

Dr. Savage has prepared this volume of 170 pages as "a practical manual" dealing with the bacteriology of water, milk and other food products and air. It begins with two introductory chapters dealing in particular with the significance of colon bacilli, streptococci and anaerobic spore formers as "indicator organisms." Then follow chapters on Water, Soil and Sewage, Shellfish, Milk, Modified Milk and Milk Products, Bacteriology of Meat and Meat Products, Air and the Determination of Antiseptic and Germicidal Power.

A book of this size covering so wide a field can not from the nature of the case give a complete and authoritative treatment of the various subjects under discussion—such a treatment for example, as Dr. Savage has given to the problems of water bacteriology in his excellent "Bacteriological Examination of Water." On the other hand the discussion seems somewhat too discursive and the procedures and standards of interpretation are stated with insufficient clearness and definiteness to make the book altogether satisfactory as a student's text-book or a practical manual for the laboratory worker. Dr. Savage does, however, give an excellent summary of recent English discussions in regard to the subjects treated, with a good list of reference to original sources which will make the book valuable for advanced students.

From an American standpoint the most serious defect in this work is the almost complete lack of acquaintance with the progress which has been made along these lines on this side of the water. It seems strange, indeed, to find a book on the bacteriology of milk, water, air and food with no reference to American investigations on the direct microscopic examination of milk, on the lactose bile presumptive test, on the bacteriology of sewer air and on the bacteriological examination of shellfish.

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THE AMERICAN MUSEUM OF
NATURAL HISTORY

Molecular Physics. By JAMES ARNOLD CROWTHER. Philadelphia, P. Blakiston's Son & Co.

This little book of 175 pages, though entitled "Molecular Physics," contains in reality only such material as is usually found classified under the general head "Electronics." It represents an attempt to present in elementary, almost in popular, form the recent developments in physics which center around X-rays, the electrical phenomena observable in exhausted tubes and radioactivity. The author is himself Fellow of St. John's College and demonstrator in physics at the Cavendish Laboratory. The points of view taken are then those which have grown up in that inspiring atmosphere out of which have unquestionably come more of the influences which have molded modern physics than from any other two places in the world combined. Freshness and originality of treatment are to be expected from such an author, and the expectation is not disappointed. The first two chapters deal with the determination of e/m and e , the third and fourth with the work on positive rays, J. J. Thomson's beautiful photographs being given especial attention. The fifth chapter gives the usual deductions found in a chapter on the nature and size of an electron. The sixth and seventh chapters are entitled the Chemistry of the Model Atom and the Atom in Vibration and represent the best elementary treatment I have seen of atomic models in relation to spectroscopy.

The eighth chapter presents just a touch of the conventional molecular physics in the discussion of Van der Waal's equation, but the last half of the chapter returns to the electron theory of metallic conduction. This subject is treated in the usual way, but unfortunately, I think, without any attempt to explain, or even to state the serious difficulties which the theory encounters. This is the one place in the book where the untrained reader will perhaps obtain a somewhat erroneous impression. The last chapter on the Atom in Dissolution is a very brief survey of the subject of radioactivity. Altogether the book is admirable and contains elements of interest for both the physicist and the general reader.

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