

The tedious boiling with sulphurous acid is avoided. A clean precipitate, which settles well and does not cling tenaciously to the sides and bottom of the beaker, filters rapidly and easily washed with hot water, is obtained. Salts of aluminum remain in solution.

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### NEW BOOKS.

THE TANNINS. A MONOGRAPH ON THE HISTORY, PREPARATION PROPERTIES, METHODS OF ESTIMATION AND USES OF THE VEGETABLE ASTRINGENT, WITH AN INDEX TO THE LITERATURE OF THE SUBJECT. BY HENRY TRIMBLE, Ph.M. Volume 2, pp. 172. Philadelphia: J. B. Lippincott & Co. 1894. Price, \$2.

The first volume of this work which appeared in 1892, was devoted to a general consideration of the subject and to gallo-tannic acid. The present volume deals primarily with the technically important tannins from the several species of oak bark and in a minor degree with those from mangrove, canaigre, and chestnut.

The tannins are usually dismissed by the chemist with the statement that they belong to a class of compounds about which very little is known and a few qualitative reactions at most, are given as characterizing them. Nevertheless they are of such importance that every one should know something of them. The author has endeavored to make an understanding of them possible by suggesting in some introductory remarks a method of study in which it is recommended to first investigate the sources of a tannin, then its history, method of preparation, properties, and finally a process for estimating it. It is usual for a chemist to begin with the last one of these; namely, the method of estimation and the result is invariably a failure.

With the exception of the historical chapters, this volume is made up almost entirely of the results of original research and the results of this work may best be understood by quoting from the final chapter, entitled Conclusions. "In looking over the composition of these tannins discussed in the volume, and comparing them with what appeared to be trustworthy results obtained in recent years by other investigators, we find that they

all arrange themselves according to their percentage of carbon and hydrogen into the following two groups :

	I. The gallo- tannin group.	II. The oak- tannin group.
Carbon.....	52.17 per cent.	60.00 per cent.
Hydrogen.....	3.10 " "	5.00 " " "

The tannins from nutgalls, chestnut wood and bark, pomegranate bark and sumac are classified under the first group, while those from oak bark, mangrove, canaigre, rhatany, kino, catechu, and tormentil, are found to fall within the limit of the second group.

This is nearly the old classification of "iron-blueing" and "iron-greening" tannins, but we believe with this important difference that oak-tannins so far as investigated give a green with salts of iron and not a blue as usually stated in the books. The blue color with salts of iron, the author claims, is obtained only with infusions of oak bark, and this is due to the presence of an iron-blueing coloring matter which accompanies the tannins.

S. P. S.

A SYSTEM OF INSTRUCTION IN QUALITATIVE CHEMICAL ANALYSIS. BY ARTHUR H. ELLIOTT, PH.D., published by the author. N. Y. 1894. Price \$2.00.

This treatise on qualitative analysis is neat in general appearance, printed in clear type and the nomenclature used is good. There is one feature of it; namely, the almost entire absence of equations representing the nature of reactions, which will bear criticism. It is impossible without a most elaborate system of experiments performed before the study of qualitative analysis is begun, to make students so familiar with the nature of chemical reactions, that these can be entirely neglected. Moreover, the average instructor of the subject prefers to keep the reactions constantly before the student as would be the case if they were introduced into the text.

It is easy to understand why such a treatise might be adopted by those engaged in the teaching of students of pharmacy and medicine, as the latter seldom enter deeply enough into the subject to consider the exact nature of the reactions involved. While leaving equations to be explained by the instructor