for him to win if he ordinarily is?" The affirmative answer does, indeed, "draw cheques on the universe which it has never yet honoured." The negative answer and how to secure it the reader will find in Mr. Robinson's pages.

APPLICATIONS OF COAL-TAR DYES.

Modern Dyeing Methods: The Application of the Coal-tar Dyestuffs: The Principles Involved and the Methods Employed. By C. M. Whittaker. Pp. xi+214. (London: Baillière, Tindall, and Cox, 1918.) Price 7*s.* 6*d.* net.

THIS is one of a series of eighteen volumes (published or in course of preparation) edited by Dr. Samuel Rideal, and intended to give a comprehensive survey of the chemical industries, as set forth in the general preface which precedes that of the author. It cannot be said that the author has followed this well-conceived plan so conscientiously as he might have done; in fact, the only point to which he has rigidly adhered has been the subdivision of his subject into sections. We are promised in the general preface that "there will be a general bibliography, and also a select bibliography to follow each section." Such bibliographies (coupled with references to current literature) would have represented a most valuable adjunct to a small work such as this, in which the treatment of so vast a subject is attempted, but all that is given (except a few references in the text) is a very incomplete list of works and current publications on pp. 10 and 11, while no select bibliographies follow the sections. The scope of the work is, however, ill-defined, for it bears no fewer than three titles, namely, Modern Dyeing Methods, The Application of the Coal-tar Dyestuffs (both on the title-page), and Dyeing with Coal-tar Dyestuffs (on the cover); strictly speaking, each of these subjects would require different bibliographies. The second heading is, however, the one under which the book is advertised in the general list, and one would certainly have expected the textile printing, lake-manufacturing, and paper-making industries to receive due consideration, but the two former are ruled out for lack of space, while the third is only cursorily mentioned in one or two places.

The dyestuffs are correctly subdivided under the various sections according to their mode of application in dyeing, and not according to their chemical constitution. Their application in the dyeing of the various classes of textile fabrics is generally adequately described, and many practical hints are given which may prove useful to the dyer. But, apart from inaccuracies, there is a certain looseness in the style which may in some cases lead to confusion. In some sections the author gives (*e.g.* on p. 12) a list of the principal classes of compounds from a chemical point of view, with a typical example of each. Thus the triphenylmethane dyestuffs are represented by magenta (the formula given is actually that of *p*-rosaniline hydrochloride, but this is of minor consequence); while on p. 13 the azo-dyes of basic character are typified by Bismarck brown (with an incorrect formula), but there is nothing to indicate that these are only typical examples. The grouping of the acid dyestuffs on p. 28 is a little clearer, but still requires some further explanation, and the same applies to the artificial mordant dyestuffs on p. 40. In the three later sections dealing with the direct cotton dyestuffs, the insoluble azo-colours, and the eosines respectively, no examples at all are given. Not only do we find such inconsistencies, but there is also displayed in many cases a lack of the sense of proportion. Thus, while on p. 19 particulars are given of two methods (*a* and *b*) of applying basic colours in cotton-dyeing, which are seldom, if ever, used to-day, the direct method, which is very useful for light shades, and ensures good penetration and level dyeing, is not even mentioned.

The last section is devoted to the valuation and detection of dyestuffs, but it is very inadequately handled. No mention is made of any of the exact quantitative methods of estimating dyestuffs which are in use at the present time, while with regard to the identification of dyestuffs on dyed fabrics the author, after referring the reader to Prof. A. G. Green's excellent work on the subject, contents himself with giving a few practical hints or tips, including two for the detection of "faked" indigo.

Altogether, the work is disappointing, and adds little, if anything, to our present knowledge of the subject.

THE MEASUREMENT OF TEMPERATURE.

Methods of Measuring Temperature. By Dr. Ezer Griffiths. With an Introduction by Principal E. H. Griffiths. Pp. xi+176. (London: Charles Griffin and Co., Ltd., 1918.) Price 8*s.* 6*d.* net.

IT is a pleasant task to welcome this work by Dr. Ezer Griffiths, of the Heat Department of the National Physical Laboratory. During the last few years it has been necessary to refer to text-books written by our Allies rather than to works written by British men of science when general information on temperature measurement is required. This has been particularly unfortunate, as so much of the fundamental work in thermometry is due to Englishmen.

Principal E. H. Griffiths, in an interesting introductory reminiscence, points out the great advances that have been made in the subject during the last thirty years. He states that "our knowledge of the temperature scale about 1600° C. is comparable both in facility and accuracy with our measurements some thirty years ago in the neighbourhood of 600° C." That this is no exaggeration a glance at the chapters on "The Fundamental Scale of Temperature" and "High-temperature Melting-points" will show. In the former chapter Dr. Ezer Griffiths summarises the work done in gas thermometry, the most difficult of all thermometry. He points out that the dis-