of the elements of the periodic table, conveniently arranged at the end of the book, make these tables still more practical.

Most wave-lengths have been measured by several authors in different laboratories all over the world. It is not always clear why the present authors in their survey of the literature have chosen the particular data presented, but in general the choice is of no great practical importance as the corresponding numbers do not differ very much.

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Fourier Technique in X-ray Organic Structure Analysis. By A. D. BOOTH. Pp. 106, with 49 figs. Cambridge: University Press. 1948. Price 12*s.* 6*d.*

The appearance of this book is to be greeted with great satisfaction. It treats a central and very important problem in structure analysis, which has not previously been the subject of a comprehensive account. Furthermore, the book is written by a scientist who has himself made valuable contributions to the field in question.

The title of the book only mentions the structure analysis of organic compounds. Although these without doubt will furnish the main material for structure determinations in years to come and certainly are the only substances with structures sufficiently complicated to warrant the use of the most developed methods, this restriction seems unnecessary. Moreover, it has no support in the text, which treats the subject quite generally.

The book assumes that the reader has a knowledge of the basic facts of crystallography and of X-ray diffraction. It starts with a condensed account of the interaction of X-rays with matter and then describes the representation of electron density by Fourier series. Next comes a treatment of the methods for obtaining approximate structures: the use of isomorphous series, the location of heavy atoms, the Patterson and Harker methods, and the various trial and error methods. The principal discussion of the Fourier technique is to be found in the following chapter which deals with the refinement of atomic co-ordinates. Here the author also describes his own time-saving contributions to this problem, the methods of bounded projections and of projected sections as well as the differential synthesis.

The second half part of the book is mainly devoted to a treatment of the methods for computation (above all the Beevers and Lipson and the Robertson strip methods) and the means of mechanical computation. Under the last-mentioned heading the author reviews mechanical as well as electrical and optical aids in both structure-factor calculations and Fourier summation.

Since this book was written many aspects of the methods for the analysis of complicated structures have changed to a considerable extent through the work of the author himself. The situation is well characterized by the following lines from Dr Booth's preface: 'It is a commentary on the rapidity of scientific progress that since the sections on calculating machinery were written, advances in electronic digital computing have given clear indication that the future of structural crystallography lies in this direction. Technique is also in a state of change, and it is almost safe to prophesy that, should a second edition of this book become necessary, electronic computers, "steepest descents" and Harker phase inequalities will figure largely in it.'

Everyone working with structure analysis will certainly be very glad to have this useful little volume close at hand. It is to be hoped that this demand and the progress of the subject will soon necessitate the second edition, at which Dr Booth has hinted.

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Kristalle und Gesteine, ein Lehrbuch der Kristallkunde und allgemeinen Mineralogie. By P. ESKOLA. Pp. viii + 397, with 461 figs. Vienna: Springer Verlag. 1946. Price bound £3.

This is a slightly augmented translation of a text-book published in 1939 in Finnish. It is divided into five sections: crystal geometry; crystal physics; crystal chemistry; physical chemistry of crystals and rocks; and descriptive mineralogy following the classification of H. Strunz. All sections are necessarily condensed, some more so than others. Space-group symmetry is introduced in a couple of pages, but that does not detract from a clear presentation of crystal morphology. The essay on crystal physics deals chiefly with the optical properties of crystals, but gives the student only a dozen pages on the 'crystal optics of X-rays' and two on radioactivity. The third section develops crystal chemistry in considerable detail with many excellent diagrams and models of crystal structures. To this are appended short sections on polymorphism, isomorphism and geochemistry. Prof. Eskola, well known for his studies of igneous rocks, shows in his fourth section how the principles of physical chemistry, in particular phase-rule studies of artificial silicate melts, have helped to throw light upon the genesis and metamorphosis of rocks. If the student is disappointed in finding no thread of continuity running through the book or seeks in vain for a broad synthesis, he will at least have learned to look beyond the laboratory for a more complete picture of crystals and crystalline behaviour. That is perhaps what the author intended.

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