

## BOOK NOTICES AND REVIEWS.

*Recherches Pharmaco-anatomiques sur Pimpinella Saxifraga L. et P. magna L.* Pharmaco-anatomic researches on *Pimpinella Saxifraga L.* and *P. magna L.*, by JACOB MICHLIN, M.Ph., Pharmacist. Thesis presented to the Faculty of Science of the University of Lausanne, to obtain the degree of Sc.D. Paris Librairie Louis Arnette, 1926. 129 pages. 27 figures. A most painstaking piece of work. The author studies the anatomy of the vegetative organs of these two species of *Pimpinella* in great detail. The work is divided into five chapters, and a résumé and conclusion. In Chapter I, he describes the germination of the seeds, the plantlets and their primary structure. In Chapter II, he takes up the secondary structure of the roots. In Chapter III, he gives descriptions of the anatomical structure of the adult roots of the two species used as drugs and their adulterants. He gives here also a table, showing the comparative physical and anatomical characteristics of the two roots and three other roots, *Radix Pastinacæ*, *Radix Heraclei* and *Radix Peucedani*, generally found with them as adulterants. In Chapter IV, he describes the structure of the stems and petioles, and in Chapter V he describes the leaf.

In the Résumé and Conclusions, the author condenses the more interesting and important facts, stating first those that are alike for the two species, and second, those in which the two species differ. 1. The primary structure and development. The cortex of the root is homogeneous in both species, and is composed of isodiametric cells separated by triangular passages. The endodermis offers nothing peculiar, the Casparian dots appearing very early on the lateral walls. There are twelve secretory canals, originating from twelve pericyclic cells. According to Van Tieghem the number of canals vary among the Umbelliferae from 14-28, whereas the *Pimpinellæ* examined have but twelve. The primary structure of the root is diarch (and not triarch as maintained by Hofret and Tschirch). The formation of the cambium is noticed at the end of 10-15 days. It at first is more active on the external side, and only a little later lays down vessels opposite the phloem, and medullary ray against the primary xylem sectors. The epidermal layers begin to exfoliate. The pericycle divides tangentially and radially and gives rise to a phellogen layer which soon develops a zone of cork. The pericyclic secretory canals—there are as yet no other, find themselves between the cork and

the altered phloem. After the exfoliation of the primary cortex, the root within 6-8 weeks takes on the aspect of the adult root. Ligneous fibers and secondary secretory canals do not form until the second year; then all the cortical parenchyma contains secondary canals arranged in radial rows in concentric circles. These canals differ from the primary pericyclic canals by their smaller caliber and by the number of epithelial cells.

2. Comparison of the anatomical characters of the adult vegetative organs of *Pimpinella Saxifraga* and of *P. magna*. Root.—Less long and darker in *P. Saxifraga* than in *P. magna*. Bark and wood of the same thickness in *P. Saxifraga*; bark thicker than the wood in *P. magna*. Fibers around the vessels, lignified and more numerous, with lumen smaller in *P. magna* than in *P. Saxifraga*. Medullary rays thicker (5-8 rows), cells only slightly elongated, the ray enlarging towards the periphery in *P. magna*; less thick (3-6 rows), not elongated, and much the same thickness throughout in *P. Saxifraga*. The lack of radial elongation of the cells of the medullary ray, contrary to that observed among other Umbelliferae is, it seems to the author the most evident characteristic, which permits one to distinguish the drug from its adulterants. Secondary secretory canals are more numerous in *P. magna* than in *P. Saxifraga*, in the latter, however, being broader (20-50 M in *P. magna*, against 30-70 M in *P. Saxifraga*). The primary secretory canals are larger than the secondary canals in both species, being larger in *P. magna* than in *P. Saxifraga*.

With equal care the author summarizes the characteristics of the stem, the petiole and the leaf, and shows how the two species differ also in these organs.—CHARLES C. PLITT.

*Organic Laboratory Methods.* By the late PROFESSOR LASSAR-COHN. Authorized translation by Ralph E. Oesper, Ph.D. of the General Part of the 5th Revised German Edition. Edited by Rodger Adams and Hans T. Clarke. The Williams and Wilkins Company, Baltimore, Maryland. Price \$6.50.

This volume is number two of the World Wide Chemical Translation Series edited by E. Emmet Reid, Professor of Organic Chemistry, The Johns Hopkins University. The claims and purpose of the book are well expressed in the translator's preface in which it is stated that the book makes no claim as to

completeness nor does it pose as a textbook for beginners; the main purpose being to outline the methods by which typical difficulties have been overcome and to leave the adaptation of the suggestions to the resourcefulness of the reader. The book is divided into twenty-two chapters. A few of the more important headings are mentioned here to give an idea of the scope and character of the work. There appear chapters on starting materials and extraction, distillation, distillation under reduced pressure and *in vacuo*, dialysis, sealed tubes, filtering, and pressing out precipitates, crystallization, molecular weight determinations, melting-point determinations, drying of solids and dehydration of liquids; drying of gases and removal of a single gas from gaseous mixtures, and a final chapter on the detection of the elements usually found in organic substances. It is hardly necessary to say that this volume is about the most thorough and complete one of its kind now appearing in English. The authoritative character of the material is guaranteed by the reputation of the author.

The translation is one of the best German to English translations that the writer has had occasion to read. It is a pleasure to see how well the peculiarities of the German have been smoothed out and put into perfect English. The writer has searched in vain for any serious errors, either typographical or otherwise. Upon superficial examination one might gain the impression that the material is old and out-of-date but this is not altogether the case since a large number of references to up-to-date material have been added by the editors. The references to original literature given throughout the book seem to be very complete.

It is unnecessary to go into detail regarding the subject matter of the book. It is a book that should be in the hands of every worker in the line of synthetic organic chemistry and should be in the reference library of every institution in any way interested in practical methods of organic analysis.

A. H. CLARK.

*Annual Survey of American Chemistry*, Vol. 3 (1927). Prepared under the auspices of the Division of Chemistry and Chemical Technology. National Research Council; Edited by Clarence J. West. The chemical Catalog Co., N. Y., 1928, pp., 395, \$3.00.

The intentions of the sponsors of this enterprise are excellently conceived, but the actual value of the subsequent result is rather un-

certain. This is evident, considering the necessarily superficial treatment of subjects in a publication of this type and scope. Its intrinsic value lies only in the presentation of material derived from widely diversified sources. The availability of the data in this publication is, however, curtailed to a great extent, since the book sustains the inestimable disadvantage of lacking an index. The contents of the volume consist of the selective compilations of 52 contributors representative of the following technical affiliations; College Professors 15, Research Institutions 4, Federal and State Bureaus 13, Private Corporations 16, Individuals in Private Practice, 4. Of the 46 chapters comprising this work, the "Survey of American Pharmaceutical Chemistry" is the briefest in the book, occupying only three pages of data based on 24 bibliographic references. Comparison with space devoted to other topics, *e. g.*, Thermodynamics, Kinetics, etc., Rare Earths, Petroleum, etc., can only suggest negligence in conducting the survey of Pharmaceutical Chemistry or else a space restriction imposed on a more adequate report of the progress made in this important branch of American industry.

A survey of Electro-Chemistry which has been omitted, would be a valuable and appropriate addition.

The Authors' Index, consisting of 11 pages, lists 5440 references which ordinarily can serve of no use in locating specific data. Summarily, the book in view of its exorbitant price, the superficial treatment of the subjects generally, and the inclusion of a preponderating amount of purely theoretical data can but serve as a valuable acquisition as a research reference or an abstract historical record of American Chemistry. The needs of the pharmaceutical chemist can still be best served by the YEAR BOOK OF THE A. PH. A.—SIMON MENDELSSOHN, 3560 Wilson Ave., Cincinnati, Ohio.

*Tablets.*—(I) The Evolution of the Tablet Machine. (II) A Bibliography on Tablets. By P. A. FOOTE—a thesis submitted for the degree of Master of Science, University of Wisconsin.—Published in *Bulletin* of the University of Wisconsin, serial number 1566, General Series No. 1340.

Mr. Foote presented part of the subject in an illustrated lecture at the St. Louis meeting of the AMERICAN PHARMACEUTICAL ASSOCIATION. The *Bulletin* has 164 pages. The first 66 pages, describe "The Tablet as a Mode of Adminis-