



Review

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consequences of environmental degradation. Still, how does one get the people who need to read and would enjoy such essays, and profit by them, to pick up the book? That, alas, I do not know. Nevertheless, I hope Gibbons continues to write such entertaining essays exploring the fascination that some of us hold for the natural world.

LITERATURE CITED

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HERPETOLOGY OF CHINA. Er-mi Zhao and Kraig Adler. 1993. Society for the Study of Amphibians and Reptiles, in cooperation with Chinese Society for the Study of Amphibians and Reptiles. Oxford, Ohio. ISBN 0-916984-28-1, 522 p., 48 color plates, color frontispiece, 371 photographs, 42 figures. \$60.00 (hardcover).— This book enables Western herpetologists to work on Chinese amphibians and reptiles, and it will greatly facilitate the work of Chinese herpetologists and those in neighboring countries. This ambitious book, the first of its kind, is an outstanding accomplishment.

China is a very large country with a large herpetofauna. Although there is a lively community of herpetologists in China, much effort is required to know the herpetofauna of this complicated country, which includes an enormous range of habitats (from deserts to tropical forests) spread across more than 35 degrees of latitude and 40 degrees of longitude. There are 661 species of amphibians and reptiles (about 7% of the world's total), in 34 families. The purpose of this book is to provide a summary of the current taxonomic status and distribution of all of these species. The geographic coverage is broadly inclusive: mainland China; Tibet; Taiwan; Hong Kong; Macao; the islands, shoals, and banks in the South China Sea; and even areas claimed by China but occupied by India and Russia.

The book is easy to use and accessible. Fol-

lowing a detailed table of contents and a seven-page introduction (which includes a table, by family, listing the genera, species, and those species endemic to China), the authors present an unusual, valuable account of the history of herpetological studies in China. This exhaustive treatment, more than 50 pages in length, starts with Confucius and extends to the present. It contains its own table of contents ("guide"). The first illustration of a person is of Shi-Zhen Li (1518–1593); and more than 70 portraits of herpetological scholars follow (only six of them women), mostly western scientists, but including a few Japanese herpetologists and more than 20 Chinese herpetologists (there is no portrait of either author, but both appear in figure 36). The early and middle parts of this account are valuable, but the last parts, reflecting a zeal to be inclusive and up-to-date, are of only immediate and most likely passing interest. Too many pages are devoted to recent history, and even to present-day addresses (which inevitably were out-of-date at the moment of publication for several people).

A partially illustrated key to the genera occupies the next 25 pages. A key to species would have been useful, but the authors chose not to present one; preparation of such a key doubtless would have greatly increased the amount of work required. Keys to species in Chinese do exist, but it is unclear how exhaustive and accurate they are.

The 48 color plates follow as a unified section, with its own "guide." One of these is a false-color satellite image of China. There are three plates (generally eight photos per plate) of salamanders (the first contains one photo of the single caecilian in China), 12 of frogs, four of turtles, 10 of lizards, 14 of snakes (the last including the only photo of a crocodylian), and three plates of habitat photographs (arranged by zoogeographic regions). The legends for the plates are generally informative, and this section is valuable.

The largest part of the book is a 186-page annotated checklist, once again introduced by a "guide." This is the heart of the book and doubtless also will be the most controversial section. Only a partial synonymy is included (synonymized taxa with Chinese type localities are listed). A great deal of attention is given to nomenclatural details in the introduction to this section, and the authors are explicit in explaining how they have searched out type species, authorship, dates of publication, type localities, etc. They state that they have avoided making new combinations but that some were unavoidable. The geographic ranges of each species are

indicated. Finally, there are numerous short notes, mainly about matters of nomenclatural detail. Missing, in general, is any biological justification for what is or is not recognized as a valid genus or species. Each specialist will find puzzling examples of decisions that are not explained.

A complicated and detailed section on geographical distribution occupies more than 30 pages and includes a landform map of China by Erwin Raisz and a long table including all species and their distribution both by political units and by the seven regions (19 subregions) that the authors recognize (based on work by others, mainly mammalogists and ornithologists; criteria and objectives of recognition of regions and subregions are not stated).

An annotated bibliography occupies over 100 pages. Again, it is introduced by a detailed guide. The bibliography is broken into general references, regional references (by political subdivision), surrounding countries (multiregional, plus 22 political entities), references cited in the text, and a section on bibliographic citations (abbreviations, places of publication). This, too, is a valuable contribution.

There are three appendices: Chinese geographic names (including various forms of spelling and current designations, 27 p.), collecting and preserving amphibians and reptiles (contributed by J. E. Simmons, 15 p. in length, and a rather curious addition to a work of this sort), and Chinese herpetological journals (3 p.). Even the index (51 p.) is explained in detail. It is exhaustive and has two parts, authors and other persons, and scientific names.

The book is well produced. The photos come from many sources, and, grouped together by taxonomy, there are unavoidable differences in quality of reproduction. My reaction to the technical details of the book and its editing are overwhelmingly positive. The book has been written to be used, and one has a sense that great efforts were taken to make the book accessible.

This book represents labor and dedication by both authors. It is too big and complicated an effort for one not well informed on the Chinese herpetofauna to search out problems and faults. Rather, one should view this as a great achievement that is a service to the discipline. This book makes it possible to study the Chinese herpetofauna. Doubtless it will usher in a new era of research on the fauna of this large, complicated country. I congratulate the authors on their efforts and thank them for their success in communication.—DAVID B. WAKE, *Museum of Vertebrate Zoology and Department of Integrative*

Biology, University of California, Berkeley, California 94720.

THE GILA MONSTER AND ITS ALLIES—THE RELATIONSHIPS, HABITS, AND BEHAVIOR OF THE LIZARDS OF THE FAMILY HELODERMATIDAE. Charles M. Bogert and Rafael Martín del Campo. Bull. Amer. Mus. Nat. Hist. 1956. 109:1–242. Reprinted by the Society for the Study of Amphibians and Reptiles, 1993. ISBN 0-916984-31-1. 242 + xx p. + color frontispiece, \$38.00 (hardcover).—In addition to the original work, this production includes a frontispiece from a watercolor painting of a gila monster by David M. Dennis, a biographical sketch about the authors, a preface by Charles M. Bogert, and a critique by Daniel D. Beck. The Preface contains a history of the *Heloderma* project that engages the reader. My fascination with the account of the early Mexican field trips easily carried into the discussion of the Fossil History and Distribution of Living *Heloderma*, which brings the reader up to 1989 in some of the recent literature. To me, the gem of Bogert's Preface is the discussion of the Origin, Evolution, and Dispersal of Venomous Lizards, which briefly reviews recent developments from Camp (1923) through Pregill et al. (1986) including an excellent summary of the phylogeny from a common varanoid ancestor to the surviving recent taxa.

Next is a consideration of the evolution of the venom apparatus with comments on the protective role of the venom apparatus in *Heloderma*. The Role of Venoms in Food Acquisition and Defense reviews egg-eating reptiles and the question of defense or food-getting as the primary functional role of venoms.

Several scenarios are presented concerning herbivory, insectivory, and carnivory (animals, exclusive of insects, as prey) in lizards and snakes with particular emphasis on the disproportionate abundance of venomous snakes compared to venomous lizards. Bogert cites 30 references, of which 21 postdated the original. Errata for the original are included in the reprint, p. xv.

A Retrospective of "The Gila Monster and Its Allies," by Daniel D. Beck provides more detail about the origin and history of the collaboration between Bogert and Martín del Campo. Beck's main objective is to report how many of the observations and conclusions of the *Heloderma* monograph have been proved or disproved in almost 40 years of scientific scrutiny.