

view of the work done on immune sera of the second order. The presentation is clear and concise, and can be understood easily by one who is not personally engaged in the work. In the points where the French and German schools disagree, the author is generally inclined to side with Ehrlich.

The last chapter of the book is devoted to the new biological test for proteids the so-called precipitin test.

The book can be recommended to all desirous of gaining general information on immunity.

P. A. LEVENE.

INDUSTRIAL USES OF WATER. By H. DE LA COUX. Translated from the French and revised by ARTHUR MORRIS. New York: D. Van Nostrand Co. 354 pp. Price, \$4.50 net.

Although this translation is somewhat abridged from the French original, which is a book of 496 pages, yet the field covered is a very wide one. Dyeing, printing and bleaching, soap-making, tanning, paper-making, photography, sugar refining and brewing are among the water-using industries discussed, as well as the use of water for boilers, laundry purposes and ice-making.

The chapter on feed-water for boilers is long and well-illustrated. The formation of boiler incrustations, and the sundry methods in use for their prevention are fully treated, although we find no mention of the employment of sodium fluoride for such purpose, a method first suggested by Doremus.

Boiler corrosion is also dealt with at length and there is given a good "Table of the reactions producing acids."

The author very properly points out that the hydrochloric acid, formed by the decomposition of magnesium chloride under boiler conditions, tends to set up a cyclic reaction.

To American readers the chapters on purification of water will be found disappointing. A number of foreign devices for water improvement are illustrated and described, but the results of their operations, which would give an idea of their relative merits, are not given, nor do we find mention of the excellent processes in use in this country.

Part IV devotes forty-four pages to "Residuary Waters and Their Purification," after which the book closes with a section dealing with water analysis. It will be noticed, in this section, that the analyst is directed to determine the sodium present in the water by making use of a filtrate derived from precipitating the

magnesium with an indefinite amount of sodium phosphate, directions which are, of course, impossible to follow.

Sundry other slips have crept into the text; for instance, on page 14 "The quantity of chlorine in a liter of sea-water is never less than 200 grams." Doubtless one-tenth of that figure was intended. Again, on page 45. "With the waters containing sulphates the scale is more difficult to deal with." Also on page 136 "The tanner endeavors to secure a water containing plenty of carbonic acid, and he can do this by forming an artificial waterfall and thus aerating the stream."

The free use of chemical equations throughout the body of the text is especially noteworthy.

The book contains much that will prove of value to those interested in the subject of "water."

W. P. MASON.

QUANTITATIVE ANALYSIS FOR MINING ENGINEERS. By EDMUND H. MILLER, PH.D., Adjunct Professor of Analytical Chemistry and Assaying in Columbia University. New York: D. Van Nostrand Co. 137 pp. Price, \$1.50.

This excellent little book was written primarily "to furnish the engineering students at Columbia University with the directions required for their course in quantitative analysis. No attempt is made to cover the entire field of inorganic analysis, but a few important analyses are given in considerable detail." Within these self-imposed limits the book is one of the best of its kind. The methods given are up-to-date and the most praiseworthy feature of the work is the way in which all the most recent literature on the methods is not only utilized but is referred to most copiously, whether it be found in journals, special pamphlets or larger works. In fact, it will be found very useful as a condensed bibliography of many important common analytical methods. This feature must have the effect of impressing on the students the necessity of remaining in touch with original sources and newer publications. It overcomes, to a certain extent, the chief pedagogical criticism which might be made of the method of instruction, *viz.*, that, in the reviewer's opinion, it would be more desirable to develop self-reliance in students after two months of analysis by gradually giving them less explicit laboratory directions and more copious references to the literature of an analytical method.

In two introductory chapters there are brief statements on such fundamental theoretical points as ionization, mass action, the