committed white workers.

In the last section Sacks examines the "rollbacks" of the 1980s. The rise of HMOs, nursing facilities, and for-profit hospitals, which "creamed" the top, left the money-losing parts of health care to the nonprofit hospital. As cost-cutting was intensified, fewer workers had to do more work under closer supervision. Food and cleaning services were contracted out to vendors employing nonunion part-time workers. (Ironically, many employees of the most advanced medical center in the region had no medical insurance.) Technicians and nurses, also pressured by speedup, responded by trying to professionalize; their aim was to resist the addition of nonprofessional tasks to their jobs and the parceling out of some of their duties to lower-paid workers. At the same time increased credentialism cut off avenues for advancement through on-the-job training. The result was a bifurcated work force: an upper tier of largely white college-educated professionals and a lower tier of racially mixed technical, nursing, clerical, and service workers. Though not sanguine about the decline in activism, Sacks suggests that the potential for organizing still resides in the everyday work culture and social networks of workers. More could have been said about the rise of militancy among nurses.

In sum, the book makes an important contribution to our understanding of the effects of the changing economy of health care on the working lives of ordinary women and men. Written with grace and passion, it is accessible to a broad audience including specialists in health care, academicians, and workers.

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Participants in Anthropology

Women Anthropologists. Autobiographical Dictionary. UTE GACS, AISHA KHAN, JERRIE MCINTIRE, and RUTH WEINBERG, Eds. Greenwood, Westport, CT, 1988. xx. 428 pp. $55.

This is an unusual volume in that it was planned and carried out by students. The editors (three have M.A. degrees in anthropology from San Francisco State University; the fourth is a Ph.D. candidate at the City University of New York Graduate Center) felt that the contributions of women anthropologists were given short shrift in most anthropology courses. This book is their attempt to right the situation. The result is a remarkably interesting volume which belongs on the shelf of everyone engaged in the teaching of anthropology or the study of its history.

Fifty-eight women are included in this dictionary, all of them in the Anglo-American tradition, their activities spanning a hundred years. The list is intended to be representative, not exhaustive, and in the best traditions of feminist scholarship it is deliberately non-hierarchical. Theodora Kroeber, Carobeth Laird, and Gitel Steed are given nearly as much space as Margaret Mead, Ruth Benedict, and Elsie Clews Parsons. The editors specifically reject any attempt to rank achievement or significance by the traditional criteria of publications, prestigious positions, or theoretical contributions. They are interested rather in the wide range of women's contributions to anthropology and in the variety of skills and situations represented. This book is feminist also in its interest in the webs of connectedness between the subjects and their friends, family members (including husbands), professional mentors, and informants or colleagues in the field. Instead of the heroic tradition of Great Men in anthropology, we have here materials for sociological analysis of some of the women who have been drawn to the discipline. The unstated assumption (which seems to me absolutely correct) is that we will only understand what anthropology is about and how it came to be what it is if we look at the activities of all of those who have been engaged in it.

The range of interests among women anthropologists is wide. This volume includes patrons (Sara Y. Stevenson, Vera Rubin, Elsie Clews Parsons), dancers and writers (Katherine Dunham, Frances Gillmor, Theodora Kroeber, Zora Neale Hurston), minority women (Hurston, Vera Mae Green, Ella Deloria, Irene Diggs), and political activists (Hilda Kuper, Eleanor Burke Leacock, Gene Weltfish). There are superb essays on the first generation of women in American anthropology (Frances Densmore, Alice Fletcher, Zelia Nuttall, Erminnie Smith, Matilda Coxe Stevenson) and on the best-known of later generations (Mead, Benedict, Parsons, Hortense Powdermaker, Gladys Reichard, Ruth Bunzel). In general the better entries are by authors who have some time perspective on their subjects and have been able to draw on previous historical research. Almost half of the women included (24 out of 58) are active today. Many of the authors writing on these women had their cooperation and occasionally mirror too closely the subject's point of view on controversies in which she was engaged. Yet even these less than objective accounts will be valuable resources for students and future historians.

The distribution across fields and between countries is uneven, as might be expected. The volume includes two physical anthropologists (Alice Brues and Ruth Sawtell Wallis) and nine archeologists (Frederica de Laguna, Isabel Kelly, Dorothy Keur, Mary Leakey, Zelia Nuttall, Lila O'Neale, Tatiana Proskouriakoff, Sara Y. Stevenson, H. Marie Wormington). All the others are social or cultural anthropologists. Ten women belong to the British tradition in anthropology, the rest to the American. Every knowledgeable reader will begin to think of women who have been omitted, but the very fact that we will be thinking about women who might have been included is evidence that the book will in part at least have accomplished its purpose.

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Sedimentary Studies

Desert Sediments. Ancient and Modern. L. E. FROSTICK and I. REID, Eds. Published for the Geological Society by Blackwell Scientific, Palo Alto, CA, 1987. xiv, 401 pp., illus. $125. Geological Society Special Publication no. 35. Based on a meeting, London, May 1986.

Subtropical deserts cover about a third of the earth's surface. Their sedimentary processes are characterized by episodic transfers of sediments by ephemeral streams and by dust- and sandstorms. Evaporation exceeds precipitation, so evaporites and chemical precipitates accumulate in soils and near-surface sediments. Ancient desert sediments occur throughout the geologic record, especially in formations of Permian to Jurassic age. Interpretation of their depositional environments requires an understanding of the nature and formation of modern desert sediments.

This volume comprises 24 papers presented at a meeting of the Geological Society of London. The papers go some way to correct the impression that aeolian activity dominates sedimentary processes in deserts and that desert sediments consist mainly of the deposits of sand dunes. Three-fourths of the papers are concerned primarily with modern desert sediments and processes, often making no reference to the rock record. The remainder are divided equally between studies of Quaternary sediments and those dealing with ancient sediments. All the papers are based on work carried out in the Old World deserts, and their overall standard is remarkably high for such a volume.

The book is divided into sections that deal with fluvial, aeolian, and chemical sediments and with remote sensing of desert sediments. The fluvial section contains papers on modern and Quaternary alluvial sequences in Israel and Oman and on Triassic ephemeral streams in Denmark. Frostick and Reid contribute an excellent paper on sedimentation in rift valleys, in which they draw on new data on the structure of the East African rift. Concepts of alluvial fan development have been formed primarily by studies in the American West, which often emphasize tectonic effects, so it is refreshing to see a paper by Harvey that indicates that in Spain variations in sediment supply play a major role in fan development.

The aeolian section is divided into groups of papers on dust, ancient and modern dunes, and grain-size analyses of aeolian sands. They include an intriguing experimental study by Whalley and his co-workers on aeolian abrasion of quartz particles. There is an excellent review by Pye and Tsoar of dust transport and deposition in deserts, which provides a background for papers on dust accretion and soil development in the Negev and West Africa. The group of papers on dunes is dominated by those on ancient dune sandstones of Devonian to Permo-Triassic age in Scotland, Australia, and Ireland. These papers demonstrate that the increasing recognition of the complex nature of ancient aeolian sandstones is largely a product of studies of modern dunes and sand seas. The three papers on grain-size studies show that, despite the use of sophisticated statistical methods to describe grain-size distributions and to discriminate between depositional settings, the use of textural parameters to discriminate between depositional environments is limited by the high degree of spatial and possibly seasonal variability on the scale of individual dunes, as indicated by Livingstone's intensive study of a Namib linear dune.

Chemical sediments are represented by studies of silica and calcium carbonate replacement of plant roots in Indian coastal dunes and of spring mounds in Tunisia. Such studies are important for understanding the diagenesis of desert sediments and for interpreting paleoenvironments in desert regions.

The volume ends with three papers that consider the "big picture" of desert environments by using remote-sensing data to study sand sheets in the eastern Sahara, surface sediments in Qatar, and sediment transfers on playas in Tunisia. A combination of approaches that include detailed field studies to calibrate and constrain the regional view offered by remote-sensing data appears to offer great promise for future studies of desert sediments and surfical processes.

The editors have done an excellent job in putting together a group of papers that illustrate the diverse nature of sediments in desert regions. The book is well produced, with a useful index. It fills a major gap in the literature on desert sediments and processes and should be on the shelves of all earth-science libraries and in the possession of researchers studying desert sediments, both ancient and modern.

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Biomolecular Processes

Dynamics of Proteins and Nucleic Acids. J. ANDREW MCCAMMON AND STEPHEN C. HARVEY. Cambridge University Press, New York, 1987. xii, 234 pp., illus. $39.50.

Since the first simulation of the molecular dynamics of a small globular protein was reported 12 years ago, there has been explosive growth in the field. This is the result of the increasingly fruitful interchange between theory and experiment that is now taking place. On the one hand, computer simulations of biological macromolecules, which were initially limited to extremely short times (picoseconds), can now be carried out on much longer time scales because of the vastly increased speed of today's computers. On the other, new chemical techniques (2D NMR, ultrafast laser spectroscopy, cryogenic and time-resolved crystallography) are providing experimental information that can be used to validate the simulations. *Dynamics of Proteins and Nucleic Acids* provides a comprehensive introduction to the theoretical methods that are currently being used to probe the dynamics of biomolecules.

The intense interest in computer simulations of biomolecular dynamics derives in part from the potential applicability of these methods to the design of new molecules of biological importance. The powerful recombinant DNA techniques of molecular biology have made it possible to produce designer proteins, yet we lack a set of theoretical tools to make the design process something more than a hit-or-miss affair. This situation is changing, however, as "free energy simulation" techniques are developed and applied to molecular design problems. Included in the book is an introduction to this rapidly developing technology as well as a review of the theoretical tools required for such simulations.

The book begins with an overview of the different types of motion that are exhibited by biopolymers and the huge time range these motions encompass (for example, small-amplitude vibrations occur on a time scale of 10^{-13} second whereas large-scale allosteric transitions occur on a time scale of 10^{-3} to 10 seconds). This large dynamic range poses difficulties for the theoretical study of these processes. An excellent review of the many techniques that have been developed to handle these multiple time scales is presented. The perspective throughout is that of the physical chemist. Simplified pictures are used to help the reader organize the tremendous wealth of experimental and theoretical data on the dynamics of proteins and nucleic acids. In the overview of the dynamics of proteins, the similarities to other dense materials are clearly brought out, with their atomic motions over shorter time intervals likened to those of liquid and their longer-term motions to those of solids. Similarities and differences between the dynamic behavior of proteins and nucleic acids are illustrated with numerous examples. It is suggested that the extended shape and large net charge of nucleic acids account for the fundamental differences between the kinds of motions observed in globular proteins and nucleic acids.

The chapter on theoretical methods provides the most comprehensive review of the methodology currently available. Starting with a description of the potential functions used for macromolecular simulations, the authors clearly describe the techniques that are used to simulate motions on this surface, from adiabatic mapping, which is essentially an energy minimization technique, to molecular dynamics and brownian dynamics simulations. The various computational strategies for carrying out free energy simulations are reviewed, and the strengths and weaknesses of each of the methods are explained. The thermodynamic cycle perturbation method first applied to the simulation of enzyme-substrate binding by McCammon's group is particularly powerful in that it is computationally efficient and it focuses on the quantities that are of greatest experimental interest, the relative free energy of binding of different substrates, rather than the absolute values, which are much more difficult to calculate. The historical roots of this field in computational statistical mechanics of liquids are made apparent.

In the early development of this field a few molecular systems have served as paradigms for the study of biopolymer dynamics: trypsin inhibitor and cytochrome c for proteins and tRNA for nucleic acids. Many of the studies of these molecules described in the book were carried out in the authors'