

AUTOGENOUS WELDING. *A Practical Manual* by R. GRANJON and P. ROSEMBERG: *Translated by D. RICHARDSON. 5th Edition. 244 pp. (Charles Griffin and Co., Ltd., 1917.) Price 5/- net.*

To many chemists it must be a matter for surprise that a subject such as the autogenous welding of metals should merit separate treatment in a volume of the size of the book under review. They will probably not be aware of the importance to which this branch of the metal workers' craft has attained in recent years, or of the wide field which has been opened to it. According to a recent statement, the consumption of oxygen in Great Britain alone has risen from about 30,000 cubic feet per day in 1907, to 1,000,000 cubic feet per day at the present moment, and of this stupendous amount it is estimated that at least 80 % is consumed in the autogenous welding of metals and in the allied industry of metal cutting by means of the oxy-acetylene flame. To some extent, the present volume is misnamed, because the authors are frank partisans of one form of welding, namely, by the aid of the oxy-acetylene flame. In consequence, they pay but scant attention to other systems, which should be covered by the title, such as welding with other blow-pipe flames, Thermit welding, electric welding, etc. In this attitude they are partly justified by the relative importance of the various methods in use, but their case for oxy-acetylene does not need, and is not strengthened by, such misstatements as that "welding by oxy-coal gas has not, nor can it have, serious application" (p. 15). It is a pity that the authors have not devoted more attention to some of the recent developments of electric welding which appear to bear promise of much progress in the near future.

Regarded as an introduction to the art of oxy-acetylene welding, this book is of very considerable value. The expert welder in any one metal is not likely to find much to help him in his particular branch: nor is this to be expected of a treatise on a subject in which practice counts for so much and theory for so little. The book will be most valuable for those who are unfamiliar with the subject, but who are contemplating themselves taking up welding or of installing a welding department. The chapters on the manipulation of cylinders, valves and fittings should be of value to the former, whilst those dealing with the selection of a suitable generator, the possibilities of oxy-acetylene welding, etc., will appeal to the latter. The authors deal in considerable detail with the use of dissolved acetylene in preference to the low pressure gas prepared direct from carbide, and rightly accord it the palm, except in the matter of expense. It seems doubtful to the reviewer whether the dissolved gas falls far behind, even in this respect, when the saving of time, obviation of waste, etc., are borne in mind. The book contains excellent instructions on the management of various acetylene generators and useful descriptions of burners, but the advice given as to the selection of a suitable blow-pipe lacks definiteness.

An excellent feature of the book, and one which should make it of value to the many who have recently taken up welding without previous experience of metal-working, is the description given of the physical and chemical properties of each metal in so far as they are of importance to the welder. Many useful hints are provided by the chapters on the correct preparation of joints for welding, on the importance of which the authors rightly insist.

Separate chapters deal with the welding of Iron, Steels, Cast Iron, Copper, Brass and Bronzes, Aluminium and sundry metals and alloys. That

on Cast Iron is particularly good, a very detailed account being given of the difficulties to be expected and the methods of overcoming them.

A somewhat vague account of welding-machines is followed by a detailed chapter on Metal Cutting.

The general style of the book is that customary in French treatises on technical subjects, and suffers in the earlier part from some padding and consequent lack of clarity. The translation is adequate, but it is unfortunate that the translator should have followed the original with undue assiduity.

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PUBLICATIONS RECEIVED.

THE DISTILLATION OF RESINS. By V. SCHWEIZER. *Second Edition, revised and re-written, by H. B. STOCKS. Pp. 212. (London: Scott, Greenwood and Son).*

OILS, FATS AND WAXES. By P. J. FRYER and F. E. WESTON. Vol. I. *Chemical and General. Pp. 279. Cambridge Technical Series. (Cambridge University Press.)*

AUTOGENOUS WELDING. By R. GRANJON and P. ROSEMBERG. *Fifth Edition, translated by D. RICHARDSON. Pp. 244. (London: C. Griffin and Co.)*

CHEMISTRY IN THE SERVICE OF MAN. By ALEX. FINDLAY. *Second Edition. Pp. 272. (London: G. Murray.)*

ARTIFICIAL DYESTUFFS. By A. R. J. RAMSEY and H. C. WESTON. Pp. 202. (London: G. Roulledge and Sons.)

THE ANALYSIS OF DYESTUFFS. By A. G. GREEN. *Second Edition. Pp. 144. (London: C. Griffin and Co.)*

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