

commend that libraries buy it and that everybody working in the field have a look at it and read some of the chapters. As evidenced by this book, optimal foraging is emerging from a troubled adolescence into an uncertain future. I shall guess that its future will be shaped, at least in part, by the ideas on learning and memory—and possibly on game theory—presented in this volume.

NILS CHR. STENSETH
*Division of Zoology,
 University of Oslo,
 P.O. Box 1050, Blindern,
 N-0316 Oslo 3, Norway*

North American Paleontology

Late Quaternary Mammalian Biogeography and Environments of the Great Plains and Prairies. RUSSELL W. GRAHAM, HOLMES A. SEMKEN, JR., and MARY ANN GRAHAM, Eds. Illinois State Museum, Springfield, IL, 1987. xiv, 491 pp., illus. Paper, \$20. Illinois State Museum Scientific Papers, vol. 22. Based on symposium, Iowa City, IA, 1980.

The 12 papers in this volume are dedicated to Ernest L. Lundelius, Jr., in recognition of his work on the paleontology of mammals in North America, especially central Texas. The main authors are R. W. Graham and H. A. Semken, Jr., who author or coauthor five papers and the introductory chapter, "Philosophy and procedures for paleoenvironmental studies of Quaternary mammalian faunas."

The Late Pleistocene or Holocene faunas of Illinois and Missouri, of the northern, central, and southwestern Great Plains, of the Northern Bighorn Mountains, of Montana and southern Alberta and Saskatchewan, and of the Lange/Ferguson Clovis Site in South Dakota are considered in individual chapters. Each of these chapters assembles many data on mammalian, particularly micromammalian, temporal distribution over the past 30,000 or fewer years, especially the last 10,000 years, and on the geographical distribution of the known sites that have produced local faunules. These chapters are usually supported by extensive tables listing the sites, their archeological context if any, radiocarbon dates, and taxa recovered. Often the taxa are assembled as faunas for particular swatches of Holocene time and these observed faunal changes over time used for paleoclimatic reconstructions.

Semken and C. R. Falk's chapter "Late Pleistocene/Holocene mammalian faunas and environmental changes on the northern plains of the United States" (pp. 176–313) is an extensive treatment of present and past loci of sympatry for small faunules of ten or

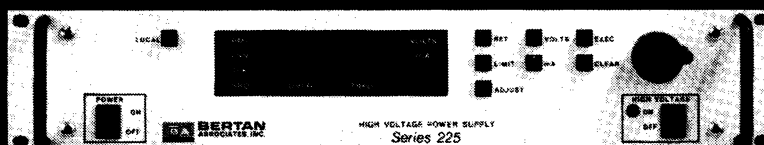
so micromammalian taxa, showing the generally northern shift of the areas of sympatry from Pleistocene-Holocene boundary times to today or the separation of the now-western montane from the now-eastern woodlands taxa as the plains became drier as the Holocene progressed. Other papers give similar treatments but not as broadly, often because they treat smaller geographic areas. Maps showing the areas of present-day faunal sympatry for an extinct local faunule are numerous and illustrate well the points made by the authors.

The book is well produced, easy to read, and well printed and bound, with an index of all localities. Most of the figures are line diagrams; the few half-tones are clear but not strongly printed.

This is not a work that may be read at a sitting but one to be consulted or dipped into. It brings together many scattered records and places them in environmental and faunal perspectives. It is thus a "Handbuch" or compendium that summarizes much of the present knowledge of Holocene faunas and environments for the central plains of

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North America. I consider it an important source and tool for any zooarcheologist, faunal analyst, Quaternary paleoclimatologist, or micromammalian paleontologist interested in the geographic area it covers.

C. S. CHURCHER
Department of Zoology,
University of Toronto,
Ontario, Canada M5S 1A1

Books Received

BASIC Programming for Chemists. As Introduction. Peter C. Jurs, Thomas L. Isenhour, and Charles L. Wilkins. Wiley-Interscience, New York, 1987. xii, 313 pp., illus. \$34.95.

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A Century of Nitrogen Fixation Research. Present Status and Future Prospects. F. J. Bergersen and J. R. Postgate, Eds. The Royal Society, London, 1987. vi, 231 pp., illus. £45. *Philosophical Transactions of the Royal Society of London* series B, vol. 317. From a meeting, London, U.K., Oct. 1986.

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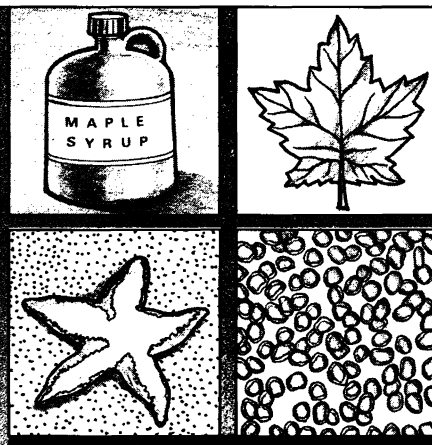
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The Encyclopedia of Structural Geology and Plate Tectonics. Carl K. Seyfert, Ed. Van Nostrand Reinhold, New York, 1987. xiv, 876 pp., illus. \$89.95. Encyclopedia of Earth Sciences, vol. 10.

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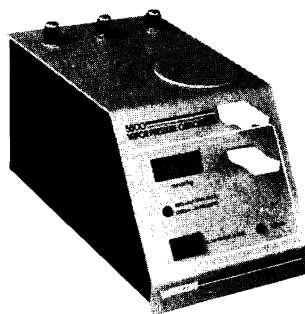
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