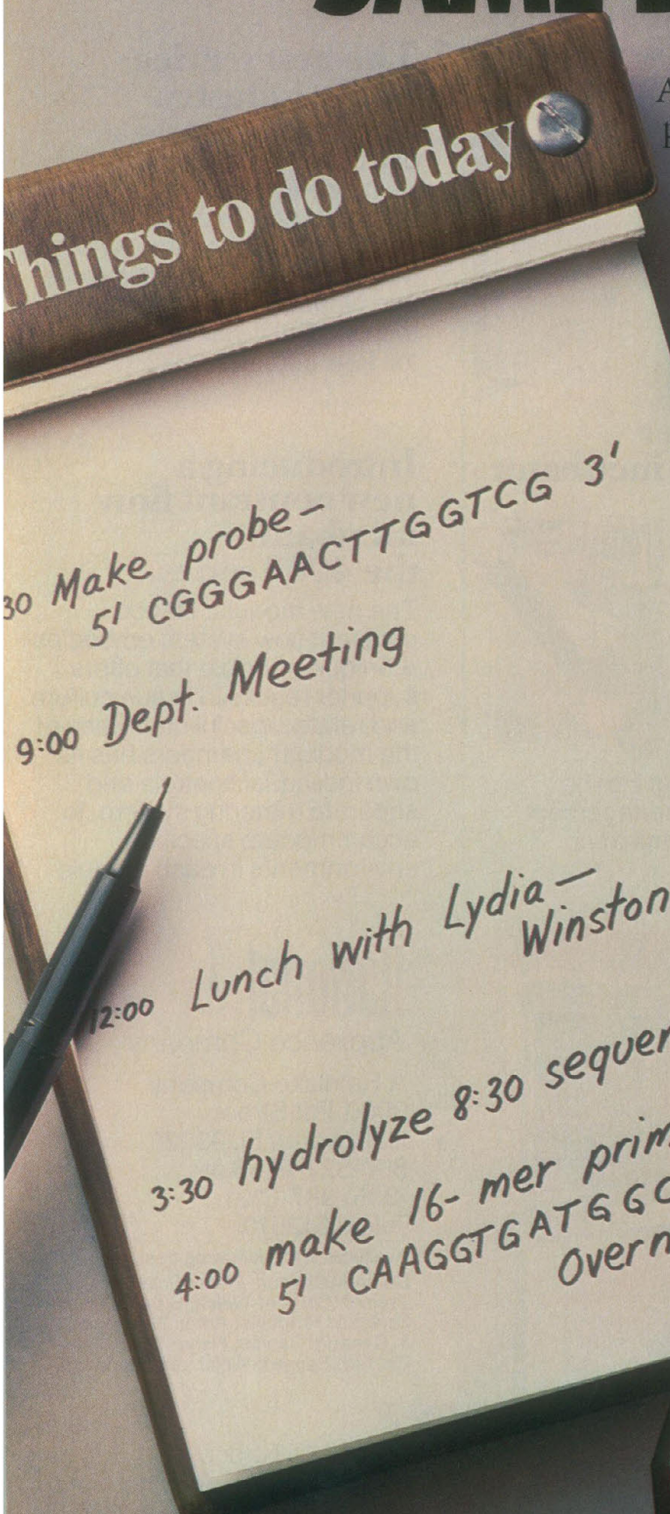

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23 October 1981, Volume 214, Number 4519 **SCIENCE**

Support of Scientific Journals

Offices of scientific societies and editors of their journals are becoming apprehensive about the future of scientific publication. A system that has served science and society well is moving into a phase of increasing financial stress. The Royal Society has conducted a study of scientific publication in the United Kingdom.* A major conclusion is that "a combination of pressures will very soon put the scholarly scientific publication system of the United Kingdom, as of other countries, under considerable strain. Journals are increasingly dependent on the international library market for their income; libraries are suffering cuts in their budgets and are looking for ways to economize; they have to cancel subscriptions to some periodicals on the assumption that material from them if requested can be obtained as loans or photocopies under some interlibrary cooperation scheme. . . . Scientists themselves assume that the journal and library system will continue and in general do not wish to see restriction on photocopying. Publishers see this as a severe threat to their existence. New specialized journals continue to be launched. . . . These new and often expensive journals intensify the librarian's problems."

Prior to World War II, journals published by scientific societies in the United States received most of their financial revenues from members. Today only a minor fraction are supported in that way. Instead, the burden has been shifted largely to the libraries. An example is the structure of financial support for the *Journal of Biological Chemistry*, sponsored by the American Society of Biological Chemists. This periodical publishes about 12,000 pages a year. It has almost 7000 subscribers, consisting of 5000 nonmembers, who pay $285 each; 1200 members, who pay $100; and 650 students, who pay a nominal rate. Authors are charged $35 a page, but the page charges are not always honored. The result is that nonmembers, mainly libraries, provide about 75 percent of the support. Practices vary among the major societies. A few charge up to $140 a page; some have no page charges. Almost all have higher subscription rates for nonmembers than for members.

Many scientific journals are owned by commercial publishers. They obtain almost all their revenues from libraries. Subscription rates are high, sometimes thousands of dollars a year. Costs range up to 20 cents per page and more, whereas the scientific societies provide material to libraries at usually no more than 3 cents per page.

For more than a decade, costs of periodicals have increased faster than inflation, while library budgets have usually barely kept up with it. Librarians have sacrificed services and procurement of books to maintain their serial collections. Now many find that they must curtail subscriptions. The libraries cannot be counted on to continue to be the sole or major support for scientific periodicals.

The publication of refereed journals is crucial to the health of science. If present modes of support are curtailed, costs must be reduced or additional revenues obtained from other sources. The best way of cutting costs is to reduce the number of pages printed. Today many scientists give priority to publishing as many items and pages as possible. If the goal were to cram information into a limited space, the number of pages could be reduced by a factor of 2 to 4.

Additional revenues might be obtained from page charges. After all, research is not complete until it is published. The federal government might be asked to support scientific publication directly; at present, there is little chance that it will do so. In the end, it may be necessary for the members of scientific societies to contribute more. They already provide substantial support by refereeing articles, but in the future they may be called on for much larger membership fees.—PHILIP H. ABELSON

*"A Study of the Scientific Information System in the United Kingdom" (Royal Society, London, May 1981).

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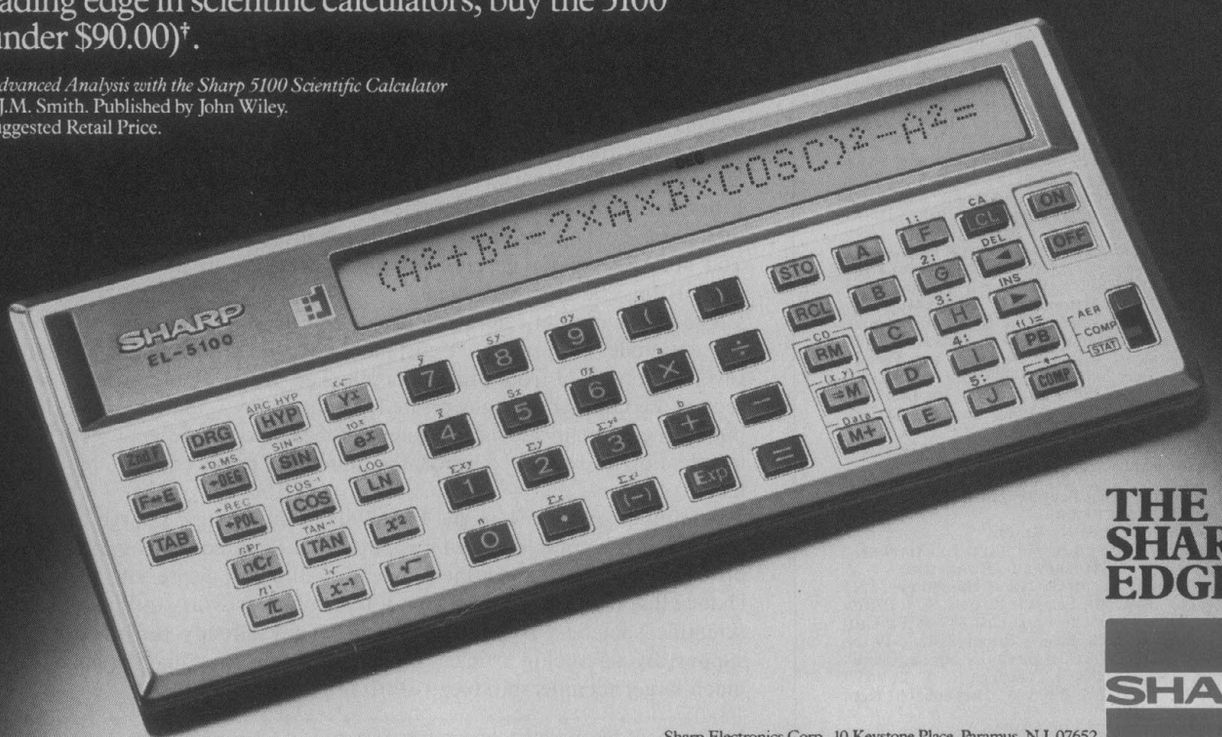

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er, there are several critical differences that make direct analogy difficult, if not inappropriate. Most of the land irrigated by the Pimans was in the floodplain and lowest terrace of the Gila River and its tributaries [R. A. Hackenberg, *Aboriginal Land Use and Occupancy of the Pima-Maricopa Indians* (Garland, New York, 1974), vol. 1, pp. 148–149]; the Hohokam utilized thousands of hectares of higher terrace farmland as well. Whereas the historic Pimans farmed a maximum of only about 6000 ha [*ibid.*, vol. 2, pp. 67–69], the Hohokam had many times that amount under cultivation throughout the Sedentary and Classic periods. Another important difference between Piman and Hohokam irrigation systems concerns the number of villages in direct association. According to Hackenberg (*ibid.*, vol. 1, p. 139), "both Pima and Maricopa villages were made up of groups of families who farm adjoining acreages. In addition to kinship bonds, these families were held together by common interest in the particular acreage which they cultivated. . . . [A]boriginally, a village consisted of all those families receiving their water for irrigation from a common ditch." E. F. Castetter and W. H. Bell [*Pima and Papago Indian Agriculture* (Univ. of New Mexico Press, Albuquerque, 1942), p. 126] noted that even when large tracts of land were being newly developed, only one to three Piman villages were involved in the undertaking. The Hohokam, on the other hand, had perhaps as many as nine or more villages linked to single irrigation systems. The organizational aspects of water management would of necessity have been more rigidly controlled by the Hohokam because of the larger number of variables (such as village, group, and individual needs) that had to be accounted for. Population size and density may have been the most critical factors in the differences between Piman and Hohokam water management. This hypothesis is supported by ethnographic data on the relationship between population and the development of social complexity [W. C. Kappel, *Pap. Univ. Ariz.* **25**, 159 (1974)].

37. D. E. Doyel, *Am. Sci.* **67**, 544 (1979).
38. ———, *Classic Period Hohokam in the Escalante Ruin Group* (University Microfilms, Ann Arbor, Mich., 1977).
39. Models of settlement hierarchy were recently developed for the Classic Period Hohokam, with the suggestion that Gila River Valley villages such as Casa Grande [D. R. Wilcox and L. O. Shenk, *Ariz. State Mus. Archeol. Ser. 115* (1977)] and Escalante (*38*) were the highest ranked villages within their individual settlement (irrigation) systems. These promising models have yet to be critically evaluated.
40. O. A. Turney, *The Land of the Stone Hoe* (Arizona Republican Print Shop, Phoenix, 1924).
41. I thank David R. Wilcox, Carroll L. Riley, George J. Gumerman, Robert L. Rands, Jeffrey S. Dean, and Scott C. Russell for comments on an earlier draft of this article. Financial assistance for the drafting of Figs. 1, 2, 3, and 6 was generously provided by the Center for Archaeological Investigations and the Department of Anthropology, Southern Illinois University, Carbondale. These figures were drafted by Karen Schmitt. I also thank Laurens C. Hammack, Alan Ferg, David A. Gregory, Alan P. Sullivan, and Ellen Horn of the Arizona State Museum and Mason Toles, James Dorre, and William Hayden of the Arizona Department of Transportation for assistance in various aspects of the study.