

wards eliminated where practicable. Otherwise the mains were flushed out periodically.

Barwise supplies the following statistics to show the effect of sanitation in London, England. Houses with privy system, 1 case of typhoid for every 37 houses; houses with pail system, 1 case of typhoid for every 120 houses; houses with watercloset system, 1 case of typhoid for every 558 houses (page 81). There is no doubt that sanitation pays. If additional evidence is needed Prof. Mason furnishes it in his book.

Purification of water by filters—slow and rapid—is handled in considerable detail. The efficiency of slow and rapid filters, based upon the removal of bacteria, is nearly the same, but the relative cost differs according to conditions. Other things being equal, slow sand filters are best suited for clear waters and rapid filters best for those of turbid or colored character (page 180). It is difficult to understand why Prof. Mason refers to rapid filters as mechanical filters when, as a matter of fact, they have very few mechanical parts. The early types had mechanical scrapers, etc., hence the old name; but to-day the name is a misnomer. The drifting sand filters of Toronto are referred to, but the author states that they are "almost too new to allow of much being said with reference to their fitness for the work assigned to them" (page 184).

Sterilization and aeration are dealt with with care.

This book deserves a place on the shelf of every water engineer and waterworks superintendent, as it covers the whole subject of the quality of water according to the best knowledge available up to the present moment.

**Applied Electricity for Practical Men.** By A. J. Rowland. Published by McGraw-Hill Book Company, Inc., New York. First edition, 1916. 375 pages, 323 figures, 5 x 7½ ins., cloth. Price, \$2.00 net. (Reviewed by R. L. Hearn, Ontario Hydro-Electric Power Commission.)

As the author states in his preface, this book has been written for practical men; that is, men who are working with and installing electrical machinery and equipment. It has been in the process of making during his twenty years of experience in teaching applied electricity to practical electrical workers.

The book does not in any way touch the actual design of electrical apparatus and pure theory is carefully avoided, except where it has a direct bearing on the practical problem in hand.

A clear statement of fundamental principles and explanation of apparatus is given only insofar as it is necessary, in order to present clearly the essential elements of the subject.

The book abounds with excellent numerical problems that bring out clearly the practical use of the principles and apparatus given in the text.

The apparatus and equipment shown in the cuts are up-to-date and well chosen.

The following headings of each chapter will show to some extent the ground covered and contents of the book: Chap. 1, Fundamental Principles; Chap. 2, Electromotive Force and Ohm's Law; Chap. 3, Magnets and Magnetic Flux; Chap. 4, Direct Current Dynamo, E.M.F.; Chap. 5, Drum Armatures and Multipolar Machines; Chap. 6, Electric Heating and Electric Power; Chap. 7, Direct Current Systems of Distribution; Chap. 8, Direct Current Motors; Chap. 9, More principles that were not included in Chap. 1; Chap. 10, Alternating Current Principles; Chap. 11, Alternating Current transformers; Chap. 12,

Polyphase Current Principles; Chap. 13, Alternators; Chap. 14, Alternating Current Motors; Chap. 15, Other Alternating Current Machinery; Chap. 16, Storage Batteries; Chap. 17, Electric Lights; Chap. 18, Wires and Wiring.

**Qualitative Analysis.**—Vol. 1 of Analytical Chemistry. By F. P. Treadwell, Ph.D. Published by John Wiley & Sons, Inc., New York City; Canadian selling agents, Renouf Publishing Co., Montreal. 538 pages, 6 x 9 ins., illustrated, cloth. Price, \$3.00 net. (Reviewed by C. H. Heys, Thomas Heys & Sons, technical chemists, Toronto.)

This work covers in clear and comprehensive details the science of elementary chemistry, suitable for students with some preliminary studies.

The pages covering the general principles of chemical examination, theory of electrolytic dissociation, nomenclature of ions and equilibrium of solids and liquids, is fully and concisely written.

The chapters on solubility, electromotive series and hydrolysis, are worthy of mention.

Part II. (Reaction of Metals, Their Recognition and Chemical Characteristics) is an outstanding feature of the book. A stimulating attraction of this part is the information regarding the occurrence and origin of the elements.

The methods, and in a number of cases, the cuts of required apparatus for complex detection of metals, is comparable with many of the recent works on advanced chemistry.

In Part III. the author deals with the reactions of acids or anions. In this case I may reiterate what has been said of Part II.

Systematic analysis, which is taken up in Part IV., is a clear and concise explanation of the separation and detection of metals and their compounds. The tabulated forms are well arranged.

Reactions of the rarer metals are fully described and brings the work well up to date in this field of chemistry.

**Passenger Terminals and Trains.** By John E. Droege, general superintendent, N.Y., N.H. & H. Railway. Published by the McGraw-Hill Book Co., Inc., New York City. First edition, 1916. 410 pages, 220 illustrations, 6 x 9 ins., cloth. Price, \$5. (Reviewed by J. R. W. Ambrose, chief engineer, Toronto Terminals Railway Co., Toronto.)

The author declares that it is the purpose of the book not to consider public regulation, etc., but the passenger service itself, to take up the design of the massive terminals through which the passenger traffic passes, to determine what is good and bad in the operation of these terminals and to deal with the operation of the trains which use them.

One has only to peruse a few pages to learn that the author is thoroughly conversant with passenger terminals and their operations.

The descriptions of the various stations are exceptionally accurate and exhaustive. The author does not criticize to any extent the weak points in each terminal, but the subject is put in such a clear manner that even the layman can pick and choose for himself.

The book, containing numerous illustrations and plans, is written in a very clear, interesting and readable manner and will be of exceptional value to architects and engineers who contemplate terminal work, and to the student making a study of railway management.