

AGRICULTURAL BOTANY FOR EXTENSIONISTS.

*An Elementary Text-Book on Agricultural Botany.* By M. C. Potter, M.A. Small 8vo. Pp. 250, with ninety-nine illustrations in the text. (London: Methuen and Co., 1893.)

THIS is a very good little book up to a certain point, but it is neither better nor worse than the general run of elementary works on botany, in which there is an attempt to cover the whole field. The physiological and anatomical parts are the best; yet we see no reason why the title should be "Agricultural Botany." Indeed, we fear the author has been a little too ambitious; laudably ambitious, perhaps, though wanting the practical knowledge necessary to achieve his object—not that it is one within easy reach. This is an extract from his preface: "My aim in these few pages has been to lay a foundation which may serve to guide the future operations in the field, and form a basis for intelligent trial and experiment. In these days of competition and struggle for existence, every little tells, and the farmer who, understanding, can apply his knowledge, is more likely to succeed than one who labours without the advantage of this knowledge."

No doubt a man would not necessarily be a worse farmer because he possessed some knowledge of vegetable physiology, nutrition, or even classification, and he might possibly derive a more intelligent enjoyment—if there be any left—from his occupation; but if he knew all the botany in Mr. Potter's book, and all that is not in his book, we doubt whether he would be any nearer making farming pay, which is the main object, after all, of the majority of those who engage in the pursuit. Success in farming does not depend so much on scientific knowledge as on practical knowledge. Science has doubtless done much to advance farming—especially mechanical science; and we should be the last to discourage making botany a subject of study for the budding farmer. But we think the macroscopic side is too much neglected in favour of the microscopic side. For instance, we sought the distinctions between rye (*Secale*) and barley (*Hordeum*); but although the anatomical structure of the stem of the former is described and illustrated in some detail, it is not included in the chapter on grasses where the floral structure is described. In the description of the natural order Leguminosæ, it is stated that the fruit is always composed of a single carpel; that the leaves are never opposite; and that the seeds are always destitute of endosperm. It is unnecessary to give examples disproving these statements. On the next page the flowers of the sub-order Cœsalpinæ (*sic*) are said to resemble the Papilionacæ, but to differ in having the standard inside the wings. There is one element of truth in this. The nature and extent of the information given under some of the genera of Leguminosæ may be gathered from the following: *Sarothamnus*—the broom is common on sandy waste lands. *Ononis*—a small plant with pink flower, commonly known as the rest harrow. There are two species, one with spines and one without. Looking under *Pisum*, we discover that *P. arvense*, the field pea, is not mentioned. Under *Vicia*, the tare, *V. sativa*, is described as having a weak stem, partly erect, and purple flowers, often in pairs; with the

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further information that it is often cultivated. In short, this part of the book needs thorough revision before it can be considered as useful or satisfactory. At half a dozen other places where we opened the pages, we noticed the same incompleteness and want of precision.

THE PRINCIPLES OF HOSPITAL CONSTRUCTION.

*Healthy Hospitals: Observations on some Points connected with Hospital Construction.* By Sir Douglas Galton, K.C.B., F.R.S., &c. (Oxford: The Clarendon Press.)

THE object of this book, as its author, Sir Douglas Galton, tells us, is to bring together the principles of hospital construction which now lie scattered through various publications, and to show what points are essential to health in hospital establishments. This task has been admirably fulfilled by the author, and we cannot but recognise the skilful manner in which, from chaos he has brought together and condensed in the small compass of 282 pages such a vast amount of useful information.

Sir Douglas Galton has already a high reputation for the application of scientific methods to the construction of barracks and hospitals. Few men have had larger opportunities of acquiring such knowledge in the public service, and very few have been able to investigate the questions involved so thoroughly as the author of "Healthy Hospitals," whose zeal has induced him to visit every place, as well in America as on the continent, where he could obtain sound practical knowledge on the subject by personal observation and inquiry. We therefore gladly welcome this book, which is the outcome of his great experience.

In the preliminary chapter Sir Douglas Galton enters very briefly into the historical part of his subject, and dates the great improvement in the construction of hospitals from the close of the Crimean War, the American War of Secession, and the Franco-German War of 1870-71.

He subsequently lays down the first principles on which the successful treatment of disease depends, the selection of site, the conditions of air supply, of warming, lighting, and water supply. Many of the rules laid down are of course not new, but they are nevertheless valuable, and bear to be repeated and emphasised.

The rules to be followed are defined so clearly and concisely, that it becomes a simple matter to apply them in a practical form. The chapter on site is one that will at a glance show the importance of the subject, and at the same time the difficulties it often has to contend with. Many errors are pointed out which have been committed in the selection of plans for some of the large hospitals in England and on the continent. This is one of the most important and best chapters in the work before us.

In the chapters on the constitution and movements of the air, and on ventilation and warming, which are dependent in a great degree on these changes, the author enters very fully into the consideration of these important subjects. He accepts De Chaumont's standard as the