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.

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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 Cornelley. The pendulum swing of Professor Spring, of Liége, 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-