favourable positions are disappearing. The work of afforestation lingers, alas ! far behind.

The book contains a very readable account of the sulphite process, with a section devoted to the history of this great discovery. The other chief processes of purification are also described, and those who are interested will find all the information they need. The book is well set up and is likely to be of great service to those concerned.   J. F. T.

ENGINEERING

Electro-Acoustics
By Prof. Dr. Erwin Meyer. Pp. xi+117+12 plates. (London : G. Bell and Sons, Ltd., 1939.) 10s. net.

BOTH the orthodox student of electricity and the orthodox student of acoustics are at a loss when confronted with the intricate and subtle marriage between the two classical subjects which has taken place in recent years in response to public demand.

Dr. E. Meyer, from the erstwhile Heinrich Hertz Institute, now known as the Institut für Schwingungs-forschung, came, at the invitation of the University of London, and gave a series of five lectures at the Institution of Electrical Engineers on his view of the present position of electro-acoustics ; the present volume records his material, showing that he dis-charged his task well. He speaks of what he has first-hand knowledge, and his almost entirely Teutonic set of references shows that the Americans are not undisputedly in the lead in this field. The chapters, corresponding to the lectures, deal with physical and physiological foundations, which include evidence that the strike note of a bell does not exist, and some new applications of supersonic waves ; electro-acoustical measurements, describing an acoustic grating analyser, and the high-speed level-indicator and the spectral analyser in use at the National Physical Laboratory ; microphones and loud-speakers, with reference to response-curves and transient times, and the logarithmic modulation meter ; sound recording and electrical music, with some explanation of magnetic recording and note synthesis ; and architectural acoustics, in which methods and results of reverberation measurements and the absorption of acoustic materials are considered, with an engaging reference to his scheme of measuring reverberation periods with audience, by using isolated chords from a full orchestra and suitable filters. Clearly Dr. Meyer could deal with few details, but the ground covered is impressive and gives a plan for those who are engaged in working in a small corner of it.   L. E. C. H.

Handbook of Technical Instruction for Wireless Telegraphists
By H. M. Dowsett. Sixth edition. Pp. xx+624. (London : Iliffe and Sons, Ltd., 1939.) 21s. net.

THE present text is obviously of little use to the scientifically minded, but it serves two essential purposes very well. It shows clearly the type of apparatus which the practical wireless man has to deal with, and its mode of operation, informa-tion which is of the greatest importance to researchers

and developers of new types of equipment. At the same time, it forms an excellent record of the state of the art of radio communication at the moment, omitting only high-powered point-to-point working. The aim is to assist operators to get their certificates, and to acquaint them with every conceivable type of apparatus they are likely to come across, for communication, navigation, and for emergency. The circuit diagrams are particularly clear, and much information is tabulated for easy reference.

L. E. C. H.

MATHEMATICS

The Kelley Statistical Tables
By Prof. Truman Lee Kelley. Pp. vi+136. (New York : The Macmillan Co., 1938.) 20s. net.

THE normal or Gaussian distribution occupies a central position in statistical theory and prac-tice, and is therefore naturally the most completely tabled distribution function. Prof. Kelley now takes a further step, and provides a table of the abscissæ and ordinates of the distribution to 8 decimal places against the cumulative probability as argument, proceeding by intervals of 0·0001. The table is clearly printed and of a convenient size, and the minimum of interpolation is required to provide results to the accuracy ever likely to be demanded in statistical problems.

Prof. Kelley takes the opportunity of including in the volume other useful tables. For values of p proceeding by intervals of 0·0001 from zero to unity he gives to 8 decimal places values of $\sqrt{pq}$, $\sqrt{1-p^2}$, and $\sqrt{1-q^2}$, where q is $(1-p)$. Statisticians will recognize these quantities as being of frequent occurrence in relation to the binomial distribution and the theory of correlation. Another table gives the coefficients of the cubic Lagrangian interpola-tion formula to 10 decimal places for an argument proceeding by intervals of 0·001. With modern calculating machines these coefficients are often more convenient than the Everett coefficients used in connexion with a difference formula.

Statisticians will appreciate the labours which have gone towards this well-produced volume.

The Theory and Use of the Complex Variable
An Introduction. By S. L. Green. Pp. viii+136. (London : Sir Isaac Pitman and Sons, Ltd., 1939.) 10s. 6d. net.

THE theory of functions of a complex variable is usually presented in exhaustive treatises, de-manding high mathematical attainments from their readers. Yet engineers and others who have neither the time nor the specialized training in pure mathe-matics to master such treatises find that they require some of the leading ideas of the subject. Mr. Green provides an introductory account of the complex variable and of conformal representation in a very simple and compact form, demanding from the reader little more than elementary calculus and co-ordinate geometry, with some indication of applications to problems of mathematical physics, aeronautics and electrical engineering.