

*On the Analysis of Zinc Ores.*—Through the courtesy of the editor of this Journal, the writer has been allowed to read before its publication the exhaustive paper by W. George Waring on "The Volumetric Determination of Zinc."

In this paper Waring points out, among other sources of error, the danger of loss of zinc by volatilization as chloride when using the Von Schulz and Low method.

The writer has also experienced difficulty in getting good results on some classes of ores by this method and, though he did not learn that he lost zinc by volatilization, finally adopted the following method, which will avoid this danger, as well as effect a more thorough decomposition, and afford an easier method of separating from iron and manganese than the method in general use.

Treat from 1 to 2.5 grams of the finely powdered ore in a flask of about 200 cc. capacity, with 15 cc. of strong hydrochloric acid; boil and effect as complete decomposition with the hydrochloric acid alone as possible, then add 5 cc. strong nitric acid and boil. When the red oxides of nitrogen have been mostly driven off, cool somewhat and add 10 cc. of a mixture of equal parts of strong sulphuric acid and water, boil vigorously, best holding the flask with a holder and moving it over the flame until all the nitric and hydrochloric acids are driven off and dense white fumes of sulphuric acid are evolved. Cool, add 40 cc. water and boil. This treatment will completely decompose most ores, but in case an ore is encountered that is not decomposed, it is necessary to fuse the insoluble residue with sodium and potassium carbonates, dissolve in sulphuric acid, evaporate to fumes, boil with water and add to the main solution.

In a large casserole place 50 cc. of strong ammonia and 25 cc. of water, and add slowly about 2 grams of sodium peroxide. Now, without filtering from the silica, pour the solution of the ore into the peroxide solution. This should be done slowly and with constant stirring. If the precipitate formed here is large, it is best to filter, dissolve the precipitate in hydrochloric acid, reprecipitate with the ammonia-sodium peroxide mixture, filter, wash the precipitate and unite the two filtrates for the zinc determination. When this precipitate is small, however, the amount of zinc carried down is too small to cause any appreciable error,

and it is easiest then to transfer the solution and precipitate to a graduated flask, fill to the mark, mix, filter through a dry paper, and take an aliquot part for the zinc determination. The hydrogen peroxide in the solution may be effectively removed by boiling off about half of the liquid before acidifying. The addition of hydrogen sulphide water after the addition of the acid destroys any trace that may have been left after boiling.

The solution is now ready for the zinc determination, unless the ore contains copper or cadmium, which must, of course, be removed.

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### NEW BOOKS.

ANNUAIRE POUR L'AN 1904, PUBLIE PAR LE BUREAU DES LONGITUDES.  
16119. 732 + 80 pp. Price, 1 fr. 50 centimes. Paris: Gauthier-Villars.

Exactly one-half of this volume is an almanac, with nothing in it of chemical interest. The latter half contains physical and chemical tables, and the reviewer is pleased to be able to modify his criticism of the former volume (1903), and to say that *this* volume is well worth its price to the chemist because of the careful revision and the addition of 13 new tables, the thermochemical tables contributed by Berthelot (47 pages) being alone well worth the cost of the book. These physical and chemical tables will, in future, be published only on alternate years, so that the volumes issuing on the even years will be the only ones of value to the chemist.

JOSEPH W. RICHARDS.

THE TECHNOLOGY OF SUGAR. BY J. G. MACKINTOSH. London: Scott, Greenwood & Co.; New York: D. Van Nostrand Co. 1903. 402 pp. Price, \$4.50 net.

A better title would have been "The Technology of Beet Sugar, with Some Supplementary Notes on Cane-Sugar Manufacture." The book will be welcome as a commendable treatise on the technology and history of continental beet sugar-house methods. As a review in English of the classic works of Horsin-Deon and other eminent European sugar-house engineers, it will be useful in the library of the sugar-house and technical school, if only to