

trations has been more than doubled, and in many other respects generally improved. This has been done without changing the arrangement of the subject matter. The work is divided into three parts. The first treats of botany, the second of pharmacognosy and the third of reagents and microscopic technique. Under botany the first 90 pages are devoted to the structure and general characteristics of the different groups of plants, beginning with the lower forms of plant life, the algae, and ascending to the higher forms, the spermiophytes, or seed plants. The next 65 pages treat of the "Outer Morphology of Angiosperms" in the order of root, stem, leaf, flower, fruit and seed. The following 67 pages treat of the "Inner Morphology of the Higher Plants," taking up the plant cell, its contents and forms; then follows the structure of different parts of plants. The next 180 pages are devoted to the "Classification of Angiosperms Yielding Vegetable Drugs." The habitat with a short description of each plant is given, and also the active constituents. The last 14 pages of part one are given to the "Cultivation of Medicinal Plants."

The part devoted to Pharmacognosy is divided into two chapters. The first 278 pages are given to the study of "Crude Drugs," giving source, description and constituents. The following 94 are given to a systematic, microscopical study of "Powdered Drugs and Foods."

Only the last eight pages are devoted to "Reagents and Microscopical Technique."

The entire work is beautifully illustrated with 321 plates and about 1500 figures. These are distributed throughout the text, which is a decided improvement over the former edition, where the illustrations were given in a separate part of the work. The present arrangement permits of the ready comparison of the illustrations with the subject matter. Most of the illustrations are from fine pen drawings, while others are half-tone reproductions, some of which are very good, while others are inferior, lacking in detail, due doubtless to improper exposure.

In general the technique of the work is fine, and the author and publishers are to be congratulated upon the results of their efforts. The book is one that should be in the hands of every one interested in the study of botany and pharmacognosy.

A. B. STEVENS.

A HANDY BOOK FOR BREWERS. BY HERBERT EDWARDS WRIGHT. Third edition, 562 pages, New York : D. Van Nostrand Company.

The principal aim of the author has been to give the conclusions of modern research in so far as they bear upon the practice of brewing, in such a form that a novice of fair intelligence may understand them. The trained chemist or physiologist however, will also be benefited by the study of this book. In fact between these branches of pure science and the brewing industry a very fertile reciprocal action has always been

going on. It is well known how much the chemistry of carbohydrates and the physiology of plants are indebted to English brewing chemists. In dealing especially with the methods of brewing used on the British Isles the author quite naturally gives a full account of the work carried on by his compatriots, but he reports with equal conscientiousness the researches made abroad, and evinces great impartiality in judging also such theories as do not agree with the views generally held by English brewing scientists at the present moment. In one instance, speaking of scientific work done in America, the author says: "we cannot conceal from ourselves that with the lighter gravities of beers now in vogue the Trade must aim at utilizing every method for securing not only the best but the most profitable results. May they not in some modified form be utilized here?" Great care has been taken to bring the work up to date, even the latest researches of the French scientists on saccharification of starch being mentioned. The author does not live to see this last edition of his work printed. He died within a few hours after dictating the preface; but he has raised for himself a lasting monument in his excellent book.

ROBERT WAHL.

JAHRBUCH DES VEREINS DER SPIRITUS-FABRIKANTEN IN DEUTSCHLAND, DES VEREINS DES STÄRKE INTERESSENTEN IN DEUTSCHLAND UND DES VEREINS DUTSCHER KARTOFFELTROCKNER. SIEBENTER JAHRGANG, 1907. Berlin. PAUL PAREY, 1907.

This annual published in the interests of the societies named is really a report of the work done under the direction of the Institute für Gährungs gewerbe in Berlin, the work of the several societies and the matter published in the Zeitschrift für Spiritusindustrie. This year a third society has been included in the combination the work of which is reported, and so covers in every way the utilization of the potato crop in Germany. The new connection is intended to cover the preservation of the crop for continuous use in the manufacture of the several ultimate products of the industries, starch, glucose and alcohol.

The Jahrbuch is authoritative in the highest degree and is intensely devoted to the industries represented. It reports faithfully all the advances made in the study and investigation of potato culture, starch making, the production of yeast and its biology, reviewing all the advances of any importance made in a scientific or technical way in the promotion of the industries. It seems rather remarkable however that no mention is made of the rather startling discovery of Ehrlich of the transformation of the amino-acids to amyl alcohol through the influence of the saccharomyces in fermenting liquids and media. However, the book contains so much of value to those interest-