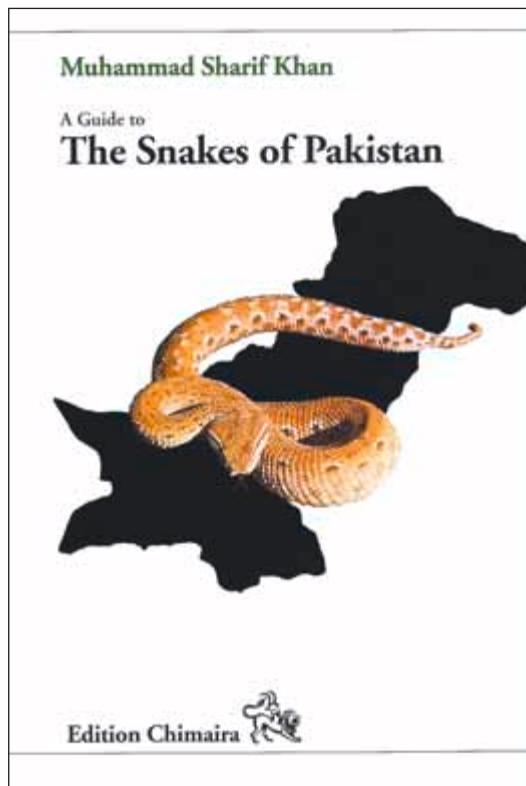


BOOK REVIEW



Khan M. S. (2002),
A Guide to the Snakes of Pakistan. Frankfurt Contributions to Natural History. Vol. 16.,
Edition Chimaira, Frankfurt am Main,
265 pages, 155 figures
(maps, line drawings and color photographs);
in English, hard-bound

Patrick David¹ and Olivier S. G. Pauwels²

Recent years have been marked by the publication of several books on the herpetology of Southeast Asia, especially Thailand and Malaysia (for example, Manthey and Grossmann, 1997; Cox et al. 1998; Chan-ard et al., 1999; Malkmus et al., 2002), and of the Indian subcontinent (Das, 2002; Sharma, 2003; Whitaker and Captain, 2004). Works on the herpetology of Pakistan are much scarcer. The snake fauna of what was still a part of

the Indian Empire was dealt by Smith (1943). Subsequently, for years, the classical synthesis of Minton (1966) remained the sole major source for herpetologists working on Pakistan. A book on snakes was indeed released more recently (Khan, 1993), but its publication in Urdu, the national language, obviously restricted its diffusion and usefulness outside of Pakistan. The publication of this new book by M. S. Khan is thus a welcome addition to the herpetology of Asia. Pakistan is situated at a crossroad between the Middle East, Central Asia, the Tibetan Plateau and the Indian subcontinent, with landscapes ranging from sea level up to highest summits of West Himalaya. It is not surprising that its snake fauna is both diverse and peculiar, with 65 species and

¹ UMS 602 Taxinomie-collection — Reptiles & Amphibiens, Département Evolution et Systématique, Case Postale 30, Muséum National d'Histoire Naturelle, 57 rue Cuvier, F-75231 Paris Cedex 05, France; E-mail: pdavid@mnhn.fr

² Department of Recent Vertebrates, Institut Royal des Sciences naturelles de Belgique, 29 rue Vautier, B-1000 Brussels, Belgium; E-mail: osgpauwels@yahoo.fr

76 taxa according to the present book. This fauna is composed of Indo-Oriental (45%), Palaearctic (36%), and Ethiopian (3%) forms. Lastly, 10 species (16%) are endemic. The fauna of Pakistan is hence a mixture of strongly diverse elements, occurring in regions widely different in ecology, and, also, in herpetological investigations.

The book is nicely produced, with a suggestive white hard cover depicting an endemic viperid snake, *Eristicophis macmahoni*, coiled over a black map of Pakistan. The publisher keeps on with its style of cover inaugurated for David and Vogel's (1996) book on snakes of Sumatra. The layout is generally well executed, with the noteworthy exception of the checklist (pp. 44 – 48), where the format is quite hesitating. The book is divided into six main parts of unequal length, as follows: (I) Introduction (pp. 7 – 57), containing a short introduction; a survey of literature on snakes of Pakistan; an interesting and useful description of the physiogeography and ecology of the country; distributional patterns of snakes; a summary of its herpetological fauna; materials and methods for collecting, preserving and storing snakes; the terminology adopted in species description; checklists of snakes of Pakistan; and keys to the families, genera and species. (II) The main part of the book (pp. 58 – 206), entitled "Annotated checklist" although it includes detailed and well organized species accounts. The text is arranged by family presented in alphabetical order. In family, genera are listed in alphabetical order, and species in same order within genera. Subspecies are discussed as separate accounts, with inconsistencies. Each family begins with a short introduction (but see below) then genera are arranged in the alphabetical order. There is one notable exception. The genus *Natrix* (for *Natrix tessellata* (Boulenger, 1893)) is placed on p. 130, after the genus *Xenochrophis*. Here we can guess that the author also intended to refer *N. tessellata* to *Xenochrophis*. Each species account includes the scientific name and author(s), English name, primary reference, the type locality, general characteristics, distinctive characteristics, "Notes," which give a summary of the biology of the species, and the range. In some poorly known species, some of these paragraphs may be lacking. Species accounts are usually accompanied with head drawings, unfortunately of much variable accuracy, a map (see below) and of color pictures, also of much variable quality. Sometimes, the depicted subspecies is not stated (for example for *Echis carinatus* on p. 199). However, the author should be congratulated for having indicated in the caption the origin of the depicted specimens. The mention of the locality of depicted specimens should be a standard in all modern books. This part is concluded by

a list of doubtful species for Pakistan. We are surprised to find there *Xenochrophis tessellata* (sic) and *Pseudocerastes bicornis*, both species included in the main text. (III) A section on snake bite and venomous snakes (pp. 207 – 218), with several keys to families and species, including a key to the identification of a species from body fragments, and key to species by region. (IV) An interesting chapter on snakes in Indian and Pakistani culture and folklore (pp. 218 – 231). (V) The bibliography (pp. 233 – 261) containing about 650 references cited in text, covering the snakes of a large part of Asia. (VI) An index to scientific names only (pp. 262 – 265).

This book is obviously the result of a long experience of the author both in the field, in the laboratory and in libraries. The wealth of original data included in this volume should not be overlooked. The author and the publisher may be congratulated for having included as many photographs of living specimens as possible, in indicating their origin when the animals are not from Pakistan. However, the quality of the photographs is often average, including those of preserved specimens (for example, pp. 82 – 83). On a general basis, one may regret that the author did not include drawings of cephalic scalation for all described taxa. Distributional maps, although prepared as dot maps, are rather small and poorly executed. The keys are puzzling, since, after a key to families, the author provides a key to genera that include all genera mixed together. In the same way, after a key to genera, the reader will find a key to all species.

Nevertheless, this book suffers from many shortcomings and weaknesses. In fact, it is plagued with numerous mistakes that could have been avoided with a more careful editorial care and serious reviews of the manuscript. The indications of maximal sizes are given as ranges, which make some of them rather fanciful, for example, 90 – 202 mm for *Typhlops ductuliformes* (p. 66) or 649 – 660 mm for *Xenochrophis cerasogaster* (p. 127). The "Distinctive characteristics" are often useless, as the author did not state the taxon or taxa from which the described taxon differs (for example, *Lycodon striatus bicolor*, p. 109, or *Psammophis leithii*, p. 117).

The number of mistyping, editorial mistakes and inconsistencies is considerable. We can mention *Amphiesma sieboldi* (p. 23)/*A. sieboldii* (p. 77); "*Microhodon*" (p. 25); *Xenochrophis tessellata* (p. 27)/*Natrix tessellata* elsewhere; *Natrix tessellata* (sic) Laurenti (1768) (sic) (p. 45); *Echis carinatus sochureki* Stemmler, 1964 (p. 47), but the correct date, 1969, on page 186. On p. 63, Thailand is still named Siam, a name long out of date. In the account of Pythonidae (p. 73) the author states that Pythonidae inhabit Asia, Africa, and South America. The author obviously made confusion with

Boidae for this latter continent. In the same account, it is stated on p. 73 that Pythonidae feed on warm blooded animals, but, farther in the text the diet is given as frogs, toads and fish to monitor lizards, crocodiles. Another problem of diet: on p. 75: “feeds mainly on warm-blooded animals: small rodents, (...), lizards.” One statement is rather juicy (p. 33), where the author, explaining how to catch a living cobra, concludes in stating that “it is advised to be killed before catching one.” Other inconsistencies include on p. 30: “On the 10 endemic snakes of Pakistan, one extends in India and two in Afghanistan,” or, on p. 33: “Snakes do not have a homing instinct, it is changing its haunts daily, which make snake-hunting a difficult exercise,” or lastly (p. 35 – 36), “formalin 40% = one part; plain water = 9 parts. It gives 10% formalin”; on the same page, it is stated that “For hardening and preservation of specimens 10% formalin is used,” but on p. 36: “formalin 40% is recommended...” The book suffers also from numerous technical mistakes. The taxonomy is a mixture of recent treatments and out of date arrangements. In the former one, we find the recognition of the genus *Xenochrophis*, the separation of *Naja oxiana* (p. 171) from *Naja naja* (Wüster and Thorpe, 1992), the use of the genera *Macrovipera* (p. 191) and *Gloydus* (p. 192). In the latter case, we include *Pseudocerastes bicornis* Wall, 1913, long regarded as a synonym of *Pseudocerastes persicus* (Duméril, Bibron and Duméril, 1854). However, if the author has information allowing the resurrection of *P. bicornis*, they should have been clearly included. Specifically, some comments on general characters of snakes are incorrect and even erroneous. For example, on p. 40, the author states that snakes have 1 – 10 supralabials and 1 – 8 infralabials. We never snake species with only 1 supralabial or 1 infralabial. On p. 42, it is stated that all body scales are similar in families Typhlopidae and Hydrophiidae; this is not correct for the Hydrophiidae (see on pp. 177 – 178). The introduction to the Colubridae (p. 76) is fanciful: “...colubrids universally share some characteristics: head, neck, trunk and tail are distinct (...); large eyes with round pupil, broad rostral scale is grooved; paired internasals; supralabials 7 – 10, 4th – 6th touching eye; (...); dorsals smooth, rarely keeled...” On a general basis, the introductions to the families do not make clear whether they apply to Pakistan species or to the complete families. Wallach (2000), in which were critically discussed some of Khan’s descriptions of *Typhlops*, is cited in the bibliography, but nowhere in the text. In this highly critical paper, Wallach (2000) regarded *Typhlops madgemintonae* and *Typhlops ahsanuli* as of uncertain status, and placed *Typhlops ductuliformes* in synonymy of *Typhlops por-*

rectus Stoliczka, 1871. On p. 48, the author mentions *Macrovipera lebetina obtusa*. However, no subspecies is cited in the species account (p. 191), whereas two subspecies are depicted on p. 202, but it is not stated which one occurs in Pakistan; one of them, *Macrovipera lebetina cernovi*, discussed in David et al. (1999), is not even mentioned in the species account. On p. 206, the correct spelling is *Spalerosophis atriceps*, not *S. articeps*. The main key is also plagued with inconsistencies. For example, there are no couplets leading to entries 8 and 25, but there are two accesses to couplet 9. In couplet 22B, the number of ventral scales is given as 187 or less, whereas the concerned species have 223 or less in *A. platyceps* and 207 or less in *A. sieboldii*. Similar mistakes and inconsistencies occur throughout the key. Furthermore, discrepancies between characters given in keys and species accounts are especially numerous. On p. 210, there is no entry No. 2 in the key. On p. 211, entry No. 9a: “1 subcaudals (sic) undivided, in a row”; entry No. 12a “4 – 7 pieces” instead of 3 on p. 123 or 8 on p. 124. On p. 215, *Spalerosophis diadema* is rightly considered to be non venomous, but the genus is included in the key to the venomous snakes (p. 210), and so on.

The bibliography is largely incomplete and also plagued with mistyping. The following references are cited in the text, but not in the bibliography (non exhaustive list): Buffetaut and Ingavat (1985: 17), Burton (1973: 13), Cook (1965: 35), Fischer (1885: 206), Gharpurey (1962: 15), Jaeger et al. (1989: 17), Jan (1863: 64), Khan (1965: 36), Murray (1887: 206), Murthy (1990: 207), Shaw (1802: 79), and Vogel (1926: 13). We identified some of them, listed below. Mahinder (1984: 15) is in fact a lapsus for Mahendra (1984), Adamson and Shaw (1986: 17) is dated 1981 in the bibliography, whereas Pascae (1919) is probably listed as Pascoe, and Powal (1979: 17) is obviously Powell in bibliography. Furthermore, about 20 references are not placed in the correct alphabetical order. The same is true for many taxon names in the index.

More specifically, we would like to address a problem plaguing this book, in the same way that it plagued the recent voluminous book on Amphibians and Reptiles of Nepal (Schleich and Kästle, 2002). It seems that authors publish what are meant to be primary references on a given region in relying not on their material, but mostly on the literature. We take as an example a genus on which we are currently working, but others are concerned. On pp. 154 – 157, Fig. 96 depicts what Taylor (1965), Chan-ard et al. (1999), and David et al. (2004), among others, regarded as *Xenochrophis flavipunctatus* (Hallowell, 1860). Specimens on Fig. 98 (p. 155) and 101 (p. 157) agree with *Xenochrophis piscator*, not with

Xenochrophis sanctijohannis, a species that we currently regard as valid and that is depicted on Figs. 99 – 100 (p. 156). In Schleich and Kästle (2002), the same problem arose with members of the genus *Amphiesma*. The specimens identified as *Amphiesma parallelum* all belong to the complex of *A. platyceps/A. sieboldii*. Such inconsistencies could be avoided if authors of such alleged in depth regional monographs took the pain to compare their own material with museum voucher specimens of the same region and with type specimens of problematic species. We believe that such a comparison would induce important and fast progress in reptile taxonomy, instead of repeating endlessly misidentifications.

Concluding a book review on a negative statement always leaves a bitter taste, especially when the book is the first modern treatment of a rich fauna for 30 years, and is obviously a labor of love from its author. Our negative comments should not hide the fact that this book conveys a wealth of original data not available anywhere else, and is hence an important contribution to the herpetology of South Asia. However, because of the presence of so many mistakes, and unverified, unsubstantiated and erroneous statements, this book is best considered as a rough draft. We deeply regret that both the author and the publisher, who otherwise released a well produced book at a very reasonable price (34.80 Euros), did not rely upon qualified reviewers. No doubt that they would have produced a major contribution to Asian snake fauna.

REFERENCES

- Buffetaut E. and Ingavat R. (1985), "The Mesozoic vertebrates of Thailand," *Sci. American*, **253**(2), 80 – 87.
- Chan-ard T., Grossmann W., Gumprecht A., and Schulz K.-D. (1999), *Amphibians and Reptiles of Peninsular Malaysia and Thailand. An Illustrated Checklist*, Bushmaster Publ., Wuerselen, Germany.
- Cox M. J., van Dijk P. P., Nabhitabhata J., and Thirakhupt K. (1998), *A Photographic Guide to Snakes and other Reptiles of Peninsular Malaysia, Singapore and Thailand*, New Holland Publishers, London – Cape Town – Sydney – Singapore.
- Das I. (2002), *A Photographic Guide to Snakes and Other Reptiles of India*, New Holland Publishers, London – Cape Town – Sydney – Auckland.
- David P. and Vogel G. (1996), *The Snakes of Sumatra. An Annotated Checklist and Key with Natural History Notes*, Edition Chimaira, Frankfurt-am-Main.
- David P., Ananjeva N. B., Das I., and Golubev M. (1999), "Translation of the original description of *Vipera obtusa* Dwiguubsky, 1832 (Serpentes: Viperidae: Viperinae), with designation of a neotype," *Russ. J. Herpetol.*, **6**(3), 193 – 198.
- David P., Cox M. J., Pauwels O. S. G., Chanhom L., and Thirakhupt K. (2004), "When a bookreview is not sufficient to say all: an in-depth analysis of a recent book on the snakes of Thailand, with an updated checklist of the snakes of the Kingdom," *Nat. Hist. J. Chulalongkorn Univ.*, **4**(1), 47 – 80.
- Fischer J. G. (1885), "Herpetologische Bemerkungen," *Jahrb. Hamburg Wiss. Anst.*, **2**, 82 – 121.
- Charpurey K. G. (1962), *The Snakes of India and Pakistan. Fifth Edition*, Popular Prakashan, Bombay.
- Jan G. (1863), *Elenco sistematico degli ofidi descritti e designati per l'iconografia generale*, A. Lombardi, Milano.
- Khan M. S. (1993), *Snakes of Pakistan*, Urdu Science Board, Lahore [in Urdu].
- Malkmus R., Manthey U., Vogel G., Hoffmann P., and Koesuch J. (2002), *Amphibians and Reptiles of Mount Kinabalu (North Borneo)*, A. R. G. Gantner Verlag Kommanditgesellschaft, Ruggell, Germany.
- Manthey U. and Grossmann W. (1997), *Amphibien and Reptilien Südostasiens*, Natur und Tier-Verlag, Münster.
- Minton S. A., Jr. (1966), "A contribution to the herpetology of West Pakistan," *Bull. Am. Mus. Nat. Hist.*, **134**(2), 31 – 184.
- Murray J. A. (1887), "Descriptions of three new species of *Hydrophis* from the Bombay harbour and the Mekran coast," *J. Bombay Nat. Hist. Soc.*, **2**(1), 32 – 35.
- Murthy T. S. N. (1990), "Venomous snakes of medical importance in India," in: Gopalakrishnakone P. and Chou L. M. (eds.), *Snakes of Medical Importance (Asia-Pacific Region)*, National University of Singapore, Singapore.
- Schleich H. H. and Kästle W. (eds.) (2002), *Amphibians and Reptiles of Nepal*, A. R. G. Gantner Verlag Kommanditgesellschaft, Ruggell, Germany.
- Sharma R. C. (2003), *Indian Snakes. Handbook*, Zoological Survey of India, Kolkata.
- Shaw G. (1802), *General Zoology, or Systematic Natural History. With Plates from the First Authorities and Most Select Specimens Engraved Principally by Mr. Heath. Volume III. Part II. Amphibia*, G. Kearsley, London.
- Smith M. A. (1943), *The Fauna of British India, Ceylon and Burma, Including the Whole of the Indo-Chinese Subregion. Reptilia and Amphibia. Vol. III. Serpentes*, Taylor and Francis, London.
- Taylor E. H. (1965), "The serpents of Thailand and adjacent waters," *Univ. Kansas Sci. Bull.*, **45**(9), 609 – 1096.
- Wallach V. (2000), "Critical review of some recent descriptions of Pakistani *Typhlops* by M. S. Khan, 1999 (Serpentes: Typhlopidae)," *Hamadryad*, **25**(2), 129 – 143.
- Whitaker R. and Captain A. (2004), *Snakes of India. The Field Guide*, Draco Books, Chennai.
- Wüster W. and Thorpe R. S. (1992), "Asiatic cobras population systematics of the *Naja naja* species complex (Serpentes: Elapidae) in India and Central Asia," *Herpetologica*, **48**(1), 69 – 85.