

present edition to make a number of changes, some of which call for brief comment.

The tables dealing with the relative accelerations due to gravity at different latitudes have been recomputed on the basis of the recent work of the U.S. Coast and Geodetic Survey. New water-vapour pressure tables have been recalculated from the latest Reichsanstalt investigations, a modification of Van der Waal's formula being employed for the purpose of interpolation.

These alterations have involved extensive revision of a number of associated barometric tables, together with those dealing with the ventilated hygrometer, the treatment of which is very satisfactory. The most important advance in the matter of the wet- and dry-bulb hygrometer was the discovery (known to Belli so far back as 1830) that it may be made a trustworthy instrument if the wet bulb is exposed to moving instead of to still air. Even then different instruments were found to give different readings to an extent depending on the shape and dimensions of the thermometer bulb and stem.

But all such idiosyncrasies were swept away by the later discovery that if an air-velocity of not less than 3 metres per second is employed, agreement results in the readings afforded by various instruments. In practice the velocity of the air need not be known so long as it is above that which gives sensibly the greatest depression of the wet-bulb thermometer.

Among other new tables are those for converting barometric inches or millimetres of mercury into the millibars which now receive international acceptance.

The various logarithmic and simpler trigonometrical tables which appeared in former editions have now been omitted—a retrograde step, we think, from the point of view of the convenience of the reader.

It may not be known to all readers of NATURE that the Smithsonian tables are not obtainable in the ordinary way by purchase through a bookseller.

### Our Bookshelf.

*Elements of Radiotelegraphy.* By Lieut. Ellery W. Stone, U.S.N.R.F. Pp. vii + 267 + xxxiii plates. (London: Crosby Lockwood and Son, 1920.) Price 16s. 6d. net.

THIS is a work written with the primary object of forming a manual of instruction for those in the wireless branch of the U.S. Navy, but on account of the clear sketch of the subject it gives, it will probably appeal to a wider circle. The way

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in which the elementary principles are set forth should be appreciated on both sides of the Atlantic. Details are given of several systems better known in America than here, but French and German methods, as well as some originating from this country, are also dealt with. The book has a breadth of outlook which is refreshing after some works which tend towards making one think that all wireless progress is due to one group of investigators. The author does not favour any one system unduly, although naturally he has to base a certain proportion of his remarks upon the various systems employed in the American Fleet. This includes a good deal of interest regarding the recent developments of the Poulsen arc system, and apparatus up to 1000 kw. is illustrated. We only regret that considerations of space have rather curtailed the treatment of the thermo-ionic valve, or "electron tube," and that wireless telephony, as distinct from telegraphy, receives only a passing reference, for it is well known that the American Navy made early advances in this direction. The treatment throughout is non-mathematical; the range covered embraces elementary principles as well as up-to-date methods, and the illustrations are excellent.

*Exercises from Elementary Algebra.* By C. Godfrey and A. W. Siddons. Vols. i. and ii., complete. (With Answers). Pp. x + 395 + c. (Cambridge: At the University Press, 1920.) Price 7s. 6d. net.

THE exercises in this book are identical with those in the first edition of "Elementary Algebra" by the same authors, with the exception that some new revision papers have been inserted. The first fourteen chapters deal with elementary algebra up to quadratic equations, graphs, and the graphical solution of equations of degree higher than the second. Then follow thirteen chapters which take in logarithms, surds, progressions, rate of change and simple differentiation and integration. An appendix of eight chapters on various forms of linear and quadratic equations, on factors, etc., has been added.

*Catalysis and its Industrial Applications.* By E. Jobling. Second edition. (Text-books of Chemical Research and Engineering.) Pp. viii + 144. (London: J. and A. Churchill, 1920.) Price 7s. 6d. net.

THE first edition of this useful little book was reviewed in NATURE for February 17, 1916. Since that time, the subject of catalysis has undergone extensive developments, and the present edition aims at bringing the book up to date. Besides necessary alterations, two chapters have been added, one on the synthesis of acetic acid, alcohol, and allied compounds, and the other on enzymes, electro-chemistry, and vulcanisation accelerators. A number of references, both to text-books and to patents, are given at the end of each chapter for the assistance of readers desirous of obtaining fuller details of the processes discussed.