in the woodland path, or a rustle in the dry grass beside it, will startle a person fully as much as the sight of the snake itself seen a short time before.

As very strong evidence in favor of the universality of the serpent dread instinct is the solution it affords to the familiar serpent nature-myth in Genesis. Scholars are pretty well agreed that the true interpretation of primitive legends lies in the attempts of primitive peoples by them to explain the origin of fundamental institutions, universal customs, innate impulses.

As Gunkle in his "Legends of Genesis" observes:

> They [the legends] are attempts to answer such questions as, Whence came the heavens and the earth? Whence the language of man? Why the love of the sexes? Why does the serpent go on his belly, and why does the "seed of woman" continue so relentlessly to "bruise its head"?

Such a legend speaks eloquently of the universality in the human family of the fear and hatred of snakes, and of the instinctive character of these emotions.

ARTHUR M. MILLER

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TO THE EDITOR OF SCIENCE: The disputants regarding our instinctive fear of snakes may "all be right and all be wrong." It is not necessary that the whole human race should have the same instinct. The feeling of repulsion for snakes and worms, and that for many-legged things such as spiders and centipedes, are rarely felt by the same person. I have the latter to an uncontrollable degree, and I do not believe that I learned it from any one. I can not remember that either of my parents felt about spiders as I do. I do not feel about snakes and worms in the same way at all. It is therefore possible that one person may have a congenital repulsion for snakes and that another may have been free from such a repulsion from childhood.

As for establishing a connection between such facts and "the cradle of the human race," I leave that to the mythical philologist who derived Middletown from Moses "by dropping the 'oses' and adding 'iddletown.'"

ARTHUR E. BOSTWICK

SCIENTIFIC BOOKS

Laboratory Manual for the Detection of Poisons and Powerful Drugs. By WILHELM AUTENRIETH. Translated by WILLIAM H. WARREN. Second American edition from the Fourth German edition. 8°. P. Blakiston's Son and Co., Philadelphia, 1915. Pp. xv + 320; Figs. 25. $2.00.

The fourth German edition of this well-known laboratory text-book has been sufficiently revised, enlarged and extended in scope to warrant the term "manual" as it appears upon the title page. Former editions were so incomplete in every subject covered as to lead the reader to wonder whether the title was not a misleading one.

In this last edition the author has presented his subject in the same order, chapter by chapter, as in former editions. The book being strictly a laboratory guide, the chapters dealing with the various noxious substances discussed, have naturally been arranged with reference to the sequence of steps taken by the chemist in his search for the presence of a poison.

Chapter I. treats of poisons which may be volatilized in a current of steam and thus separated from organic material. Chapter II. discusses the Stas-Otto method for the extraction of vegetable poisons and powerful drugs and describes the special reactions by which these substances may be identified. Chapter III. treats of the inorganic (metallic) poisons. Chapter IV. discusses corrosives, several poisonous anhydrides of organic acids; a number of powerful synthetic drugs; toxalbumins and matters of importance to physician and analyst. Under Chapter V. are grouped a selection of special methods for the qualitative detection and quantitative determination of arsenic, phosphorus, a number of important alkaloids, and salicylic acid. In this chapter is also given a brief outline of Mauch's very ingenious chloral hydrate method for the separation and identification of the active principles of plants. Chapter VI. is devoted to crude drug assay and evaluation according to the official methods of the German pharmacopœia. Chapter VII. discusses the forensic chemistry of blood and blood stains.

The translator has admirably performed his task and has placed in the hands of American students a book almost unique in its field in the English language. The text is exceptionally free from the peculiarities of Teutonic sentence construction usually met with in translations of German works. The additions made by Dr. Warren to the new American edition greatly enhance the usefulness of the book as a student text. It is to be regretted that in his additions to the chapter dealing with the identification of human blood he did not include the recent American advances in the study of "blood crystals" (Reichert and Brown) which to the chemist are more important than agglutination tests, and that he did not feel warranted in inserting in Chapter VI. some of the official methods of drug assay according to the U. S. Pharmacopœia. Doubtless many other teachers in common with the reviewer, using this book as a laboratory text with their students, believe that, although the primary object in work of this nature is to afford instruction in manipulation and chemical reactions, if this can be accomplished by the use of official methods it is wiser to employ such processes than those which the student may not use in his future work. It would not have added materially to the size of the book to have introduced notes pointing out the divergence of U. S. P. methods (if any) from those given by Autenrieth.

A matter of surprise is that the space devoted to poisoning by phosphorus has been increased, although statistical information leads to the conclusion that cases of phosphorus poisoning have greatly decreased since the manufacture of the yellow phosphorus match has been forbidden by statutory enactments. Obviously no small laboratory manual can be complete, yet it is a matter of disappointment that such very important drugs as the morphine derivatives such as heroin, peronin, etc., have received no mention, nor have the cocaine substitutes, eucaine, novocaine, etc. In view of the stringent American antinarcotic laws and the nation-wide campaign to stamp out habit-forming drugs, it is difficult to understand why such manifestly important matter should have been omitted by the translator.

In spite of the small size of the book, Dr. Autenrieth has succeeded in incorporating between the covers a surprising amount of information and suggestions. This has been accomplished by the free use of fine type and by making all descriptions of tests and methods as brief as possible. This attempt to carry conciseness of statement to the limit is one of the only serious faults so far as the actual material presented is concerned, for the reviewer has found that his students experience great difficulty in properly performing many of the tests described.

Taken all in all the tests selected have been well chosen and with one or two exceptions the directions given are correct and down to date. The book can be heartily recommended to all who are interested in the usual problems of forensic chemistry and should prove a welcome addition to the book shelf of every analytical chemist and pharmacist. Not the least interesting sections will be found to be those giving a brief summary of our present knowledge of the action of poisons and the changes they undergo during their elimination.

E. M. CHAMOT

The Chemistry of Colloids. By W. W. TAYLOR. London, Edward Arnold. 328 pp. 7/6 net.

This is the first attempt at an original textbook in English dealing with the important subject of colloidal chemistry. The author is a lecturer in chemistry at the University of Edinburgh, and the book owes its birth, as is the case of many scientific books, to a series of lectures given by the author before a class of advanced students. Viewed in this light, the book will undoubtedly prove useful, not only to the student, for whom it will save laborious note-taking; but also to the instructor, who will benefit by the mass of arranged facts which the book offers.

The principal portions of colloidal chemistry are treated in a manner which is not only brief but sometimes approaches laconicism. The general properties of colloids are followed with a discussion of the van Weimarn theories of amorphous substances which naturally lead to a description of the usual methods for preparing colloidal solutions. The theoretical side of