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## The Amphibians and Reptiles of Cyprus

by Felix Baier, David J. Sparrow, and Hans-Jörg Wiedl. 2009. Edition Chimaira, Frankfurt, Germany ([www.chimaira.de](http://www.chimaira.de)). 364 pp. Hardcover. EUR 49.80. US \$79.95. ISBN 978-3-89973-476-8.

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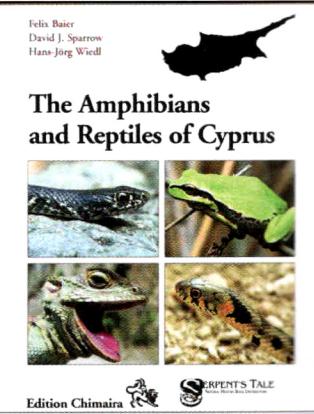
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The Frankfurt Contributions to Natural History ("Frankfurter Beiträge zur Naturkunde") series has been equipping amateur as well professional herpetologists with fine field guides for nearly two decades. Depending on their particular scope, these mostly handy books allow for the identification of all known members of discrete taxa (single families, frogs, lizards, reptiles, etc.) or the entire herpetofauna of the treated territory. Books in this series feature a black silhouette map of the region under consideration on a white cover. Volume 45 of "the white series" is dedicated to the easternmost of the Mediterranean Sea's large islands, Cyprus. The team of authors is nicely heterogeneous in every aspect. Whereas the German senior author was an undergraduate student of biology and philosophy in his early twenties at the time of publication, his co-authors are more than 40 years older—a British photographer with a PhD in chemistry and an expatriate Austrian residing and running a reptile park on Cyprus. However, all three share a passion for amphibians and reptiles and have a long familiarity with the island.

As the Minister of Agriculture, Natural Resources and Environment of the Republic of Cyprus points out in his foreword, the book "fills a long-standing need." In their following preface, the authors specify that this need is two-fold, as addressed by the scope of their work. The first aim is to summarize existing knowledge of the Cypriot herpetofauna which, according to them, has received little scientific attention in the past. The book's second purpose is to provide a solid source of information as well as an identification guide for the non-expert and especially the island's residents.

The Materials and Methods section concisely outlines the scope of the different sections of the species accounts and elucidates the sources and processing of the data presented. Before listing the abbreviations used in the text, the authors briefly but thoroughly justify the exclusion of certain doubtful species records from Cyprus (e.g., *Zootoca vivipara*) mentioned by previous workers.

The two-fold approach pursued by the authors manifests itself in the subsequent introduction, the first part of which is dedicated to Cyprus itself. The reader is familiarized with the island's geography, geology, and tectonic history, aided by physical and political maps as well as photographs of major geological units. Likewise, the section on climate and vegetation is



complemented by representative pictures of its four major vegetation types, for which typical plant species are listed, and by a brief summary of the island's botanical diversity and endemism. Clearly directed at the non-herpetologist, the introductory chapter's second half provides a short course on herpetology, spanning the history of herpetology and systematics, the principles of classification and taxonomy, the evolution of amphibians and reptiles as well as aspects of their ontogeny, anatomy, physiology, sensory perception, behavior, vocalization, and reproductive and feeding strategies. Here the authors have successfully managed to condense a great amount of meaningful information into just twelve pages while both maintaining a coherent flow of ideas and keeping the highly concise text perfectly intelligible to the layman.

Species accounts for three anurans and 27 reptile species occupy more than two thirds of the book. Preceding their respective specific accounts, the alphabetically arranged orders and families are each briefly characterized. With the exception of shorter accounts for five species whose records from Cyprus require substantiation (*Eirenis levantinus*, *Natrix tessellata*, *Platyceps nadjudum*) or which have been introduced by man (*Trachemys scripta* and *Testudo*spp.), all species accounts are adequately detailed and consistently organized. For widespread taxa, the information presented explicitly refers to the Cypriot populations when available.

The scientific name, author, year of publication, and English common name(s) comprise the headline for each account and are followed by common names in Greek and Turkish. Starting with the first historical mention of the species from the island, the paragraph on taxonomy details the taxonomic history of its populations on Cyprus, thereby discussing nomenclatural changes and their applicability to the Cypriot populations in detail, usually down to the subspecies level. A short diagnosis defines the population, endemic subspecies, or endemic species found on Cyprus; i.e., this paragraph is not intended for distinguishing a Cypriot specimen of a certain species from specimens of other species found on Cyprus, but rather from non-Cypriot specimens of the same, or a closely related, species.

An additional detailed description of external morphology and coloration will allow for a reliable identification of any amphibian or reptile encountered on the island. However, in most cases where the animal in question is alive and complete, the reader will not have to consult it in full, given the brilliant photographs illustrating different color variants, morphological details and, where relevant, developmental stages, of every species. On the other hand, the professional reader will be delighted by the detailed characters of scalation and even more by the fine head drawings provided for seven lizard and seven snake species.

The altitudinal distribution on Cyprus of each species is delineated along with its entire geographic range. A clear point distribution map combines locality records from a handful of key publications listed in the Materials and Methods chapter with those from the large dataset generated by the authors during their own field studies. A minor drawback of these maps is that the contours indicated (determined by me to be at 300, 700, and 1300 m asl) are not mentioned anywhere. A "Biogeographic classification" section assigns each species to a zoogeographical subregion of the Palaearctic.

A paragraph on ecology details the habitat(s) occupied by the species on Cyprus and varied aspects of its life history, such as seasonal activity patterns, reproduction, prey, predators, abundance, and population ecology. Syntopic occurrences with other herpetofaunal species are listed along with present threats and

conservation status. The concluding section on behavior merges mostly rather general behavioral traits reported from the literature with numerous specific observations made by the authors.

The species accounts as a whole, and especially their sections on distribution, ecology, and behavior, benefit greatly from the combined long-term experience of the three authors with the island and its herpetofauna. Luckily, cameras must have been at hand throughout their field trips, as photographs of mostly superior quality illustrate many ecologically and behaviourally salient points, in addition to the more standard portrait and habitat shots. Typical examples include defensive postures and actions, utilization of different substrates, and a variety of predation events.

The fourth chapter presents a brief zoogeographical analysis that reveals that a large fraction of the species belong to the Eastern Mediterranean and/or Irano-Turanian regions as defined by the authors. Furthermore, three species and eight subspecies are currently regarded as endemic to Cyprus. Apart from a short discussion of possible cases of island dwarfism and gigantism among the Cypriot herpetofauna, the authors summarize published information on divergence time estimates and compare these to the island's geological history. Discussing different immigration times and scenarios, they reach the conclusion that both overland (during the Messinian Salinity Crisis) and oversea dispersals have contributed to the current herpetofaunal assemblage. Pointing out the few dating approaches that have been undertaken to present, as well as several indications of faunal divergences between the island's two separate mountain systems, they pinpoint open questions and delineate possible directions for future research.

Subsequently, a short chapter provides examples how the herpetofauna—mostly reptiles—have influenced human culture on Cyprus. In turn, the book's last chapter is concerned with the opposite relationship; after identifying the principal threats that Cypriot amphibians and reptiles currently face, all of which are linked to anthropogenic activity, the authors summarize existing conservation legislation and programs as well as the state of environmental education, inevitably concluding that much remains to be done for the conservation of the island's terrestrial herpetofauna, especially the three taxa which they regard as most seriously threatened: *Mauremys rivulata*, *Hierophis cypriensis*, and *Natrix natrix cypriaca*.

A twelve-page glossary assures that not a single non-herpetologist will be left wondering about the meaning of any technical term, twenty-two pages of references provide the interested reader with every opportunity for further reading, and a systematic index helps to locate mentions of organism as well as place names. Last but not least, the book is completed with two fine appendices: Appendix I provides a polytomous identification key in full-phrase question style that focuses on easily detectable features of external morphology and usually offers several characteristics per question. As the key is explicitly directed at the non-specialist, the trade-off of the greater precision and efficiency of a "professional" key for increased intelligibility can be seen as a successful strategy. Appendix II deals with snakebite on Cyprus, and does so excellently. Its first part very clearly contrasts the bites of Cypriot colubrids with those of the native viper and separates disbelief from reality and the second part gives reasonable step-by-step advice for first aid after a viper bite, including Cypriot emergency and hospital phone numbers.

In conclusion, *The Amphibians and Reptiles of Cyprus* is more than a field guide to 30 species inhabiting an island. It is also

more than a summary of scattered publications on these species. Much more, it is the best possible result of a profitable alliance of three passionate connoisseurs of a micro-continent somewhere between southwestern Asia and southeastern Europe and its herpetofauna. From another perspective, it is a prime example of how a sophisticated treatment of a geographically restricted herpetofauna may be realized. The book seems to contain virtually every bit of knowledge generated so far on any aspect of the amphibians and reptiles of Cyprus and should be an equally valuable source of information for the herpetologist (amateur or professional), the conservationist, the local resident, and the visitor with an interest in wildlife. Simultaneously, its portability and durable binding certainly qualify it for real-life use outside of hotel rooms or libraries. If Cyprus is on your travel agenda, this hybrid between reference work and field guide should be on top of your packing checklist. No wonder a second edition is in preparation for 2013.

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