

The above experiments confirm the results of Andrews and show that just as the absorption of acid vapors by filter-paper exposed to laboratory air may render the paper unfit for delicate titrations, as, for example, the determination of the hardness of water, so also the absorption of nitrous vapors may take place to such an extent as to oxidize solutions of iodate-free potassium iodide when filtered through such paper. With the paper used in these experiments the oxidation, although representing very small amounts of free iodine, was readily detectable by the appearance of a yellowish coloration when such a solution is acidified.

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NEW BOOKS.

A COMPENDIUM OF CHEMISTRY, INCLUDING GENERAL, INORGANIC, AND ORGANIC CHEMISTRY. BY DR. CARL ARNOLD. Translation by JOHN A. MANDEL, Sc.D. New York : John Wiley and Sons. Price, \$3.50.

Dr. Arnold is a professor of chemistry at Hannover, and the German original has held its place for twenty years and through eleven editions. It is obvious that such a book must possess qualities which will lead chemists in this country to welcome a translation. This contains 600 closely packed pages. 100 are devoted to general chemistry, 100 to the non-metallic elements, 100 to the metals, and 300 to organic chemistry. No space is given up to illustrations, none to history, none even to names of great chemists and discoverers, except as apparatus or laws may be called after them. Type of two sizes is employed, statements are usually brief, and the amount of information here compressed is surprising. It has an index containing not less than 5,550 entries. Together with this wealth of content the book has other excellencies which will commend it to those to whose wants it is adapted.

The original is called a *Repetitorium*; it may well take the place of those notes of a lecture course which few junior students can make without sacrificing the most profitable kind of attention to what is said. As such a substitute, as well as a book of reference later, this book is well adapted, and we hope that it will come into the hands of many students.

The translation has, obviously, been made with much care. Some hours of turning the pages have discovered no mistranslations more serious than optional for arbitrary; vaporization for boiling; and anthracite for bituminous. "Boron occurs only trivalent," and "simpler constructed," are samples of the worst of the not too numerous faults of style. It is chiefly in the connections between two sentences or parts of sentences, in the use of but, or however, or on the contrary, that translation betrays itself. This is by no means faint praise; the translator is to be congratulated on having successfully and well completed his task.

Errors of fact are few. The temperature at which water has a density the same as at zero is made 9° instead of 8° ; the density of ice at zero is made 0.93, which is a survival. Such trifles are inevitable, and that there are no more is high praise. But there is one respect in which the translator should revise the language of the original. Wherever ratios and proportions are mentioned, as in discussions about the atomic theory, or about densities and molecular weights, statements are made, some of which are erroneous and some vague and obscure; this, too, in regard to a subject where the utmost clearness and accuracy are none too much for the student. Page 13, "Only a definite quantity by weight * * * can take part, etc." This is too obscure a way of saying that the quantities of the two elements bear a definite ratio to each other. Page 11, "These proportions by weight * * * are always a whole multiple of the lowest quantity by weight, etc." A proportion or ratio is made a multiple of a weight, and the phrase *integral* multiple excludes ferric oxide from the list of compounds. Page 26, ammonia "has the specific gravity 17.07 with respect to oxygen taken as unity"; and in other sentences the molecular weight of oxygen is said to be the unit of molecular weights. It is, of course, intended that the molecular weight of oxygen is the *basis* and that one-sixteenth of the molecular weight of oxygen is the *unit* of molecular weights. It is to be hoped that a second edition will soon give opportunity to revise statements of the kind described.

The printer has done his work well. The page is attractive, the type clear and the paper satisfactory.

EDWARD W. MORLEY.

TRAITÉ D'ANALYSE DES SUBSTANCES MINÉRALES, PAR ADOLPHE CARNOT.
Tome second. Metalloïdes. Paris: V^e Ch. Dunod, Éditeur. 1904.
821 pp.

The first volume of this work, which appeared in 1898, was devoted to an unusually detailed discussion of the methods of quali-