

native mammals. Hence it is hardly surprising that in the structure of its body this animal exhibits marked differences from all the other habitants of the forest." Like the elephant, it forces its way through the thickets. It is consequently equipped with (1) a conical head; (2) short, powerful legs; (3) tough skin; (4) coat of bristles; (5) deep-set eyes. It lives in the marsh. The separating toes prevent sinking; the body is kept from cooling in the water by the thick layer of fat. The bristles dry quickly so that little heat is lost. The boar is omnivorous, hence such and such teeth, hearing, sight. It burrows, hence shape of head, snout, canine teeth, muscles of neck, spinous processes of cervical vertebræ, distribution. Finally the boar has certain relations to man.

This method is followed throughout the book. It is very illuminating. The great difficulty is that in the attempt to explain everything one cannot but feel that the author sometimes resorts to explanations that are merely possible and plausible.

On the whole, however, the book is to be strongly commended to the general reader and to the consideration of the teacher of zoology in secondary schools and colleges. This is the sort of zoology that is to be preferred to pure morphology as an introduction to the science. The selection of such heavy paper and large size of pages seems unfortunate for a textbook, for, because adding to the price of the book, they must restrict its use.

C. B. DAVENPORT.

Handbook on Sanitation. A Manual of Theoretical and Practical Sanitation. By GEORGE M. PRICE, M.D. New York, John Wiley & Sons; London, Chapman & Hall, Ltd. 1901. 12mo. Pp. xii+317; figs. 31. Cloth, \$1.50 net.

The book is of four parts, 'Sanitary Science,' 'Sanitary Practice,' 'Sanitary Inspection' and 'Sanitary Law.'

Part one is stated to be a 'condensed but comprehensive résumé of the best text-books.' It is vastly too condensed to be of use to 'students and physicians.' Thus the question of 'water and water-supply' is disposed of in

seven and a half pages, and nine and a half are given to 'sewage and sewage disposal.'

Carbon dioxide should not be classed as a 'virulent poison,' and the statement that carbon monoxide 'may produce death when inhaled in large amounts' does not do justice to the highly poisonous qualities of that gas.

On page 21 it is written that 'as a rule the height of a room ought to be about one third of the cubic space.'

The error of such an expression is apparent. Possibly the author had in mind the 'cube root' rather than 'one third.'

The chapters on plumbing are good and well illustrated.

Considerable information of value, such as tables of measurements, elementary mensuration, extracts from civil service rules, and tenement-house law, is included in the last half of the volume. As a whole, the book contains material useful to a certain class of inspectors, but it is an error to entitle it 'a manual of theoretical and practical sanitation.'

SCIENTIFIC JOURNALS AND ARTICLES.

The Botanical Gazette for May contains the following articles: The third and last part of the paper by Frederick C. Newcombe on 'The Rheotropism of Roots' appears, and the paper as a whole embodies important results from several years of experimentation. Mr. Newcombe's first paper upon the subject was read before the American Association in 1896. The detailed results of the numerous well-devised experiments cannot be given, but the conclusion of the whole matter may be summed up as follows: Rheotropism is an obscure phenomenon manifested in the curving of roots against a stream of water. The author finds the response not general among plants, there being but twenty sensitive species out of thirty-four tested. Velocities of flow causing a response may range from 0.1 cm. to 500 cm. per minute, though the strongest curves are formed in velocities between 100 cm. and 500 cm. per minute. A remarkable discovery was made in finding the roots sensitive not only at the apex and throughout the elongating zone, but for some distance