difference in details. This difference, however, the international commission sought to eliminate as much as possible by the establishment of the basic principles on which the analyses should be conducted, and a reference to the various official methods for the details in each case.

This work points out in a most marked manner the functions still remaining to the international commission; *viz.*, to secure at least practical unity in details of manipulation, as well as in the principles of the analysis. M. Sidersky is to be congratulated on the effective manner in which he has carried out the instructions given him by the International Congress.

H. W. WILEY.

A SHORT MANUAL OF INORGANIC CHEMISTRY. By A. DUPRÉ, PH.D., AND H. WILSON HAKE, PH.D. Third edition, revised and partly rewritten with special reference to the periodic law. London: Charles Griffin & Company; Philadelphia: J. B. Lippincott Company. 1901. ix + 391 pp. Price, $3.00.

The introductory portion which precedes the description of the properties of the various elements and their compounds is very concise, and needs must be so to condense within the space of 101 pages all the general principles of chemistry, together with much information on physical and thermo-chemistry.

In Chapter VI the authors say in a foot-note: "A rapid method, not commonly known, for converting centigrade degrees into Fahrenheit degrees, is as follows: double the centigrade degrees, and subtract from them one-tenth of their quantity; to the remainder add 32, and the result is the corresponding degrees Fahrenheit."

This method while not new is very rapid, and deserves to become more widely known.

Some "Typical Elements and their Compounds" are then considered, 96 pages being devoted to oxygen, hydrogen, nitrogen, carbon, boron, silicon, sulphur, and phosphorus. The remainder of the elements are then treated according to the periodic system of classification.

The scheme followed in discussing the properties of the elements and their compounds is as follows: name; symbol and atomic weight; formula; molecular weight and percentage composition; occurrence in nature; physical properties; chemical properties; distinguishing tests; physiological action; preparation or manufacture; application; historical matter.

Under the heading "Physiological Action," it would have been well had the authors adhered to the original idea somewhat more closely. For example, under PH_3 nothing is said in reference to its poisonous character; again, sodium phosphate and potassium nitrate are not referred to as having any physiological action, while zinc sulphate, which is largely used as a mild astringent, is only mentioned as an emetic.

On the whole the work is clearly and concisely written, and contains a vast amount of information in a comparatively small space.

The book is poorly bound, many of the leaves separating entirely from the volume during the reading for review.

J. A. MILLER.

CHEMICAL LECTURE EXPERIMENTS. BY FRANCIS GANO BENEDICT, PH.D. New York: The Macmillan Co. 1901. xiii + 436 pp. Price, $2.00.

Dr. Benedict's purpose in preparing this book is, as he says, "primarily to furnish teachers with a large number of reliable lecture experiments." His aim is, also, to suggest experiments that may be performed with an ordinary laboratory equipment. Although excellent manuals of this kind have been prepared in this country, in Germany and in England, no one will, I think, consider this book of Dr. Benedict superfluous. The experiments are so well chosen and so clearly described with so many valuable and practical hints, that even a novice should have no difficulty in making them successfully. The omission of many experiments requiring fragile or costly apparatus may cause some regret, but since descriptions of most of them are to be obtained from the text-books that will probably be found in nearly all school or college libraries, their exclusion does not detract seriously from the value of the book.

The greater portion of the text is devoted to the illustration of the properties of the non-metals, but some very interesting experiments on the metals and their compounds are described. Any teacher will, I think, find this work a useful addition to his library.

L. B. HALL.

RESEARCH PAPERS FROM THE KENT CHEMICAL LABORATORY OF YALE UNIVERSITY. EDITED BY F. A. GOOCH. In two volumes. 8vo. Vol. I, xvi + 411 pp. Vol. II, xii + 415 pp., with 20 figures in the text. New York: Chas. Scribner's Sons. Price, $7.50.

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