described as the ninth edition, it is explained in the preface that the text has now practically been rewritten in order to produce a comprehensive survey of the principles of radio-communication in the light of modern knowledge and practice. The subject is treated in a general but not too elementary manner, it being assumed that the reader has some slight acquaintance with electrical circuits and alternating currents. The volume is of a very handy pocket size and should be appreciated by those who desire a general survey of the subject in the French language.

(3) The sub-title of the third book indicates the class of reader for whom it has been especially prepared, namely, those engaged in the production, operation, inspection or maintenance of radio-communication apparatus of all types. The first edition of the work was published in the United States some ten years ago, and it has undoubtedly been a success in its right sphere. The present edition of more than a thousand pages is a working manual of the practice of radio-communication on land, at sea, and in the air, with illustrated descriptions of the equipment used, and including detailed explanations of the general regulations and operating procedure appertaining thereto.

So far as the publication of the book in Great Britain is concerned, its usefulness is severely limited by the fact that the majority of the systems, apparatus and regulations described are representative of American practice, and so they are not of general direct interest to those engaged in radio-communication outside the United States.

R. L. S.-R.

STEAM DATA

(1) Abridged Callendar Steam Tables

By the late H. L. Callendar, revised by G. S. Callendar. Fourth edition. Centigrade Units. Pp. 8. 1*s*. net. Fahrenheit Units. Pp. 8. 1*s*. net. Charts for above. 18½ in. × 16 in. 6*d*. net each. (London: Edward Arnold and Co., 1939.)

(2) The 1939 Heat-Entropy Diagram for Steam Plotted from the 1939 Callendar Steam Tables

Based on Research by Prof. A. C. Egerton and G. S. Callendar. (Published for the British Electrical and Allied Industries Research Association.) 38½ in. × 33½ in. (London: Edward Arnold and Co., 1939.) 4*s*. net.

(1) IN association with the 1939 Callendar Steam Tables [Fahrenheit Units] there have also been published, in convenient octavo pamphlet form, two sets of Abridged Callendar Steam Tables. These, which are now in their fourth editions, are available both in centigrade units and in Fahrenheit units, and appropriate to each there has also been prepared a total heat-entropy chart, 15 in. × 18 in.

In these tables and charts a considerable amount of revision has been effected in order to bring the figures presented into accord with the results of recent work in this field of research. To meet also the extending needs of those concerned with the design, testing and operation of steam plants, the values have been carried on to a pressure of 3,000 pounds per square inch. Included are a number of equations for saturated steam and general equations for steady flow, so that for most general purposes these publications supply such information as will be required at very moderate cost—a consideration which should place them within the reach of students.

(2) Where, however, the nature of the work demands more extensive data and a chart of larger scale, the 1939 Heat-Entropy Diagram for Steam is now available. This is of large size, on a sheet 38½ in. × 33½ in., and has been plotted from the 1939 Callendar Steam Tables based on research by Prof. A. C. Egerton and Mr. G. S. Callendar, on behalf of the British Electrical and Allied Industries Research Association. It has been produced in three colours and, as a result, any one of its closely grouped series of lines can be followed with ease to the desired point or vice versa. The lattice on which the diagram is plotted and which represents co-ordinates of entropy and heat is shown in green, the scales being 1 cm. to 0·01Φ and 1 cm. to 10 B.Th.U. per pound. The pressure, temperature and dryness curves are in black, while those of volume and superheat appear in red. Recalling the trend of these several curves in this type of chart, it will readily be seen that the arrangement adopted is the most favourable to ease of interpretation.

The care which has been taken in plotting the vast number of values which have been necessary for the preparation of so extensive a diagram, and the remarkable accuracy with which it has been reproduced in three different colours, reflect the highest credit on those responsible for the original and on those also to whose technical skill its reproduction is due.