

THURSDAY, MARCH 12, 1914.

CHEMISTRY FOR ADVANCED STUDENTS.

- (1) *A Treatise on Chemistry*. By H. E. Roscoe, F.R.S., and C. Schorlemmer, F.R.S. Vol., ii., *The Metals*. New edition completely revised by the Rt. Hon. Sir Henry Roscoe and others. Pp. xvi+1470. (London: Macmillan and Co., Ltd., 1913.) Price 30s. net.
- (2) *A Dictionary of Applied Chemistry*. By Sir Edward Thorpe, C.B., F.R.S. Assisted by Eminent Contributors. Revised and enlarged edition. In five volumes. Vol. v., Pp. viii+830. (London: Longmans, Green and Co., 1913.) Price 45s. net.

JUST as the leaves of our deciduous plants fade away in autumn, and in winter perish, so do our science books have their autumn and their winter. They cannot live long under a régime which changes with the fleeting years. The publisher's spring-time brings forth an array of fresh books, but none are more welcome than some of the older and familiar forms revitalised and newly adapted to the change of environment. The reviewer has therefore a pleasing task in introducing the new editions of the above-named books to readers of NATURE, and this the more because each book is a familiar friend to chemists the world over.

(1) The new edition of "Roscoe and Schorlemmer"—as it is colloquially called—merits a hearty welcome. This book stands on the most convenient shelf in the libraries of thousands of chemists, and its well-thumbed pages bear eloquent testimony to its utility and value. This has continued, edition after edition, since 1878, when vol. i. was published. The first edition was thus born before many of us, in this generation, took up the test-tube and the wash-bottle; and we have grown up using "Roscoe and Schorlemmer" as a kind of alkoran. The book, in consequence, must have exercised a deep influence on the present generation, and it is a book of which British chemists have been proud.

It is interesting to see how the concepts of physical chemistry gradually permeate, modify, and illumine even so conservative a subject as the "Systematic Description of the Metals and their Derivatives." True enough, there are no very marked changes in the descriptive matter ranging from pages 224 to 1406, yet the first 223 pages are largely occupied by physical chemistry, and the last 42 pages have a clear succinct account of the present state of our knowledge of that

fascinating subject, "The Radioactive Elements." In the chapter on specific heats, a page or two might perhaps have been spared for Einstein's work on the atomic heats of solids to show how theory has at last given a reasoned explanation of the "constancy" of the number 6. The chapters on crystallography and on spectrum analysis are specially good. The new edition has all the strong points of former editions, and it can therefore be confidently recommended to advanced students as the best text-book extant on descriptive inorganic chemistry.

(2) The fifth volume of "Thorpe's Applied" completes the work. The concluding volume maintains the high standard of those which precede, and the observations on the fourth volume in NATURE, August 14, 1913, are of equal weight here. This volume covers subjects ranging from "Sodium to Z." The longer articles deal with sodium, soils, solutions and solubility, specific gravity, spectrum analysis, starch, sugar, sulphide dyes, sulphur and sulphuric acid, synthetic drugs or medical products, tannins, tartaric acid, tea, terpenes, thermometers, thermostats, thorium, tin, titanium, tobacco, toluene and toluidines, toxins and antitoxins, triphenylmethane colouring matters, tungsten, ultramarine, uranium, urea, uric acid, urine, vanadium, varnish, vat dyes, vegetable alkaloids, water, waxes, whisky, wine, destructive distillation of wood, wool, zinc, zirconium, etc. This list is quite inadequate, and gives but a feeble idea of the immense range of the subjects discussed in this volume. I am informed that the whole set of volumes contains some six thousand articles—short or long. The work is therefore *ganz deutsch* in its thoroughness.

As a rough imperfect test, in order to find how the fifth volume happens to fit the subjects in which I personally am interested, I wrote a list containing twenty items, and then consulted the "dictionary." I did not succeed in finding any mention of a thermostat for high temperatures (say 500°–1100°) for electrically heated muffles; or of μ - and λ -sulphur and their effect on the melting-point of the so-called "pure" sulphur. In the remaining eighteen cases the dictionary emerged triumphant. This result is very good, and illustrates the high probability that the work will not be found wanting when occasion demands. The dictionary, as a whole, reflects great credit on the wisdom and acumen of the editor, on the skilful and accurate condensations by the contributors, and on the enterprise and good taste of the publishers.

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