

Alternating Current Measurements at Audio and Radio Frequencies

By Dr. David Owen. (Methuen's Monographs on Physical Subjects.) Pp. vii+120. (London: Methuen and Co., Ltd., 1937.) 3s. 6d. net.

THIS new addition to Messrs. Methuen's well-known series of monographs is devoted to the principal methods used for the measurement of frequency and circuit constants for alternating current in the audio and radio frequency range. Its main contents are as follow: introduction to the treatment of A.C. circuits by vector methods and complex notation, measurement of inductance (self and mutual), capacity and frequency at audio frequencies, mainly by the use of bridge methods, including, however, a special chapter on A.C. potentiometers; measurement of the same magnitudes at radio frequencies by resonance methods. The author, who with the 'Owen bridge' has himself made a definite contribution to the subject, has succeeded in presenting the matter with agreeable shortness, outlining well the points which should be observed in the experimental procedure. Numerous examples, worked out in detail, add to the usefulness of the book by illustrating the order of magnitudes and errors encountered.

A. B.

Miscellany**Interpretative History of Flight:**

A Survey of the History and Development of Aeronautics, with Particular Reference to Contemporary Influences and Conditions. (Board of Education: Science Museum.) By M. J. B. Davy. Pp. 208+31 plates. (London: H.M. Stationery Office, 1937.) 5s. net.

THIS is a fourth volume written by Mr. Davy, of the Aeronautics Section of the Science Museum, South Kensington, which, although not directly descriptive of the exhibits there, is based upon the historical aspect of such an exhibition, and might well be read in conjunction with a visit to it.

The book describes the continuous development of the idea of flight and provides a record of the human activities leading to its achievement. The subject has been dealt with from a somewhat new point of view in that the outstanding phases, facts, and events are explained with reference to the contemporary conditions and the general trend of human development, it being felt that there exists a need for the presentation of this subject in a form which embraces more than bare facts and technical details unrelated to the social and economic background.

It is divided into three parts, and is fully illustrated with contemporary prints and photographs. Part 1 deals with the principles of natural flight and the early history of man's attempts. Part 2 treats the period from the beginning of definite historical records up to the end of the Great War in 1919, that period in which flight was first conceived, then achieved, and afterwards developed towards the wartime outlook exclusively. Part 3 covers the post-War applications to the various transport activities,

and speculates upon the social and economic aspects of the question.

This is a thoroughly readable book, written by an author who is in a position to be, and is, a master of his subject.

Prosperity Beckons:

Dawn of the Alcohol Era. By Dr. William J. Hale. Pp. viii+201. (Boston, Mass.: The Stratford Co., 1936.) 2 dollars.

THE interdependence of industry and agriculture is gradually gaining wider recognition, but current conceptions of agriculture are largely dominated by inherited views of its functions. In this spirited forecast of the possibilities of an era in which alcohol will largely displace petrol and other hydrocarbons as fuel for the internal combustion engine, as a result of developments from the discoveries of Bergius on the hydration of cellulose and Hertz on the isolation of α -cellulose from wood pulp, the author discards such conceptions. The production of food, he suggests, is a purely secondary matter. A fifth of those engaged at present in agriculture could supply all our needs in respect of food and clothing. Agriculture's main business in the future should be the provision of raw materials for industry, especially raw alcohol, or as he terms it, "agricrude alcohol", and the crops to be cultivated should be determined primarily by industrial needs.

In a style which at times borrows too much from the devices if not the jargon of the publicity agent, Dr. Hale gives much food for thought, and the possibilities of advance in the direction he indicates deserve serious attention. His argument for a closer relation between the factory and the farm is reinforced not only as a contribution to the unemployment question and by the importance of utilizing the vast quantities of agricultural waste products, but also by the general tendency of economic nationalism to seek substitutes for materials imported from abroad. At a time when determined effort to formulate a genuine agricultural policy for this country related to the conservation of all its natural resources is long overdue, the book should appeal to all scientific workers who are considering the contribution of science in this field.

Noise

By Dr. A. H. Davis. (Changing World Library, No. 6.) Pp. x+148. (London: Watts and Co., 1937.) 2s. 6d. net.

THE author is well known for being in the forefront of noise studies. The present little book is suitable for the scientific worker who has not yet become acquainted with the many aspects of the noise problem, and for the general reader, who ought to be impressed by the manner in which a social problem can be attacked when treated scientifically. The measurement of noise level and the definition of the phon scale are carefully explained, but the feature of this little book is the amount of well-balanced information which is presented in such agreeable terms.

L. E. C. H.