

BOOK REVIEW

Gila Monsters and Beaded Lizards

Biology of Gila Monsters and Beaded Lizards. 2005. By Daniel D. Beck; photographs by Thomas Wiewandt. University of California Press, USA, 211 pages. Hardback - ISBN: 0-520-24357-9 - \$49.95.

Upon learning that the IRCF was partnering with Project Heloderma for the preservation of Guatemalan Beaded Lizards, I realized that I needed a quick and thorough education in all things helodermatid. I knew little about Gila Monsters and Beaded Lizards beyond the fact that they were fascinating in appearance and just a little bit scary. Daniel Beck's *Biology of Gila Monsters and Beaded Lizards* proved to be authoritative, well-organized, and as comprehensive as possible given the current state of research on the world's only venomous lizards.

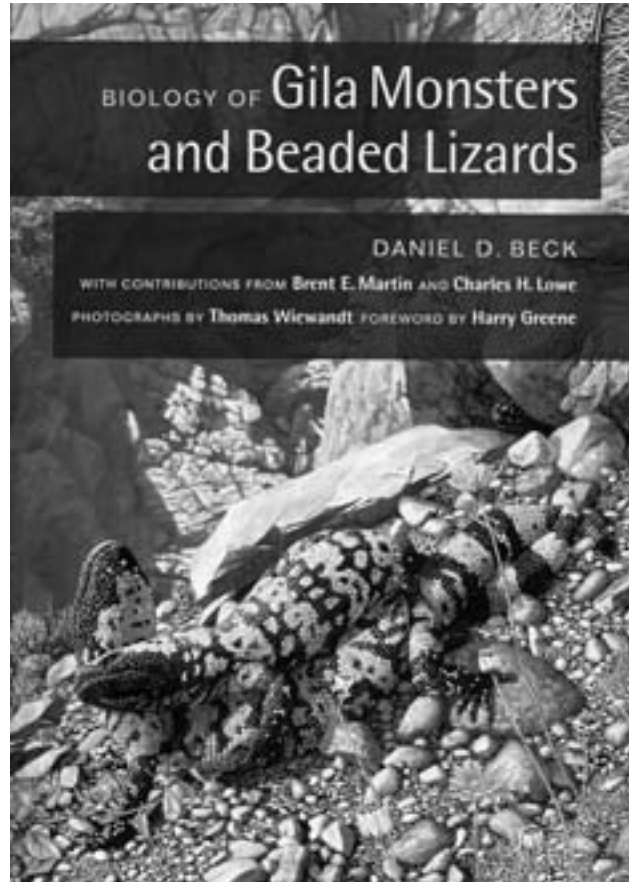
The book's 10 chapters begin with history and evolution, progress through the venom system and various aspects of ecology, and end with conservation and a look to the future. The first chapter, "Monsters in our Midst: History, Humans and Heloderma," places Gila Monsters and Beaded Lizards into a sociological context. Beck chronicles the history of investigations and presents some of the more colorful folklore and mythology. Despite their fame (or infamy), *Heloderma* has been one of the least-studied lizard genera — until recently.

Chapter 2, "Evolution, Distribution and Systematics," traces the complex evolutionary history of the Monstersauria, the ancient group into which taxonomists place *Heloderma* and six extinct genera. Based on skull morphology, the six currently recognized species in the genus have changed very little over 23 million years, and qualify as living fossils. Their closest living relatives include varanids (Monitor Lizards) and snakes.

If humans require any rationale to preserve Gila Monsters and Beaded Lizards beyond the need to maintain biodiversity, the stimulus lies in chapter 3, "The Venom System and Envenomation." While scientists continue to investigate whether *Heloderma* venom is used to acquire prey or for defense, Beck describes some of the many components of the venom, their physiological effects, and potential uses in treating human ailments as varied as diabetes, cancer, and Alzheimer's disease.

Chapters 4 through 7 discuss aspects of ecology, including physiology, habitat use, and population and foraging ecology. The chapter on population ecology is co-authored with Brent E. Martin and Charles H. Lowe. Virtually every aspect of their ecology served to heighten my fascination with *Heloderma*, from their astonishing energy efficiency to their complex refuge-dependent activity patterns and greater than 20-year-long life histories. Even their diet is unique; these lizards prey largely on nests and nestlings of mammals, birds, and even other reptiles, a feeding niche exploited by few squamates.

Chapter 8 on "Reproduction, Behavior and *Heloderma* in Captivity" emphasizes the challenges involved with conducting research on these animals. The difficulties of enticing *Heloderma* to reproduce in captivity lead into chapter 9 on "Conservation." Gila Monsters and Beaded Lizards are faced with habitat frag-



mentation and degradation, invasive plants and fire, illegal collection for the pet trade, and destruction by road traffic, domestic pets, and wanton killing due to fear and ignorance. The Guatemalan Beaded Lizard, the conservation of which the IRCF champions, is faced with precisely these threats, and habitat protection may provide its best opportunity to avoid extinction.

In his final chapter, "Future Directions," Beck outlines some of the gaps in our current knowledge and suggests avenues for future research that involve technological advances in radiotelemetry, molecular biology, and pharmacological investigation.

On the whole, *The Biology of Gila Monsters and Beaded Lizards* satisfied my appetite for information about *Heloderma*. Information might have been organized by species, which would have facilitated the acquisition of insights into each taxon. This deficit, however, is not entirely the author's fault; instead, the dearth of information about some taxa, including the Guatemalan Beaded Lizard, leaves little to reveal. Beck's book will surely serve the animals well as it outlines current knowledge, suggests future research, and promotes an appreciation of a remarkable group of reptiles.

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