

is so important in relation to the pure food law. The various flavoring substances, such as vanillin, saccharin, etc., are treated at length, as are the medicinally important bodies throughout the book. The main portions of the volume, devoted to the essential oils, are, in the opinion of the reviewer, well written and up-to-date. The Extraction of Essential Oils, Classification, General Characters, Analysis, Constituents, Hydrocarbons, Olefinic Terpene Alcohols and Aldehydes, Cyclic Terpene Alcohols, Phenols and Phenolic Ethers, Ketones, Sulphuretted Constituents, Special Characters of Individual Essential Oils and Terpeneless Essential Oils are each discussed in a separate paragraph. The material given is quite full enough for practical purposes and no serious errors were detected. Especially useful are the tables of the important essential oils and of their constituents. Rubber and the resins are thoroughly discussed as follows: Caouchouc and Gutta-percha, Chemical Composition of Resins, General Character of Resins, Resins, Oleo-Resins or Turpentine, Gum-Resins. In general the volume is quite satisfactory.

ALFRED HOFFMAN

*Las Plantas Usuales de Costa Rica.* By HENRI PITTIER. Washington, H. L. & J. B. McQueen. 1908.

This work on the useful plants of Costa Rica will be welcomed by students of economic botany and tropical agriculture. Professor Pittier has already produced several works relating to tropical agriculture, contributions to the flora of Costa Rica, monographs of certain Central American genera of plants, and treatises on the ethnology and languages of several aboriginal tribes of Central and South America. The present work is illustrated with thirty-one plates, most of which are reproductions of natural size photographs of fruits and plants made by the author. An account of physical features and climate of Costa Rica is given, together with the characteristic plants of the various zones of vegetation, a list of plants grouped according to their uses, the etymology of their common names, derived as they are

from various sources, Nahuatl, or Aztec; the language of the ancient inhabitants of Hayti; various tribes of Central America; and even from the Quichua of the Andes of South America. In addition to these names those of Spanish origin are given. Then follows an alphabetical enumeration of the useful plants of the republic, a tabulated list of the number of species belonging to each plant family thus far known to occur within its limits, and an index to the plants under their botanical names. The work ends with a very complete bibliography of works on tropical agriculture and the botany of Central America. Professor Pittier's present work is the first of its kind dealing with Central America. It was published under the auspices and by the direction of the government of Costa Rica.

W. E. SAFFORD

*Human Foods and their Nutritive Value.* By HARRY SNYDER. New York, The Macmillan Co. 1908.

At last man is having his share of the results of science applied to animal life. The author clearly states the twentieth century view when he says:

It is believed that a better understanding of the subject of nutrition will suggest ways in which foods may be selected and utilized more intelligently, resulting not only in a pecuniary saving, but also in greater efficiency of physical and mental effort.

This volume will not only supply a need, but will satisfy a real want, a want becoming acutely felt by the laity who are asking for some comprehensible statements as to human foods and their various qualities and relative values. One feels instinctively the master dealing out knowledge at first hand. Here is no compiler sifting more or less ancient and possibly outgrown material.

Not only teachers and students but the business man who has been warned by his physician to take thought for his diet, the club woman who has to "write up a paper" will find sound science as well as useful information about the many kinds of human foods. Such passages as the two quoted below convey economic lessons of great importance.