attention to the epoch-making discovery in 1804 by Appert of the efficacy of canning, and to the studies of Liebig, Masson, Pasteur and others.

Then follows a general discussion of the causes and effects of decomposition in foods, with a theoretical resumé of the phenomena of putrefaction. Considerable attention is given to preservation by heat and to a practical treatment of the canning industry, the general technique of canning various fruits and vegetables as well as of fish, meats, meat products and milk being given in detail.

Preservation by cold is treated in a separate chapter dealing with the question of cold storage as applied especially to meat, fruits, fish, eggs and dairy products. Preservation by desiccation follows, with commercial methods for the drying of the various foods to which the process is applicable.

The chapter on food preservation by antiseptics is of paramount interest, on account of the increased use in recent years of chemical preservatives in foods. While discussing the relative efficiency of the various commonly used antiseptics, the author unqualifiedly and justly condemns the use of these substances in food, with the possible exception of sulphurous acid in wine, the use of which, under certain restrictions in the wine industry, has in his opinion been justified to some extent by long practice.

The final chapter on the preservation of eggs is fairly complete and timely.

It is to be regretted that the usefulness of the book is restricted by the lack of an alphabetical index. ALBERT E. LEACH.

THE ELEMENTS OF CHEMICAL ENGINEERING. By J. A. GROSSMAN, with a preface by SIR WM. RAMSAY. London: Chas. Griffin & Co. Philadelphia: J. B. Lippincott & Co. viii + 152 pp. Price, $1.50.

So far as it goes this is a good book but it certainly does not contain sufficient to convert the average graduate in chemistry into an engineer. The book describes and figures the technical equivalents of the beaker, flask, condenser, fractioning tube, air-bath, blowpipe, crucible, funnel, mortar and measuring vessel. There are chapters on the steam boiler and other sources of power; on the application of heat; on the materials used; on technical research and the designing of plant.

The first thing a chemical engineer must do is to design, lay out and build his building. Little will be found here to help him.

Then he must put in shafting, pulleys and belts, without help so far as this book is concerned. The treatment given to the subjects chosen is also too brief, sometimes apparently from lack of information, as important types are not even mentioned. The book is characterized by diffuseness; what is wanted is specific information in short crisp sentences. Chemical engineering is a large subject. To get even an elementary treatise within 500–600 8vo pages it will be necessary to make every word count.

It may be somewhat doubtful whether any one person can be found able to write a satisfactory treatise, which had better be the result of coöperation from several well versed in different phases of the subject. EDWARD HART.

DIE CHEMISCHE REICHSANSTALT VON WILHELM OSTWALD Leipzig 1906

In this pamphlet of twenty-eight pages, after narrating how the plan of a National Bureau of Chemistry took form, Ostwald explains how university laboratories of chemistry are so well organized for instruction as not to be well fitted for some of the most important kinds of chemical research.

The leaders of chemical science in Germany assumed that the proposed laboratory should provide for research in pure chemistry and in applied chemistry, but the technical chemists desired no such concession in the name to their supposed interests, and the new institution, if established, is to be *die chemische Reichsanstalt*, and not *die chemisch-technische Reichsanstalt*. Four divisions are proposed, one for inorganic chemistry including determinations of atomic weight; a second for analytical chemistry; a third for organic chemistry; and a fourth for physical chemistry. For the foundation of such an institution, chemical manufacturers in Germany are ready to provide considerable sums.

Ostwald mentions the fact that part of the activity of our National Bureau of Standards coincides with that of the proposed *chemische Reichsanstalt*. EDWARD W. MORLEY.

RECENT PUBLICATIONS.

FIRST STAGE INORGANIC CHEMISTRY. By G. H. Bailey. Edited by William Briggs. Fourth Impress. (Third Edition). London: Clive. 1906. 264 pp. 2/.

URIC ACID. By A. Haig. London: Churchill. 1906. 2/6.