

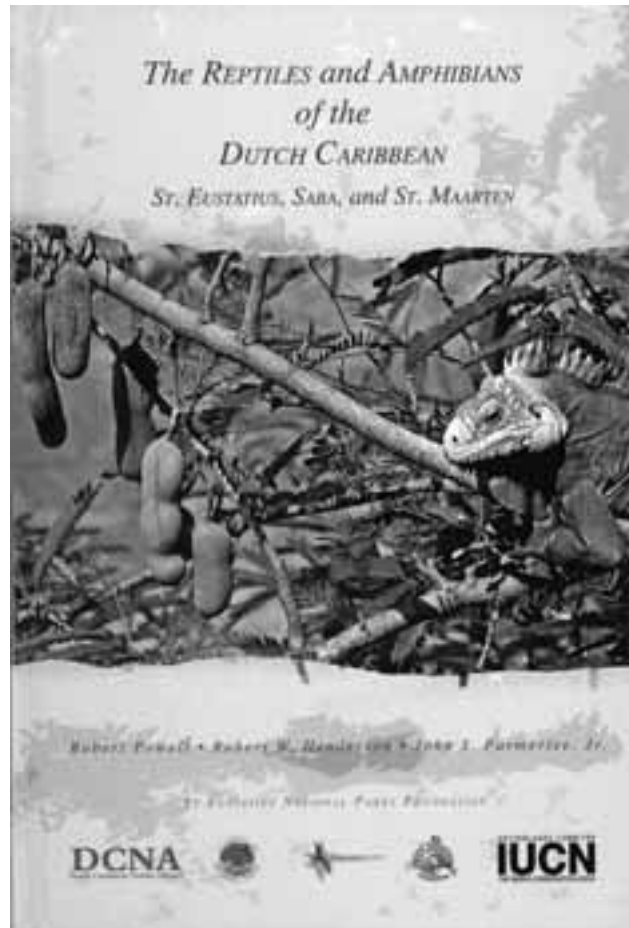
## BOOK REVIEW

# Dutch Windward Island Herpetofauna

Powell, R., R. W. Henderson, and J. S. Parmelee, Jr. 2005. *The Reptiles and Amphibians of the Dutch Caribbean: St. Eustatius, Saba, and St. Maarten*. The St. Eustatius National Parks Foundation, Gallows Bay, St. Eustatius, Netherlands Antilles, 192 pp. Softcover. ISBN 978-09673958-8-3. \$25.00 plus shipping. U.S. distributor: Bibliomania! ([www.herplit.com](http://www.herplit.com)).

These days, it's fairly easy to produce a field guide to the amphibians and reptiles of a relatively small geographic area. It isn't even necessary to know much about the natural lives of the animals. It's enough to have access to good photographs of each species, often taken under controlled conditions in artificial "habitat" sets, and an abbreviated discussion of the distribution and biology of the species. Knowledge of the latter can often be found in scientific and lay literature, including other field guides. Such guides may be useful in identifying the animal before you — but, unless your only goal is to add a species to your herpetological life list, they may leave you hungry for more. A really good field guide is worth its weight in gold, and distressingly few are available. You probably already know this. You may have several guides to the amphibians and reptiles of a particular area on your shelf, but only one is dog-eared from page turning and trips to the field. To my mind, the ideal field guide is portable (it is, after all, supposed to be a *field* guide), includes photographs that are useful not only for purposes of identification but illustrate some aspect of the ecology or behavior of the animals, and text that includes descriptions of the species, including developmental, sexual, and geographic variation, how to distinguish each species from similar species that occur in the region, and discussions of distribution, habitat, food habits, reproduction, behavior, and conservation status. A general discussion of the geography of the region covered by the guide and of the habitats that are found there should be included, as well as a glossary of terms used in the guide with which the reader may not be familiar and a bibliography or literature cited section to lead the interested reader to more detailed information. Powell, Henderson, and Parmelee (hereafter, PHP) have produced a field guide to the amphibians and reptiles of the Dutch Antillean islands of St. Eustatius, Saba, and St. Maarten that meets my expectations.

Including introduced species, the herpetofauna of the Dutch Windward Islands (the Dutch Leewards are Aruba, Bonaire, and Curaçao, which are South American continental islands) consists of two species of amphibians, both frogs, 15 or 16 (depending on whether or not the Green Iguana of Saba is a species distinct from *Iguana iguana*) species of lizards, three of snakes, and two of turtles, plus three species of sea turtles known to nest in the islands and a fourth that is sometimes seen in the surrounding waters. This relatively small fauna has allowed PHP to produce a guide



that is portable while including extensive accounts for each species. A similarly detailed guide for the herpetofauna of, for example, Cuba (which has at least 50 species of anoles alone) would take on the proportions of an unabridged dictionary.

Following the Introduction, the guide describes the natural features of each island. Included are topographic maps and aerial photographs and a discussion of the region's geological history. This is followed by a history of the human occupation of the islands; this section is enhanced by additional photographs of each island, including archival photographs that sometimes highlight the changes that have accompanied the human occupation and development of the region. Next comes a section on conservation that identifies parks and reserves, and emphasizes the local conservation organizations that are working to conserve the natural heritage of each island.

Next is an extensive section introducing amphibians and reptiles. It begins with definitions: What are amphibians and reptiles. The definitions go beyond external morphology to

include features associated with respiration, reproductive biology, and thermoregulation. There follows a short discussion of scientific names, their derivation, and why they occasionally change. Common names and why they can create difficulties are discussed next. A subsection on biogeographic relationships emphasizes human-mediated introductions in the Dutch Antilles and the biogeographic similarities and differences among the three islands. Disappointingly, a discussion of the biogeographic origins of the elements of the herpetofauna of these islands is lacking, although species accounts remedy this shortcoming to some degree. A general discussion of conservation status includes concise descriptions of the conservation threat categories employed by the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and the Red List of the World Conservation Union (IUCN). The Dutch Antillean species listed by either organization are discussed, as are the negative effects of the introduction of mongoose on the herpetofauna of St. Maarten. This section concludes with "Stories about Reptiles," including a discussion of the medicinal use of reptiles, iguana meat as an aphrodisiac, and other myths. Here you can find two recipes for lizard soup, once thought to be a treatment for bronchitis and asthma.

The bulk of the book is devoted to individual species accounts. This section is a little anachronistic in not following the usual taxonomic organization of amphibians first, then turtles, then lizards, and then snakes. Instead, lizards appear first, then snakes, then turtles, with amphibians bringing up the rear. Even within the lizard accounts the order of presentation of the families is unusual. None of this, however, detracts from the quality of the individual family and species accounts.

Family and species accounts begin with the common English and scientific names, and the derivation (etymology) of the scientific name. The latter is an interesting feature omitted from most field guides. This is followed, for family accounts, by a statement of the geographic range and of any interesting taxonomic considerations. Species accounts include a description that will facilitate identification, as well as any changes in color or pattern that are associated with age or sex. The distribution among the three islands is stated and note is made of populations known to have been extirpated. In some accounts (e.g., *Iguana delicatissima*), the origin of the species is discussed. Habitat is described in some detail and additional subsections address food and predators. The discussion of reproduction may include, among other things, seasonality, mode of reproduction (e.g., eggs, live-bearing, parthenogenesis [= reproduction within all-female population]), and clutch size. Rare in a field guide, the discussion of behavior is usually fairly extensive. Each species account concludes with a discussion of conservation status including primary threats and, if known, recent population trajectories. The accounts are all copiously illustrated (the book contains over 300 color and eight black & white photographs). The photographs of amphibians and reptiles were taken, for the most part, in natural habitat and often highlight differences among similar species, document age and sex variation in color and pattern, or illustrate aspects of behavior.

Following the species accounts is a section entitled "Straits and a Vagrant." The strays are species that were introduced to areas where they do not naturally occur but failed to become

established. Straits are known only on St. Maarten and include two species which occur naturally elsewhere in the Dutch Antilles (Green Tree Lizard, *Anolis bimaculatus*; Red-bellied Racer, *Alsophis rufiventris*) and five exotic snakes: Boa Constrictor (*Boa constrictor*), Rainbow Boa (*Epicrates cenchrus*), Blood or Short-tailed Python (*Python curtus* group), Ball Python (*Python regius*), and Corn Snake (*Elaphe guttata*). The Loggerhead Sea Turtle (*Caretta caretta*) is listed as a vagrant. Not known to nest in the Dutch Antilles, Loggerheads are occasionally encountered at sea around the islands.

The book concludes with a Bibliography, a List of Taxonomic Authorities for each Dutch Antillean species (unique, so far as I know, for field guides), a Glossary, and an Index to Names of Reptiles and Amphibians. The Bibliography lists 164 citations, two-thirds of which date from 1990 or later. The glossary contains 112 entries.

My complaints about the book are minor. Each page is UV-coated, lending a glossy appearance that dramatically enhances the photographs and renders the book moisture and mildew resistant (not an unimportant consideration for a guide to the herpetofaunas of tropical islands), but the slick surfaces stick together, making it next to impossible to casually leaf through the book. The book, although ostensibly soft covered, is heavy and stiff. Whether the quality of the images and weather resistance justifies the unusual feel may well vary from reader to reader. Also, I think we needed to have only one photograph of a mongoose, and a few individuals are illustrated more than once (figures 177 and 251 of a Red-bellied Racer, *Alsophis rufiventris*, are an interesting example of photographic pseudoreplication).

The PHP guide ought to serve multiple audiences. For the amateur naturalist visiting the Dutch Antilles, it can serve as both an introduction to the islands and the herpetofauna, facilitating the location and identification of species. The book will serve the same purpose for the professional biologist new to the islands. In addition, it provides enough information on the biology of the amphibians and reptiles, and clues as to what is *not* known, that it will point the way for future research. With respect to all of these, the book ought to be widely read by anyone conducting research on the amphibians and/or reptiles of the Dutch Antilles and beyond. It should be particularly popular with graduate students contemplating work in the region.

PHP have conducted research on amphibians and reptiles throughout the West Indies for an aggregate of over 60 years and, together with a small army of students, they have worked extensively in the Dutch Antilles. Fifty of the citations in the PHP Bibliography are authored or co-authored by Powell, Henderson, or Parmelee. Although new species may yet be discovered in these islands, and others will without doubt be introduced, this guide will be the gold standard for years to come. The World Wildlife Fund (Netherlands) and Prince Bernhard Nature Fund (Netherlands) are to be commended for funding its publication and allowing the proceeds from sales to go toward conservation efforts in the Dutch Antilles. However, as PHP was not produced by a major publisher, the number of copies printed may be relatively small. Get yours while you can!

Arthur C. Echternacht  
University of Tennessee, Knoxville