MEDICAL BIOLOGY.

Biology, General and Medical. By Prof. J. McFarland. Pp. 440. (Philadelphia and London: W. B. Saunders Co., 1910.) Price 7*s*. 6*d*. net.

PROF. McFARLAND tells us in his preface that "medical science is, in fact, a branch of biology, and should be studied as such." With this opinion we heartily agree, and we were fully prepared to find that the present volume would supply a long-felt want in demonstrating the importance of biological studies from the medical point of view. We still believe that the author has succeeded in doing this, but he has also succeeded in demonstrating the fact that a medical man is not always the most trustworthy authority on biological questions. The plan of the book is interesting, and, to some extent, original, commencing very appropriately with the cosmical relations of living matter and ending with a chapter on senescence, decadence, and death; and the author has successfully avoided the pitfalls of the type-system. Nevertheless, we can hardly share his somewhat curiously expressed hope "that the writing will not be found too technical to be beyond the comprehension of any intelligent reader."

The work is largely a compilation and is of a curiously mixed character, derived partly from text-books—some of a very elementary character—and partly from highly technical writings of a more or less controversial nature. For elementary zoological facts the author appears to have relied largely upon Masterman's "Elementary Text-book of Zoology," and Galloway's "First Course in Zoology," from which numerous illustrations are borrowed. The "New International Encyclopædia" has supplied a superfluity of information upon parasites, arranged zoologically, but we should be sorry to attribute responsibility for the author's statements to any of the works mentioned.

The theory of heredity is treated mainly by means of copious quotations from Herbert Spencer, Darwin, Galton, Weismann, and Adami. The amount of space devoted to the complicated lateral chain theory of the last-named author seems quite out of proportion to that given to other subjects.

We are obliged in justice to our readers to point out that the work contains numerous inaccuracies and misleading statements. Thus, for example, the shell of a tape-worm egg is described as a cell-wall; flagella and cilia are described as rigid protoplasmic threads; the shells of Foraminifera and Radiolaria are said to "find their homologues in the dermal coverings, the limbs, and fins, &c., of the higher animals"; the medusa of Obelia is said to have a water-vascular system, and so on. On p. 103 we are told that the germinal cells have twice the number of chromosomes possessed by the somatic cells, and our astonishment at this statement is only partially abated when we come to p. 189, and find that the author is referring to the doubling of the number of chromosomes which is supposed to take place in the maturation of the germ-cells prior to reduction, and fully realises that the actual gametes have only half the somatic number.

It is, perhaps, of no great consequence to the general reader or to the medical man if the sponges are defined as "characterised by many incurrent openings and only one excurrent opening. Axially symmetric. Sexually reproductive," but this diagnosis is so strikingly inadequate, and to some extent even incorrect, that it might just as well have been omitted, as might that of the arthropods, which are simply defined as "jointed animals." Moreover, it is always possible that the book may find its way into the hands of a student preparing for examination.

In the chapter on the origin of life the author suggests (or borrows the suggestion, it is not quite clear which) that the power of reproduction may be "only characteristic of such forms as shall have already evolved to a certain point." The possibility of organic evolution without reproduction is, we must confess, a new idea to us, and one upon which we do not think, with the author, that "it may not be unprofitable to speculate."

We can only hope that the more especially medical chapters, dealing with blood relationship, infection and immunity, will be found less open to criticism at the hands of medical readers. A. D.

GEOLOGICAL ESSAYS.

Outlines of Geologic History, with especial reference to North America. A Series of Essays involving a Discussion on Geologic Correlation presented before Section E of the American Association for the Advancement of Science, in Baltimore, December, 1908. Symposium organised by B. Willis; compilation edited by R. D. Salisbury. Pp. viii+306. (Chicago: University of Chicago Press; London: Cambridge University Press, n.d.) Price 6*s*. net.

SOME of the best qualified geological writers and workers in America, including Dr. F. D. Adams from the Dominion of Canada, have here brought together their views on the correlation of stratified deposits. The series of essays was originally published in the *Journal of Geology*, and forms a text-book of North American stratigraphy, embodying results up to December, 1908. It is illustrated by Mr. Bailey Willis's "paleogeographic maps" of North America, which are a little difficult to read in their black and white shaded form. Our ignorance of what lies beneath the oceans probably gives a false impression of fixity to the continental boundaries in many cases.

The terminology used has been left to the various authors, so that we may welcome Mr. Willis's retention of "Cambrian" as against Mr. Grabau's "Cambric." Prof. Salisbury, as editor, points a warning finger towards Mr. Grabau's preferences on p. 44; but he is unable to save us from the "Beekmantownian" representative of the "Lower Ordovicic." Should not, by the by, the correct translation of the French "Plaisancien" be, not Prof. Osborn's "Plaisancian" (pp. 216 and 262), but either "Placentian" or "Piacenzan"?

We have the benefit of the views both of Dr. Adams and Prof. Van Hise as to pre-Cambrian classification. The former urges that the break between the Middle and Upper Huronian in America is at least