

Part II is an alphabetical index of authors referred to with dates and reference numbers to the dates in Part I.

Part III is a subject index where a similar arrangement of dates and numbers are used, the subject coming first in alphabetical order, and the name of the author last.

On pages 10, 11, and 12, are given the full text of the assay processes of the British Pharmacopoeia of 1885 for cinchona, nux vomica, and opium, and on pages 38, 39, and 40, are given the full text of the assay processes of the same Pharmacopoeia of 1898 for belladonna, cinchona, ipecac, nux vomica and opium tincture.

On pages 33 and 34, are given a translation of the assay processes of the German Pharmacopoeia of 1895 for cinchona and opium, and on pages 22, 23, 24, 25, and 26, are given the assay processes of the U. S. Pharmacopoeia of 1890 for cinchona, nux vomica, and opium.

The recent British Pharmacopoeia gives also an assay process for opium which is not quoted here apparently because it is so nearly identical with the process for making the tincture of opium by assay. But it would have been better to have quoted the process for opium rather than that for the tincture, since it is very convenient to have all the complete pharmacopoeial processes quoted here together for ready reference in accordance with the general plan of the pamphlet.

The chief utility of this work outside of the Committee of Revision, is in the time and labor that may be saved by it to any one who is about to undertake any research or investigation of any of the natural alkaloids, and although its field is not large it is rather to be regretted that the "pamphlet is not for sale." It is however altogether probable that any one needing a copy may get it from the committee.

E. R. SQUIBB.

TRAITÉ D'ANALYSE DES SUBSTANCES MINÉRALES. PAR A. CARNOT.  
Tome premier.—Méthodes Générales d'Analyse Qualitative et Quantitative. Paris: V<sup>e</sup> Ch. Dunod, Editeur. 1898. 992 pp.

This treatise on mineral analysis by M. Carnot is to consist of three volumes of about 1000 pages each. The first volume which has just been issued comprises 992 pages of which 459 are devoted to qualitative methods.

The first chapter treats of the blowpipe and blowpipe methods including heating in open and closed tubes, on charcoal and on the end of a platinum wire ; flame reactions and fusion in borax and microcosmic-salt beads ; fusion with sodium carbonate, with reagents on charcoal and on platinum foil ; the tests for sulphur and examination with cobalt solution. The separation and distinctive tests for the metals are given tersely and clearly.

Chapter 2 treats of the Bunsen burner, and contains a scheme for the systematic examination of a sample by the previously described methods.

Chapter 3 treats of the spectroscope and accessories.

Chapter 4 takes up microchemical examinations and is an extremely interesting and instructive essay on this subject containing as it does much of the original work of the author.

Chapters 5, 6, and 7 comprise the wet methods of qualitative chemical analysis, the characteristic reactions of the bases and acids of the various elements, and the methods for making and purifying the reagents employed in chemical analysis.

It is difficult to say too much in praise of this part of the work. The scheme for the systematic qualitative examination of an unknown substance is admirably described. The language is clear and intelligible and the explanations lucid without diffuseness. What are usually considered the rare elements are treated as fully as those of more common occurrence, constituting a marked difference between this work and nearly all others on qualitative analysis, and giving it a value decidedly exceptional.

With chapter 8 begins the operations employed in quantitative analysis and includes sampling, pulverizing, drying, and weighing.

Chapter 9 gives operations in the dry way ; descriptions of furnaces, crucibles, etc. ; fusion and fluxes. Fletcher's gas furnaces and burners are not mentioned, although in my opinion they are superior to any of those described.

Chapter 10 describes methods in the wet way. General operations including solution, evaporation, distillation and the precipitation, filtration, washing, drying, burning, and weighing of precipitates. In the description of filtering apparatus no reference is made to the Gooch crucible which to analysts in America must appear a serious omission.

Chapter 11 treats of the apparatus and general principles involved in the determination of metals by electrolysis. From the historical résumé it appears that Davy in 1808 was the first to deposit a metal by the aid of the current, he having obtained potassium in an amalgam, from potassium hydrate, and Luckow in 1869 was the first to employ electrolysis as a method for the determination and separation of metals.

Chapter 12 treats of volumetric analysis. The apparatus and solutions employed in volumetric work including a very useful section on indicators.

Chapter 13 gives color methods including an excellent description of the Dubosq colorimeter.

Chapter 14 describes gas analysis. This chapter which is very thorough includes a section on the qualitative determinations of gases, dividing them into groups of combustible and non-combustible, and under each head those that are absorbed and those not absorbed by potassium hydroxide, with tables of the reactions of the different gases under each group. The section on incompatible gases, or those that cannot exist together in a mixture, is very much to the point and is indicative of the thorough way in which M. Carnot treats every portion of his subject.

The publisher's part has been admirably done, the type is large and the pages look beautifully clear, while the cuts which are nearly all line drawings are easily understood.

It is quite impossible to mention all the admirable features of this volume, but what strikes me most forcibly is the clearness and thoroughness which characterize the descriptions of methods and the absolute mastery of detail shown throughout.

ANDREW A. BLAIR.

A TEXT-BOOK OF ELEMENTARY ANALYTICAL CHEMISTRY, QUALITATIVE AND VOLUMETRIC. BY J. H. LONG, M.S., Sc.D., Chicago: E. H. Colegrove. 1898. 278 pp. Price \$1.50.

The proper presentation of the subject of this book is always difficult, and must vary with the needs of each particular class or instructor. In general, the brief courses of qualitative analysis—the short cuts to a knowledge of the system—are dangerous and tend to loose work on the part of students in that they are led to mechanical performance of the so-called practical methods, rather than to the thoughtful, and thorough