

Diamond Technology

Production Methods for Diamond and Gem Stones. By Paul Grodzinski. Second revised and enlarged edition. Pp. xxxiv+784. (London: N.A.G. Press, Ltd., 1953.) 52s. 6d.

"DIAMOND Technology" is a completely revised and enlarged edition of Mr. P. Grodzinski's "Diamond and Gemstone Production Methods", which was published as a matter of urgent necessity soon after the start of the Second World War. The earlier volume contained 256 pages, whereas the new edition has 784—an indication of the vast increase during the past decade in the use and importance of diamond in a number of industrial processes. It is indeed fortunate for those concerned with diamond mining that, unlike the non-transparent types of other gem minerals, even impure diamonds have a considerable market value.

In his capacity as technical editor of the *Industrial Diamond Review*, Mr. Grodzinski has been in constant touch with technical advances throughout the world, and has himself contributed towards the design of new instruments, particularly in the field of hardness testing. The book is divided into two main sections, the first dealing with general manufacturing methods and the second with special methods. Thus, in the first part there is a chapter on grinding and polishing gemstones, while in the second there is a parallel chapter on polishing gemstones for jewellery, where the specific forms developed are dealt with. This is bound to lead to a certain amount of overlapping, and it is possible that by careful rearrangement the book might be reduced in size without losing anything of real value. It seems to me that an opening chapter on diamond itself, its structure, crystallography, varieties and properties, would be a useful foundation for what follows. The information given in Chapter 13, on the selection and orientation of industrial diamonds, could largely be included in such a preliminary chapter.

"Diamond Technology" is a well-produced volume, and the understanding of the text is greatly assisted by the illustrations, of which there are nearly five hundred. The industrial world should be grateful to the author and publishers for bringing together so much scattered information within the covers of a book which, by modern standards, is not unduly expensive.

B. W. ANDERSON

Der Ultraschall

Und seine Anwendung in Wissenschaft und Technik. Von Dr. Ludwig Bergmann. Sechste völlig überarbeitete und erweiterte Auflage, mit 609 Bildern. Pp. xvi+1114. (Stuttgart: S. Hirzel Verlag, 1954.) Ganzleinen, 72 D. marks.

THE appearance of a sixth edition of this well-known book is a pointer both to the expansion which ultrasonics has undergone in the past years and the success of Dr. L. Bergmann in writing on the subject. He has indeed made it his life's work to keep this treatise up to date, and workers in this field will hope that he may long live to continue it.

The first edition appeared in 1937, a slim volume of some two hundred and fifty pages and a hundred and fifty figures. Now Dr. Bergmann's offspring has grown to an unwieldy tome of eleven hundred pages and six hundred figures, while the references number more than five thousand. Since practically every reference finds its due position in the text, one cannot but marvel at the industry of the author in reading and collating all this material. It is impossible

to summarize the work here, but one notes, besides the more academic aspects of ultrasonics which occupy five chapters, others on industrial applications, medical applications and ultrasonics in Nature. No worker in ultrasonics can afford to be without this book. It is a pity that the great size of this edition makes it unlikely that a publisher will be found to translate it into English as the first edition was.

E. G. RICHARDSON

Textile Fibers, Yarns, and Fabrics

A Comparative Survey of their Behavior with Special Reference to Wool. By Ernest R. Kaswell. Pp. xvi+552. (New York: Reinhold Publishing Corporation; London: Chapman and Hall, Ltd., 1953.) 88s. net.

THIS book is a very full review of the literature of those properties of fibres, yarns and fabrics which depend on fibre mechanics and the geometry of yarns and cloths. The first three chapters give a comprehensive description of the mechanical properties of the various natural and man-made fibres. Succeeding chapters discuss the friction of fibres and yarns, the moisture absorption of fibres and the effect upon fibres of heat, sunlight, weather and the common chemical reagents. Two rather flimsy chapters on the microbiological resistance of fibres and their dyeing properties conclude this part.

The second and more valuable part of the book deals with the properties of textile structures. Fabric resilience, drape and crease recovery are ably discussed. The chapter on resistance to abrasion is especially good, though surprisingly there is no mention of 'pilling'. A single chapter on felting and shrinkage is scarcely sufficient; but the sections on the effect on wool felting of fabric geometry and blending with other fibres are valuable. There are useful chapters on the transmission of air, heat and moisture through cloths and on the acquisition of soil by fabric and its removal.

The author quotes at length from original papers, of which more than four hundred, chiefly from British and American journals, are listed in the bibliography. The book is well indexed and will be welcomed by textile scientists and technologists as a compendium of research upon the functional characteristics of fibres and fabrics.

W. J. ONIONS

Annual Review of Physical Chemistry, Vol. 4

G. K. Rollefson (Editor); R. E. Powell (Associate Editor). Pp. x+493. (Stanford, Calif.: Annual Reviews, Inc., 1953.) 6 dollars.

THE present volume of this excellent review covers twenty branches of physical chemistry, written by British, Canadian and American specialists. All the articles are readable and informative, and the bibliographies are international in character. The section on micro-waves and nuclear resonance gives up-to-date information on this new field; that on experimental molecular structures will be of interest to many chemists, when read in conjunction with that on experimental crystallography.

Although these parts of the volume have been singled out for mention, all the articles are good, and the authors have contrived to make the book read more like a text-book than an abstract journal, which is a considerable achievement when the large amount of information contained in it is taken into account. There can be no doubt that this publication, now in its fourth year, is filling a place in chemical literature with marked success.