Elektrische Gasentladungen : ihre Physik und Technik. Von A. v. Engel and M. Steenbeck. Band 1 : *Grundgesetze.* Pp. vii + 248. 25.50 gold marks. Band 2 : *Entladungseigenschaften, Technische Anwendungen.* Pp. viii + 352. (Berlin : Julius Springer, 1932, 1934.) 33.50 gold marks.

THE first volume of this monograph gives an excellent and condensed account of the methods by which ions are generated and destroyed, and of the laws which govern their passage through a gas. In the first part of the second volume the various forms assumed by the electrical discharge through gases are discussed, and so far as possible explained in terms of the conclusions reached in the first volume. The treatment is intended as a necessary basis for the understanding of the conduction of electricity through gases, and does not pretend to be complete.

The absence of any historical or critical survey is apt, perhaps, to encourage in the reader the feeling that a great deal more is known of the details of some of these processes than is actually the case, and that the explanations given and the data furnished are, in fact, correct. On the other hand, it is extremely easy to find the information which the practical worker in the field requires, and the clear graphs and tables render unnecessary those searches for data in the original papers which are so tedious and often so unsatisfactory. This part of the monograph should prove valuable to those who must design or use apparatus employing gaseous discharge phenomena in the laboratory or in technical work.

The second part of the second volume is too limited in scope to be of much value. It describes various technical applications of the discharge through gases, but in far too superficial a manner. For example, a reader who wished to use a Geiger counter would obtain little practical information from the description given.   M. E. O.

Mathematical Problems of Radiative Equilibrium. By Prof. Eberhard Hopf. (Cambridge Tracts in Mathematics and Mathematical Physics, No. 31.) Pp. viii + 105. (Cambridge : At the University Press, 1934.) 6s. net.

THIS tract is an authoritative exposition of problems of radiative equilibrium by one of the original workers in the subject. An initial chapter gives a summary of the general theory and main problem to be treated, namely, the determination of the radiation field of a star when the coefficients of absorption and scattering, the emissivity and the law of scattering are given. The method is based on the solutions of certain integral equations and is expounded in detail in the succeeding chapters, which deal in turn with the cases of purely absorbing and grey material in local radiative equilibrium (Schwarzschild-Milne model) and that of monochromatic radiative equilibrium with scattering but zero emissivity (Schuster-Schwarzschild model). On account of the rigorous analytical method employed, the book is one for the specialist rather than the general reader, and will prove a very useful guide for those interested in the subject.

An Introduction to Logic and Scientific Method. By Morris R. Cohen and Ernest Nagel. Pp. xii + 467. (London : George Routledge and Sons, Ltd., 1934.) 15s. net.

THIS book, by two American teachers of philosophy, helps to show how far the best representatives of logic in modern universities have travelled from the Aristotelian tradition which formerly prevailed. In an earlier generation Mill and Stanley Jevons, and later Neville Keynes, did much for the reshaping of the old formal logic, and for the development of an inductive logic which brought the subject into more vital relation with the methods of scientific investigation. In more recent times, logical theory has made progress in different directions, so that for educational purposes an eclectic treatment of the whole subject is desirable. Such a treatment is accomplished in this admirable book.

The authors have, we think wisely, adopted a fairly conservative attitude towards the traditional views, with which they have sought to connect the newer work in exact logic. In giving the main results of symbolic or mathematical logic, they have refrained from stepping across the boundaries between logic and mathematics. They hold that the alternative systems of logic which have been worked out are really different systems of notation for the same logical facts. Their illustrations, freely drawn from the natural sciences, are such as a college student may be expected to understand and appreciate. We think highly of the attempt of the authors to provide a sound introduction to the principles of logic and scientific method.

Recent Advances in Vaccine and Serum Therapy. By Prof. A. Fleming and Dr. G. F. Petrie. (Recent Advances Series.) Pp. x + 463. (London : J. and A. Churchill, 1934.) 15s.

AN authoritative and up-to-date account of modern serological remedies and therapeutic and preventive vaccines is much needed by the medical practitioner, and this book should go far to supply this want. Dr. Petrie deals with the serological side, including the treatment of snake, scorpion and spider bites, and Prof. Fleming with the vaccines, including non-specific vaccine and protein therapy. The veterinary side of the subject is also considered by both authors.

Though primarily concerned with recent advances, the older work is referred to, and the volume, which is well produced and very readable, provides a comprehensive practical account of the whole subject. A chapter is devoted to bacterial variation in relation to immunising power, and the importance of the 'rough' and 'smooth' and 'H' and 'O' variants is detailed, and the work of Perry, Findlay and Bensted on the suitable strain of typhoid bacillus for the preparation of anti-typhoid vaccine is included. A lengthy chapter is devoted to the vaccine treatment of chronic rheumatic conditions, in the preparation of which Prof. Fleming is able to draw upon his own considerable experience.

A short bibliography is appended to each subject, and an index of authors as well as of subjects is included.