

interest with the Faraday Society's general discussion on "Strong Electrolytes" at Oxford in 1927, although it was limited to a single day.

The discussion on vitamins on the following day was in some respects even more remarkable, since the visitors who contributed to it must have come to England for this express purpose rather than for the associated physical celebrations. The discussion on vitamin A was introduced by Sir Frederick Gowland Hopkins, and was contributed to by Karrer, Euler, Morton, Heilbron, Richard Kuhn, Moore, and Drummond, while the contributors to the discussion on vitamin B included Jansen, Peters, Drummond, Callow, Windaus, Reerink and van Wijk, Heilbron and Simpson, the concluding review being contributed by Robinson.

A symposium on "The British Fuel Problem", with reviews by Sir David Milne-Watson, Sir John Cadman, and Mr. H. T. Tizard, provided a technical alternative to a discussion on the atomic weight of oxygen in Section A, and included contributions from Sir James Irvine and Prof. W. A. Bone.

The final discussion, on "The Structure of Simple Molecules", brought into the Chemistry Section many of the pioneers in atomic physics. The contributors to the discussion included Debye, Lennard-Jones, R. H. Fowler, Victor Henri, Heisenberg, Born, and W. L. Bragg.

In view of the unique character of the programme, it would have been a serious loss not to preserve a permanent record of the work done by the Section. The record provided by the secretaries in the present volume includes all the valuable material contributed to the four discussions. It has been issued in a well-printed volume, comparable in size with the official report of the London meeting of the British Association, and is issued at such a remarkably low price that it should merit a very wide circulation amongst those who are interested in the progress of chemistry in its various aspects.

Short Reviews

A Practical Handbook of Water Supply. By Dr. Frank Dixey. Pp. xxviii + 571. (London: Thomas Murby and Co., 1931.) 21s. net.

Few problems of immediate importance in the pioneer development of colonial territories are more urgent than the provision of an adequate water supply. Various geological surveys and irrigation departments give advice on particular schemes, but no book which would serve as a general guide has hitherto been available. Dr. Dixey has realised the necessity for such a book as a result of his experience in Nyasaland, and those who are called upon to provide water supplies in

outlying regions owe him a deep debt of gratitude for the very practical and thoroughly competent treatise which he has been stimulated to write.

Although the conditions particularly kept in mind are those characteristic of Central and East Africa, the book will prove helpful to workers in other similar regions, and not only so, but also to students of water-supply problems in general, for the geological, engineering, and other aspects of the composite problems involved are all dealt with in ample detail. Methods of dam construction and of sinking wells and bore-holes to moderate depths are described, with the view of helping settlers and administrative officers who are likely to be inexperienced in such work. Less attention is paid to the technique of deep boring, which must of necessity be carried out by experts. The various means of safeguarding against contamination and of purifying unsatisfactory supplies are surveyed in the very important chapter on the quality of water. One of the most interesting chapters is that devoted to water-finding methods. The desirability of a geological report before costly schemes are undertaken is rightly stressed. "Reliance upon any other advice, such as that based on water-divining, may lead to serious waste of time and money." The book concludes with an invaluable summary of the water-supply conditions in South Africa, the Rhodesias, Nyasaland, Tanganyika, Kenya and Uganda, the last of these having been contributed by Mr. E. J. Wayland. There are several geological maps embodying information not otherwise easily accessible.

The book will undoubtedly be of very great assistance to those for whom it has been primarily prepared, and much of it will appeal to a far wider audience.

Hydraulics for Engineers: including Turbines and Pumps and Unsteady Motion. By Prof. R. W. Angus. Pp. xii + 304. (London: Sir Isaac Pitman and Sons, Ltd., 1931.) 12s. 6d. net.

IN view of the rapid development of the exploitation of hydro-electric power in Canada and the United States, the subject of hydraulics is of outstanding importance to engineers in North America. A new textbook on the subject by the professor of mechanical engineering in the University of Toronto naturally, therefore, arouses interest as to the treatment accorded to the problems which present themselves in connexion with turbine installations. Including centrifugal pumps, Prof. Angus devotes rather more than a third of his book to the consideration of this subject, and within this space gives an effective résumé of the conditions to be met and the calculations involved in design.

Among several examples of typical installations, Prof. Angus briefly describes the reaction turbines of the Conowingo plant on the Susquehanna River and the impulse turbines of the San Francisquito No. 1 plant of the city of Los Angeles. The former, which has a present aggregate capacity of 378,000 horse power, is among the largest in the world, and one of its units is of greater size than any other at present in existence, having a discharge nearly