

Our Bookshelf.

Leçons de géométrie projective. Par Prof. Federigo Enriques. Traduit de la quatrième édition italienne par Prof. P. Labérenne. Pp. iv + 430. (Paris: Gauthier-Villars et Cie, 1930.) 60 francs.

THE present French translation from the fourth edition of these lessons on projective geometry by the eminent Italian mathematician-philosopher to a certain extent meets a long-felt want. Perhaps the most striking feature of the book is the remarkably clear and consistent way in which the subject is developed from its logical foundations solely by means of graphical methods, based upon five purely geometrical postulates together with a sixth which is the geometrical equivalent of Dedekind's continuity theorem. Although so much stress is laid upon projective constructions, the relations between projective and metrical geometry are expounded in the text whenever occasion arises, whilst the connexions with group theory and algebraic geometry are touched upon in several appendices.

As regards the detailed arrangement of the book, it is sufficient to state that the first five chapters deal with definitions, fundamental propositions and preliminary theorems, the law of duality, the postulate of continuity, and Staudt's theorem. Then follow chapters on projectivities and involutions between forms of the first and second ranks, with applications to conics, their projective and focal properties, and to cones, ruled quadrics, and twisted cubics. A chapter on projectivities between forms of the third rank completes the work. The perusal of this book is sure to afford great pleasure to all interested in the development of projective geometry.

Testing Radio Sets. By J. H. Reyner. Pp. vii + 178 + 8 plates. (London: Chapman and Hall, Ltd., 1930.) 10s. 6d. net.

THIS book gives a series of suggestions for the tracing of faults in the simpler types of receiving apparatus. It is not likely to be of assistance to qualified radio engineers; but, as there are few books on the subject, it will be useful to amateurs with a limited amount of technical knowledge. The author's discussion of the effects produced in a high frequency choke coil is correct, provided that it is not in parallel or virtually in parallel with other components of the receiver. The conclusion he draws (p. 59), that it acts like a small capacitance which has the property of allowing direct current to pass through it, is too vague. The advisability of discharging the condensers in an eliminator or mains-driven receiver is pointed out. The way he suggests, however, of placing the metal part of a screwdriver across the terminals of the reservoir condenser, is open to criticism, for such violent discharges have been known to damage the condenser. It would be better to discharge it through a resistance.

The part of the book dealing with 'laboratory testing' seems to be a brief outline of the measure-

ments that can be made in the author's own laboratory. In places it would be well if the author had been more explicit. On p. 23, for example, we read, "we will assume that this circuit functions, but in a poor manner". There are many different 'poor manners' in which a circuit can function. The chapter on American test data will be useful.

Growing Tree and Small Fruits. By H. B. Knapp and E. C. Auchter. (The Wiley Farm Series.) Pp. xiii + 510. (New York: John Wiley and Sons, Inc.; London: Chapman and Hall, Ltd., 1929.) 15s. net.

THE needs of practical fruit-growers and students are here specially catered for by providing them with a text-book which can also be used as a reference volume for points of detail. To this end, an attempt has been made to render the various sections of the book complete and independent, in order that information unnecessary for the individual may be passed over without fear of losing other points germane to the question in hand. Each of the main fruits is dealt with separately, from harvest to harvest, marketing operations being included; and in addition special chapters are devoted to wider problems of more general application, including, amongst others, orchard establishment, pruning, propagation, thinning fruit, and the control of diseases and pests. Here again, where necessary, the application of the problem to particular fruits is indicated individually and adequately indexed. The scientific names of some species of the common fruits are appended; and hints for practical work, given at the end of each chapter, increase the usefulness of the volume for students' class work.

The Journal of the Institute of Metals. Edited by G. Shaw Scott. Vol. 43. Pp. xii + 838 + 40 plates. (London: Institute of Metals, 1930.) 31s. 6d. net.

STUDIES of the influence of gases on cast metals occupy an important place in this volume. Both hydrogen and sulphur dioxide cause unsoundness in copper and bronze, and removal of them by means of nitrogen or some other insoluble gas, or by melting under reduced pressure, has been found to improve the quality of the ingots or castings. The four papers on this subject all owe their origin to the Non-Ferrous Metals Research Association, whilst the same body is responsible for the work by R. Genders on the increased resistance to corrosion produced by the addition of small quantities of aluminium to brass, this being one of a number of instances now known of the protection of an alloy by an external film consisting mainly of aluminium oxide. A communication by C. F. Elam is interesting as recording the progress of solid diffusion of zinc through brass by the application of X-ray methods. A lengthy paper by T. A. Rickard on the early use of the metals led to a discussion in which archæologists as well as metallurgists took part. The scope of the Institute of Metals is wide, and its journal is an invaluable source of information concerning the progress of metallurgy.