

and America, the most conspicuous is the *Phylloxera vastatrix* Plan. of the grape which was introduced from America and has proved so destructive to the vineyards of Europe.

The work also includes a bibliographical index of nearly 400 authors and about 1,200 titles; index tables giving the orders, families, genera and species of the organisms which cause the cecidia; and the families, genera and species of the host plants.

In looking over the bibliographical index our attention is attracted to the names of a few authors who have also contributed to our knowledge of American cecidology, especially that of C. R. von Osten-Sacken, who contributed far more to the American than to the European literature.

Every one in America who has attempted a study of cecidology has experienced great difficulty due to the literature being so involved with other phases of biology, especially entomology, and the author in his preface states that this is also true in Europe and this fact has led to his undertaking this important work.

It will undoubtedly prove most useful not only for the cecidologist, but for the botanists and the entomologists. In fact, the author expresses the hope that the work will be of service to the entomologists, the botanists, the foresters and the agriculturists. The author and his fellow scientists are to be congratulated upon the excellency and usefulness of this work. A most excellent companion piece to this would be a similar work on the myco-ecidies.

Cecidology is one of the youngest of the biological sciences in both Europe and America, but has attracted a great deal more attention in Europe than in this country. The greater part of the work has been done by the entomologists, who have naturally been more interested in the insects than in the cecidia. However, the subject is now attracting the attention of the botanists, who are finding it a fruitful field from the standpoint of plant pathology and plant physiology. There are at the present time a number of young workers who are taking up this study and in due time

we may expect similar productions in this country.

MEL T. COOK

DELAWARE AGRICULTURAL
EXPERIMENT STATION,
NEWARK, DEL.

Lehrbuch der Pharmakognosie. Von Dr. GEORGE KARSTEN, Professor an der Universität Halle, und Dr. FRIEDRICH OLTMANN, Professor an der Universität Freiburg i. B. Zweite vollständig umgearbeitete Auflage von G. Karstens Lehrbuch der Pharmakognosie. Mit 512 zum Teil farbigen Abbildungen im Text. Jena, Gustav Fischer. 1909.

Pharmacognosy is a comparatively new branch of botanical science, and text-books on the subject are very welcome, particularly if they present a new point of view. In this country the so-called works on materia medica, on which the students of pharmacy and medicine formerly relied for their knowledge of vegetable drugs, are being replaced by works on pharmacognosy, on the one hand, and works on pharmacology on the other. In other words, these two divisions can no longer be covered by a single text or treated with authority by the same author. Thus, pharmacognosy in the modern acceptance of the term deals with the natural origin of vegetable and animal drugs, their physical and morphological characters, and the chemical nature of their constituents, while pharmacology deals with the action of their constituents and preparations on the animal organism, and hence to this latter division properly belongs the consideration of therapeutic properties and doses. It is to the credit of German scientists and teachers that they earlier differentiated these subjects than we in this country.

The work at hand treats of the vegetable drugs exclusively, but, like most of the German works on this subject intended for the use of students, treats only of a limited number of the drugs, these being more or less typical of the various classes. Professor Oltmanns has written the chapters dealing with the cryptogamic drugs, rhizomes, roots, tubers,

flowers and exudation products, while Professor Karstens has considered the woods, barks, leaves, herbs, fruits and seeds. The order of treatment of each drug is somewhat as follows: (1) The botanical origin together with a few words on the distribution of the plant; (2) an historical note on the use of the drug in medicine or in the arts; (3) the external morphology of the drug; (4) the anatomy of the drug; (5) a brief description of the drug in the powdered form, and (6) an enumeration of the important constituents.

The strongest feature of the work is the comprehensive treatment of the macroscopic and microscopic structure, the illustrations being numerous and in part colored. The German point of view of treating a selected number of subjects in a thorough manner is to be commended in a *Lehrbuch*, and looked at pedagogically Karsten and Oltmanns's "Pharmacognosy" is an excellent work.

HENRY KRAEMER

PHILADELPHIA COLLEGE OF PHARMACY

The Periodic Law. By A. E. GARRETT, B.Sc., F.R.A.S. New York, D. Appleton & Co.

This is one of the volumes in the International Scientific Series. The first part of the work is historical, after an introduction giving the methods of determining the atomic weights. Beginning with Prout's hypothesis, the early attempts at classifying the elements are reviewed. It may well be questioned whether undue space and prominence are not given to some of these. In discussing the periodic system itself, the author assigns more credit to Lothar Meyer than Mendeléeff was willing to give him and than I am inclined to think is justly his due. Much prominence is given the important work of Cornélley. The pendulum swing of Professor Spring, of Liège, is attributed to Reynolds and Crookes, and the idea of the spiral, first worked out by Baumhauer, is credited to Johnstone Stoney. A considerable portion of the book is given to the applications of the periodic law and a chapter is devoted to the efforts at stating the relationship between the atomic weights in the terms of a mathematical formula. In the last chapter there is a discussion of the more

recent theories as to the nature and structure of the atom and their bearing on the periodic law.

The book is well written and should prove a useful handbook to a student of this important subject.

F. P. VENABLE

SCIENTIFIC JOURNALS AND ARTICLES

THE first number of the *Journal of Pharmacology and Experimental Therapeutics*, edited by Dr. J. J. Abel of the Johns Hopkins University, appeared in June. It contains the following articles, with these results in brief:

1. "The Comparative Toxicity of the Chlorides of Magnesium, Calcium, Potassium and Sodium," by D. R. Joseph and S. J. Meltzer. The order of toxicity of the four chlorides when tested on dogs is magnesium, Ca, K and Na. It is thought that the effect of these chemical substances depends in large part upon the particular substance upon which they act, that is, the effect upon simple tissues is not applicable to complex organs, and the effect upon organs is not applicable to entire animals. The toxicity of alkalies and alkali earths existing as constituents of the animal body is in inverse proportion to the quantities in which they are present in the serum of that animal.

2. "Studies in Tolerance—I., Nicotine and Lobeline," by C. W. Edwards. Tolerance to nicotine or tobacco can be obtained in animals only with great difficulty when the drug is given in small doses. Dogs develop resistance quickly to large toxic doses of nicotine, but to lobeline they gain only a limited tolerance.

3. "Studies in Tolerance—Strychnine," by Worth Hale. Dogs may develop a tolerance to strychnine very slowly and at best in a very imperfect form. Guinea-pigs, owing to their varying degree of sensitiveness, yield results that are somewhat uncertain, though acquired tolerance is suggested.

4. "Mechanism of Hæmolysis, with special reference to the Relation of Electrolytes to Cells," by G. N. Stewart. Evidence, both histological and physico-chemical, is brought forward to support the idea that the super-