

The Dancing Mouse; a Study in Animal Behaviour.
By Robert M. Yerkes. Pp. xxi+290. (New York :
The Macmillan Company; London : Macmillan and
Co., Ltd., 1907.) Price 5s. net.

THE most characteristic feature of the best psychology of the present day is the tendency to look for much of the explanation of mental life in its antecedents and surroundings. The older individualistic position is being rapidly left behind. The continuity of mind is now as clearly recognised as the continuity of life. Lower forms of mental activity, in the race no less than in the individual, are found to throw much light upon the nature of developed human consciousness. Such forms are, however, matters of inference, not of direct observation; it is therefore not surprising that the science of comparative psychology is so far from keeping pace with its elder brother, comparative anatomy. The work thus far done has been of a somewhat sporadic nature, in one prominent case, at least, vitiated by faulty psychological theory. More decided progress may be looked for in the application of the experimental method.

Dr. Yerkes's book on the Japanese dancing mouse, the first of a series to be devoted to the study of animal behaviour, is an excellent example of this plan of procedure. A very full description is given of the two principal forms of test employed, viz., the light-discrimination test and the labyrinth test. The former was employed to investigate not only the visual discrimination of the animal, but also its powers of learning by experience and of retaining the lessons thus learnt. As "motive" to the use of the discriminative faculty, Dr. Yerkes employed punishment, in the form of mild electric shocks for mistakes made, considering this not only more humane than the motive of hunger usually employed in such experiments, but also better adapted to the peculiarities of behaviour of the animal, viz., its superabundant activity. Here the criticism at once suggests itself that such a mode of procedure would probably encourage a mechanical production of habit in the animal, and fail to stimulate any germs of higher mental faculty that might be present. The results obtained certainly fail to show the presence of any reasoning power above sense discrimination. Even the inference to power of discrimination may not be completely justified. Sense-differentiation and the mechanical working of hedonic selection would seem able to account for all the facts. Yet the mice might have been capable of higher mental processes, e.g. in terms of kinæsthetic imagery, which the experiments failed to call into operation owing to the insufficiency of the stimulus or motive employed.

Apart from its value as a contribution to science, the book is an extremely readable one, and is, moreover, admirably bound and printed.

W. B.

Studies in the Medicine of Ancient India. Part i.,
Osteology, or the Bones of the Human Body. By
Dr. A. F. Rudolf Hoernle, C.I.E. Pp. xii+252.
(Oxford: Clarendon Press, 1907.) Price 10s. 6d.

SOME time ago, when Dr. Hoernle was preparing an edition of two old Indian medical tracts, preserved in the Bower manuscript of the fifth century A.D., he was surprised to find how little we knew of medicine as taught and practised in Ancient India. The volume under review is the first fruit of a resolve to make good that deficiency in the history of medicine so far as it can now be made good by a study of existing manuscripts and documents. Of the three systems of medicine which have come down to us the most ancient is that ascribed to Atreya, a physician who is assigned by Dr. Hoernle to the sixth century B.C.; the system ascribed to Suśruta, the

surgeon, is nearly as ancient; the third system, that of Vagbhata, the Galen of the mediæval East, as Dr. Hoernle describes him, dates from the seventh century A.D., and is a compound of the two older systems.

Evidently amongst the ancient Indians, as among medical men of to-day, a knowledge of the bones was regarded as fundamental in the study of medicine. In the system of Atreya the number of bones in the human body is given as 360 (the nails, teeth, and *tooth sockets* are counted as separate bones); in that of Suśruta 300, while in Vagbhata's system they number 360. In modern text-books of anatomy the number of bones is variously estimated from 200 to 214, the number varying according to the inclusion or exclusion of certain small bones and some which are only occasionally present. The ancient Indian anatomist shows an intimate knowledge of animal tissues in classifying the cartilages with bones; he regarded cartilage as an immature form of bone. In the course of transcription the text naturally became corrupt; for instance, in Atreya's system the two *humeri*, four wrist bones and two eyes (their outer coat was believed to be cartilaginous, hence they were classified as bones) came to be omitted, but the total number of 360 was made good by increasing the number of face and neck bones. In all three systems the thumb is stated to have three joints or phalanges; Dr. Hoernle points out that a similar mistake is made in the summary of bones given in the Talmud. The Talmudic summary, probably derived from the Greek school at Alexandria, follows very closely the systems of Ancient India. How far the systems of medicine amongst the early Greeks and the Ancient Indians were related cannot yet be estimated; thanks to the labours of Dr. Hoernle we know much more of the systems practised amongst the Indians than amongst the Greeks.

Altogether Dr. Hoernle, although not a medical man himself, has laid medical men under a deep obligation to him by rendering so easily accessible the knowledge and practice of physicians who tended the sick in northern India some centuries before Christ was born.

The Sea-shore, Shown to the Children. By Janet Harvey Kelman. Described by Rev. Theodore Wood. Pp. xi+146; with 48 coloured plates. (London and Edinburgh: T. C. and E. C. Jack, n.d.) Price 2s. 6d. net.

THIS book belongs to the "Shown to the Children" series, and consists of forty-eight coloured plates with a short description written in the simplest possible language of each of the subjects depicted.

From such an immense choice of material it was no doubt difficult to decide what should be described and what left out, but, on the whole, we think that the choice has been a very good one. The chief objection to the book is the use of English names for most of the objects described. Some of these names are unfamiliar to us, while others are surely local. In some cases the generic name has been used, e.g. *Chiton*, *Purpura*, *Pinna*, *Terebella*, &c., and we think it would have been an advantage if this system had been more freely adopted, the English names only being used where there could be no doubt whatever as to their being well-known ones. *Alcyonium* is called "the sea-finger"; in some localities, at least, it is known as "dead men's fingers." *Pleurobrachia* is called "the sea-acorn," but in another well-known book of the sea-shore its English name is given as "the sea-gooseberry." The name "sea-acorn" is usually applied to a barnacle.

This attempt to give English names to objects not