

of distributing networks and the determination of the fault resistance of such networks is especially good. The author has himself contributed largely to the technical literature of this subject, and his method of finding fault resistance is well known to all distribution engineers.

Dr. Russell is also a well-known authority on dielectric strength. This subject is of growing interest on account of the higher pressures at which cables are being operated. The heating of cables is discussed, but in any future editions of the book it is hoped that reference will be made to the heating of buried cables and to the extensive researches that have been carried out in recent years under the auspices of the Electrical Research Committee. The chapter on electrical safety valves, also, should include some reference to the lead peroxide arrester, which is now being used so largely in the United States.

The chapter on lightning conductors contains material which is not available except in the *Proceedings* of learned societies, and the new appendix on the interesting problem of the most economical site for a power station is of special value in view of the growing importance, economically, of the electrical aspect of this problem. This book is well known as a standard textbook on the theory of electrical cables and networks, and should be on the shelves of all cable manufacturers and distribution engineers.

*The Journal of the Institute of Metals.* Vol. 33. Edited by G. Shaw Scott. Pp. xii+710+15 plates. (London: Institute of Metals, 1925.) 31s. 6d. net.

SCIENTIFIC readers of the new volume of this Journal will probably turn first to the May Lecture, in which Prof. H. A. Lorentz deals in a most fascinating manner with the most recent knowledge of the motion of electricity in metals, including the determinations of the velocity of moving electrons in a conductor, and with the phenomena of super-conductivity. The whole lecture is a model of reasoning and exposition. The papers contributed to the Institute cover a wide range, the properties of the various alloys of copper occupying as usual a considerable proportion of the space. Problems of corrosion are dealt with in several papers, and it is satisfactory to notice that the apparently irreconcilable positions taken up by different investigators have now been examined in an impartial spirit, and an agreed statement has been issued, so that further experimental work can proceed without the atmosphere of controversy which has so long enveloped the subject. An important practical paper describes experiments on the production of castings of aluminium alloys with greatly diminished porosity, the method used being to free the alloy from dissolved gases by bubbling nitrogen through the liquid just before solidification, afterwards remelting. The inert nitrogen washes out the gases which give rise to blowholes, and sound castings result. This method has also been applied with success to other alloys. More than half of the volume is occupied by abstracts of work published elsewhere, and this section is invaluable to the metallurgist, the abstracting being done with remarkable thoroughness, so as to include research in pure physics and chemistry wherever it touches metals. The arrangement is clear, and the method of presentation is attractive.

*Abbeys.* By Dr. M. R. James. With an additional Chapter on Monastic Life and Buildings, by Dr. A. Hamilton Thompson. Pp. x+154+107 plates+13 plans. (London: Great Western Railway, Paddington, 1925.) 5s. net.

It is only fair to warn the unwary that this book is not a treatise on abbeys in general, or a comprehensive survey of the abbeys of Britain. It deals only with those abbeys which are on or accessible from the Great Western Railway system. There is no hint of this on the title-page, except in the publisher's imprint, which many will not notice. It is, in fact, a glorified guide-book; but a guide-book of a type which we wish were more frequent. Nearly every building is illustrated in one or more photographs, excellently reproduced. In addition, several examples of the priceless manuscripts which were produced by the monks of the abbeys are given in colour. The letterpress of the Provost of Eton is to a great extent, though not entirely, a compilation. As he explains in his preface, he has visited most of the buildings, and to his authorities he has added something of his own. Not only are the buildings adequately explained for the needs of the visitors, but the author has also brought out in each case the relative importance of each and of the community to which it belonged. The list of abbeys classified according to religious orders will be found a great convenience. Prof. A. Hamilton Thompson has contributed an admirable chapter on monastic life. The book is a remarkable production at so low a price.

*Summation of Series.* Collected by L. B. W. Jolley. Pp. xi+232. (London: Chapman and Hall, Ltd., 1925.) 13s. 6d. net.

A COMPREHENSIVE collection of series and their sums would be invaluable to the university teacher, the research worker, or the technician, according to the principle guiding the selection, but an attempt to cater for all parties must necessarily spell failure. The present volume, containing about seven hundred series, is well arranged and includes individual types easy of reference. The series are set out clearly on one page, and the sum on the page facing. In spite of the compiler's intentions, we believe the collection will be of value mainly to the not too advanced student. Fourier series, Bessel functions, and elliptic functions are treated in cursory fashion, although quite a number of Fourier series are classified under the heading of trigonometric series. The general expression for Fourier coefficients does not appear to be given. It is eminently desirable that the limits of the variable within which the series is a valid representation of its "sum" should be systematically stated—a dangerous omission if the collection is intended for the use of the technician.

*Life: a Book for Elementary Students.* By Sir Arthur E. Shipley. Second edition. Pp. xvi+204. (Cambridge: At the University Press, 1925.) 6s. net.

It is a pleasure to find that Sir Arthur Shipley's little book, which was reviewed in *NATURE* of July 5, 1924, p. 6, has been so much in demand that a second edition has already been called for. A few minor changes have been made.