

and so are led to the areas of polygons and the volumes of polyhedra.

In Chap. xiii. a return is made to axiomatics ; an axiom of continuity is added, and it is shown how this enables us either to drop the congruence axioms or else to weaken the parallel axiom and drop some of the congruence axioms ; both schemes suffice for Euclidean geometry and are consistent and complete. By way of appendix we are given an outline of a different method of procedure in which congruence is taken as the only undefined relation between points, and finally an excursus on non-Euclidean geometries.

We congratulate the author and the Cambridge University Press on an excellent piece of work.

Our Bookshelf.

- (1) *Bolles Lee's Microtometist's Vade-Mecum : a Handbook of the Methods of Microscopic Anatomy.* Ninth edition, edited by Prof. J. Brontë Gatenby and Dr. E. V. Cowdry. With the collaboration of Dr. W. R. G. Atkins, the late Prof. Sir William Bayliss, J. Thornton Carter, Dr. Robert Chambers, Dr. W. Cramer, the late Dr. C. de Fano, Dr. Helen Pixell-Goodrich, Dr. J. G. Greenfield, Dr. Reginald Ludford, G. Payling Wright, and Dr. F. W. Rogers Brambell. Pp. x + 714. (London : J. and A. Churchill, 1928.) 30s. net.
- (2) *Histological Technique : a Guide for Use in a Laboratory Course in Histology.* By Dr. B. F. Kingsbury and Dr. O. A. Johannsen. Pp. vii + 142. (New York : John Wiley and Sons, Inc. ; London : Chapman and Hall, Ltd., 1927.) 11s. net.

(1) THE new edition of this indispensable work has been enlarged, new sections have been added, some of the older matter has been omitted, and the names of new collaborators appear on the title-page. Full accounts are given of the technique of tissue cultivation and of micro-manipulation.

More care in editing would remove a few inconsistencies we have noticed. Thus a method for ripening hæmatoxylin solutions is described as having been "re-invented lately," the reference given being dated '1912.' Both the spellings 'methylen-' and 'methylene-' blue occur in text and index ; in the latter they are separated, and the pages referred to are for the most part distinct. In fact, the all-important index would be the better for drastic revision, for as it stands it may be necessary to look up several headings to obtain the whole of the information on a particular subject. A good instance of this is 'Acid Fuchsin.' For full information on the uses of this dye several other headings must be consulted (*e.g.* Fuchsin, Acid ; Säurefuchsin ; Rubin S., etc.), as the page references given under each are for the most part different ; *i.e.* they are not cross-references.

(2) The second book is essentially a guide to the fundamental methods of normal and pathological

histology as required by the medical and the biological student. Fixation, sectioning, staining and mounting, the microscope, and special methods for blood, muscle, nerve, etc., are all dealt with, and a final section gives methods for the investigation of invertebrates in general. The information appears to be adequate and accurate, and the book should serve the purpose for which it has been written.

R. T. H.

The Potato : its History, Varieties, Culture and Diseases. By Thomas P. MacIntosh. Pp. xvi + 264 + 11 plates. (London and Edinburgh : Gurney and Jackson, 1927.) 12s. 6d. net.

POTATOES constitute one of the few foodstuffs in which Great Britain is still self-supporting, and great advances have been made in recent years on various problems relating to their culture. The growing menace of disease has directed attention to the classification and identification of the many varieties used in commerce, and, more recently, work in virus disease indicates a reason for the well-known degeneration of stocks. Questions of marketing and synonymous nomenclature are purposely omitted from this volume, but historical notes on the chief breeders and the varieties introduced by them are included.

Perhaps more than with any other crop, it is essential for all workers with potatoes, from whatever aspect, to have a thorough knowledge of the many varieties, and special attention is therefore devoted to their classification and to details of intervarietal differences. These are based on type varieties of the main groups, and the variations in different parts of the plant are clearly and comprehensively set forth and illustrated. The tubers are classified in tabular form, based primarily on colour.

Under modern methods of cultivation, potatoes are usually grown between two cereal crops to gain the full benefit of their cleaning value, and they are the best of all crops in their response to artificial fertilisers. As food they are chiefly valued for their high carbohydrate content, the proteins usually being ignored, but care is needed if they are fed uncooked to livestock. Industrially, they are widely used for alcohol production (giving a residual cattle food), potato starch and flour, dextrine, glucose, and for dried potatoes. The danger of attack by plant and animal pests is naturally great in such a universally grown crop, and virus, fungus, and bacterial diseases call for the utmost efforts of pathological research workers. Descriptive notes of some common commercial varieties, and a glossary of the more technical terms, conclude this most useful summing-up of modern work on potatoes.

The Fundamentals of Chemical Thermodynamics. By Dr. J. A. V. Butler. Part 1 : *Elementary Theory and Applications.* Pp. xi + 207. (London : Macmillan and Co., Ltd., 1928.) 6s.

THE author believes that the student of chemistry should become acquainted with thermodynamical methods at an early stage, and his book affords an elementary introduction to the underlying