

6000 yards, and 17.5 inches at 24,000 yards. Readers interested in the subject will find in the book many equally instructive comparisons, illustrating the great strides made during recent years in the engineering of ordnance.

W. H. W.

VEGETABLE PROTEINS.

The Vegetable Proteins. By Dr. Thomas B. Osborne. Pp. xiii + 125. With Bibliography. [Monographs on Biochemistry. Edited by Dr. Aders Plimmer and Dr. F. G. Hopkins.] (London: Longmans, Green and Co., 1909.) Price 3s. 6d. net.

THE extent to which the knowledge of the proteins has increased during the last decade is abundantly witnessed by the fact that this is the fourth in this series of biochemical monographs which is devoted to them. Dr. Osborne is undoubtedly the leading authority on the chemistry of the vegetable proteins, and much of the matter considered in this essay was originally made known by his researches. The vegetable proteins are of importance, not only on their own account, but also because of their analogy to the animal proteins, which are being so closely studied at the present time. For this reason, this monograph will be welcomed by animal physiologists.

The author has chosen to treat the subject broadly, and to give a general discussion of the chemical and physical properties of vegetable proteins rather than to describe the individual proteins. Whilst this method of treatment will commend itself to many, it must not be forgotten that there is nothing fundamental to distinguish vegetable from animal proteins as a whole, and there is a danger of setting up some artificial distinction between the two classes.

A clear distinction is made between the proteins of the plant embryo and the reserve proteins of seeds, which so far have been the materials chiefly examined. The reserve proteins are all very characteristic and yield large proportions of some particular amino-acid when hydrolysed. As Pfeffer has pointed out, they are to be regarded as excretory products, for they can take no further part in metabolism, and are lost to the plant. The reserve proteins are far more stable towards chemical reagents than are the living tissue proteins; this property has enabled them to be more drastically purified than most of the proteins of animal origin.

Perusal of the monograph will very rapidly convince the reader of the great experimental difficulties attending work in this field, partly on account of the great tendency to form colloidal precipitates which are difficult to manipulate, and partly because no absolute methods are at present known which enable one protein to be separated from another.

Although, on the whole, it must be admitted we are only just beginning to gain some insight into the chemical nature of proteins, yet a work of this kind, like the other monographs which have preceded it in the series, is so stimulating, and suggests so many possibilities of research, that it requires no other justification for its issue, and it should be in the hands of every earnest student of biochemistry.

We could have wished the author to have been more

exhaustive in his treatment, and to have included, for example, some discussion of Dr. H. T. Brown's recent work. The inter-relationship of the proteins of wheat likewise deserves much fuller discussion.

In conformity with the editors' plan, a bibliography of no fewer than 608 papers, arranged alphabetically according to the authors' names, has been added. The publishers may be congratulated on the improved cover. A further advantage in the style of the series is the possession of the wide margins, which enable the reader to amplify the text by his own notes.

E. F. A.

MORPHOLOGY AND MEDICINE.

Clinical Commentaries deduced from the Morphology of the Human Body. By Prof. Achille De-Giovanni.

Translated from the second Italian edition by John Joseph Eyre. Pp. xii + 436. (London: Rebman, Limited, 1909.) Price 15s. net.

THE object of the author of this work is to lay anew the foundations on which the principles and practice of the physician's art are based. The new foundations are the principles of morphology—morphology as expounded by Haeckel, Gegenbaur, and other great anatomists. Like all enthusiastic reformers, as one may infer from the following passage (p. 206), he has evidently suffered considerably at the hand of his Italian confreres:—

"The academicians (I call them academicians because, according to their way, they have made known that the epithet of colleague is not suitable)—the academicians will not demean themselves by accepting these stupid things. Then there are those who, posing as reforming geniuses, let fly a smile of compassion, and others who, from the Olympus of the hypercritical criticism of which they seem specialists, qualify these things in the presence of the credulous public as works of magic, because they do not seek to comprehend them."

By way of apology for Prof. De-Giovanni's medical confreres, the reviewer must confess that a full comprehension of these new doctrines is not an easy matter. As in some of the more recent novels of Henry James, one is puzzled to know whether the obscurities are due to a lack of sense on the part of the reader or of the writer. At least, from the following passage in the preface, in which Prof. De-Giovanni explains his purpose—and there are passages equally obscure on every page of the book—it is evident that the translator has found an equal difficulty, and, apparently, has abandoned as hopeless the task of making the meaning of the original clear:—

"Therefore I think that every clinical investigation should be conducted on the basis of the individuality morphologically verified, for every other verification of the facts and phenomena in relation to doctrine and practice in their turn in every concrete case individualise themselves, or, to speak better, present themselves, not such as they may be according to the data of general biological experience, but such as they must be in the morphological type of the individual under examination."

Instead of speculating on the exact meaning of the passage just cited, it will be more profitable to follow Prof. De-Giovanni into his clinic, attached to the Uni-