

prices for their water, which diminished its availability to farmers or raised their production costs.

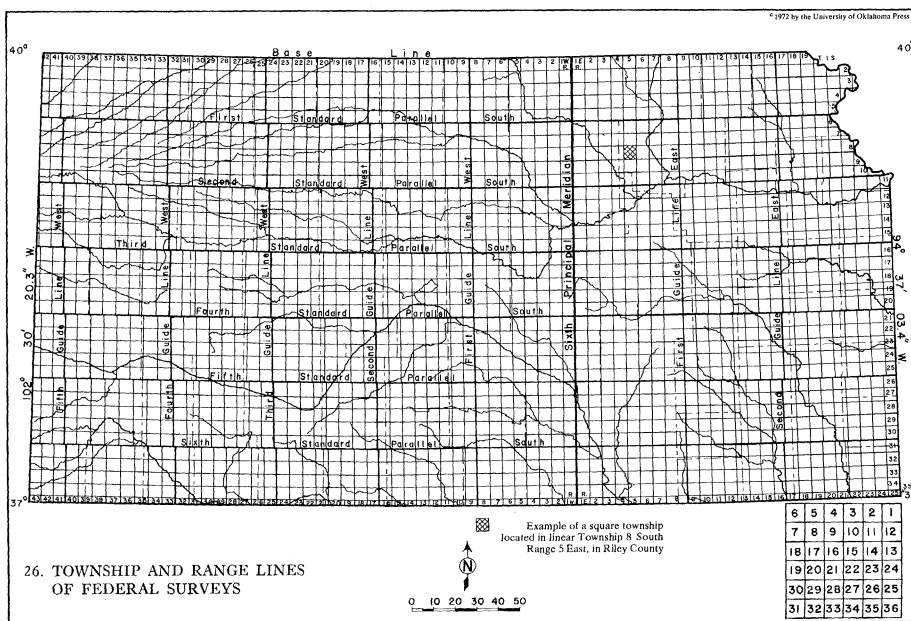
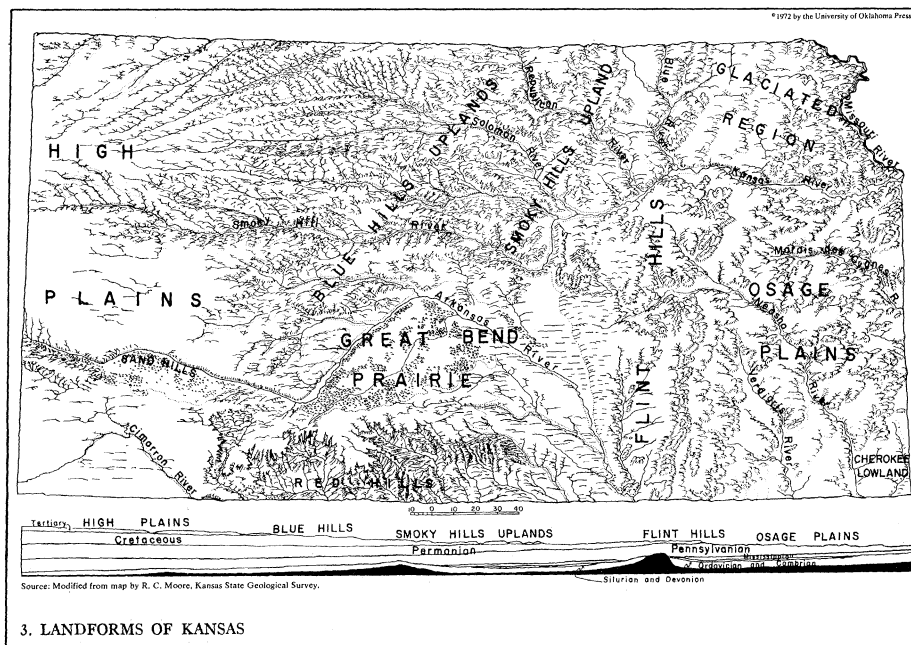
Mounting concerns over the use (and abuse) of land, water, and timber and the conflicting goals of farmers, ranchers, miners, road builders, and urban developers led conservationists such as Gifford Pinchot to propose restrictions to guarantee the "best possible use" of land, a proposal that some

charged was an abridgement of the rights of private property. Dust storms, declining fertility, and environmental pollution strengthened the arguments of those who advocated government regulation but did not still the voices of those who feared government intrusion on private property rights. The creation of the Soil Conservation Service in 1935 and the 1970 Clean Air Act, the latter described by Opie as "aggressive govern-

ment action to protect prime farmland as a strategic national resource, at theoretical levels of no significant deterioration," were significant new policies. By placing costly restrictions on farmers they contradicted the policy of making more food available at declining prices and subordinated the saving of the small farmers to the presumably larger social goals of saving the soil and the environment. Yet the production of cheap and abundant food and the sanctity of the family farm remained stated policy goals.

Opie is more successful in outlining the historical roots of current farm problems than he is in suggesting viable solutions. Saving the small family farmer and protecting the soil need not be contradictory, he notes, if we are willing to accept the higher food prices that would come from using fewer chemicals and less capital in production. But he notes also that powerful lobbies, demands for cheap and abundant food, and foreign policy imperatives make such goals difficult to achieve. The history that Opie outlines provides scant hope for easy solutions, but his essay does provide a clear view of the sources of many of the pressing problems we face and the difficult choices we must make rather than continue to avoid if we are to solve the problems.

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Landforms of Kansas and township and range lines as set by land survey. "The extreme contrast between physiography and geometric survey was typical of land surveys in all the public domain states." The federal land survey "began the transfer of 1.3 billion acres . . . from public trust into private ownership" and had a "psychological impact [that] cannot be overstated." In the minds of the hoped-for settlers, especially immigrant farmers from Europe, where "human orderliness, not wilderness, dominated the . . . landscape," the patterns laid out by the survey "transformed the strange wilderness into a familiar geometry." [From *The Law of the Land*; H. E. Socolofsky and H. Self, *Historical Atlas of Kansas*, University of Oklahoma Press, 1972]

Some Other Books of Interest

Surveying Social Life. Papers in Honor of Herbert H. Hyman. HUBERT J. O'GORMAN, Ed. Wesleyan University Press, Middletown, CT, 1988. xx, 533 pp. \$45.

"Modern survey research has increased our knowledge of social life more than any other tool in the social sciences," writes O'Gorman in the introduction to this volume memorializing a "man who made a difference" in the history of this enterprise. In his introduction O'Gorman delineates Hyman's career and contributions, which include two "classic" works in the field, *Interviewing in Social Research* (1954) and *Survey Design and Analysis: Principles, Cases and Procedures* (1955), studies of the role of "reference groups" (a term Hyman introduced in his 1942 doctoral dissertation) in perceptions of status, studies of the long-term effects of education, and systematization of methods for "secondary analysis" of survey data. The volume proper consists of 22 papers, many but not all of which make reference to Hyman's work, on broad themes or particular subjects of empirical

research in sociology. The opening group, headed Survey Research, contains reflections of an "older practitioner" by Glock, discussions of methodology for surveying racial attitudes by Schuman and Bobo and of confidentiality and political infringements thereon by Diamond, and a consideration of why ethnomethodology has "failed so far to become a coherent alternative in sociology" or "to develop its implicit political line" by Lemert. Part 2, Reference Groups, contains papers by Zuckerman (on role models), O'Gorman, Merton (on invisible colleges and deviant behavior in science), and Bay. The remaining groups of papers are headed Social Psychology, Public Opinion, Inequality, and Mass Media. Among the subjects research on which is discussed are political participation (Rosenberg), definition of psychosis (Miller and Jaques), attitudes toward nuclear power (S. Cole and Fiorentine), equality in education (Coleman), news coverage of the relation between cholesterol and heart disease (J. Cole), and moviegoing (Bogart).—K.L.

Oxidases and Related Redox Systems. Tsou E. KING, HOWARD S. MASON, and MARTIN MORRISON, Eds. Liss, New York, 1988. xxvii, 789 pp., illus. \$140. Progress in Clinical and Biological Research, vol. 274. From a symposium, Portland, OR, Oct. 1987.

This volume of proceedings of the Fourth International Symposium on Oxidases and Related Redox Systems is distinguished from its predecessor by the inclusion of a symposium honoring the centennial of the birth of David Keilin, the discoverer of cytochrome. Keilin, who was born in Moscow and grew up in Poland, received his doctorate in parasitology from the Sorbonne and in 1915 went to Cambridge University, where he spent his entire career, becoming interested in biochemistry through his work on insects. Keilin's own account of his research was published in his posthumous *History of Cell Respiration and Cytochrome* (1966; reviewed in *Science* 152, 1493). In the present volume six of his sometime associates—Tsou E. King, Thad-

deus Mann, E. C. Slater, Peter Nicholls, E. Margoliash, and C. L. Tsou—present their reminiscences and reflections. Themes in addition to the research itself that recur are Keilin's breadth as a biologist, his other intellectual interests, and the atmosphere of the Molteno Institute at Cambridge, of which he was director and where his research was centered. Photographs are included, and King provides a bibliography of Keilin's biochemical publications. The remainder of the volume (p. 93ff) consists of 40 technical papers on copper proteins, cytochrome P-450, cytochrome c oxidase, and other subjects. A brief memorial to Martin Morrison is also included.—K.L.

Books Received

Continental Shelves. H. Postma and J. J. Zijlstra, Eds. Elsevier, New York, 1988. x, 421 pp., illus. \$189.50. Ecosystems of the World, vol. 27.

Crystal Growth from the Melt. G. Müller. Springer-Verlag, New York, 1988. viii, 138 pp., illus. \$77.60. Crystals, vol. 12.

The Cytogenetics of Mammalian Autosomal Rearrangements. Art Daniel, Ed. Liss, New York, 1988. (Continued on page 1187)

Advances in Cognitive Science: Steps Toward Convergence

Edited by Manfred Kochen, *University of Michigan*, and Harold M. Hastings, *Hofstra University*

Computer science and biology—two fields that were once widely divergent—are increasingly influencing one another and converging into a new, more comprehensive area of cognitive science. This book, based on a AAAS Annual Meeting symposium, focuses on issues of evolutionary learning, thereby stimulating fresh ideas for research. Its multidisciplinary discussions integrate methods and concepts in imaginative ways, offering a unique perspective on the state of the field and on directions for future study. This volume should prove valuable to psychologists, computer scientists, biologists, and anyone interested or involved in artificial intelligence or cognition.

\$45.00; AAAS members \$36.00 (include membership number from *Science*). 283 pp., 1988. AAAS Selected Symposium 104.

Order from: Westview Press, Dept. AAAS, 5500 Central Avenue, Boulder, CO 80301. (Add \$2.50 postage and handling for the first copy, 75 cents for each additional copy; allow 4–6 weeks for delivery.)

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