

## REVIEWS

Peters, James A., Braulio Orejas-Miranda, and Roberto Donoso-Barros.

**Catalogue of the Neotropical Squamata. Part I: Snakes.** Pp. viii + 1-347. **Part II: Lizards and Amphisbaenians.** Pp. viii + 1-293. Smithsonian Institution, U.S. National Museum Bulletin 297. Washington, 1970.

James A. Peters of the U.S. National Museum, Braulio Orejas-Miranda of the Museum of Natural History, Montevideo, Uruguay and Roberto Donoso-Barros of the Universidad de Concepcion, Concepcion, Chile, have collaborated in an attempt to produce the first catalogue of Neotropical snakes, lizards, and amphisbaenians. The result is a work of truly monographic proportions, and as Trinidad comes within the geographic scope, it will be of extreme interest to local students of herpetology.

The stated objective of the authors is, modestly, "... the construction of a workable field manual with keys designed to help identification without laboratory facilities." This approach is carried further by the almost (but not complete) elimination of internal characters in the keys, and the need for a dissecting microscope. Most determinations can be effected with nothing more than a simple hand-lens. Thus the work is truly a "field manual" despite its somewhat goliathene proportions.

The geographic area covered by this work is from the Mexico-Guatemala border, south through all of continental South America and the offshore islands within the continental shelf, thus including Trinidad but not the rest of the Caribbean islands or the Galapagos Islands. It is unfortunate that a work already of these proportions was not extended to include the definitely Neotropical Greater and Lesser Antilles. It is somewhat shocking, however, to discover that the extensive tropical portions of Mexico are omitted entirely, especially in light of the fact that their herpetofauna is probably better-known systematically than that of any other area of comparable size in the Neotropics. We are offered no explanation for this omission. The work includes, of course, extensive South Temperate areas in southern Argentina and Chile. Thus the title, "Catalogue of Neotropical Squamata:...", is not all inclusive zoogeographically and does include large areas without the Neotropics.

Part of the bulk of this work is due to the Introduction and all of the keys being published in both the English and Spanish languages in adjacent columns. Despite the added bulk, the bilingual treatment should add greatly to the utility of these volumes in the region covered, and is highly commendable.

For a field manual, the systematic treatment is unusually detailed, and affords the beginning taxonomist some bibliographic reference should he wish to follow up some nomenclatorial problem. Complete synonymies are not given, and those which are shown are abbreviated in consideration of the genus in question only. Also indications of type-designations are omitted. These abbreviations and omissions seem entirely appropriate in a work of this kind; they would have added unnecessarily to the bulk of this work without adding materially to its utility as a field manual.

Most of the keys are of a simple terminology and use the familiar dichotomous format; a few are trichotomous for convenience. The use of these latter, without warning, may cause confusion on the part of inexperienced students.

An interesting innovation is the inclusion of a "star" system for attempting to evaluate degrees of reliability of the information presented: These range from "One Star" (low reliability) to "Four Stars" (high reliability). Thus, if a key was prepared from literature descriptions, with no specimens at hand, not checked by an outside reviewer, or for other difficulties, it receives a "One Star" designation. This progresses through two intermediate categories to "Four Star" reliability: "Manuscript either prepared externally, in which case the author is acknowledged in the heading material; or taken by us from a very recent generic monograph summarising the literature and including all specimens for study." Despite the obvious difficulties the authors must have encountered in many cases in designation of the reliability score, this is a truly signal attempt to objectively evaluate keys.

The work is scantily illustrated with line drawings, and this apparently only when the authors felt it absolutely necessary. It is assumed, therefore, that the person using this work as a manual be already familiar with the anatomical features used in modern reptilian taxonomy. In this feature, the work differs markedly from the familiar illustrated "field guides."

Except for the paper covers and title pages, the entire text is reproduced from a typewritten original by photo-offset. In this manner the cost of reproduction has been greatly reduced, and legibility and permanence have not been affected. By this process, the retail price has been held to U.S. \$6.75 for the two volumes, thus bringing it within the reach of many students and amateurs who would not otherwise be able to afford such an expansive monograph.

For the student of herpetology on Trinidad, this work should prove a valuable, 2-volume index to the identification of the snakes, lizards, and amphisbaenians of the Island. Its bulk, and the fact that most of the species included are not found on Trinidad, will probably negate its popularity as a "field manual" here. The serious student on Trinidad will probably use the work primarily as a "shelf-reference", extracting the Trinidad species and making up his own keys from the data presented for matters of convenience in actual field use. If so, he will have the assurance of up-to-date nomenclature, distributional data, and some degree of reliability of the characters used, and consequently some of the systematic and distributional problems that exist.

Woodcock, George. **Henry Walter Bates: Naturalist of the Amazons.**

Pp. 1-269; 8 pls.; 4 maps. Barnes & Noble, New York. 1969.

This new biography of Henry Walter Bates, Victorian naturalist, traveller, collector, and delineator of what is now known as "Batesian" mimicry, should be of regional interest to Trinidad naturalists. Although Bates' remarkable 11 years of travel, from 1848 until 1859, were confined to the Amazon Basin, many of the species which he collected and des-

cribed, or closely related species, are found on Trinidad. In addition, much of the recent research on both Batesian and Muellierian mimicry has been conducted here.

Bates began adult life as a hosier's apprentice in the sociologically and economically depressing pre-Industrial Revolution Midlands of England. Through years of self-training, together with his vast field experience in the Amazon, he ultimately became the confidant and scientific associate of the evolutionary giants of his time, Charles Darwin and Alfred Russell Wallace. Bates' contributions to evolutionary theory, primarily through his descriptive field observations and specimen collecting, finally gained him a position as Secretary of the Geographical Society; Fellowships in the Entomological, Zoological, Linnean, and Royal Societies; a Chevalier of the Order of the Rose of the Emperor of Brasil; and made him a familiar figure at late-nineteenth century scientific and cultural gatherings in London. Most of these honours came as a result of the presentation of two papers on insect zoogeography and the species concept before the Entomological Society in 1860, and one paper on mimetic resemblances before the Linnean Society in 1861. Two years later, Messrs. John Murray of London published Bates' descriptive narrative of his travels, **The Naturalist on the River Amazons**; it was an instant success in both scientific and literary circles, and did more than anything else to establish the reputation of the man.

George Woodcock, the author of six volumes on Asiatic and Latin American travel and the general editor of the "Great Travellers" series published by Faber & Faber, Ltd., has produced a long-awaited and impartial biography of Bates in an attractive and exceedingly readable style and format. There are vivid and well-documented descriptions of Bates' background in England before his Amazon travels, as well as a chapter devoted to his later life and struggles, despite his honours, in London. The bulk of the volume, however, is in the form of an annotated account of Bates' 11 years on the Amazon, the most significant period in an otherwise drab existence. Emphasis is placed not so much upon Bates' scientific acumen and objectivity, as upon his unusual descriptive literary style. This is perhaps as it should be, for a century of subsequent investigations has clearly shown Bates' scientific objectivity to be the lesser of those of his contemporaries, Darwin and Wallace. **The Naturalist on the River Amazons** remains as a major literary contribution, despite its scientific shortcomings. As such, it has been praised by such diverse critics as Darwin, Charles Kingsley, D. H. Lawrence, and George Orwell.

**The Naturalist on the River Amazons** has stimulated generations of young naturalists, and continues to do so. Aside from whatever literary value it has, this stimulation makes it an important contribution to natural history. George Woodcock's biography of Bates is a commendable effort to view this work in modern perspective.

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