

lightened, and the present unfortunate and unnecessary state of affairs significantly improved, by a recently published work. This is the "Manual of Comparative Psychology" edited by Prof. Gustav Kafka, of Munich, to which twelve psychologists, including himself, have contributed. The work itself is divided into twelve sections, each section constituting a specific department of psychology and being written by a specialist in that department. These sections are grouped, somewhat unequally, into three groups, each group corresponding to a volume of some five hundred pages. The three groups are: The Evolution of Mind (Animals, Primitive Mankind, and Children); the Functions of the Normal Mind (Language, Religion, Art, Society, and Vocational Psychology); and the Functions of the Abnormal Mind (Psychopathology, Sex, Dreams, and Criminals).

This list sufficiently indicates the scope of the work. It is easy to find omissions: law, industry, and morality are inadequately represented, for example, while the editor himself deplors the absence of a section on the psychology of science, an omission due to his inability to find any one to write the section. It is easy also to find fault with the arrangement of the subject-matter. To mention one point only, it is surely not justifiable to give the impression that sex and dreams are abnormalities. One might again stress the occasional overlapping, the occasional unevenness of treatment and of point of view, and the more than occasional stodginess of manner, due largely to excessive compression on the one hand, and to theoretical incoherence on the other hand. But this is a pioneer work and must be judged leniently. If the reader brings an active and organising mind to its perusal, then the defects will be neutralised and the solid qualities of the work appreciated. For this reason one hesitates to recommend the work to the general reader, above all to the general reader who knows little or no psychology, and to whom an overloaded and viscous style is repellent. To those better versed in psychology its comprehensiveness, its accuracy, and its excellent bibliographies will make their appeal. They will be grateful for the compact account of the psychology of language. They will be glad to have Sante de Sanctis' views on dreams, inasmuch as they are the views of a man who began the study of dreams before Freud published his "Traumdeutung"; and they will be appreciative of and grateful for much else in this timely work. The fact that it is written in German will constitute but one more reason for regret that an international language for science has not long since made the peculiar aptitude of the German for this type of work the common property of mankind.

Our Bookshelf.

Handbuch der Pflanzenanatomie. Herausgegeben von Prof. K. Linsbauer. II. Abteilung, 1 Teil: Thallophyten. Band 6: Bakterien und Strahlenpilze. Von Prof. Dr. Rudolph Lieske. Pp. iv + 88. (Berlin: Gebrüder Borntraeger, 1922.) 4s. 6d.

THE purpose of this handbook, which is to be comprised in a series of monographs by specialists in the various branches of the subject, is to give, in brief compass, a critical presentation of the present state of our knowledge of plant anatomy and cytology. In the volume before us, Prof. Rudolph Lieske, of the University of Heidelberg, has brought together, in a commendably brief and useful form, a critical digest of what is at present known of the morphology of the bacteria and ray-fungi (Actinomycetes). The first part of the book contains an account of the bacteria. In reference to the nuclei and nuclear structures which have been so frequently described, it is concluded that, although there can be no doubt about the existence of minute granules with nuclear characteristics, the presence of true nuclei in the bacteria has by no means been proved. The author has some interesting observations upon the recently described symplastic stage in bacterial development, and on the so-called sexual reproduction of bacteria. Among other topics dealt with are pleomorphism and variability, filtrable viruses, and mycobacteria.

In the second part of the volume the ray-fungi are dealt with. In discussing the systematic position of the group it is pointed out these organisms have certain characteristics in common both with bacteria and fungi, and that they must be looked upon as an independent group standing between the two. The various forms of the Actinomycetes present an astonishing variability both in morphological and physiological peculiarities, and the characters which have been used by various observers to discriminate species are so inconstant that no dependence can be placed upon them.

A literature list accompanies each part of the work, and there is a good index.

Mathematics and Physical Science in Classical Antiquity.

By D. C. Macgregor. Translated from the German of J. L. Heiberg. (Chapters in the History of Science, II.). Pp. 110. (London: Oxford University Press, 1922.) 2s. 6d. net.

THIS volume gives a general survey of the science of classical antiquity, laying special stress on the mathematical and physical aspects. It opens with an account of the Ionian natural philosophy, pointing out that science is the development of early attempts of man to see his way in the world outside. Next there is a chapter on the achievements of the Pythagorean school, followed by two others on the progress made in the fifth century B.C. One of these is on mathematics, still under the influence of Pythagoras, and the other on medicine, which then reached a level not surpassed before the Alexandrian age. The work of Plato and Aristotle is adequately dealt with, while the longest chapter in the book is assigned to Euclid, Archimedes, and the Alexandrian school. In the period of decline which followed (second and first centuries B.C.)