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-

ficial layer of the erythrocyte plays an important part in regulating the exchange between the corpuscles and the plasma or other surrounding media. Alterations of the envelope merely allow the conditions to be established which are necessary for the transformation of the hæmochrome. Some evidence is offered in support of the idea that the electrolytes of the erythrocytes may be divided into three fractions: (1) A portion which escapes even with the gentlest methods of laking, (2) one liberated only by energetic laking agents, and (3) one set free only by destructive processes.

5. "Studies Concerning the Iodine-containing Principle of the Thyroid Gland—I.," by S. Strouse and C. Voegtlin. Iodotyrosine has not an analogous effect to that of the extract of thyroid gland upon nitrogen metabolism or upon the blood pressure. It has no curative effect upon myxedema or cretinism, does not exhibit the typical action of the thyroid extract in exophthalmic goiter and finally the negative results of these writers seem to indicate that the activity of the iodine-containing principle of the thyroid gland is not due to a combination of iodine with one single cleavage product of protein.

6. "The Antagonism of the Adrenal Glands against the Pancreas," by C. W. Edmunds. The action of adrenalin in inhibiting the pancreatic secretion is found to be in no sense specific. Nicotine and other drugs that constrict the blood vessels of the gland cause an inhibition of the gland's secretion as does adrenalin, and in a similar manner asphyxia and splanchnic stimulation may produce anæmia of the organ and thereby inhibit secretion.

7. "Quantitative Experiments with the Cutaneous Tuberculin Reaction," by C. J. Pirquet. It is found that the cutaneous tuberculin reaction depends upon at least two factors, one the tuberculin, the other that furnished by the organism, which latter can be considered as an antibody, the origin of which dates back to previous infection of the organism with the tubercle bacilli. The first factor can be varied at will and progressive dilutions are followed by a more or less uniform diminution of the intensity of the reaction, but owing to an imperfect understanding of certain phenomena no definite mathematical expression could be elicited for the determinations made.

The August number of the *Journal of Pharmacology and Experimental Therapeutics* contains the following articles:

1. "Some Convenient Laboratory Apparatus," by A. C. Crawford and H. Honn. An automatic winding device for spring kymographs is described and figured. This device consists of a small motor and a special clamp that can be easily attached to the heavier forms of kymographs resembling the Ludwig-Baltzer type.

A self-registering injection, a nerve stimulating apparatus, and a combined signal and base line apparatus are each figured and described.

2. "The Effect of Caffeine and Sodium Bicarbonate upon the Toxicity of Acetanilide," by Worth Hale. The author concludes that caffeine is of little or no benefit in acetanilide poisoning, in some cases it even exerts a harmful effect. Sodium bicarbonate lessens the toxicity of acetanilide both upon the heart and upon the intact animal.

3. "Anesthesia by the Intracerebral Injection of Magnesium Chloride," by V. E. Henderson. A note describing a laboratory method for anesthetizing rabbits and cats.

4. "Ergot," by W. H. Cronyn and V. E. Henderson. It is held by these writers that most galenical preparations contain considerable amounts of the active principles. The pharmacologic action of the small doses usually prescribed are, however, too slight to elicit the desired effect when given *per os*. Ergotoxine is a highly active alkaloid and has the properties of ergot most desired in medicine, it brings on long enduring vaso-constriction, increases uterine movements when exhibited intravenously, and the same to a less extent when injected subcutaneously, but when given *per os* has very little action.

5. "On the Pharmacological Action of Some Phthaleins and their Derivatives, with Special Reference to their Behavior as Purgatives—I." by J. Abel and L. G. Rowntree.

Phenolphthalein and its halogen products, phenoltetrachlorphthalein and tetrabromphenoltetrachlorphthalein do not differ markedly in their pharmacological behavior. Both phenolphthalein and its tetrachlor derivative are non-irritant when applied to the mucous membrane, to open wounds, and when injected subcutaneously. A subcutaneous injection of 0.40 g. in man causes a laxative action lasting four to six days. This prolonged action along with its low degree of toxicity makes it a hypodermic purgative of much promise. When subcutaneously injected the tetrachlor derivative is absorbed and finally excreted into the bile only. Phenolphthalein administered in the same way escapes in part in the urine, when given *per os* it may appear in small quantities in both bile and urine, but when the tetrachlor compound is given by mouth none of it appears in the bile or in the urine. The large intestine may absorb these drugs from their solution in bile and become thoroughly saturated with them.

6. "Clavin, Vahlen's Active Constituent of Ergot," by D. Vanslyke. A sample of Vahlen's "clavin" showed upon analysis the following content: leucin, 39.1, iso-leucin, 22.3, and valin 37.1 per cent.

7. "The Effect of Collodion on the Amanita-hemolysin." Amanita-hemolysin when dialyzed in collodion sacs loses its hemolytic action completely. Likewise when in contact 24 to 36 hours with granular collodion previously boiled in one per cent. sodium chloride solution and washed with dilute alkalies the hemolysin loses its hemolytic action. Solanin is not affected, but saponin sometimes is.

8. "The Distributions of Poisons in the Amanitas," by W. W. Ford. Nearly twenty species of amanitas were examined and the three most important poisons found in these fungi are muscarine, hemolysins and toxins. By the methods used even one or two plants furnish sufficient analytic material to establish the properties of the fungus suspected of being poisonous.

9. "On the Pharmacological Action of Iodiodoso- and oxyiodosobenzoic Acids," by A. S. Lovenhart and W. E. Grave. Intravenous injections of N/20 solutions of sodium iodosobenzoate or oxyiodosobenzoate acids cause an immediate and marked depression of the respiratory center, which seems to be identical with ordinary apnœa caused by excessive ventilation. This and other physiological phenomena seem to indicate that the oxygen bound to the iodine in iodosobenzoic acid is physiologically active.

AN EARLY NOTE ON FLIES AS TRANSMITTERS OF DISEASE

IN these days when we are just coming to realize what powerful agents insects are in the dissemination of infectious diseases, it is interesting to read on pages 385 and 386 in Edward Bancroft's "An Essay on the Natural History of Guiana in South America," published in London in 1769, concerning a disease called "Yaws" very prevalent in Guiana:

> The Yaws are spungey, fungous, yellowish, circular protuberances, not rising very high, but of different magnitudes, usually between one and three inches in circumference. These infest the whole surface of the body, and are commonly so contiguous that the end of the finger can not be inserted between them; and a small quantity of yellowish pus is usually seen adhering to their surface, which is commonly covered with flies, through the indolence of the Negroes. This is a most troublesome, disagreeable disorder, though it is seldom fatal. Almost all the Negroes, once only in their lives, are infected with it, and sometimes the Whites also, on whom its effects are much more violent. It is usually believed that this disorder is communicated by the flies who have been feasting on a diseased object, to those persons who have sores, or scratches, which are uncovered; and from many observations, I think this is not improbable, as none ever receive this disorder, whose skins are whole; for which reason the Whites are rarely infected; but the backs of the Negroes being often raw by whipping, and suffered to remain naked, they scarce ever escape it.

The "Yaws" according to the Standard Dictionary is: "A contagious tropical skin-disease characterized by small, dusky red spots that develop into raspberry-like tubercles, sometimes ulcerating: often of long continuance: framboesia."