Book Reviews

Life of an Anthropologist

Alfred Kroeber. A Personal Configuration. THEODORA KROEBER. University of California Press, Berkeley, 1970. xii, 292 pp., illus. $7.95.

Alfred Kroeber is rated by most scholars as the greatest anthropologist of his time. Theodora Kroeber, his second wife, was his devoted companion from their marriage in 1926 until his death in 1960 at age 84. Since the length and closeness of Theodora's relationship to Alfred exceeded that of any other person, her qualifications as his biographer are unique. She is, in addition, a seasoned writer, with a very perceptive but restrained style well suited to biography, as her earlier biography of Ishi, the last "wild" California Indian, so amply demonstrates. In her biography of her husband she has wisely refrained from introducing amusing or bizarre trivia that might have increased the book's appeal to the general reader but would have blurred the main focus on Kroeber's development as a scholar. Though she lacks a professional degree in anthropology her competence in this field, as shown also in her earlier book *The Inland Whale,* is greater than she admits in her preface.

The first chapter, dealing with Kroeber's youth, is enlightening both in its account of the influences that shaped his intellect and personality and as a study of certain aspects of American culture in the late 19th century that are insufficiently known to the present generation. The young Alfred was fortunate in his background of an upper-middle-class, bilingual family, early private tutors, and excellent schools—all free from the racial, national, and religious prejudices to which most children are exposed. Living near Central Park, he also had access to the major museums that had already been established in New York. After earning his M.A. degree in literature at Columbia University, Kroeber began his study of American Indian languages with Franz Boas, under whose direction he took his Ph.D. in anthropology in 1901.

In the same year he was appointed to the faculty of the University of California at Berkeley, where he taught until his retirement in 1946. Anthropologists throughout the world are familiar with the fruits of his research, which continued for the rest of his life and encompassed many cultures, but Theodora quotes him as saying that his wide-flung historical and theoretical interests were rooted in his fieldwork with the living Indians of California.

Theodora's narrative of Kroeber's personal life is especially interesting to those of us who knew him largely as an exacting mentor in the lean and competitive period of the economic depression of the 1930's. It shows more than the usual amount of warmth and affection toward his family, which often included relatives beyond his wife and children. It also explains the personal circumstances of his excursion into another intellectual field.

Earlier than most social scientists, Kroeber had been reading the works of Freud and his disciples. A series of traumatic experiences, which would have impaired the productivity of a less dedicated scholar, led him into a more active concern with psychoanalysis. His first wife died in 1913, after several years of a lingering illness. He was also deeply moved by Ishi's death in 1916. Furthermore, from 1915 to 1922 an ear infection caused severe symptoms including partial loss of physical equilibrium.

Partly because his condition had been incorrectly diagnosed as psychogenic, Kroeber began a psychoanalysis in 1917 during a stay in New York. The next year, in California, he retained his position as director of the museum but took a two-year leave of absence from teaching and the chairmanship of anthropology in order to practice psychoanalysis. He returned to anthropology officially after the leave but continued to treat some patients until 1922. During this period of illness and his venture into psychoanalysis he continued to write in anthropology, producing important articles and three books, of which two, the *Handbook of the Indians of California* and his 1923 *Anthropology*, are among his most distinguished works.

Later sections of this biography throw light on other aspects of Kroeber's scholarly development. A short bibliography at the end lists a selection of his major works and also a few articles about him, written mostly after his death. Anyone who was personally acquainted with Alfred Kroeber will find his knowledge of the man considerably augmented by Theodora's account. For those also who never had the privilege of direct contact with him, her book provides a meaningful addition to the history of anthropology.

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Prehistoric Technology

Tools of the Old and New Stone Age. JACQUES BORDAZ. Photographs by Lee Boltin. Published for the American Museum of Natural History by the Natural History Press, Garden City, N.Y., 1970. xiv, 146 pp. $5.95.

Bordaz describes some of the main categories of prehistoric stone tools of Paleolithic, Mesolithic, and Neolithic age, with special reference to the technology of their manufacture, the raw materials of which they were made, and, where possible, the ways in which they were used. This main theme is developed against the background of the archeological sequence of those periods, which is described in broad outline in terms of changing subsistence patterns as well as changing prehistoric cultures. At the introductory level, this is a much more attractive approach to such a vast subject than the typological and taxonomic one so often used in the past.

The result is a good short introductory book, with plenty of accurate information on the technological side, and it is pleasing to note that much of the incidental discussion of important, more general aspects of the Paleolithic sequence is in reasonably up-to-date terms, in view of the rapid progress of discovery and research on the one hand and on the other the time a book must spend in the press. There is a long list of works for further reading, which students should find very useful in spite of a number of curious omissions. Among the illustrations, most of the line drawings are at least adequate; photographing flints satisfactorily presents many problems, and one feels that the quality of reproduction here may not

always have done justice to Lee Boltin's original plates.

If the reader has already passed beyond the introductory stage in this branch of archeology, he may feel that the author's choice of what has to be omitted, given the space available, is sometimes questionable. To take a particular example, the special techniques used for producing hand-ax and cleaver blanks in the African Acheulian, which are a vital key to any understanding of the typology of the finished implements, are not mentioned. On a more general level, chapter 6, which contains most of the information on Mesolithic and Neolithic implements, is entitled "Microliths and ground stone tools," which, since it is an accurate description of the principal contents, may perhaps indicate how serious are the omissions here in presenting a balanced picture of the ordinary range of lithic tools and weapons of, for example, the Western Neolithic of the Old World. There are other places in the book where space limitations rule out the possibility of proper discussion of controversial points, but this is more or less inevitable, and in any case the provision of such a comprehensive bibliography largely offsets this deficiency. Apart from such limitations, this remains a very useful introduction to one of the basic studies of the prehistoric archeologist, and it would be unfair while commenting on omissions not to remark that on the other hand there are plenty of things which it is excellent to see included—for example, the work of Crabtree on the effect of heat treatment on the flaking properties of flint, which deserves to be much more widely known.

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Big Machines

Linear Accelerators. PIERRE M. LAPOSTOLLE and ALBERT L. SEPTIER, Eds. North-Holland, Amsterdam; Elsevier, New York, 1970. xxii, 1204 pp., illus. $61.

One can only admire the ambition of the editors in attempting in a single volume to "describe in enough detail theoretical as well as technological aspects of linear accelerators in general and briefly cover the various types constructed and their applications." To this end, they have enlisted the help of 50 specialists. The result is a volume of some 1200 pages which comes close to describing the state of the art of linear accelerators in 1967.

The principal sections of the book are devoted to electron linear accelerators (540 pages) and proton linear accelerators (440 pages). In the section on electron linear accelerators, there are chapters describing positron accelerators, the racetrack microtron, and radio-frequency separators which should have interest to some readers. Two other, shorter sections of the book describe heavy-ion linear accelerators and superconducting linear accelerators. These last two types have seen a large amount of activity in the last three years, which is unfortunately unreported.

A large variation in the skill with which the authors carry out their assignments is apparent. A few examples are worthy of mention for their usefulness. The Stanford Linear Accelerator group has done an excellent job on chapters dealing with electron accelerating structures, particle dynamics, beam breakup, and the technology of accelerating structures. G. Dôme's (CERN) review and survey of proton linac accelerating structures is a complete, unifying presentation that will serve as a reference for future investigations. For the chapter on preinjectors Huguenin and Vosicki (CERN) have done considerable research to compile comparative information on ion sources and accelerating columns. Unfortunately, this chapter had to be submitted for publication in 1968, before much information on the testing of the new generation of high-gradient accelerating columns was available, so the reader is left stranded. (The editors' note at this point is not much help and, in fact, is erroneous in reporting the design features of the National Accelerator Laboratory accelerating column.) C. S. Taylor (CERN) has reduced to print some of the lore associated with radio-frequency problems, in particular multipactoring and sparking phenomena, known only by a few in the linac fraternity and usually rediscovered at start-up time on new linacs. The chapters on technology bear special mention because laboratory reports on linear accelerator engineering problems and techniques are rare. The attempts to cover these subjects in this volume are commendable, though sometimes falling short—for example, one might have expected some discussion of mechanical engineering problems associated with the Alvarez structure and in particular drift-tube fabrication and alignment, where ingenious methods have been used to meet technical requirements.

Several good books are in existence describing circular accelerators, but the space devoted in them to linear machines has been relatively small. A few recent publications have provided more information on linear accelerators, but the best sources of information on them have existed in the form of internal laboratory reports and conference proceedings. This book is another step in meeting the needs of those who seek specific information in this growing field, although it may be questioned whether it will obliterate the necessity for reference to laboratory reports.

The main shortcoming of the book, recognized by the editors, stems from the difficulty of integrating the chapters into a coherent presentation. This has resulted in repetition and in some cases annoyances; for example, in four consecutive chapters different symbols are used for effective shunt impedance. Another manifestation of this problem is the nonuniform treatment of the references in the chapter bibliographies, and the final author index accentuates the problem. The subject index proves to be too abbreviated to be very useful. I fear that with all its virtues the book will fall short of fulfilling the hope expressed by the editors that it "should have a chosen place . . . on the shelves or on the desks of all scientists in laboratories where linear accelerators are either being built or used."

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Chromatography

Ion Exchange in Analytical Chemistry. WILLIAM RIEMAN III and HAROLD F. WALTON. Pergamon, New York, 1970. xiv, 296 pp., illus. $17.50. International Series of Monographs in Analytical Chemistry, vol. 38.

The authors of this volume have attempted to take a wide view of ion exchange in its application to analytical chemistry. In this they have been successful, in that the book is not written from a limited practical point of view but presents synthetic and theoretical information and devotes a good deal of space to the less well known applications of ion exchange materials.

The initial chapters present infor-