Jennings, and "The Reproduction of Paramæcium Aurelia in a 'Constant' Culture Medium of Beef Extract," by Lorande L. Woodruff and George A. Baitsell.

The contents of the last issue of the *Philippine Journal of Science* in the section devoted to chemical and geological sciences and the industries contains articles as follows: "Philippine Firewood," by Alvin J. Cox; "Quinine Esters of Phenylarsinic Acid Derivatives," by K. J. Oechslin; "The Mechanical Analysis of Soil," by Wallace E. Pratt; "The Economic Possibilities of the Mangrove Swamps of the Philippines," by Robert R. Williams.

SCIENTIFIC BOOKS

Reptiles of the World. By Raymond Ditmars. New York, Sturgis & Walton Company. 1910. Pp. xi + 373; 89 plates, 1 colored.

Of the numerous popular books on natural history that have appeared recently, few probably meet a greater need than this comprehensive work on the reptiles of the world. It is thus fortunate that Mr. Ditmars has undertaken the task, for his long connection with the New York Zoological Park has given him familiarity with living examples of a large number of forms and a knowledge of the information desired by the class of people who will presumably find most use for the book.

The limits of one volume do not, of course, permit a full treatment of the subject, but, as a rule, the author has used good judgment in the selection of material. All of the large groups are defined, down to and including the families, and the more important genera and species are described. The less important families, *i. e.*, those of less general interest, are given but a brief description, the less important genera and species are omitted, and genera that contain a large number of closely similar species, *e. g.*, the Anoles and Sceloperi, are given a rather full description supplemented by a short account of a few of the better known forms. The book is thus not burdened with details.

The descriptions are brief, couched in non-technical terms, and admirably supplemented by excellent illustrations from photographs, mostly of living animals. It is refreshing to find the habits so fully discussed. They are given nearly as much space as the descriptions (in some cases more), and even when it has been necessary to treat a group very briefly the general habits are often given. The range is outlined in each case, and about as fully as one can expect in such a work.

It is not easy to criticize the book when one keeps in mind its aim "to give in a popular manner a general survey of the reptiles of the world." Thus, while the lack of detail in many places and the too brief and general descriptions will be regretted by scientists, they can not be condemned, for they are unavoidable defects in a book of this kind. However, the author makes the further statement that "while the manner aims to be popular . . . it is at the same time, the writer hopes, everywhere in accord with the latest results of the scientific study of the subject," and there will be differences of opinion on this point.

In the first place, it is to be regretted that a more recent nomenclature has not been used. It goes without saying that a book of this kind can not give space to nomenclatural disputes, and it may even be admitted that it may profitably retain names that have been replaced, if the new names have not as yet become well established in the literature. But it seems to the reviewer that nothing is to be gained by adhering to old names when the new ones have become reasonably well known (*e. g.*, *Lacertilia* for *Sauria*, *Ophidia* for *Serpentes*, *Eutænia* for *Thamnophis*), and particularly in a book that aims to present the subject, no matter how popularly, in its present stage.

Another criticism that may be made is that relatively too much space is given to the habits of captive specimens. The habits in captivity furnish only a general clue to the habits in nature, and, as a rule, the activities of a captive animal are only a small part of the normal activities. Thus one may deter-

mine by a study of specimens in captivity whether a lizard is herbivorous or insectivorous, but from such data it is not possible to determine the range of diet, and generally impossible to work out at all satisfactorily the habitat preferences, reproduction, etc. It may readily be seen that this is true by an examination of this book, for it is the food that captive specimens will take that is given in most of the accounts of feeding habits, and habitat preference and reproduction come in for very brief treatment. The author might very profitably have included summaries of the published notes on the habits in nature. On the other hand, it is only just to acknowledge that the observations on the habits of specimens in captivity are of value, not only to those who wish to keep live material but also to scientists, for even general information is desirable in the case of many forms. Thus, on the basis of his observations on captive animals, Ditmars refutes the often repeated statement that the iguanas (subfamily Iguaninæ) and *Basiliscus* are strictly herbivorous (that they are also insectivorous in nature is a fact that may easily be demonstrated by an examination of the stomach contents of wild individuals), and the observations on the breeding habits of *Elaps fulvius* and *Lachesis mutus* are distinct contributions to our knowledge of the habits of these species.

In some respects the book-making is very good. There seem to be very few typographical errors. The upper figure on plate 3 is upside down, and in the table on p. 100 the genus *Coleonyx* is placed under the family Uroplatidæ by a printer's mistake. But these are very unimportant errors. The most unfortunate thing about the book from this standpoint is the absence of appropriate headings. The book is divided into four "parts," dealing with the turtles, crocodiles, lizards and snakes, respectively, but aside from this division there are no subdivisions of the subject matter, if we except the fact that there are center heads to the sections on the structure of lizards, the family Boidæ, and the new world Elapine snakes. The names of the families considered are usually given as side heads and the common names given to families when used as side heads and the common names of the genera and species when beginning a paragraph are placed in small capitals, but this is not sufficient to break up the text conveniently, and it is very difficult to find the descriptions of particular forms. The author states that "the scope of the book prevents it from being, as a previous book ['The Reptile Book'] by the same author was, primarily a volume for identification purposes," and it is probably for this reason that the excellent arrangement of the former work was not followed, but the value of the book could have been greatly increased by the use of at least a general system of headings, such, for example, as the one employed in Knowlton's "Birds of the World." Another fault in the arrangement is that the plates are not referred to in the text, and, as they are often far removed from the descriptions of the species, they can not be conveniently found.

One may, however, easily overlook the defects in the book for it is a valuable contribution to the subject. It is a good popular account, as the author intends it to be, and at the same time it will find its place on the shelves of the general zoologist and herpetologist, both for its very excellent illustrations and for the information on habits that it contains.

ALEXANDER G. RUTHVEN

Natural Vegetation as an Indicator of the Capabilities of Land for Crop Production in the Great Plains Area. By HOMER LEROY SHANTZ, Physiologist, Alkali and Drought Resistant Plant Breeding Investigations. Bulletin 201, Bureau of Plant Industry, U. S. Department of Agriculture. Washington. 1911. Pp. 100; 6 plates and 23 text figures.

This first endeavor to apply the exact methods of quantitative ecology to the problems of agriculture meets with conspicuous and gratifying success. The author is as skillful as thorough in his use of instrumental and