

Our Bookshelf.

The Memory Factor in Biology: a Sketch of the Unity of Life. By Prof. C. J. Patten. Pp. xiii + 175. (London: Baillière, Tindall and Cox, Ltd., 1926.) 5s. net.

PROF. PATTEN is an enthusiastic supporter of the mnemonic theory of life and heredity which is associated with the names of Hering, Samuel Butler, Francis Darwin, and Semon. His little book is very readable and contains much matter within a small compass. The theses put forward are "that Memory is indeed the Mainspring of Organic Evolution, and also that it is the source and potentiality which unifies both consciously and unconsciously the Psychic side of all living organisms; that vital activities, morphological as well as physiological, are in truth Psychic manifestations; that even the simplest vital activities are quite purposive; that Memory is rhythmic in character; that the processes at work in the evolution both of the Individual and of the Race furnish evidence of being an unbroken chain of Memory Processes, and are, in the main, due to Habit Formation; and lastly, that Memory Processes, when analysed mainly in regard to their physical basis, cast a strong beam of light upon the advocacy of Somatic Inheritance" (p. xii).

One might conclude from this citation that Prof. Patten is a psychobiologist, and indeed he comes very near to that position. On one cardinal point he is quite emphatic, "that unless one postulates the presence of a Psychic side in all living things any attempt to explain Memory phenomena on rational lines would signally break down" (p. xi). But the philosophical position he adopts is apparently that of monism, of the rather vague Haeckelian kind, which is by no means free from the dualistic taint that Prof. Patten has in horror. So it comes about that in elaborating the memory theory he falls back upon the "physical trace" or "engramm" conception of Richard Semon: he tries, in other words, to translate what is essentially a psychical activity into its presumed physical correlate.

For our own part we hold with James Ward that a memory theory of heredity will not work unless based frankly upon a psychological theory of life, and freed from the mechanistic preconception of physical traces. But it must be confessed that no one as yet has successfully worked out such a theory.

E. S. R.

Industrial Fermentations. By Prof. Paul W. Allen. Pp. 424. (New York: The Chemical Catalog Co., Inc., 1926.) 5 dollars.

PARAPHRASING the author's statement in his preface, this book is not intended for those who require special knowledge on the subjects it deals with, but its intention is "to bring together in a general way some of our present information concerning the application of micro-organisms to industry." Taking this fully into account, after having read the book, we must confess ourselves disappointed. The text is divided into thirty-one

chapters, each dealing with some special applications of micro-organisms to industrial processes. To those who are acquainted with only some of these processes, the task of giving even a general account of so wide a field in so small a compass will appear at once Utopian.

The book contains useful information, but a perusal of the text justifies our criticism. Under "Leather and Tanning" the processes preceding the tanning are described briefly but accurately, whilst tanning itself occupies but twelve lines; and here there is no mention of the use of tannin extracts, or of chromium compounds, formaldehyde, etc., treatment of the hide or skin with a mixture of fish and other oils only being referred to. Bread-making occupies forty pages and gives some useful outlines of the processes employed. We are left in doubt, however, as to the meaning of the following sentences (p. 133): "The particular kind of yeast which is of interest to the bread maker is *Saccharomyces cerevisiae*. . . . These organisms are divided into three groups: bottom yeasts of German beers, top yeasts used in making English beers, and distillery yeasts. . . . These are the yeasts generally used in the manufacture of bread." If the author refers to all three, his statements are incorrect. Nor do we obtain any further help in this connexion in the chapter on "Bread Yeast Manufacture" (p. 311). The chapter on the manufacture of industrial alcohol introduces much matter of a purely academic character, but the text will be of little assistance to the general reader who wishes to gain an insight into the industrial processes. A useful feature of the book is the appendage to each chapter of references to the literature.

A. R. L.

Marine Works: a Practical Treatise for Maritime Engineers, Landowners and Public Authorities.

By Ernest Latham. Second edition, considerably enlarged. Pp. xii + 223. (London: Crosby Lockwood and Son, 1926.) 16s. net.

THE second edition of this work consists of two parts, the first of which is identical with the earlier edition and the second is made up of three additional chapters. We have not been able to find any alteration in the first part, and it is accordingly open to the same criticisms as were expressed in the review which appeared in NATURE of Mar. 3, 1923 (p. 285).

As regards the additional matter, Chap. x. deals with quays and jetties in tidal waters and is obviously supplementary to Chap. ix. on deep-water quays. It consists of certain somewhat disconnected jottings on costs and valuations and modern practice in design. It contains, however, a timely and salutary admonition on the economical aspect of the selection of a site for the exploitation of a river frontage, and points out the advantages accruing from the use of runways and other modern transportation facilities. There is a note of a method advocated by the author for the determination of the actual volume of dredged material in computing payments to a dredging contractor. This point crops up again in the next chapter but