

of the then Duke of Buckingham. Another fell in 1797, owing to the action of the weather upon its foundations.

The entrance to Stonehenge faced the N.E., and the road to it, or "Via Sacra," called the Avenue, can be traced by banks of earth which fall into those of the circumscribing circle of the earth bank which surrounds the whole structure, and which has a diameter of about 200 feet.

Prof. W. M. Flinders Petrie's account is cited as arriving at a date very much later than that given by Mr. Maskelyne, viz. as between 500 and 900 A.D.!

Lady Antrobus' book concludes with an account of the objects met with on the picturesque road which leads from Amesbury to Salisbury along the banks of the Avon.

OUR BOOK SHELF.

Polyphem ein Gorilla. By Dr. Th. Zell. Pp. 184. (Berlin: W. Junk, 1901.) Price Mk. 2.50.

A BOOK of nearly two hundred octavo pages of close print, discussing the subject above mentioned, may, without exaggeration, be termed exhaustive. It should be at once added, however, that in his preface the author refers expressly to those of the fifteen chapters (viz. Nos. xiii and xiv) which contain the essential arguments in support of his views. Otherwise the reader should be prepared to find himself involved in the consideration of the behaviour of animals in relation to changes in the weather, or engaged in the study of the relative keenness of the special senses of the walrus. The effects of meteorological changes on animals are discussed in reference to the story, not of Polyphemus, but of Proteus, in the course of a general disquisition on the interpretation of Homeric myths, while the subject of the special senses appears in subtle connection with important questions raised by the peculiar cyclopien eye of Polyphemus. The author's enthusiasm and his desire to examine all sides of the question have led him to burden his work with a large amount of detail, which could have been largely avoided, without diminishing the value of the book, by the substitution of reference for quotation *in extenso*.

The contributions to Homeric literature consist, firstly, in the exposition of the view expressed in the title of the book, viz., that the story of Polyphemus is not, as Grimm and others believe, a mystic account of the strife of the elements or a solar myth, but rather the reminiscence of an encounter of early civilised man with a pre-human ancestor. To this ancestor Dr. Zell prefers to refer as a "gorilla-mensch," reminding one of Winwood Reade's implied suggestion that Caliban was a gorilla.

In the second place, Dr. Zell suggests that the term cyclopien indicates that the person or animal so designated had simply eyes of rounded appearance and was not necessarily the possessor of a single median organ of sight.

While agreeing with Dr. Zell that the explanation of the story of Polyphemus is to be sought in the actual adventures of early voyagers, rather than in an appeal to the unaided inventive faculty of a poet, it is thought that the term "gorilla-mensch," as well as the title of the book, are distinctly unfortunate, as tending to revive the now discarded view that the particular ape in question should be regarded as figuring in the line of human ancestry. If the large gorilla mentioned on p. 112 is that which has been recently represented in certain publications in England and Germany, it is thought that Dr. Zell has been misled; for the attitude of the specimen referred to is not warranted by the structural anatomy of the gorilla.

With regard to the explanation of the term *κύκλωψ*, it must be admitted that this is a subject for inquiry on the part of philologists rather than students of natural science. Two remarks may be made here. The ordinarily accepted significance is one of very ancient standing. At the same time it is far more essential to Grimm's explanation than to that of Dr. Zell. W. L. H. D.

The Evolution of Consciousness. By Leonard Hall, M.A. Pp. 152. (London: Williams and Norgate, 1901.) Price 3s. net.

THIS is one of those well-meaning but futile books which it is almost impossible to criticise. To write a history of the evolution of consciousness an author should be thoroughly well informed of the latest results in both psychology and physiology. Mr. Hall seems to depend for his knowledge of the two sciences principally on the late J. S. Mill, with an infusion of Mr. Herbert Spencer. His account of psychological development is, no doubt unconsciously, entirely at variance with the results which have been won in recent years by careful experimentation, especially in the important domains of animal psychology, the analysis of spatial perception and the investigation of the processes by which meaning is acquired. The physiological explanations in which the writer indulges most frequently amount to nothing more than the reiteration of the blessed words "integration" and "differentiation." His grand thesis is that human consciousness is the property of a dominant cell or monad, but he seems not to be aware of the practical dethronement of the cell by the neuron as the unit of nervous action, nor does he offer any valid reason for his belief that the sub-cortical and medullary cells have a minor consciousness of their own. The actual "transference of consciousness" from one cell to another of which he talks freely is, of course, nonsense. Like most writers whose knowledge of psychology is of the same kind as his own, he is a very dogmatic and determined adherent of the merely mechanical theory of human action.

The Self-Educator in Chemistry. By James Knight, M.A., B.Sc., F.C.S., F.G.S., F.E.I.S. Edited by John Adams, M.A., B.Sc. Pp. xxiv + 162. (London: Hodder and Stoughton, 1901.) Price 2s. 6d.

THE intention and hope of the series to which this book belongs is that "the most isolated student will be able, without other aid, to ground himself in the various subjects dealt with." It is much to be doubted whether Mr. Knight's book will achieve any such purpose. Grounding in a subject is usually held to mean the laying down of substantial foundations, whereas this book is calculated rather to give superficial and miscellaneous information. It will give the reader no idea of the methods by which the principles of chemistry have been established, how chemical knowledge grows, or how chemists work and think. Within the first four pages the reader is introduced to atoms and molecules, graphic formulæ and the mysteries of the nascent state, whilst on the fifth he is told, "the statement that the atomic weight of oxygen is 16, means that a cubic inch, say, of oxygen is 16 times as heavy as a cubic inch of hydrogen. The atomic weight of substances like copper and carbon, which are not gases at all, are got in a more round-about fashion."

The most that can be said for the book is that it aims at showing chemistry in its relation to the things and phenomena of daily life. But it is neither thorough nor accurate, and doubts must arise as to the claims of a populariser who, besides propounding theory in the manner illustrated above, gets so far wrong in matters of fact as, for example, to state (p. 42) that hydrogen is liberated when steam is passed over red-hot copper, and that water gas and producer gas have the same composition. A. S.