

various methods used in the attempt to obtain even distribution of sewage on bacterial beds. The chapter "Sterilization by Heat, Chemicals, and Electricity" has been carefully revised. In this chapter the importance of sterilization when effluents are discharged near shell-fish layings is carefully and fully discussed, numerous papers on the subject being cited. The concluding chapter of the book "Agricultural Value of Bacterial Effluents-Trade Effluents" contains comparatively little new matter. In conclusion, the reviewer can only repeat what he said in 1901 regarding the first edition, that notwithstanding its faults of arrangement and its lack of clear concise conclusions, it is a book of great value to all students of sewage disposal, and a book which could have been written only by one who had given the most careful study to the subject.

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**Elements of Water Bacteriology.** By SAMUEL CATE PRESCOTT and CHARLES-EDWARD AMORY WINSLOW. Second Edition, Rewritten. New York: John Wiley and Sons. London: Chapman & Hall, Limited, 1908. 12mo. xii+258. Cloth, \$1.50.

The first edition of this book was published in 1904 and was immediately recognized as a most valuable contribution to the knowledge of water analyses as viewed from the bacteriological standpoint. The publication of the second edition in less than three years shows the favor with which this book has been received, as well as the growing importance of the subject. Not many years ago a chemical examination of a water was considered to be all sufficient for determining its sanitary character; today it is universally recognized that while a chemical examination gives data from which not only the past history, and the changes which the purifying substances have and are undergoing, can be told better than in any other way, and that, as a rule, the character or nature of the organic matter can be determined, a chemical analysis often signally fails in a most important point, in detecting small amounts of excreta accidentally washed or carried by various means into wells, or small streams, and further, can give no direct answer to the question whether or not a given water should be considered dangerous on account of containing bacteria derived from the intestinal tract of the higher mammals. The answer to these questions can be given only by a bacteriological study of water, and for this purpose Prescott's and Winslow's *Elements of Water Bacteriology* is admirably fitted. This book gives the latest and most important contributions to the subject, discusses very carefully the conclusions to be drawn from bacteriological data, and states the present view of bacteriologists scientifically and conservatively. In many ways the second edition is a decided improvement over the first, for not only are data not known in 1904 given, but the importance of these data in modifying and changing to a certain degree the views held in 1904 is clearly stated. The principal additions are in those chapters

relating to the self-purification of water, the isolation of the typhoid bacillus, the interpretation of the colon test, and the newer presumptive tests for the colon bacillus, while a new chapter has been introduced "The Bacteriology of Sewage and Sewage Effluents"—a chapter which could not have been written in 1904 on account of lack of data. In the Appendix there is given the method of media making as recommended by the Committee on Standard Methods of Water Analyses, together with the formulæ for preparation of special media, as Loeffler's Blood Serum, Phenol Broth, MacConkey's media, etc. Not the least valuable part of the book is the table of references to original publications, which may be said to include all the important contributions to water bacteriology.

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