The Fauna of India and Adjacent Countries Reptilia Volume I (Testudines and Crocodilia), by R. C. Sharma. 1998. Zoological Survey of India, Publications Division, 234/4, AJC Bose Road, 2nd MSO Building, 13th Floor, Nizam Palace, Calcutta 700 020, India. xiv + 196 pp. US$ 30.00; £ 20.00; Indian Rs. 500.00. ISBN 81-85874-6-9.

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Thirteen years ago, the Zoological Survey of India (hereafter, ZSI) published, as part of its *Handbook* series, a work on the Indian Testudines, authored by Binoy Krishna Tikader (formerly Director, ZSI, now deceased) and Ramesh Chandra Sharma (formerly Officer-in-Charge, Desert Regional Station, ZSI at Jodhpur, now retired). The work of Tikader and Sharma (1985), at present out of print, contained serious errors of omission and commission. Now, the ZSI has thought fit to ask the second author to revise the *Fauna of (British) India* series on reptiles.

The introductory chapters of the first of the three volumes, covering Testudines and Crocodylia, are an indication of what is to come. It contains, in poor grammar, a general introduction, sections on progress in herpetology in India and "adjoining countries," phylogeny (which contains some vague remarks on "stem reptiles" as well as the origin of turtles, which the author firmly states "emerged from the early cotylosaurs"), distribution, and zoogeography (too long-winded for this reviewer), affinities of the reptiles of India, characteristics of Class Reptilia (generally agreed to be polyphyletic), leading to the definitions of the Order Testudines and accounts of each of the families that occur in the region.

Each species account comprises a suggested English name, the scientific name considered valid by the author, a synonymy (copied from Smith 1931, errors and all), a description written in an nonscientific style (e.g., "This is a gigantic, flat, soft-shelled species..."; p. 130), distribution (mostly from Smith 1931), habits and habitat, and conservation status. The last two categories contain most (unintentionally) amusing notes that more often than not hark back to Victorian times.

Although the author notes that knowledge on the fauna has increased substantially since the last treatment by Smith (1931), the present work omits many important papers and books published in the post-Independence period, including those on turtle and crocodile distribution and natural history. The fact that the author himself has published not a single paper on the subject is a pointer, and most of the references appear to have been derived from the earlier *Handbook*, which, in turn, were culled from Pritchard (1979) and Groombridge and Wright (1982), for the references from the last 30 years. Consequently, there are no references from the mid-1980s onwards.

Like Smith (1931), this work covers the entire mainland of southeastern Asia, besides the Indian Subcontinent, despite the fact that the author has no field experience outside of India. Much of the text has been copied, sometimes verbatim, from existing works, and when it is original, frequently introduces new errors. For instance, on p. 80, Sharma misinforms us of the distribution of *Melanochelys tricarinata*, indicating that it is found only in Bihar, Bengal, and Assam. Studies in the last 10 years have shown that the range of this species is about twice as large. Likewise, for perhaps India's rarest turtle, *Kachuga sylhetensis* (pp. 100–101), the distribution as known today is larger than "Garo, Khasi and Naga Hills." On the other hand, some species, such as *Aspideretes leithii* (pp. 137–138) have been stated to have larger ranges than recognized by reliable authorities. More seriously, several turtle species are shown as absent from India, including *Cuora amboinensis, Morenia petersi*, and *Pelochelys cantorii* (listed as *P. bibroni*; see Webb 1995 for the valid name of the taxon from the region), all known to occur in the country (see for instance, Das 1991; 1995). The common English names are not those suggested in Iverson (1992), but rather have been manufactured by the author, with disastrous results: Travancore vegetable-eating turtle for *Melanochelys trijuga coronata* (these turtles are omnivorous); Garo and Khasi Hills tortoise for *Cyclemys dentata* (Asian leaf turtle is more commonly used for this widespread turtle); and Assam freshwater tortoise for *Pyxidea mouhotii* (the keeled box turtle, which is terrestrial).

Readers are spared the poor quality color and black-and-white plates of preserved and misidentified species that characterized the *Handbook*, although most of the line art has been taken from that work. Of the new additions, some of the oddest depict crocodilians with scale markers in mm!

Taxonomic decisions are either poor or the author had no recent literature at hand on the nomenclature of the turtles of the world (see for instance, Iverson 1992). Thus, he refers all Indian testudinids to *Geochelone* (contra Crumly 1984; 1985) all trionychines to *Trionyx* (inspite of the convincing results from the phylogenetic analysis of Meylan 1987), and the batagurids to Emydidae (contrary to Hirayama 1984 and Gaffney and Meylan 1988). The subspecies concept of *Lissemys punctata*, as given in Smith (1931) is followed, despite the findings of Webb (1980; 1982) on the occupancy of names in these turtles, and the "Travancore tortoise" is noted as *travancorica* (rather than *forstenii*, as suggested by Hoogmoed and Crumly 1984). The important works of Moll (1986, 1987) on the taxonomy of the genus *Kachuga* are also ignored, as is new information on the biology and morphology of *Aspideretes nigricans*, reported by Ahsan and Haque (1991) and Ahsan and Saeed (1989). Indeed, the systematic and distributional information on Indian turtles are considerably more refined than during the time of M. A. Smith, thanks to the research of Bhupathy (1994, 1995), Bhupathy and Choudhury (1994, 1995), Frazier (1986, 1992), Frazier and Das (1994), Groombridge et al. (1983), Moll (1986, 1987), Moll et al. (1986), Moll and Vijaya (1986), Vijaya (1982, 1983), and many other workers, although this is not evident from this volume. For the Indian crocodiles, several Ph.D. theses have explored questions on ecology, although only the more popular articles are listed. The dangers of using the present work for formulating conservation plans are obvious.

The glossary provides some entertainment for those with time: "juxtaposed—placed in opposition to not imbricate"; "beak—the horny covering of the jaws assuming the shape of bird's beak"; "kinesis—fee movement between the bones or bony structure"; and finally, my favorite, "ossicle—a little bone." Many names of geographical localities are dated—Celebes, Foochow, Burma, Hainan, USSR—to give a few examples.

There are numerous false and misleading statements, including "the flesh [of *Amyda cartilaginea*] is not considered much suitable for human consumption" (p. 141), reference to *Aspideretes hurum* as endangered (p. 139), hatchling predation of *Crocodylus palustris* by herons and storks as a cause for their endangerment (p. 152), and so on. In general, the poor grammar and editing makes it difficult to distinguish typographical errors from other awkward phrases and expressions. An obvious one, of course, is Crocodylia, which has been misspelled Crocodilia even on the first page of the book. The spelling of this Order has clearly troubled the author, as the incorrect version appears not only at the start of the section on crocodilians (p. 141), but also as a running head throughout (p. 141 et seq.). Most annoying is the fact that several species names are consistently misspelled, according to the ICZN Code: *Hardella thurgi* for *Hardella thurjii* (p. 92), *Kachuga smithi* for *Kachuga smithii* (p. 95), and *Testudo horsfieldi* for *Testudo horsfieldii* (pp. 122–123). Interestingly, the titles on the dust jacket and spine are slightly different (*Fauna of India. Reptilia. Testudines and Crocodilians. Volume: I*).

In summary, this is neither a popular work nor a technical synopsis of the subject. It does not provide accurate information, nor is it aesthetically pleasing (no color photographs, an ancient font type, printing sometimes showing through on the opposite page, every scute of every turtle illustrated bears a name tag!). It has an incomplete bibliography, which would falsely suggest to the ininitiated that not much is known about the southern (and because of the coverage of this work, southeast) Asian turtle fauna. The Foreword by the Director, ZSI (p. iii) makes it abundantly clear that works like these will continue to be used for "formulating proper conservation strategies for ... protection," which confirms our worst fears.

The information presented has evidently been gleaned almost exclusively from three sources: Smith (1931), Pritchard (1979), and Groombridge and Wright (1983). Thus, if you have these works, you will save shelf space by not purchasing the latest work of Sharma. One now awaits with considerable trepidation the companion volumes on lizards and snakes in the *Fauna of India* series.

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