are clearly presented. A sketch is given of the development of structural forms and an interesting short chapter on the economics of simple trusses is included. The subject of impact is concisely discussed, but the details are mainly confined to the usual ideas and allowances, and no reference is made to the recent theoretical work of Prof. Inglis of Cambridge on this question. The treatment of earth-pressure theories is very adequate, and the author's critical development of the various principles and methods in this difficult subject is of special value. The chapters on masonry structures include studies of retaining walls, piers, dams, and stone arches, and present all the main principles free from the misleading profoundity that occasionally characterises treatments of this subject.

Throughout the entire work, the author's grasp of method is well displayed, and many of his short chapters are models of concise presentation. He is mainly concerned with principles, and his development of and critical attitude towards these endow the book with a high educational value.

Beyond the Electron: a Lecture given at Girton College on March 3, 1928. By Sir J. J. Thomson. Pp. 44. (Cambridge: At the University Press, 1928.) 2*s*. 6*d*. net.

ALL who are interested in the discoveries of modern physics as to the intimate structure of the universe will be grateful to the authorities of Girton College for persuading Sir J. J. Thomson to deliver, and to the Cambridge University Press for publishing, this lecture. In the art of making the deep things of physics plain, not merely to the professional scientific worker but also to the educated world at large, Sir J. J. Thomson has few equals. It does not seem so very long since he was leading us beyond the atom into a new world of electrons. To him, however, "each discovery is not a terminus but an avenue leading to country as yet unexplored," and he now invites us to accompany him to a region still more remote and even more fascinating, "Beyond the Electron."

The invasion of this new domain has been made possible by the discovery, due to Davisson and Kunsmann and to Prof. G. P. Thomson, that in certain circumstances the electron can be diffracted in exactly the same way as light; a discovery which may be regarded as complementary to the now established fact that light under certain conditions can behave like a particle. In this lecture Sir J. J. Thomson deals with these new discoveries in his usual masterly manner, and draws for us a picture, as clear as it is interesting, of the way in which this twofold connexion between light and energy may arise. It is true that the phenomena can be dealt with by a method of analysis of de Broglie and Schrödinger. Those of us, however, who demand from research a picture of the universe rather than a set of mathematical equations, will be very grateful to Sir J. J. Thomson for the fascinating picture he has outlined so clearly in these delightful pages. We may add that those who desire a more formal exposition of the theory will find it in two mathematical appendices.

Electric Winders: a Manual on the Design, Construction, Application, and Operation of Winding Engines and Mine Hoists. By H. H. Broughton. Pp. 402. (London: Ernest Benn, Ltd., 1927.) 52*s*. 6*d*. net.

THE whole development of electric winding in mines has taken place within the comparatively short period of twenty years. The method has proved itself thoroughly trustworthy, and in many respects superior to the older steam-engine types. The ease with which automatic devices in aid of control may be incorporated in the equipment is a special advantage, and completely automatic installations have been designed in which even an operator is unnecessary.

In the present elaborate treatise on this subject, Mr. Broughton presents a vast range of valuable data on equipments of all types, designed for a wide variety of duties, which he examines and discusses with great care and thoroughness. Both the mechanical and electrical sides of the system are exhaustively treated, and all questions of type, performance and cost are systematically studied. The book is not exactly a text-book on design, but it contains that essential and accurate information which the designer must not ignore. It is at once a treatise and a book of reference, and should prove invaluable to the engineering student, to the designer and manufacturer, and to mining engineering staffs.

Untersuchungen zur Quantentheorie. Von Louis de Broglie. Übersetzt von Dr. Walther Becker. Pp. ii + 88. (Leipzig: Akademische Verlagsgesellschaft m.b.H., 1927.) 5·80 gold marks.

IT is sufficient evidence of the importance of M. de Broglie's memoir that the three years of rapid advance in quantum theory that have elapsed since it first appeared, still allow it to be republished in the form of a direct translation into the German. Not the least recognition that can be made of the author's fundamental contributions to the subject is that very recent work tempts us to query his statement in the preface (September 1927) that "la constitution d'une théorie ondulatoire de la matière dans le cadre de la physique du champ . . ." seemed remote; his own comments upon the work of Schrödinger and of Heisenberg are most generous.

Through Jade Gate and Central Asia: an Account of Journeys in Kansu, Turkestan, and the Gobi Desert. By Mildred Cable and Francesca French. Pp. xvi + 304 + 12 plates. (London: Constable and Co., Ltd., 1927.) 10*s*. net.

THIS is an account of a journey made by three members of the China Inland Mission who started from China and worked their way through Mongolia and Chinese Turkestan to Siberia. The prospects of such a journey would appal most men; the missionaries who made it were women. The difficulties, hardships, and dangers that were faced and overcome are not emphasised, but those who know the route they travelled will best appreciate the courage and endurance of the three ladies who write so modestly of their achievement.