

cultures; the former is mainly revealed from excavations at Susa (S. I.) and at al'Ubaid, the latter is that of Susa II. and of other sites.

As we have the first account in book form of the Badarian culture, so also we have that of the Indus civilisation. We find, thanks to work of Sir John Marshall, on the now impoverished banks of the Indus a brilliant civilisation in touch at once with the prediluvial villages of the Iranian plateau and the nascent city-states of Babylonia, and the Arabian Sea was ploughed by dhows freighted with the stuffs of Sindh consigned to Babylonian river towns. Thus the civilisation of Sindh was ahead of that of Sumer. About 3000 B.C. a catastrophe overtook the cities of the Indus basin. Gordon Childe thinks it is a legitimate deduction that the rôle of the maritime peoples of Arabia was to act as intermediaries between Egypt, Mesopotamia, and India.

This book should be of definite interest to the non-specialist reader, as it is pleasantly written, copiously illustrated, and will enable him to place in their historical setting the discoveries that are continually being noticed in the daily Press.

A. C. H.

#### Our Bookshelf.

*Morpheus: or the Future of Sleep.* By Prof. D. F. Fraser-Harris. (To-day and To-morrow Series.) Pp. 94. (London: Kegan Paul and Co., Ltd.; New York: E. P. Dutton and Co., 1928.) 2s. 6d. net.

A NUMBER of eminent men of science have contributed to the admirable series to which this little book belongs, and success has attended their efforts varying with their ability to cast aside professional restraints and speak their adventurous and unguarded minds. If the unsophisticated reader is willing to add Dr. Fraser-Harris's name to the list, it will be for reasons which are unfortunately concealed from the specialist. No subject could offer a greater opportunity for daring and ingenious speculation founded in scientific fact; but Dr. Fraser-Harris prefers to follow (rather lamely) the story of the journals. On p. 11 expectation is aroused by the statement that "comparatively few people could tell us exactly what it is that makes us sleepy and finally permits us to go to sleep." Gall, Mosso, Pupin, Claparède, Ramon y Cajal, Duval, Howell, Coriat, and Pavlov did not claim to do more than suggest tentatively, and while the author gives some account of their work, it is for the most part shorn of those honest doubts and reservations which somehow constitute a real contribution to the subject. Finally, he takes refuge in that disastrous propensity of physiologists confronted with conflicting streams of evidence, the 'omnibus' theory. Thus we have the absurdity: 'types' of sleep (p. 26). Par-

ticularly it is confusing to see Pavlov taken into the omnibus. First among physiologists he seems to have broken with the earlier inactivity theories completely. There is still the problem of sleep.

Some serious errors are made. The granules of Nissl are scarcely "rod-like" and they certainly are not to be found in the nuclei of nerve-cells in any circumstances, as Dr. Fraser-Harris implies (p. 25). The dream does not appear to have a very respectable biological ancestry if all we can say is that "we are entitled to assume that certain animals, for instance the dog, can dream." For many animals the dream is a most important protective mechanism. "The speech centres in the frontal lobes" does some injustice to several workers, and it is to be doubted whether insistence upon the hallucinatory character of dream images is to be commended even in a popular work. Several passages suggest that Dr. Fraser-Harris has not observed the manias associated with low blood-pressure. Whether there "seems no reason to doubt that . . . information is conveyed telepathically or directly to the brain without having been communicated through any of the sleeper's organs of sense" (p. 77) is a matter of opinion, as is also the statement "that some dreams are the expression of ancestral memories is an attractive theory" (p. 78).

The future of sleep is discussed in sixteen pages. Evidently its security will depend largely upon social and political agitation for the suppression of its prolific modern enemies.

*Elements of Alternating Currents and Alternating Current Apparatus.* By Prof. J. L. Beaver. Second edition. Pp. xiii + 393. (New York, London and Toronto: Longmans, Green and Co., Ltd., 1928.) 18s. net.

THIS book is written mainly for the benefit of those commencing the study of alternating currents. The numerical examples are numerous, and a very fair attempt has been made to explain away the difficulties which every one experiences in studying the subject. For those who have not the benefit of a teacher, numerous references are given to papers and other text-books where fuller explanations will be found. Some of these papers, as, for example, the *Bulletins* of the General Electric Company of America, cannot easily be obtained on the eastern side of the Atlantic. The nomenclature used is mainly that standardised in America. Capacity is called capacitance and a condenser is sometimes called a 'capacitor.' Possibly this is to prevent confusion with a steam condenser, which is quite a different device. It has long been thought desirable by electricians to standardise the termination 'or' to designate a piece of apparatus. But the difficulties in the way seem insuperable. Arrestor, starter, and divertor are coming into use, but exciter, damper, and feeder still have the 'er' termination.

Naturally, in an elementary book it is difficult, if not impossible, to state the theorems rigorously and to give their limitations. We think, however, that a word of warning might have been added on