cause the appearance of choline, both in the cerebro-spinal fluid and in the blood, which, of course, means a decomposition of lecithin. Subsequent observers have stated that the crystals which Halliburton believed to be choline platinum chloride were in reality ammonium platinum chloride; but it is difficult to see how this can be true, in view of the confirmatory physiological tests to which Halliburton submitted his material. In every case, the suspected substance was found capable of causing a rise of blood pressure in a normal animal, but not in an animal previously treated with atropine.

Halliburton's book is not a dispassionate treatment of the subject, which takes into account the relative importance of various matters considered, but is rather an expression of an overpowering enthusiasm possessed by the writer for his own work, which often causes trivial matters to assume gigantic importance. This, however, is a defect so rarely found in text-books, that we are more inclined to approve it than condemn it, and have no doubt that the book will be generally read with pleasure.

WALTER JONES.

BACTERIOLOGY AND THE PUBLIC HEALTH. By GEORGE NEWMAN. Philadelphia: P. Blakiston's Son & Co. 1904. 8vo. xx+497 pp. Price, $5.00.

This book is in reality a third edition of "Bacteria, Especially as They Are Related to the Economy of Nature, to Industrial Processes, and to the Public Health," issued in 1899, in the Science Series, published by Putnam's Sons. In its present form, however, it purports to be a new book, since several new chapters have been added, and the whole enlarged and revised.

The first chapter on the Biology of Bacteria is very short compared with the rest of the book, comprising less than 30 pages. In this there are a number of statements of doubtful accuracy, while others are ambiguous or misleading, *e.g.*, the word capsule is used to designate the cell wall; the modes of reproduction are described as budding, division, and spore-formation for the bacteria and yeasts, but it is not definitely stated which method characterizes each class; chemiotaxis, without further comment, is described as "the somewhat mysterious power by which cells possess inherent attraction or repulsion for other cells;" whereas, it is a response to chemical stimuli, and oxygen and the potassium salts are among the most powerful chemiotactic agents. In this

chapter, also, a half page only is devoted to the bacterial plant diseases, and while such diseases are recognized, no mention is made of several well-known diseases where the etiology has been well worked out, as for instance, pear blight and cabbage rot.

The author's discussion of the subjects of bacteria in their relation to water, to air, to soil, to sewage, to milk and other food supplies, and to the various fermentations, is especially good. Here in 250 pages (Chapters II to VIII inclusive) is given an excellent digest of our present knowledge of these subjects. The general reader, as well as the chemist, biologist, hygienist and medical man, will find these chapters both interesting and instructive. The frequent foot-note references here, as throughout the volume, add much to its value.

The chapters on the relation of bacteria to disease production occupy 170 pages. One describes how bacteria produce disease, channels of infection, etc., and then takes up in outline some of the most important human diseases. Another chapter considers tuberculosis as a type of bacterial disease. This is a good digest of the subject, and contains quite a full discussion of the question of the intercommunicability of the human and bovine types. A third chapter considers the etiology of tropical diseases.

The two final chapters treat of the question of immunity and antitoxins and of disinfection.

It is unfortunate that the addition of the new matter, about 150 pages, and the new dress of the book, should have raised the price from $2.00, that of the first edition, to $5.00, the price of the present one. This has been necessitated, in part at least, by the introduction of a large number of full-page plates, 31 in all. While these plates are of average merit they do not seem to the reviewer to be necessary or even desirable in a work of this general nature. Quite as much value would be gotten from good line drawings in the text. There are three colored plates of the acid-fast bacteria. These are of questionable value in any book, and seem entirely out of place here.

On the whole, however, the book is an excellent one. The literary style is good, and the author has succeeded in presenting the important facts relating to our present knowledge of the bacteria in a simple, attractive, and in general, an accurate way. The publishers have done their part well, and it is to be hoped that in its new form the book will reach a wide circle of readers and students.

W. D. FROST.