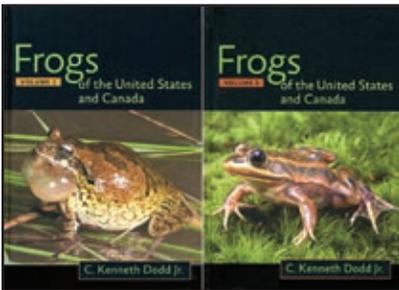


BOOK REVIEWS

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Frogs of the United States and Canada (Volumes 1 & 2)

C. Kenneth Dodd, Jr. 2013. Johns Hopkins University Press, Baltimore, Maryland (www.press.jhu.edu). xxvii + 982 pp. Hardcover. US \$180.00 (set). ISBN 978-1-4214-0633-6 and 978-1-4214-0633-0.



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Occasionally a technical book is published that has the potential to become a classic reference

in its field. On the bookshelf of most professional and serious amateur North American herpetologists and university libraries one can usually find standard species reference works such as Petranks (1998), Ernst and Ernst (2003), and Ernst and Lovich (2009) on salamanders, snakes, and turtles, respectively, of the United States and Canada. Perhaps there may even be a well-worn copy of Wright and Wright's (1933) *Handbook of the Frogs and Toads*. Although several early editions of this latter classic were produced until 1949, and many reprints have been produced, there has not since been an effective synthesis or review of the species-specific anuran literature for both Canada and the United States. Why not? Although the need for an update was long overdue, nobody seemed to have the expertise, time and/or fortitude to attempt such a formidable task. Here we have a new species-specific synthesis and review of the 112 native and established non-indigenous anuran species of the United States and Canada that has the potential to become a standard reference for the upcoming decades. Is it destined to replace the disintegrating copy of Wright and Wright (1933) on our shelves? Considering the magnitude of the global amphibian decline (Stuart et al. 2004) and recent evidence indicating that even the common North American amphibians are declining (Adams et al. 2013), a thorough contemporary reference source on anurans is urgently needed.

The author needs little introduction to those who work with amphibians or reptiles either in North America or globally as his reputation and contributions are widely known. Dodd is a well-seasoned herpetologist who has been an academic and government scientist, and has even done "hard time" as an administrator. In his brief preface, Dodd tells us why he became a biologist—a passion for nature, a keen interest in how it works,

and wanting to spend a life outdoors. These motivations are familiar to many of us.

One of the author's objectives, and critical for a book of this kind, is to provide a thorough review of the pertinent literature. Over 4700 publications from the 1700s to mid-2011 were read and cited by the author. Dodd apologizes that he did not cite every paper on North American anurans and quotes Ernie Limer: "You can't get them all." From a careful perusal of the species with which I am most familiar—the 50 or so that range into Canada—I found only a few papers missing that could have been included. However, these tended to be short local natural history notes published in obscure sources. Thus, it appears that Dodd did an all-around excellent job of identifying and incorporating the pertinent literature for each species.

The two attractive volumes that comprise this set are well constructed, with a rugged hardcover binding and acid free pages, and should weather the frequent use to which a key reference is subjected. With a weight of 2.5 kg for the set, carrying these books will provide the owner with fitness benefits, but makes them impractical for use in the field. The printing quality is excellent and the font is easily readable. However, throughout the volumes there are occasional typographical errors. Most of those I noted were real words, but the wrong words, and suggested the use of automatic word replacements that some software packages employ. A live copy editor would likely have done a better job. Fortunately, the errors are not so frequent as to detract significantly from the prose.

This is neither a field guide nor a key to frogs and toads. As Dodd points out, there are a plethora of regional, state, and provincial field guides with keys and identification information available. His goal was to produce an extensive synthesis and review of the published literature on all of the anuran species of North America occurring north of Mexico as of May 2011. In this he succeeds commendably. Despite not being a field guide, the books still do an excellent job of summarizing general identification characteristics.

Volume 1 begins with a brief Preface, Introduction, and List of Abbreviations. It then goes directly into the individual Species Accounts that form the bulk of the material in both books. The accounts are organized alphabetically by family name from Ascaphidae to Rhinophrynidae in the first volume but leaving the more diverse Ranidae for the second. Volume 2 begins by repeating the List of Abbreviations and then completes the species accounts of Ranidae and Scaphiopodidae followed by accounts of established non-native species. The species accounts are followed by a Glossary, Bibliography, Index to Scientific and Common Names, and an Index of Potential Stressors, bringing the complete work to over one thousand very thorough and well-organized pages summarizing what is known about North American anurans. Although the species accounts occupy the bulk of the books and will get the most use, I hope readers will

also carefully read the 'About The Book' section on pages xx–xxv of the Introduction, which contains many insights regarding our current state of knowledge of amphibian biology and insights that can emerge only from researching and writing a work of such scope. This provides direction for those seeking topics or areas for future study or needing a primer on a species new to them, and reveals gaps in the literature where natural history information is lacking. It is surprising that even in developed countries such as Canada and the United States, where the amphibian fauna is relatively well-known and studied, so many gaps in basic natural history and geographic variation exist—even for our most common species. Although natural history is often undervalued, without these data we are left with gaps in basic knowledge that often hamper progress in ecology, conservation and management (Dayton 2003; Bury 2006). Having just served three terms on the Committee On the Status of Wildlife In Canada (COSEWIC) Amphibian and Reptile Species Subcommittee, I know how important a thorough understanding of the natural history of a species is to enable accurate status assessment and just how frustrating it is when species remain unprotected because they are designated as “Data Deficient.”

Dodd follows the current but somewhat controversial nomenclature of Frost et al. (2006, 2007). However, he also includes the more widely recognized names used in Conant and Collins (1998) and Stebbins (2003) making it easy for most readers to follow. Dodd stays out of the nomenclature debate, leaving it to systematists and taxonomists to “duke” it out. As most experienced field herpetologists know, it doesn't matter if you call a bullfrog *Lithobates* or *Rana*, it still won't respond. For the seemingly more stable common names Crother (2008), Desroches and Rodrigues (2004), and McKeown (1996) are followed for English, French, and Hawaiian, respectively.

The accounts are well organized, clearly and concisely written, and very thorough. The main subheadings under each species' account are: Nomenclature, Etymology, Identification, Distribution, Fossil Record, Systematics and Geographic Variation, Adult Habitat, Terrestrial and Aquatic Ecology, Calling Activity and Mate Selection, Breeding Sites, Reproduction, Larval Ecology, Diet, Predation and Defense, Population Biology, Community Ecology, Diseases, Parasites, and Malformations, Susceptibility to Potential Stressors, and Status and Conservation. Some of these subheadings are absent, merged, or modified, depending on the amount of information available about each species. Individual species accounts range from about five to over 30 pages, illustrating the unevenness of knowledge about our anuran fauna. Each account includes a black and white political boundary outline map with the species ranges shaded in gray. The author explains that the information on distribution comes from the latest available sources but he provides a caveat in the preface that the maps should be interpreted as approximate. They do appear generally to be a good estimate of the approximate extent of the range for most species. However, I found that the map for Cope's Gray Treefrog (*Hyla chrysoscelis*) could have been more accurate by including southeastern Manitoba as the species' occurrence there is discussed in the text. In checking the source for this map, I found it was from an older published map that did not show the northern distribution beyond the US border. This highlights the author's caveat that all range maps (especially “outline maps”), not just maps in this book, must be interpreted cautiously. As the macroecological literature indicates, the abundance-distribution structure of the range for most taxa is poorly documented but it remains virtually unknown for all amphibian species.

Each species account also contains representative photographs of eggs, larvae, adults, and habitat where available. For the most part these are of good to excellent quality. In a few cases I wished that photographs of egg masses were larger than single column width for better resolution. In some cases line drawings are provided for eggs or important identification characteristics (e.g., cranial crests in toads) presumably where photographs were not available or adequate. Some drawings in the accounts came from other sources but most are high quality pen and ink illustrations made for this set by C. Pizano. These fine drawings demonstrate that at times, the old illustrations of yesteryear can be superior to photographs for identification purposes. For some species accounts multiple photographs are provided to illustrate color phases or variation in habitat. As one views these photographs for species familiar to them, it is sometimes evident that they are not so representative of the tadpoles or adults in one's own study area. This highlights another caveat that the author provided in his introduction about geographic variation in basic features such as color and pattern, and especially his statements that “The identification of tadpoles is truly an art as much as a science” and “Field experience and knowledge of natural history are the best teachers when identifying larvae.” This fondly brought back to memory an observation from early in my career of a conference field trip, on a tiny island, with four eminent herpetologists from different regions of North America peering into a dip net and arguing *ad nauseum* over which species of tadpole had just been scooped. A local naturalist with but one degree but decades of experience was able to correctly identify the beast with one quick peek. Although these volumes are no substitute for regional field guides, they nonetheless do a fine job of describing the general basic features.

The section on Fossil Record is typically the shortest in each account and for many species contains just the statement that “no fossils have been identified.” Much of this information comes from the extensive work of the late Alan Holman and a few others on North American fossils and sub-fossils but it illustrates the serious gaps for anurans in the fossil record. This likely partly reflects the low probability of small-bodied species becoming fossilized but also highlights the general lack of work on amphibian paleontology relative to other aspects of amphibian biology.

The Systematics and Geographic Variation sections appear to be comprehensive in reviewing the latest primary sources of information and thorough in providing a summary of the evidence for hybridization. This section reminds one not only how much uncertainty we still have of phylogenetic and phylogeographic relationships but also how fast knowledge in this field is increasing. One wonders where the dust will settle once entire genomes can be compared and if our modern analyses will largely confirm the classifications, relationships, and inferred dispersal corridors divined by early herpetologists based on morphology, habits, and years of studying nature *in situ*. The amount of evidence for both natural and lab-produced hybrids shows how valuable anurans can be as model organisms for investigating speciation, especially if reproductive isolation is assumed to have some relationship to the definition of species. Indeed, under Mayr and Ashlock's (1991) biological definition of species, perhaps early taxonomists were premature in many of their classifications.

The sections on Adult Habitat and Terrestrial and Aquatic Ecology are very thorough, reflecting both the variation and the disparity of knowledge among species. Within each species' account the generalities are clearly presented and regional

variation is discussed when known. Likewise, the sections on Calling Activity and Mate Selection and Breeding Sites provide good reviews. The literature has been thoroughly searched to summarize the phenology of activities where known across the ranges of each species.

The Population Biology section reveals little about population growth or trends, but instead provides thorough reviews of what is known of the demographics of each species, emphasizing population structure. The lack of the former data reflects the fact that there are few long-term studies of amphibian populations, despite the recognition of their potential value to conservation, and we still know little of the spatial dynamics of amphibians (Marsh and Trenham 2001; Smith and Green 2005).

The Community Ecology section focuses mostly on what is known about interactions among species, emphasizing competition and habitat partitioning. This section, next to that of the Fossil Record, is generally the shortest for most species and even absent from some of the accounts reflecting the paucity of ecological studies conducted at the community level using anurans. The results of lab and field micro- and mesocosm experiments of the past few decades, some of which are now citation classics influencing community ecology in general, are reasonably well-summarized. There is, however, no mention of the tradeoffs between realism and control in these classic experiments versus observational studies, which often makes it difficult to assess the relative importance of individual ecological interactions in structuring anuran communities. As one who generally works at the community level and focuses on anurans, I concur with Dodd's assessment that very little is generally known about the community ecology of North American anurans.

The sections on Diseases, Parasites, and Malformations are based on a sound assessment of the literature, but again reflect how little we know beyond description of some pathogens and parasites that occur in some anurans. The information presented in this section varies greatly among species. The ecological role of disease and parasitism as ecological interactions is poorly known in most taxa, but particularly so in anurans and amphibians and reptiles in general.

In the section Susceptibility to Potential Stressors a summary of both lethal and sublethal anthropogenic and natural stressors is provided. For some species nothing is known but extensive summaries exist for other species and information is conveniently organized under subheadings such as Metals, Other Elements, pH, Chemicals, NaCl, Nitrate and Nitrite, UV light, and other categories. This is, to my knowledge, the most thorough summary by species of stressors and it will appeal to both herpetologists and ecotoxicologists as a guide to the past literature. Dodd notes the shift to sublethal studies but points out that little is known about differences in effects among species and states, "Clearly, toxicological studies need to be more rigorous." There remain many knowledge gaps with respect to the effects of individual stressors and even less is known about the "chemical soups" to which anurans are exposed, and other multiple stressors.

The final section in each species account is Status and Conservation. The author does not provide a lengthy list of status designations by federal, state and provincial jurisdiction as this information is readily available and kept up-to-date on government and other websites. Instead an excellent review of threats documented in the primary literature is included. Like all other sections the length varies greatly among species reflecting the general relative disparity of knowledge. A short glossary follows

the species accounts before the Bibliography. I checked various technical terms used in the text of which some readers may not be familiar and found only one that I would add: "thigmotactic"—response to stimuli resulting from touch.

In reading and comparing the individual accounts, it becomes clear just how much the state of knowledge of natural history varies among species and how much geographic variation exists within species. Dodd points out that many 'facts' about some species are based upon very little empirical evidence and that past misinterpretations or errors are sometimes perpetuated. Thus, there are at least two important take home messages to the reader that are articulated in two statements from the author, first "Researchers need to understand the basis and limitations of the data used to test hypotheses, or their meta-analyses will not be of much value." And second, despite the plethora of knowledge summarized in this set of books, "*Life history traits of North American frogs are poorly known.*" The best overall, and most important message of this book for all to consider lies in a passage on page xxv: "All too often, biologists consciously or unconsciously embrace the concept of ecological typology whereby if a species does something in one location it must do the same thing elsewhere. Such narrow thinking needs to be countered by comprehensive long-term studies in a variety of locations and under varying environmental conditions."

The initial excitement I had upon receiving these books to review did not dissipate as I read them. Readers will learn not only much about the natural history of each species, but comparison of the individual accounts also reveals where gaps exist in the literature, and where more research and reporting needs to be done. This is a monumental contribution that provides an urgently needed review of the literature on the anurans of the United States and Canada. Dodd succeeds in his goal of providing thorough reviews of the literature on each species in well-organized and well-written accounts. It will quickly become the main reference source on frogs and toads of the United States and Canada for decades to come. Its underlying caveats also provide sage advice for improving the quality of research and knowledge. This set should be on every North American herpetologist's bookshelf and in every academic and research institution library on the continent. Both professional biologists and serious amateurs will find the contribution to be the best summary of knowledge on the biology, natural history, and conservation for each species.

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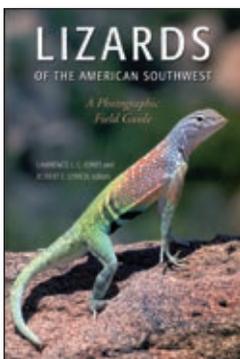
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Lizards of the American Southwest: A Photographic Field Guide

edited by Lawrence L. C. Jones and Robert E. Lovich. 2009. Rio Nuevo Publishers, Tucson, Arizona (www.rionuevo.com). 567 pp. Softcover. US \$24.95. ISBN 978-1-933855-35-6.



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This book concentrates on one of the most lizard rich regions of North America—the southwestern United States of California, Nevada, Utah, Colorado, Arizona, New Mexico, and Trans-Pecos Texas, as well as the adjacent Mexican states of Baja California, Baja California Sur, Sonora, and Chihuahua. Not since Hobart Smith's (1946) work *Handbook of Lizards* has there been a publication of this nature, specifically focusing on a North American lizard fauna that incorporates identification, biology, and taxonomy within comprehensive species accounts, thoroughly illustrated throughout. At 567 pages, *Lizards of the American Southwest* contains detailed accounts on 96 lizard species, plus additional introductory sections, family level accounts, and a section on the

lizard fauna found in northwestern Mexico, all written by 63 of the most reputed lizard specialists and expert herpetologists. To be fair, this work is more than a field guide; it is a dense reference containing a wealth of information on lizard life history, where they occur, how to find them, and much more.

The book opens with a Foreword by renowned lizard ecologist, Laurie Vitt. Here, Vitt initiates the discussion on lizard diversity in the American Southwest and reflects upon the early years leading to his successful career as a biologist focusing on lizards. Following the Foreword, the editors of the book provide separate Prefaces, each imparting their unambiguous enthusiasm for the Lacertilia. Before delving into the introductory contents, a map of the geographic scope covered by the book is included with total species counts and the number of endemics occurring within each of the seven U.S. and four Mexican states.

A number of opening sections under an initial chapter entitled “Getting Started” help orient the reader with the book's layout and provide an overview of basic lizard biology, diversity, and habitat associations. “About Lizards,” authored by Lovich and Jones, discusses species richness within the American Southwest, as well as taxonomy and the importance of lizards in mythology and cultural history. “Lizard Habitat,” authored by Jones and Lovich, begins with discussion and definition of ecoregions and is accompanied by a map illustrating the 16 ecoregions found within the coverage area. Plant communities and habitat features are then discussed, narrowing down to microhabitat from there. Scenic landscape and habitat photographs are provided for a few of the ecoregions and habitat types mentioned, but not all. This chapter continues with a detailed account and overview of lizard “History and Behavior.” Here, author Stanley Fox conveys his obvious fascination with lizards as he summarizes their different modes of reproduction, the vast array of mating and territorial displays, foraging habits, and predator evasion strategies. “External Anatomy and Identification” by Jones and Randy Babb covers varied external morphology in lizard scalation, color patterns, and body forms, breaking down diagnostic features for each family in the region. This section is complemented by exquisite original line drawings produced by Babb that accurately illustrate markings and anatomy, which aid in identification. “Non-native Species” by Jones and Lovich discusses the relatively small number (when compared to such places as Florida) of lizard species that have become established in the American Southwest following human-facilitated introductions.

Another chapter entitled “Observing Lizards” by Jones and Lovich covers an opening section on “Lizard-watching Basics,” offering the reader helpful information on where to locate lizards, when to observe lizards, how to look for lizards, and catching lizards, all of which may vary greatly by species, climate, latitude, season, time of day/night, and habitat, making this very useful content for everyone from the novice lizard-watcher to the “serious lizarder” (a term coined on page 53!). “Public Lands for Observing Lizards” by Jones details numerous places, organized by U.S. state, where lizards can be found and viewed. A sub-section titled “Lizard-viewing Hot Spots” focuses on some of the most notable places that are both rich in lizards and scenic hiking, such as Borrego Palm Canyon Trail in Anza Borrego Desert State Park, California and Marijilda Canyon in the Pinaleno Mountains of southeastern Arizona. Author Kim Lovich addresses “Lizards in Captivity,” initially providing alternative approaches to viewing lizards up close on display in zoos or other exhibits rather than collecting and keeping them in the home.

However, recognizing that some readers will be interested in keeping lizards that they'll encounter in the wild, general advice and information pertaining to captive husbandry is offered.

Discussion of collecting and captive care is a nice lead into the next chapter, "Conservation and Legal Issues," as novice readers may be unaware that it is illegal to collect and keep a number of lizard species that are in decline in some regions or fully protected (such as *Heloderma suspectum*, *Phrynosoma cornutum*, *P. mcallii*, etc.), and/or listed under the federal Endangered Species Act (such as *Gambelia sila* and *Uma inornata*). Others occur in sensitive microhabitats that can be readily damaged if careless searches are employed (e.g., crevice-dwelling night lizards such as *Xantusia bezyi*, *X. henshawi*, and *X. sierrae*). In "Environmental Ethics," Lovich and Jones comment on such topics encouraging "non-invasive enjoyment of lizards." This is followed by "Conservation, Management, and Threats," where the authors attempt to educate and enlighten readers as to the impacts some species face and some of the benefits afforded to humans by lizards, thus validating conservation and management practices. "Lizards and the Law" ends this chapter covering regulations readers should be aware of, from international (CITES) to federal, state, and local levels.

In a chapter on "Taxonomy and Nomenclature," authors Lovich and Jones begin with a basic history and breakdown of taxonomy for the layperson prior to the species accounts, and it is explained that a standard taxonomy was adopted for the book following de Queiroz and Reeder (2008) for U.S. taxa and Liner and Casas-Andreu (2008) for Mexican taxa. The book is as taxonomically up-to-date as can be for the time of publication in 2009. Notable taxonomic changes in recent years are highlighted in this section, such as the use of the genera *Aspidoscelis* (for the North American whiptails; Reeder et al. 2002) and *Plestiodon* (for the toothy skinks; Smith 2005), after long histories recognized under the genera *Cnemidophorus* and *Eumeces*, respectively, with which some readers may be more familiar.

The real meat of this book is, of course, its species accounts representing 96 lizard species. Each account is accompanied by a range map and two to five color photographs (most accounts include four). Although these accounts cover species found in the American Southwest that also may continue their distributions into adjacent Mexico, species that occur in the contiguous states of Sonora, Chihuahua, and the Baja California peninsula, but that do not extend into the U.S., are not given individual accounts. Instead, three sections on Mexican lizard fauna written by expert researchers of each region follow the main species accounts: "Lizards of Baja California (Norte) and Baja California Sur, México" by Rob Lovich and Lee Grismer, "Lizards of Sonora, México" by James Rorabaugh and Erik Enderson, and "Lizards of Chihuahua, México" by Julio Lemos-Espinal. Within these sections an additional number of Mexican endemics are briefly discussed within their respective ecoregional assemblages.

Following the species accounts, a comprehensive checklist is provided consisting of all species occurring within the U.S. and Mexican states covered by the book, amounting to a total of 177 species. Perhaps for user-friendliness, the species checklist is arranged alphabetically by family and species, whereas species accounts are arranged phylogenetically by family and then alphabetically by species.

Photography is a key element of this book, as indicated by the subtitle, "A Photographic Field Guide." Some authors of species accounts provided their own images while other images were solicited from more serious herp photographers. Outstanding

images such as a *Dipsosaurus dorsalis* in habitat on page 132 by Tom Brennan, an elegant *Aspidoscelis pai* on page 375 by Randy Babb, a red-headed *Plestiodon "gilberti"* by Troy and Marla Hibbits on page 449, a pleasingly postured *Elgaria panamintina* by Brad Alexander on page 472, and a beautiful, basking adult male *Petrosaurus thalassinus* in full breeding coloration by James Rorabaugh on page 503 are among some 380 photographs in total that collectively make this a top-notch volume. Clearly, the images selected for this book were intended not only to serve the purposes of accurate field identification, but to evoke an interest in this spectacular group of reptiles. While some accounts applicably illustrate distinctly polymorphic taxa (e.g., *Sauromalus ater*), other accounts depict widely ranging, highly variable taxa from only a single state (e.g., *Phrynosoma hernandesi*) or depict only two or three subspecies for polytypic taxa when a number of forms occur in the geographic area covered by the book (e.g., *Aspidoscelis tigris*).

There is little concerning criticism to comment on, though some minor inaccuracies or incongruities warrant attention in future editions. For example, a typo on page 52 referring to *Sceloporus varius* is obviously meant to say *Sauromalus varius*. On page 173 *Phrynosoma ditmarsii* is mentioned as having been formerly included as a subspecies of *P. douglasii* prior to being elevated to species status along with *P. hernandesi* (Zamudio et al. 1997). However, *P. ditmarsii* has never been included within the *P. douglasii* species complex. Further, it is stated in this same paragraph that the absence of blood-squirting is a distinguishing feature of the short-horned lizard clade, when in fact members of this group have been reported to exhibit this trait in the literature (Sherbrooke and Middendorf 2001; Hodges 2004, and references therein). In the range map on page 318 the distribution for *Phyllodactylus nocticolus* should not extend to the Baja Cape region, where this species is replaced by its sister taxon, *P. xanti* (Grismer 2002; Blair et al. 2009). Similarly, on page 440 the range map for *Xantusia wigginsi* should not include the distributions of *X. gilberti* and *X. sherbrookei* (Grismer 2002; Bezy et al. 2008). An isolated locality dot on the range map for *X. vigilis* in Sonora represents the type locality for *X. jaycolei* on page 436. Although *X. jaycolei* and *X. sherbrookei* were described just prior to this book's publication (and thus did not make the cut for this first edition), *X. gilberti* (= *X. vigilis gilberti*) has been recognized as a valid taxon occurring in the Sierra la Laguna of the Cape region since its description in the 19th century (Van Denburgh 1895).

Most of the distribution maps produced for this book are generalized for wider-ranging species, but some are much more detailed such as those for habitat specialists or those with significantly reduced distributions due to habitat alteration (e.g., *Phrynosoma mcallii* and *Sceloporus arenicolus*). Other maps for certain species in the same boat (e.g., *Gambelia sila*) do not reflect similar loss of habitat and may be misleading to some readers unfamiliar with current vs. historic distribution in this context.

Other matters of minor criticism concern subspecies delimitations within the range maps and written content referring to subspecies within the accounts. A key on page 559 is provided to match the appropriate color code to mapped subspecies, alphabetically, to any given range map within respective species accounts. Some subspecies sections for polytypic species within the accounts provide descriptions of where each subspecies occurs so that one might be able to discern subspecies distributions without having to flip to the back of the book to reference the color key (e.g., *Uta stansburiana*, page 297). However, discussions within other subspecies sections provide information

on diagnosing subspecies, but do not discuss their respective distributions (e.g., *Sceloporus graciosus*, page 221). Still others simply list subspecies without providing any additional information, such as *Urosaurus ornatus* (page 293), or *Coleonyx variegatus*, where in the latter, it is mentioned on page 315 that “the remaining subspecies occur in Mexico,” but the region of Mexico in which these occur is covered by this book. At least one range map (*Urosaurus graciosus*, page 282) does not correspond correctly with the subspecies color key. Further, subspecies that occur within the U.S. are discussed in the species accounts, but subspecies occurring in Mexico, including Sonora, Chihuahua, and the Baja California peninsula, are not, despite range maps illustrating additional, unreferenced subspecies distributions within these Mexican states.

This work does a superb job at showcasing the region’s diverse lizard fauna, offering an accessible look at lizards as interesting and attractive members of the systems of which they are a part. Editors Larry Jones and Rob Lovich are to be applauded for accomplishing the huge task of bringing together an aggregate of 77 expert authors and skilled photographers to produce such a wonderful look at lizard biodiversity. This book is an essential addition for anyone with an interest in lizards, desert ecology and natural history, the American Southwest, wildlife photography, or herpetology of the region covered. It should be noted that all proceeds from the book are donated to The Herpetologists’ League in support of the Jones-Lovich Grant in Southwestern Herpetology, which sponsors research on the herpetofauna of the American Southwest and adjacent Mexico.

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Salamanders and Newts of the World Vol. 1: Salamanders and Newts of Europe, North Africa and Western Asia

Marc Staniszewski. 2011. *Terralog Vol. 21*. Edition Chimaira, Frankfurt am Main, Germany (www.chimaira.de). 160 pp., Hardcover. 39.80 Euro. ISBN 978-3-89973-369-3.

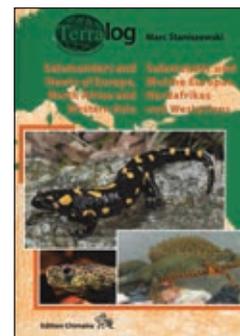
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Terralog is a book series presenting reptile and amphibian groups in color photos of all species and subspecies of various regions. It gives information on keeping the animals in captivity by means of small symbols under the photos and also provides some data on size, habitat, and protection status, along with maps (41 in this volume) depicting the distributional ranges of each taxon. It is aimed primarily at terrarium hobbyists. Thus far *Terralog* volumes have appeared on turtles, varanid and agamid lizards, geckos, and venomous snakes.

The present volume is the first devoted to salamanders and addresses the salamander and newt species of Europe, North Africa, and Western Asia. The book starts with an elaborate table of contents that includes distribution data of the taxa depicted in the book. The following introduction, in both German and English, is nine pages long, but is not intended to introduce the novice to salamander biology. Instead it gives a referenced summary of the taxonomy of the species dealt with in the book, and in doing so generally follows Frost (2011). Thus, the introduction is, in fact, a justification of the use of the scientific names in the book. The book is not intended to contribute to the scientific discussion about species or subspecies status of different taxa, so the choices that are made will probably not be of scientific consequence. This is not the place to elaborate this point further, but I find that the views of Dubois and Raffaëlli (2009), which are followed by Frost for a number of European salamander species, are sometimes adopted too readily. Dubois and Raffaëlli in my view often jump to conclusions and propose new taxonomic arrangements that are premature, and sometimes based on questionable grounds, such as an animal’s behavior in captivity. Often the scientists who are actually working in the lab or in the field on the taxa under consideration, take a more cautious and conservative approach (a case in point is the use of the name *Lissotriton maltzani* for *L. boscai* from southern Portugal; they raise many *Lissotriton vulgaris* subspecies to species status; for *L. kosswigi* from northern Turkey this may be reasonable, but this is less clearly so for the subspecies *meridionalis*, *graecus*, and *lantzi*). Even so, it is laudable that the author is aware of the taxonomic issues and states explicitly which arrangement

he follows in his treatment of the species and subspecies. Frost (2011, subsequently updated through 2013) is an authoritative default position to fall back on for such a book. The introduction to the book has two pages of references to taxonomic literature. Reference to available textbooks on amphibian biology, or books on captive maintenance of salamanders, is surprisingly lacking.

But rather than dwelling on what the book is not or what it is missing, let me focus on what the book really is: it is a picture book and does not aspire to be anything more than that. As such it is by far the richest collection of color photos (750 of them) of salamanders existing on the book market. Many photos are of excellent quality, and have been made available by people who have studied the animals in the field. The photos taken by well-known herp photographers, such as Benny Trapp, who has made the greatest contribution to this volume, are especially outstanding. Indeed, not only for adult animals, but also for eggs, larvae, juveniles, and for salamander habitats, the book is a treasure trove. Where else can one find all Fire Salamander subspecies depicted in all their varieties? The subspecies of the Algerian Fire Salamander, *Salamandra algira*, are depicted in a large number of good photos (*S. a. tingitana* alone is depicted twelve times, covering two pages!). On the other hand such a dazzling quantity of photos, when presented without description or explanatory context, is not automatically optimally informative. More is not *per se* better. Many photos deserved a larger format in the book, and many others could have been skipped without much loss of information. To my taste, the layout is a bit messy, with too many small pictures on one page, separated by lines with graphic symbols relevant to terrarium information. A number of photos, while spectacular and deserving a better print quality, such as the pictures of the Olm (*Proteus anguinus anguinus* and *P. anguinus parkelj*), are not rendered in optimal quality.

So, for whom is this book intended? Chimaira is a publisher who successfully targets a fairly large market of amphibian and reptile enthusiasts, both German and international. This book will no doubt find its place among salamander enthusiasts, who can appreciate a comprehensive pictorial account of all salamander and newt varieties in the western part of the Old World. It does not serve as an introduction to newts and salamanders in general, nor will it qualify as a guide book to keeping salamanders in captivity. Better books are available for these purposes. This book, I would imagine, would serve wonderfully well as a gift to an American or Asian salamander lover, as a demonstration of the bewildering variety in color and form of the European salamander fauna.

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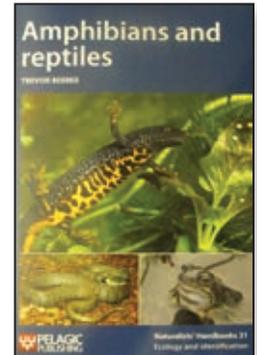
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Amphibians and Reptiles (Naturalist's Handbooks 31)

Trevor Beebee. 2013. Pelagic Publishing, Exeter, United Kingdom (www.pelagicpublishing.com). [6] + 170 pp. Softcover. UK £19.99 (approximately US \$33.00). ISBN 978-1-907807-45-9.

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The amphibians and reptiles of the British Isles have been featured in a number of previous publications which have provided a great deal of information on the biology, identification, and conservation of these animals (e.g., Arnold 1995; Beebee and Griffiths 2000; Arnold and Ovenden 2002; Inns 2009). Although relatively low in diversity when compared to its exotic counterparts, British herpetofauna has been afforded substantial attention by a number of dedicated researchers. Of these, Trevor Beebee, Emeritus Professor of Evolution, Behaviour and Environment at the University of Sussex, has published much on the subject. Throughout the book an obvious enthusiasm for the subject is shared, along with a host of research questions either yet to be answered, or to be continued from previous studies.

Where this book differs from previous publications is in its effort to encourage further research. This book appears largely targeted at amateur enthusiasts, but this does not stop it from being a useful text for research students and professionals alike. Moreover, it fulfils its aim of encouraging readers to design and implement their own studies, be it in their own back garden, a local heathland, or in a captive environment. It also encourages all scales of research, from a single individual working alone, groups working together such as in schools, through to developing partnerships with recognized organisations such as the Amphibian and Reptile Groups (ARGs) throughout the British Isles. Moreover, it highlights the need to conduct comparisons between geographic locations. The methods required to undertake such research are discussed throughout. Previously, the encouragement of research has only been briefly mentioned in the appendices of Beebee and Griffiths (2000). It is worth noting that this latest book by Professor Beebee does not focus on non-native and vagrant species to the extent provided in other publications (e.g., Inns 2009).

The book kicks off with an inspiring foreword provided by TV presenter and naturalist Chris Packham. The remainder of the book is separated into ten chapters, containing 92 figures and 20 distribution maps. Species-specific examples are given throughout the book and existing research is put into context. In line with its design for use by amateur enthusiasts, the book helpfully provides an ongoing glossary in the margin of each page to ensure the book is user-friendly.

The chapters start with a brief introduction on what makes reptiles and amphibians so interesting, why more research is needed, and how and what can be done to aid them. A chapter

on basic biology then provides a brief but well-rounded insight into all aspects of amphibian and reptile biology, capped off by a look at their taxonomy and evolutionary history. The third chapter covers the important subjects of ecology and conservation which are central to this book. It includes information on population dynamics, genetics and trends, and regulators of population size such as disease, competition, predation, human influence and environmental change. Community ecology is also covered, followed by a discussion on the conservation of British herpetofauna including the issues faced, and methods to improve their status, such as habitat management.

The subsequent chapter covers survey and monitoring techniques for different types of study, their pros and cons, considerations, and what to do with the data. This is followed by typical methods, a review of research topics and, perhaps most importantly, an array of questions to provide inspiration for studying amphibians and reptiles at their varying life stages (in chapters five and six, respectively). Uniquely, the book then provides an entire chapter on how schools and other enthusiastic groups can get involved by conducting field research or captive studies. Encouraging work by these small groups could make a substantial contribution to managing habitats, developing monitoring and research programs, and of course assisting in educating the next generation of herpetological enthusiasts.

Chapter eight provides information on the identification of British herpetofauna, including a set of keys for the various species and their different life stages, and a set of distribution maps derived from Inns (2009). Quite helpfully, a table of common habitats for each of the species is also provided to aid readers in finding their local herpetofauna in their natural habitats. More information on identifying the sexes of each species, as well as identification of reptiles by their shed skins, as included in some previous publications, would have been a good addition in this section. The distribution maps show ranges at the national scale, and a mention is given on how to find out information on a smaller spatial scale. It may be noteworthy that in contrast to the original distribution maps (Inns 2009), the Channel Islands have been omitted in this text. Furthermore, the Pool Frog, *Pelophylax lessonae*, Edible Frog, *Pelophylax kl. esculentus*, and Marsh Frog, *Pelophylax ridibundus*, together known as the water frogs, have been grouped into a single map.

A discussion of the essentials that every enthusiast needs to know for working with British reptiles and amphibians then covers legal considerations, appropriate handling methods (best avoided if possible), notes on general good practice, methods for individual identification and their application. It then goes on to discuss how to plan your research in order for it to be rigorous, and provides a well-written and easily understandable section on statistical methods and uses. Notes on potential publication outlets, and a mention of the regular herpetological meetings in Britain to meet like-minded enthusiasts and discuss ideas are also included. Within this section, it may have been pertinent to mention the statistical package 'R' which is a freely available emerging tool in data analysis. Finally, some very useful contacts, addresses and links are provided before the references and index. Perhaps some notes here discussing funding bodies to assist in the development of projects at varying scales would have proven useful, such as the ARG-UK Research Fund.

Unfortunately, there are a number of minor typographical errors throughout the book that have been overlooked. Nonetheless, as someone currently studying the ecology and conservation of two British reptile species (albeit on Jersey), I have found

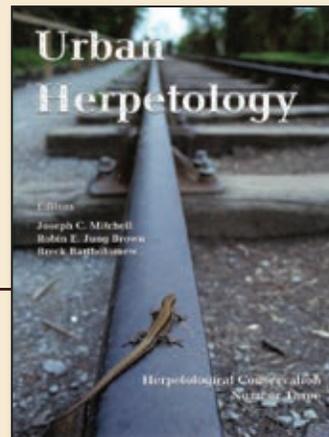
this book extremely interesting and thought-provoking. This book may be considered Trevor Beebee's retirement gift to the herpetological community in Britain, particularly as the royalties have been donated to Amphibian and Reptile Conservation (ARC)—a national wildlife charity dedicated to the conservation of herpetofauna and their habitats. In summary, this is a fantastic addition to the existing literature on British herpetofauna, and I have no doubt that this book will become a part of many enthusiasts' collections of literature on the subject, both professional and amateur.

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Herpetology Conservation Book Series Seeking Manuscript Proposals

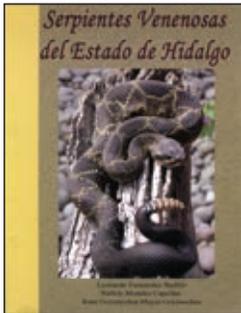
Herpetological Conservation, a book series published periodically by SSAR, is seeing proposals (titles) for the next volume. This is an underused publication outlet devoted to the conservation and management of amphibians and reptiles. The last volume in this series, *Urban Herpetology*, contains 40 chapters and 13 case studies, written by 120 authors from 17 countries. Proposals should address topics broadly applicable to herp conservation and management, geographic coverage should be global in scope or at least regionals, and the work makes an important contribution to a topic not well covered by other publications. All inquiries should be directed to the series editor, Joseph Mitchell (dr.joe.mitchell@gmail.com).



PUBLICATIONS RECEIVED

Serpientes Venenosas del Estado de Hidalgo

Leonard Fernández-Badillo, Nallely Morales-Capellán, and Irene Goyenechea-Mayer Goyenechea. 2011. Universidad Autónoma del Estado del Hidalgo, Pachuca, Hidalgo, México. 98 pp. Softcover. MXN \$150 (approx. US \$11.50 plus shipping). ISBN 978-607-482-161-1. [In Spanish, available from authors; e-mail: ventasolmec@hotmail.com]



This book follows closely the publication of a statewide checklist by Ramírez-Bautista et al. in 2010, but focuses on a subset of the herpetofauna—venomous snakes—that generates much interest among biologists and the general public alike. The state of Hidalgo is positioned in east-central México and is dominated by the Sierra Madre Oriental. Despite its small size (ca. 21,000 km²), Hidalgo's varied landforms (elevations ranging from 18–3490 m), vegetation, and climate have promoted a remarkably

diverse venomous snake fauna. The authors list 16 species of clearly venomous species—3 elapids and 13 viperids—as occurring within the state's borders, and also discuss briefly several colubrids known or suspected to be venomous even if their bites are not medically significant (although bites from species of *Coniophanes* often warrant medical attention). Species accounts for each of the 16 venomous species contain descriptions, natural history, habitat and distribution, conservation status, venom type and envenomation symptoms, and include multiple high quality color photos. Various other species are also represented by color photos; these include potentially venomous colubrids, coralsnake mimics, and other harmless species that might be confused with venomous ones. This is a book likely to be of particular interest for those people who live and work in this part of México—biologists, conservationists, medical and public health personnel, teachers, and interested citizens.

Harmless Snakes of the West

Brian Hubbs. 2013. Tricolor Books, Tempe, Arizona. 130 pp. Softcover. US \$19.95. ISBN 978-0-9754641-4-4. [Available from the author; e-mail: tricolorbrian@hotmail.com]

This book is written for readers searching for very basic information about snakes in the western half of the United States. However, the exclusive focus on “harmless” species could present a challenge for a reader who observes any of the venomous species within the coverage area, forcing consultation with another source for identification. The author states that “Many people know the difference between harmless and venomous species, and if they don't they should.” Tough to do when the latter group is missing from the book! Species accounts include a brief history (when and who described the species), non-standard common names, identification, brood size, range, prey, habitat, and notes. Small, color-shaded distribution maps vary considerably in their level of detail from species to species, with species like the California Mountain Kingsnake mapped in exquisite detail (no doubt reflecting the author's longstanding interest in that species), while other species (e.g., Rosy Boa) are depicted as having a much more generalized range. There are plenty of things in this book that herpetologists will find annoying: using “poison” instead of “venom”; capitalizing the words “Genus” and “Genera”; and suggesting that all snakes have a specific “job, which is helping to control other species of animals so they do not cause environmental problems.” The listing of first describers at the start of species accounts (e.g., “*Arizona elegans elegans* Kennicott, 1859”) seems out of place in this type of work. The blending of *Coluber constrictor* and *Drymobius margaritiferus* into a single account is perplexing. The inclusion of even the most obscure colloquial names yields appellations like “Rossel Bastard” for hog-nosed snakes (*Heterodon* spp.). Troublesome as these might be, most are likely to go unnoticed by the target reader who will appreciate the photos and colorful maps.

