

sensation of lactose with a formal aldehyde group is somewhat misleading. The book contains a number of useful indications of the connexion between organic chemistry and medicine, pharmacy, dentistry, agriculture, and the biological sciences. There is adequate mention of up-to-date methods of preparing various organic substances in common use; but it is surprising to find, in a modern text-book, the terms 'diatomic,' 'triatomic,' and 'polyatomic' applied to alcohols. The type and paper are of excellent quality; the portraits of eminent organic chemists, however, are not well reproduced.

J. R.

*Laboratory Methods of Inorganic Chemistry.* By Heinrich Biltz and Wilhelm Biltz. Authorised translation by William T. Hall and Arthur A. Blanchard. Second edition. Pp. xv + 261. (New York: John Wiley and Sons, Inc.; London: Chapman and Hall, Ltd., 1928.) 12s. 6d. net.

THE first edition of Biltz was very favourably received, and the present edition is an improvement on the previous one. New preparations have been added and the older ones revised. The short theoretical sections are also very good, especially that on the periodic system, in which atomic structure is included. In most undergraduate courses the amount of practical inorganic chemistry, apart from qualitative analysis, is usually much too small in comparison with the practical organic chemistry, and there is sometimes a danger that the course will lack balance and become one-sided. Any idea that inorganic preparations do not offer so much scope for manipulative skill as those in organic chemistry will quickly be dispelled by looking through the present volume, in which a number of more difficult preparations are included: These are in many cases suitable for students who have completed an ordinary course and wish to do more advanced work without actually embarking on research.

The book will also be found most useful by students beginning research in inorganic chemistry, and by teachers who wish to introduce inorganic preparations into the more advanced courses. It may be recommended to all these as the only work of its standard in existence. When the large amount of material presented is taken into consideration, the price is very reasonable indeed.

*Che cos' è l' elettricità?* Per Giovanni Giorgi. (Collezione Omnia, 8.) Pp. 136. (Roma: Paolo Cremonese, 1928.) 6.50 lire.

THE latest developments of physical theories point not only to the possibility of a complete change in our conception of the nature of matter, but also in our views of causality and natural law. They are no longer purely mathematical and experimental. Speculations are being made in regions formerly regarded as metaphysical and outside the limitations of human knowledge. No one can say where these speculations will lead us. Recent theories, however, are becoming more acceptable to the average physicist. Electrons and protons appearing as energy centres in so-called material waves remind

us of the vortex rings which were much studied fifty years ago.

G. Giorgi, in this interesting little book, gives us a clear résumé of the opinions held as to the nature of the phenomena of electricity, beginning with Du Fay in 1733, and ending with de Broglie, Schrödinger, Dirac, and Heisenberg. Practically no knowledge of mathematics is assumed, so this book will be appreciated by the layman as well as by the scientific worker. No one can claim to have a general knowledge of science who is ignorant of these theories. If they are as important as many physicists believe them to be, then the sooner they come up before the general tribunal of mankind the better.

*Leaf-Mining Insects.* By James G. Needham, Stuart W. Frost, and Beatrice H. Tothill. Pp. viii + 351 + 5 plates. (London: Baillière, Tindall and Cox, 1928.) 27s. net.

THE authors mention that the object of this book is to provide a non-technical introduction to leaf-mining insects, an account of their biology and lists of miners, together with their host-plants. Four orders of insects, namely, Coleoptera, Lepidoptera, Hymenoptera, and Diptera, include species which have developed leaf-mining habits in their larval stages. This type of behaviour attains its greatest development in Lepidoptera, and about one-half of the volume is consequently devoted to these insects. The various grades of mining habits are discussed, and the correlation between structure and function clearly stressed in different types of larvæ. Although the subject is a specialised one, the knowledge brought together by the authors shows that the study of leaf-miners offers many features of interest to the ecologist and to the student of adaptation. At the same time, the field naturalist and economic entomologist will find the book of material help in the identification of the species found, more especially in North America. The subject matter is well arranged, the illustrations are for the most part adequate, and there is a useful bibliography provided at the end. We can recommend the book as a useful introductory manual.

*The Cellulose Lacquers: a Practical Handbook on their Manufacture.* By Dr. Stanley Smith. Pp. ix + 145. (London: Sir Isaac Pitman and Sons, Ltd., 1928.) 7s. 6d. net.

THE cellulose lacquer industry is one of great importance, and the manufacture and applications of these materials are advancing at a rapid rate. The present manual is written from the practical point of view. The style is often rather discursive, and although the author remarks that he will avoid technical terms so far as possible, this is no reason why he should not spell correctly those which he uses; 'phthallate' occurs several times. The account covers the whole subject, including raw materials, formulæ, plant, pigments, methods of application, and the industrial applications. The book is well printed and illustrated, and it will be found useful to those actually engaged in the industry.