

calculus course for engineers. The preliminary work appears to have been selected solely with this end in view.

It is rather a formidable-looking volume, containing nearly 500 pages; and it would be more readable if there was some variation in the type (in itself very good) employed. There are many signs of individuality in the methods of treatment and in the choice of subject-matter; the examples are particularly stimulating, and on this account alone teachers would do well to examine it. The sections on periodic functions and harmonic analysis deserve a special word of praise.

(5) This small text-book contains in a compact form the elements of practical drawing. The author writes from the point of view of one who has realised from industrial work the importance of accuracy in the workshops, and he insists throughout on the need of close attention to conventional notation and lucidity of expression. His diagrams are clear, and his explanations are couched in simple language.

For most students descriptive geometry is not an easy subject; it requires a power of visualising, which comes only after long perseverance and practice. Such a book as this seems to us to give as much assistance to the student as he can receive from outside; a grasp of the subject can only be obtained by his own diligence.

#### OUR BOOKSHELF.

*La Radiologie de Guerre. Manuel Pratique du Manipulateur Radiologiste.* By G. Massiot and Biquard. Pp. viii+224. (Paris: A. Maloine et Fils, 1915.) Price 3.50 francs.

A NEW impulse has been given by the war to those who desire to say over again what has been often and well set out already in text-books dealing with the practical applications of X-rays. Nevertheless, it must be admitted that extraordinary inventive effort has been called for of late regarding the design of new apparatus to meet special and unusual conditions; and, in so far as a new book on the subject deals conscientiously with this fresh phase, it should prove useful in practice.

The work under review suffers somewhat from the defect that the authors are concerned with the appliances designed and made by one firm only. But if in one respect the book has the limitations of an elaborated trade catalogue, it also has the great merit of clearness and simplicity. It contains a large amount of general information relating to X-ray technique which should not only be invaluable to the beginner, but serve also as a guide to all who have to organise X-ray departments for war purposes. For instance, the device for the wet racking of plates described on page 136, at first sight a small

matter, assumes importance when many negatives have to be developed and examined rapidly. The effectiveness of the method recommended has, in fact, been proved at one of the military hospitals in this country, where it has been adopted since the outbreak of war and where sometimes 200 plates have to be dealt with in a day.

The book is full of useful detail of this sort, and more than one hundred pages are devoted to the question of the localisation of imbedded foreign bodies. The whole elementary ground of practical radiography is fairly covered, although no mention is made of stomach examinations and the technique of what may be called the "higher X-ray diagnosis." There are illustrations of folding couches, portable X-ray outfits, and so on, as well as ambulances that are complete radiographic departments on wheels.

Within the limits stated in the early part of this notice the book may be thoroughly recommended.

C. E. S. P.

*Laboratory Manual of Horticulture.* By Prof. G. W. Hood. Pp. vi+234. (Boston and London: Ginn and Co., 1915.) Price 4s. 6d.

A COURSE in horticulture is by no means easy to devise, but it is certain that so far as the craft of the horticulturist is concerned the best place to learn it is in the garden, the potting-shed, and the frame-yard: these must constitute the laboratory. Hand-in-hand with training there should go work in botany, especially in vegetable physiology, in elementary chemistry, and physics, with the double object of inculcating scientific method (which should not be ignored in the garden) and of education in a knowledge of how plants grow.

Judged by this standard this "Laboratory Manual of Horticulture" falls lamentably short. It consists largely of observations on buds, corms, and fruits, and of experimental exercises with seeds, all of which fall into the realm of horticultural botany, and of exercises on making cuttings, grafts, buds, grafting-wax, fungicides and insecticides. It is intended as a general course in horticulture, but is really a series of exercises which have a more or less direct bearing upon practical plant-growing. It is true that it is recommended that after fundamental principles are mastered practice should be given in pruning and spraying, but even if this is done, a course which does not include tillage operations, potting, seed-sowing, planting, propagation (apart from the mere making of cuttings, etc.), watering, heating, ventilation, pollination, etc., cannot properly be called a course in horticulture.

After all, it is mainly with the title that we quarrel. The book cannot fail to prove suggestive to the teacher, or the working of the exercises profitable to the taught. The exercises are interleaved with blank pages for the student's notes and report, but we do not quite like the temptation to "copy" which the illustrations afford when directions are given to draw something.

F. J. C.