Mrs. Fisher : or the Future of Humour. By Robert Graves. Pp. 95. *Diogenes : or the Future of Leisure.* By C. E. M. Joad. Pp. 102. *Romulus : or the Future of the Child.* By Robert T. Lewis. Pp. 95. *Hibernia : or the Future of Ireland.* By Bolton C. Waller. Pp. 96. (To-day and To-morrow Series.) (London : Kegan Paul and Co., Ltd. ; New York : E. P. Dutton and Co., 1928 and 1929.) 2*s.* 6*d.* net each.

AN interesting literary feast is that provided in the " To-day and To-morrow " Series. A hundred 6 in. × 4 in. pages give no scope for exhaustive treatment of any subject, but the writers selected are doubtless those most capable in the main of doing justice within the defined limits. It is unsafe to generalise, but these four, out of a library approaching one hundred volumes, may be taken as representative. The chief titles lend an initial quaintness. One of the four, however, " The Future of Humour ", is deplorably lacking in this quality ; the three other selected works are entirely convincing. Mr. Joad considers the " Future of Leisure " in sympathetic style and laments the destruction of the countryside. Mr. Lewis in his " Romulus " crystallises the modern attitude towards child education. Both Mr. Waller in his thoughtful " Hibernia " and Mr. Joad may illuminate Mr. Graves in regard to true humour : " Good taste is hard to come by and easy to lose ", writes Mr. Joad, and Mr. Waller depicts the cynic admirably, to whom he attributes the view that " any man who has his hand on the tiller must also have his hand in the till ". Will the future establish the accuracy of the views expressed by these augurs in their engaging theses ? P. L. M.

The Propionic Acid Bacteria. By C. B. van Niel. Pp. viii + 187 + 4 plates. (Haarlem : J. W. Boissevain and Co., 1928.) 3 dollars.

THE increasing industrial importance of propionic acid for the preparation of esters and ketones (methylethyl- and diethyl-ketone), and for application in the cellulose industry, led the author to submit the group of propionic acid bacteria to a thorough re-investigation, the results of which are contained in this monograph.

These organisms occur in milk and other dairy products and are best obtained from Emmentaler cheese (Gruyère), in which they are responsible for the formation of the characteristic ' eyes '—bubbles filled with carbon dioxide produced as the result of the propionic acid fermentation. The bacteria, for which the author, following Orla Jensen, adopts the generic name *Propionibacterium*, are facultative anaerobes, and their characteristic chemical effect is the fermentation of lactic acid and glucose, and in some cases the disaccharides and the polyhydric alcohols, with production of propionic, acetic and carbonic acids. Acetic and carbonic acids are produced in molecular proportions from lactic acid, whilst the molecular ratio of propionic to acetic acid is about 1·8, whereas in the fermentation of glucose this ratio rises to 2-4, and from glycerol almost pure propionic acid is produced. The author considers that the manufacture of propionic acid by the action of these bacteria on glucose is a feasible proposition, the great drawback being the slow rate of fermentation. His monograph will supply any prospective manufacturer with a large amount of information on which to base his process.

Dairy Bacteriology. By Prof. Bernard W. Hammer. (Wiley Agricultural Series.) Pp. xii + 473. (New York : John Wiley and Sons, Inc. ; London : Chapman and Hall, Ltd., 1928.) 25*s.* net.

DR. HAMMER'S book covers considerable ground in an interesting and comprehensive manner, and will doubtless be of great use to students of dairy bacteriology and dairy husbandry. It deals with the normal and abnormal microbiology of milk, cream, butter, and cheese, the methods of preservation of dairy products, and tests for quality of milk and cream. Sections are devoted to the bacteriology of evaporated, sweetened, condensed and powdered milks, ice cream and fermented milks (Bulgarian butter-milk, Acidophilus milk, etc.). The subject of butter cultures (' starters ') is well treated, and the importance of the presence of the ' associated ' citric acid fermenting organisms (*Streptococcus citrovorus* and *S. paracitrovorus*) in addition to the lactic acid bacteria, is stressed.

An important section of the work is devoted to the spread of human disease through milk and its derivatives, both with regard to diseases in which the infecting virus comes primarily from the producing animals (bovine tuberculosis, Malta fever) and those in which the milk or milk products are contaminated from human sources (typhoid, diphtheria). In the former connexion the relationship between *Brucella abortus* and *B. melitensis* is gone into at some length, the two organisms being regarded as varieties of the same species and producing similar types of human infection.

R. ST. J.-B.

Cours d'électricité industrielle à l'usage des élèves-ingénieurs : leçons professées à l'Institut industriel du Nord. Par A. Defretin. Tome 1 : *L'Électricité dans la science de l'ingénieur.* Pp. xi + 582. (Paris : Hermann et Cie, 1929.) 95 francs.

THIS treatise on industrial electricity will be completed in three volumes. The first volume is divided into two parts. In the first part the general properties of fixed electrical circuits and of electrical machines are described. The style of the author is admirably clear and he takes great pains to simplify the theory. He lays stress on the importance of the student examining his equations to see that they are homogeneous, a point which is frequently neglected by industrial writers. He points out that permeability is a double valued function and explains why engineers in their formulæ adopt a constant value for it.

Instead of the ' watté ' and ' dewatté ' formerly commonly used by French writers, we have ' active ' and ' reactive ', which we think much better. Very clear line diagrams are given to illustrate the working of dynamos and alternators. Photographs of parts of actual machines are kept quite distinct from the text and are shown at the