Most of these papers are interesting and valuable but from their nature they are difficult to abstract.

The number of samples examined in the laboratory in 1898 was 6,158; in 1897, 5,533. The majority of these consisted of beer, wine, and oils, but almost everything dutiable is represented.

ANDREW A. BLAIR.

(1) EXPERIMENTAL CHEMISTRY. By L. C. NEWELL. 12 mo. xvi+410 pp. 114 illustrations. D. C. Heath & Co. Price, $1.10.

(2) THE ELEMENTS OF INORGANIC CHEMISTRY. By W. A. SHENSTONE. London: Edward Arnold. 12mo. xii + 506 pp. 142 illustrations.

(1) The purpose of this book, as the preface states, "is to promote the more efficient teaching of chemistry by modern methods. The choice and arrangement of subject-matter is based on the author's extended experience with students of varied ability. The book as a whole is the outcome of a desire to provide a course in chemistry which shall be a judicious combination of the inductive and deductive methods." Considerable care has been taken to eliminate errors since it appears from the preface that the entire MS. has been read by three other teachers of chemistry and the proof by fourteen.

Laboratory methods are given prominence—there are 201 experiments in all—and the interrogation point is freely used; some teachers will think too freely. Sixteen pages are included in the chapter on acids, bases, and salts and 25 under atoms, molecules, and related subjects. This latter chapter is open to serious criticism. The statements contained in it are well enough, but such topics as the methods for determining atomic weights, ions and ionization and applications of the theory of electrolytic dissociation, are out of place in a first book on chemistry. When teachers of chemistry learn not to give as a first course more than is necessary, and to follow this up by supplementary courses, we shall have better results. Shooting over the heads of students is still the most common fault in text-books and teachers. The book is an excellent piece of work mechanically.

(2) Like the book noticed above this is evidently intended as a first book in chemistry. The author says: "I have endeavored to provide a book which begins with a course of experimental work for quite young students and develops at the later stages

into a text-book suitable for those who are older; that is, into a text-book containing fewer facts than those written solely for senior students." Part I contains a concise and well-written introduction treated under the captions: "The Chemistry of Fire; Gain of Weight and Combustion; Lavoisier's Researches on Combustion; Is Matter Indestructible? Can We Create It? and Principle of the Conservation of Mass." These topics are briefly treated and in language easily comprehended by a beginner and are illustrated by experiments to be performed by the student.

Chapters II and III contain an introductory study of water, illustrated by experiments which teach methods of determining melting- and boiling-points, the use of the barometer, fractional and destructive distillation, the pipette, specific gravity determinations, etc. Chapter IV tells how to dissolve, crystallize, the use of plotted curves to show solubility, the desiccator, etc. Chapter V treats of the electrolytic decomposition of water, the chemical elements, compounds and mixtures, synthesis, analysis, substitution, and double decomposition. Chapter VI continues the study of water and treats of water of crystallization, the nature of solution, the action of water with the metals, the composition of water by weight, the law of constant proportions, hydrogen peroxide, and the law of multiple proportions.

Chapter VII is a study of the atmosphere, combustion, flame, plants, and animals.

Part I as outlined above covers 94 pages and contains not a single symbol. In Part II chemical nomenclature is taken up and the rest of the book follows, in great measure, the ordinary line of treatment. Here again too much is given, but in other respects the book is a good piece of work and worth the careful study of teachers. E. H.

AIR, WATER AND FOOD FROM A SANITARY STANDPOINT. By ELLEN H. RICHARDS AND ALPHEUS G. WOODMAN. First edition. First thousand. New York: John Wiley & Sons. 1900. 226 pp. Price, $2.00.

This is an extremely practical book dealing with the common problems of sanitary science in a simple yet thorough manner, and one can not read it through without being convinced that the authors know from their own observations what they are