culture down to the time when successive societies attained literacy."

This is an ambitious design that quite naturally, in a work of 284 pages, calls for a great deal of compression. Although Clark bases his discussion almost entirely on concrete but fragmentary evidence, he found it impracticable to incorporate or even summarize the nature of the evidence itself. What he has done is to present a reasonably coherent picture of human cultural history from the earliest appearance of man as a tool-making animal to the emergence of adequately written history in different parts of the world at different times.

In a disarming paragraph Clark signals his awareness that "the varying intensity of archaeological research in different parts of the world, the author's unequal reading, and the insistent progress of knowledge, which modifies conclusions almost before they can be set down, all help to distort the picture."

Paradoxically, although the author specifically eschews an attempt at artificial evenness of treatment, the actual structure of the book, by virtue of its relatively even chapter lengths, superficially approximates just that, and results in a certain lack of balance.

The first chapter, entitled "Man's place in nature," is fairly evenly divided between physical environment and biological evolution. The next two chapters, which span 50 pages, discuss Lower Paleolithic cultures and their survivals, on the one hand, and advanced Paleolithic and Mesolithic cultures on the other. Here Clark is dealing with his own specialities and is at his best. "The invention of farming and the rise of Mesopotamian civilization" occupies 23 pages, and "Ancient Egypt and the later prehistory of Africa" only 20 pages. By contrast, "Neolithic peasants and arctic hunter fishers" in Europe runs to 28 pages, and "From Mycenae to the age of expansion" runs to 33 pages. Since both of these chapters are subdivisions of a broader topic, the foundations of European civilization, this disproportionate bias is understandable, particularly since our archeological evidence for much of Continental Europe and the Mediterranean is fairly complete and therefore quite confusing.

On the other hand, to treat India and the Far East, including China, Southeast Asia, Indonesia, and the Philippines, as well as Japan and Northeast Asia, in 32 pages, the New World, encompassing North America, Mesoamerica, and South America, in 28 pages, and Australia and the Pacific in 11 pages is likely to cause the professionals who specialize in those areas to gasp.

It is obvious that Clark could do no more than present his own interpretations and that only occasionally could he outline some area of disagreement, and it is also obvious that he had to omit much relevant material. This, then, is the kind of book about which the expert can and does say, "This is excellent, stimulating and informative, but for my area. . . ."

It is not a book to read at one sitting, for the compression of material has resulted in a density of style. Each chapter must serve as a point of departure for further reading or lectures to fill in the gaps, repair omissions, and assess conflicting interpretations. But as an introductory text that leads the reader into unfamiliar territory this book deserves a place on the reference shelf of the professional archeologist, the serious student, and the interested layman.

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Science Since Babylon. Derek J. de Solla Price. Yale University Press, New Haven, Conn., 1961. 149 pp. $4.50.

The author delivered five of the six chapters of this book as public lectures in a prolegomenon to a program in the history of science and medicine at Yale. He wisely concentrated attention on certain "crises," in the study of which he has himself made valuable and important discoveries or suggestions. His enthusiasm is infectious and will convey in print, as it must surely have done by the spoken word, the variety of opportunities that await the scholar in this, the newest field of historiography.

Price tells of the complements of Greek geometrical model and Babylonian computation in Ptolemy's *Almagest*. The comparisons of clockwork between China and the West is a well-told detective story, containing clues for a fuller tale of cultural relations. A chapter on the technological background of American science takes a more generous view than has been fashionable of our national heritage in this field. An essay on discovery in radiation grapples with the problem of what to do with recent history in science. There is a most suggestive study of the quantitative growth of science. The book closes with an appeal for institutionalization of what the author calls "humanities of science," of which the reader is to take the five substantive chapters as samples. I find this summons a little apocalyptic and would prefer to refuse the choice of all or nothing. And perhaps one need not make it in order to enjoy and profit from the excellent observations and curious facts that abound in a brief, delightful, and intriguing book.

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Anatomy of Monocotyledons. vol. 1, *Gramineae*. Charles Russell Metcalfe. Oxford University Press, New York, 1960. lxi + 731 pp. Illus. $13.45.

A more appropriate title for this excellent reference work would have been "Leaf Anatomy of the Gramineae." Leaf anatomy is emphasized because "in the vegetative organs of the Gramineae the most important characters are to be found in the leaf." The volume is the culmination of over 10 years of research by Metcalfe, and it records the data for 206 genera and 413 species examined. In addition, the literature has been summarized and blended with the author's results, so that 345 genera have been treated.

There are chapters on the general morphology of the grass plant, on the diagnostic microscopical characters, and on the leaf structure and taxonomy of grasses, but the major part of the book records the details of leaf anatomy. The genera are arranged alphabetically under each of two divisions: the genera not in the Bambuseae and genera in the Bambuseae. The diagnostic characters of each genus are followed by the detailed anatomy of selected species. This usually includes only the abaxial epidermis of the leaf and a transverse section of the lamina, but sometimes the anatomy of the culm and other parts are given. The source of the material examined is indicated for each species. Sometimes it is from plants cultivated at Kew and sometimes from a specific herbarium specimen. Additional information from the literature is considered separately.