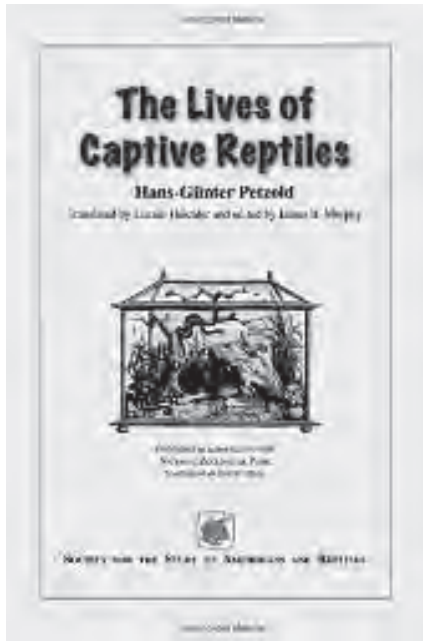

BOOK REVIEWS

The Lives of Captive Reptiles

Hans-Günter Petzold

Translated by Lucian Heichler
and edited by James B. Murphy

2008, Society of the Study
of Amphibians and Reptiles,
Ithaca, New York, USA, 275 pp.



‘In the long history of humankind (and animal kind, too) those who learned to collaborate and improvise most effectively have prevailed’

Charles Darwin

The above quote by the ‘father’ of evolution is a fitting statement for the importance of shared knowledge throughout all fields of scientific study. In *‘The Lives of Captive Reptiles’* Hans-Günter Petzold has given a systematic comparison of collective research and observations carried out in the captive environment that have changed the way that we understand the incredible creatures we call the ‘reptiles’.

This book first published in 1982 originally

as a Ph.D. thesis under the title *‘Aufgaben und Probleme der Tiergärtnerei bei der Erforschung der Lebensäußerungen der Niederen Amnioten (Reptilien)’* (translated into English: tasks and problems of zoo biology in studying the life manifestations of lower Amniotic animals) was submitted just three days before Petzold suffered an untimely fatal myocardial infarction, at just 51 years of age.

This English translated edition has received very little alteration in its content and organisation from its former work, with numerous translatory discrepancies inordinately occurring throughout. Editorial notes are added and indicated where applicable, which are predominantly utilised within the footnotes (255 in total), often indicating recent advances in the literature post 1982, e.g., Müller & Kranenberg’s (2004) discovery about the propulsion of the chameleon tongue using contraction energy in the musculus accelerator linguae.

A good knowledge of taxonomic status is often required throughout with various outdated nomenclature being utilised, i.e., *Crocodylus lucius* in chapter two, this name has been largely abolished since the early 19th century and is now what we know as *Alligator mississippiensis* (however, it is worth noting that this is purposely done to demonstrate what old ‘manageries’ were keeping but there is no indication of the correct modern day nomenclature in the text). A further example that was not intentional, as with many others recognised throughout, was *Natrix stolata* which is now *Amphiesma stolata* (Chapter 3.1.4).

The book contains seven well defined chapters with large sub-sections, with an addition to the English edition of colour plates, providing imagery of Petzold’s former work place, Tierpark, Berlin. Many of the plates are of species discussed during the course of the volume.

The first chapter gives an insight into the four principle roles that zoological gardens play in modern zoo biology: public education, research, environmental protection and recreation. It also produces a foundation that it builds on in chapter two. There are numerous references to the Marxist theory of class struggle in this chapter, which without the book would not have been published

in the former German Democratic Republic. The second chapter looks systematically at how reptiles (and amphibians) have been kept throughout history from the earliest of *Crocodylus niloticus* (Egyptians) and *Gavialis gangeticus* (Indus culture) from ca. 3000 B.C. to modern day zoos. There are numerous tables included throughout, principally outlining numbers of species/individuals in various collections at comparative intervals in time. Chapter 3 comprises three large subsections: 3.1 functional system of reproduction; 3.2 functional system of ontogeny; and 3.3 functional system of nutrition. Each section has been broken down further into sub-subsections, with this chapter comprising the main body of the book with >180 pages detailing the huge array of information available and pooling it for different taxonomic groupings. Chapter 4 draws on current (1980s) work in behaviour and other functional systems providing a good resource, however, suggestions for future research, which is the primary target of the chapter, is often out of date now with much work being carried out after the book was written e.g., aspects of snake bite. Recent methodological advances and research focus has given rise to a vast wealth of knowledge, better bite protocol and antivenom in the field post publication (e.g. Otero et al., 2006; Casewell et al., 2009). Chapter 5 looks into the relevance of terrarium data for herpetological research and is evaluated with acute accuracy. Three main topics are investigated during this chapter: general behaviour, reproduction, and nutrition. These sections are then broken down further e.g. general behaviour: "tameness." Chapter 6 summarises conservation programmes and perspectives of various orders and families. As this section relies heavily on species status, which can and has fluctuated since the book was written, many of the areas are outdated. However it gives an excellent insight into breeding programmes/successes up until 1982. The final section is Petzold's final remarks, giving a good overview of the vast amounts of information displayed throughout the entire book.

With over a thousand references (many hard to obtain, even with access to online databases) and Petzold's extensive personal experiences, the depth of knowledge presented on captive research of reptiles is not easily matched despite the book

now being over 25 years old. The pooled sources of information from numerous languages provided are often dismissed by the majority of people from countries where English is the primary language. Despite often producing important statistically sound results and findings, which contributed significantly to our knowledge, there is arguably little doubt that much of the knowledge surrounding the vast issue of captive reptiles is ever fully documented. Anyone who works with terrarium animals should keep records of their individuals and professional herpetoculturists should ideally record detailed aspects of health, feeding, locality, defecation, feeding, lighting and temperature etc. Such information is useful for those involved with reptile husbandry.

To conclude, despite numerous out of date works and translatory discrepancies, this book is superb for an overview and grounding for further research into terrarium husbandry. I think that it is an essential item on the book shelf of any herpetologist involved in the captive environment, especially research and zoological institutes. At a price of £50-70 a serious consideration by amateur herpetologists should be made and I would suggest only those who have a passion for learning about the potential for research in terrarium animals and the considerable work that has gone into the study of herpetology should contemplate a purchase. This is due in part to the intensity of the volume, which at times is very unforgiving and hard reading despite being such a wonderfully informative tool.

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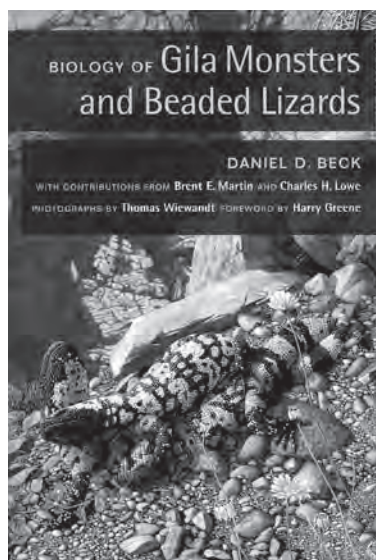
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Biology of Gila Monsters and Beaded Lizards

Daniel D. Beck

2009, University of California Press,
California, 211 pp (softback edition).



“*Biology of Gila Monsters and Beaded Lizards*” was first published in 2005 in hardback and is now available in soft back at a lower price. The general topics covered are ecology, physiology and behaviour. The book has some excellent photos (both in colour and black and white), tables and a plethora of different graphs and charts

showing results from field research studies. The text can be difficult to read due to the amount of referencing. However, the author does not over complicate sentences with unnecessary jargon. The book lacks one major subject, *Heloderma* in captivity. Nevertheless information on temperature preferences, breeding statistics etc. is sufficiently detailed to be used as a basis for the husbandry of captive lizards.

The first chapter is titled “Monsters in Our Midst”. This is an introduction and a historical account about helodermatid lizards including information about folklore, medicine and early techniques for field studies. It is apparent from this chapter that helodermatid lizards were poorly studied until recently. This chapter also shows these lizards showing off in a film called “The Giant Gila Monster” produced in 1959. These lizards were used much the same as green iguanas *Iguana iguana*, in “Jason and the Argonauts” to strike fear in humans due to their physical appearance.

The second chapter is “Evolution, Distribution and Systematics.” Accurate head drawings clearly show scalation differences between the two subspecies of *Heloderma suspectum* and the four subspecies of *Heloderma horridum*. A three angled view of the skull of *H. horridum* shows and names all scalation present, which is always handy as a reference. All species and subspecies have been described in some detail in this chapter. Maps plotting their distribution always simplify geography if the reader is not too familiar with central America. An interesting look at their relationship with snakes and varanids is also touched on.

The third chapter is “The Venom System and Envenomation.” This was my favourite chapter as it describes the venom delivery system, effects of venom and chemical makeup, which makes this genus so fascinating and the information has been thoroughly researched. Diagrams of the venom delivery system, structure of the lower mandible and teeth are excellent. The major components in the venom are all listed and simplified in a table format with notes on their physiological effects. The peptide exendin 4, which is only found in *H. suspectum* venom, is explained with reference to its effects on stabilizing blood glucose levels and

helping to combat type 2 diabetes.

Chapters four, five and six and seven are mainly about *Heloderma* ecology including temperature variations, habitat preferences, metabolic rates, growth rates, diet, feeding, population density and longevity. All information is from specimens that have been observed and studied in the wild. All results are put in table or graph form. Diet and feeding is important especially when keeping these animals in captivity to guide what, and how much to feed. Field data in this book can be relevant to captive animals. Whilst reading this book, it was surprising how little the lizards eat in the wild. I personally keep *H. horridum* in captivity and have found this chapter essential for the captive maintenance of my animals.

The eighth chapter is “Reproduction, Behaviour and *Heloderma* in Captivity”. The latter subject in this chapter is basic as much of this book is about field research. Reproductive issues are touched on, in captivity including incubation of eggs. This chapter has some very clear and informative drawings and photographs showing combat sequences in *H. suspectum* and *H. horridum*. Information about reproductive biology is clearly presented in subheading format making it easier for the reader to sort and digest such information.

One of the last chapters is “Conservation”. This chapter explores the threats to helodermatid lizards including information about invasive plants, fire threats, habitat threats, human population and agriculture. The current legal status of helodermatid lizards is also explored and it is amazing how it differs between states. This chapter is particularly interesting for any field researchers who may want to work on this genus. It highlights areas of work that need addressing in the future.

Overall this book is an excellent read. If you are an avid fan, keeper, or just interested in this genus of lizards from a biological or ecological point of view, this book is for you. The information is thoroughly referenced and is the most complete and comprehensive book I have seen. The reader can indulge themselves in some chapters (e.g. conservation), whereas others can be skimmed over due to the complexity of the work (e.g. chemical makeup of the venom). The new soft back edition has lowered the price, making it affordable to most.

“*Biology of Gila Monsters and Beaded Lizards*” is a welcomed addition to my collection and has not spent too much time on the shelf.

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De Amfibieën en Reptielen van Nederland

Raymond Creemers
and Jeroen van Delft

2009, Foundation Ravon,
Holland, 480 pp.



This book is the result of a ten year project that built a complete national database of amphibian and reptile (distribution) data for the Netherlands. “*De Amfibieën en Reptielen van Nederland*” is published by the RAVON (Reptile, Amphibian and Fish Conservation Netherlands) foundation. RAVON is a non-governmental organisation (NGO) with over 1500 volunteers, more than 1000 contributors and about 35 professional staff members with offices in Nijmegen and Amsterdam.

RAVON's main goals are to inform and educate, conserve species and their habitats, organise national monitoring networks and collect distribution data for the conservation of reptiles, amphibians and fish in the Netherlands. They give advice and carry out research for a wide range of clients. An important task is also to instruct and support the volunteers in their work. In short, they have all the knowhow on the reptiles and amphibians in the Netherlands (for more information visit www.ravon.nl). RAVON has now published its magnum opus, part nine in the series "The Netherlands Fauna" published in cooperation between the National Natural History Museum Naturalis, the Society European Invertebrate Survey and the distributors KNNV.

"*De Amfibieën en Reptielen van Nederland*" has been sponsored by 15 different societies and organisations such as WWF as shown by the extensive list on the final page of the book, which shows the great interest in the subject of this book. Over 2400 observers have given their data and 1800 references are cited and used. Each chapter is richly illustrated with excellent colour pictures, tables, figures, maps and a number of beautiful drawings of each species by Bas Teunis and Paul Veenvliet.

The book contains 14 chapters and an extensive appendix. An extensive English summary is provided for each species chapter and finally an English summary of the whole book is provided. In many other chapters the figures and tables are also bilingual, though sadly not always. In total 45 authors have been writing their pieces. The book includes 420 photographs by a total 60 photographers.

The first chapter is an introduction to the book. The book is dedicated to Dr. Henk Strijbosch, who "raised" a new generation of herpetologists at the animal ecology department of Nijmegen University in the seventies, eighties and nineties. His dedication and warm personality makes him a herpetological father for many students that worked with him. Many of his former students, including myself, are still in close contact which shows his dedication to his pupils.

Chapter 2 describes general systematics, taxonomy and diversity of reptiles and amphibians in general. This chapter is especially important

for the reader who is not so well versed in these species. Chapter 3 describes the cultural history of amphibians and reptiles in facts and fiction. It is a unique chapter rarely seen in books like this and gives some nice new information on the attitudes of humans towards these species groups. For instance, it describes the works of the important Flemish author Jacob van Maerlant who published an important book about nature in 1270. Even Harry Potter arrives in this chapter!

Chapter 4 deals with the history of herpetology in the Netherlands. It starts with the works of Frederick Ruysch (1710) and moves on to Eli Heimans and Jac. P. Thijssen around 1900 who are the founding fathers of nature conservation in the Netherlands. The birth of the first national coordination of amphibian and reptile distribution data was during the Second World War when the Netherlands Society of Herpetoculture "*Lacerta*" was founded in 1942 and under its wings the Herpetogeographical Services, by Dick van Wijk and Johannes ter Horst. Then the different professional, mainly by the Universities of Amsterdam and Nijmegen, and private activities, started by voluntary nature protection groups are described that have taken place through the years. The main focus of the chapter is the development of the different private organisations consisting of volunteers who focussed especially on conservation, monitoring and collecting distribution data. These organisations formed the foundations for what has become RAVON.

Chapter 5 describes the ecology and life history of reptiles and amphibians in the Netherlands. Many excellent and unique pictures are used to illustrate the various facets of herpetofaunal ecology such as predation, feeding, breeding and shedding. Chapter 6 describes the database that has been used for this book. Building a complete and accurate database was one of the key elements for this book. All the data has been re-checked, focusing on the odd old records, museum records and doubtful records which have been published in earlier atlases or even unpublished data. In total 451,710 validated records have been used. Interesting to see is that there is a fast growing record input in the last decades, especially due to the internet applications which makes it now very easy to just enter your

data every day with a few simple cursor presses.

In chapter 7 different methods of searching, investigating and monitoring are described, including the use of individual recognition in many species and the use of equipment. One can also read how they are applied by a regional group of runners who map every slow-worm they see and about national coordinated monitoring activities for reptiles and amphibians.

Chapter 8 is the core of the book (totalling 250 pages) and describes all the different species and their distribution and how that has changed over time. Every chapter follows the same strict set up. For each species detailed information is given on recognition, natural history, distribution within Europe and the Netherlands, habitats, conservation measures and investigation methods. And every species has four national distribution maps, which shows the distribution between 1971-1995, from 1996-2007, all sightings and the changes. Also a European distribution map is shown. Sadly the maps are not in English but they show fascinating data.

The species chapters have been written for the most part by volunteers. One of the disadvantages of using different authors for every species chapter is that this could lead to imbalance between the different chapters. Although one can still see some style differences the editors have done a great job. The only flaws are in some picture captions. Several newt species (e.g., *Triturus cristatus*, *Lissotriton vulgaris* or *Lissotriton helveticus*) are depicted with the caption “during courtship”, but actually nothing of the courtship is shown; they are just in their water phase.

A special part of this chapter describes the exotic species that have become naturalised in the Netherlands, including the Italian crested newt, the American bullfrog, red-eared sliders. It is followed by a part dedicated to Prof. Dr. Leo D. Brongersma and finally concludes with a review of all sea-turtle sightings and observations written by Dr. Rinus Hoogmoed. This is the very first time a complete review on all sea turtle sightings on the Netherlands coasts has been published.

The book then closes with three chapters. Chapter 9 is on herpetofauna in the Netherlands landscape; where distribution of species is related to

the geographical areas of the Netherlands. Chapter 10 focuses on changes in time and in the Red list. Chapter 11 describes the successes and failures in protection and management of the species. Chapters 12 and 13 are a glossary and an extensive reference list respectively, and finally chapter 14 summarises the whole book in English. A nice addition to the book is the CD with 21 different original recordings of the vocalisations of all 11 anurans native to the Netherlands. Most of these were recorded in the Netherlands by Baudewijn Odé for this publication.

The authors and editors are passionate about the animals and one can read that between the lines. It makes the book attractive for professional and non professional biologists, but also for policy makers and non Netherlands herpetologists. The previous Netherlands atlas by Bergmans & Zuiderwijk (1986) has clearly resulted in a growing interest for these species groups. Several regional volunteers have started collecting new data on distribution, ecology and conservation, and this has resulted in something which is far more than an atlas. If one looks at all the details written down in this review, one could state that the “*De Amfibieën en Reptielen van Nederland*” is just as relevant to the whole of Europe.

It is the aim of RAVON to increase the number of sustainable populations of amphibians, reptiles and fish in the Netherlands via accumulated knowledge. With this book all the current knowledge is combined and it will be the standard for at least the next twenty years.

If there ever was a reason to learn the Dutch language, it would be this book, or go for the simple way and start with the English summaries and many bilingual figures and tables. I can guarantee it will not disappoint you.

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