

orator, who has done a large part of the actual work of a research, before his own name at the head of a paper is refreshing evidence that doing justly by others in such matters is not entirely a lost trait among scientific men.

This volume is to be considered as the first volume of a series of biochemical studies to appear at times when the accumulated material justifies. The work covers a wide field of biochemical research and includes chemical investigations of animal tissues and tissue constituents; pathological and toxicological investigations; miscellaneous researches on biochemical subjects; and chemical investigations in plant physiology. J. M.

IMMUNE SERA. By PROFESSOR A. WASSERMAN. Translated by CHARLES BALDUAN. New York: John Wiley and Sons. 77 pp. Price, \$1.00.

The questions of acquired immunity have attracted more attention of the investigators than any other subject in modern medicine. The laboratory experiments on immunity have been quite fruitful in practical results, of which the discovery of diphtheria and tetanus antitoxins is sufficient proof. However, there are two distinct classes of infectious diseases. To one belong those where the morbid process is caused chiefly by the toxins manufactured by micro-organisms; to the other class, diseases caused chiefly by the organism of certain bacteria.

The diseases of the first order are cured successfully by antitoxins (like diphtheria and tetanus), those of the second group by bactericidal sera. The efforts of workers of recent years have been directed principally to the study of the properties and of the mode of production of sera of the second class. The experiments were facilitated to a degree by the discovery that toxic sera can be produced, not only to bacteria, but also to cells of higher animals. Thus, if an animal A is injected with the red cells of an animal B, the serum of the animal A turns toxic to the red cells of the animal B. It was found that a toxic serum owes its activity to two substances—one very little resistant to heat, the other more so. Progress in the knowledge of the nature of the active sera was achieved principally through the efforts of Metchnikoff in Paris and Ehrlich in Germany. Wasserman was at one time associated with Ehrlich and contributed, himself, very considerably to our knowledge of immunity. The book of this author that has just appeared in a translation by Balduan is devoted to a re-

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