

Amphibians and Reptiles of Pakistan, by Muhammad Sharif Khan. 2006. Krieger Publishing Company (info@krieger-publisher.com). 328 pp. Hardcover. US \$145.00. ISBN 1-89464-952-3.

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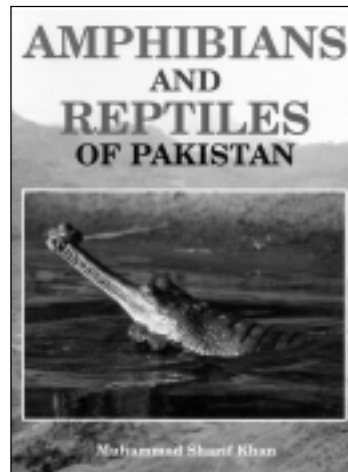
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Pakistan's location and rather diverse topographical features (widely albeit mistakenly considered by some as entirely arid) have much to do with its rich herpetofauna. The country forms the easternmost frontier of a number of Palearctic taxa, stretching from northern Africa and Europe, as well as the westernmost edge of Oriental ones, extending from eastern Asia. This country, thus, forms the melting pot of two distinct faunas, and includes a number of autochthonous elements, particularly amongst its high altitude saurofauna and its deserticolous snakes. Much of Pakistan's biota is under threat, from development and overexploitation, as well as from lack of knowledge (Anon., 2000).

Islam took early root here, and some of the greatest human migrations took place around the middle of last century, when millions of Muslims from the newly independent (in 1947) India crossed over to Pakistan, just as millions of Hindus and other non-Muslims from Pakistan fled their homes in Pakistan in favor of India. This was accompanied by free bloodletting on both sides, abetted, if not aided by local governments, and was to result in mutual hostility and suspicion (and three wars) for nearly five decades. Only very recently have overtures of peace been made and both nations seem to have forsaken violence in favor of nation-building. Under such historic circumstances, research or explorations of a shared fauna had taken a back seat, and much of the information on the biota of the borders of these volatile nuclear-armed neighbors stem from expeditions and other boundary missions conducted during colonial times.

The importance of science for the welfare of her citizens was not lost to Pakistan's new ruling class. In an inaugural address to the All-Pakistan Science Conference in 1949, the then Governor-General H. E. Khawaja Nazimuddin noted "If we are to build our State on progressive lines and bring about a radical change in the living conditions of our people, we shall have to make them scientific minded and harness the resources of science for the solution of the problems facing the country" (Anon. 1950). Over half a century later, this truth is being realized.

This work is by Pakistan's foremost student of herpetology, Pro-



fessor Muhammad Sharif Khan, formerly of the Herp Laboratory, Rabwah, Pakistan. For the last decade, Khan has been living in the U.S., and has published widely on all herpetofaunal groups, both in his native Pakistan and, more recently, in books published in the West. The volume under review can be considered a synthesis of a life's work on an interesting fauna, and as such, has no peer.

After a brief dedication (to Dr. and Mrs. Habib Ullah Khan, Ahsanul Islam, Robert Mertens and Sherman A. Minton, after some of whom the author has already named snake species) and a Foreword (by Kraig Adler), are the Preface (which describes the organization of the book), Acknowledgments and an extended Introduction (including a useful political map of Pakistan). Chapter 1 shows 24 species and subspecies of amphibians and 203 of reptiles in the national checklist. The total taxon count is hard to arrive at from this chapter. Adler (p. ix), in his Foreword, counted 24 species (but this includes subspecies recognized for Pakistan by Khan). In the species list, there are inconsistencies in the format adopted, with the inclusion of subspecies name of some (e.g., *Bufo melanostictus* and *Bufo viridis*), but not all (e.g., *Lissemys punctata andersoni* and *Eryx tataricus*) polytypic taxa where the type subspecies do not occur in Pakistan. Included as valid is Khan's (1997) *Bufo siacheninsis*, treated as synonymous with *B. latastii* Boulenger, 1882, by Stöck et al. (2001). Two additional taxa may be added to this fauna. Das et al. (1998) revived from obscurity the lygosomine skink, *Asymblespharus tragbulensis*, collected from the western Himalayas by the Pamir Boundary Commission towards the end of the nineteenth century, and Macey et al. (2006) included *Bufo laungwalansis* from Pakistani territory, based on the largely unpublished work of the late Walter Auffenberg (T. Papenfuss, pers. comm.).

As to the main body of the book itself, I am pleased to see maps printed in two colors, each species distribution represented with a dot map. It would perhaps been useful to have a gazetteer of localities, but this would increase the number of pages (and the cost). Some of the Pakistani endemics have been illustrated from life for the first time in color. Certainly, it was the first time I saw color images of *Bufo melanostictus hazarensis* (page 44), *Bufo viridis zugmayeri* (page 52), *Paa barmoachensis* (page 62), *Paa hazarensis* (page 64), *Paa sternosignata* (page 65), *Cyrtopodion kohsulaimanai* (page 129), *Siwaligekko dattanensis* (page 146), *Siwaligekko mintoni* (page 147), and *Enhydria pakistanica* (page 196). Surprisingly, *Chamaeleo zeylanica* is not illustrated. While this species may be rare in Pakistan, images of this species are readily available from populations in India and Sri Lanka. A handful of photographs are of preserved specimens—still useful in my opinion—and better than a 100-word description.

On the matter of nomenclature used in this work, it is somewhat of a mixed bag. Traditionally, workers in the Subcontinent have clung to Smith's three volumes on reptiles in the *Fauna of British India* series, published 1931, 1935, and 1943, overlaying it with new revisions for particular groups. The amphibian taxonomy follows that proposed primarily on phenetic criteria by Dubois (1986; 1992). Some of the relevant papers may not have been available to the author, and indeed, the amphibians will see a substantial change at the generic level if *The Amphibian Tree of Life* nomenclature of Frost et al. (2006) is adopted. Nomenclature for turtles is somewhat dated in that it does not follow Spinks et al. (2004),