

museums. Out of the 118 paintings illustrated in this book, only 14 are present in India. Eighteen are the property of the Victoria and Albert Museum, 24 are in private collections outside India, 30 are in various other museums, 11 each in New York and Tehran, 5 in Los Angeles, and so on.

While most of the chapters are interesting, I was specially fascinated by the importance of the elephant in Mughal paintings by Asok Kumar Das. Another erudite chapter is on mythical

animals, their images, symbols and allusions, by Philippa Vaughan. Scenes of hunting in Mughal paintings are described by Divyabhanusinh, who has recently written a highly readable book on the cheetah in India.

It is difficult to describe the beauty and scientific accuracy of each painting in this brief review. Go and get this book. You will enjoy it. It is worth two thousand rupees.

■ ASAD R. RAHMANI

3. SNAKES IN INDIA, edited by B.D. Sharma, Asiatic Publishing House, 1998, Hardbound price Rs. 995 (US\$95), pp. xvi+352, 33 fig., 33 plates, (22 x 14 cm)

According to the not so subtle subtitle, this book is "An indispensable (*sic*) book on Indian snakes, their ecology, conservation and clinical study". This volume is, in this reviewer's opinion, almost wholly dispensable. The first draft of this review was a blow by blow (actually chapter by chapter) account of this disastrous production but it ran to 6 long pages. This is an edited version which samples some of the classic blunders.

With a few exceptions, the illustrations are either poor to begin with, printed badly or both. Many pictures are twisted, preserved specimens; one is sideways (Pl. 37), several are misidentified (Pls. 17, 19, 20 and 21) and one is actually a negative image (Fig. 30)! The pictures serve little purpose since they are so unclear as to render them useless in helping to identify the random collection depicted, and as a result also render the associated Chapter 8 worthless. Fig. 3 on page 29 shows the profile of a cobra's head, but with its eye situated where the nostrils ought to be. Fig. 5 on page 31 is the crosssection of a cobra fang, not a viper fang. The Russell's viper photo in Fig. 21 was taken by me, not my friend Dr. Vad as credited. That's just the illustrations!

The Preface informs us that "the up-to-date" bibliography of 666 references contains "almost all published works on Indian snakes."

Of these, I found only 5 references dating to the 1990's. The real number of published works on Indian snakes is probably about ten times the number in this bibliography.

Chapter 1 (by Anil Khaire) is one of the few that stand out. It is a nice, simple description of snakes in general, obviously written by someone who likes and knows them well. Chapter 9 by T.S.N. Murthy is also a well written but dated piece, dealing with the venom systems in snakes. Perhaps the most important fact brought to the fore is that snakebite is rarely fatal and that fast administration of antivenom serum is of prime importance. Advice, however, for avoiding snakebite is "just avoid snakes"! The editor is responsible for Chapters 2 to 8 (except 6) and though you can find some useful facts therein, you must read through a lot of poorly edited shoddy writing, rife with confused facts. Need a few examples? Try page 9, where the author states that 'in India alone 15,000 to 30,000 people die of snakebite' and a few sentences later says that "deaths due to snakebites in India alone tune to two million per year"! And in Chapter 3 the casualties come down to a lakh of people each year. On page 14, the author repeats an error started by P.J. Deoras in his book *SNAKES OF INDIA* that in a cobra fang "the venom simply trickle (*sic*) down the groove of the fang".

Chapter 3, item 20 states that the author feels that people die from snakebite mostly due to "fear of death", I don't think many medical doctors would subscribe to this oft-repeated myth. It's not that easy to die of fright unless you have a weak heart or faint over the edge of a cliff.

Scientific fact no. 39 is titled "Cobras and the kind (*sic*) cobras are the hooded terrors among the venomous snakes." In a book purporting to "dispel the fear and detest in the minds of the people", the purpose is defeated by such statements.

Table 4 of Chapter 4 infers that the Himalayan pit viper is an ant eater. Did it not occur to the researcher that the ant remains were from the stomach of much more likely food items (digested earlier) namely lizards and amphibians?

Chapters 6 and 16 are ones I'm partly to blame for. Both were written 30 and 20 years ago respectively. While the first isn't worth much, the second (on snake conservation) is not too bad but very out of date.

Impatiently going down the checklist of Indian snakes in Chapter 11, I noted at least 20 omissions (*Ahaetulla prasina*, *Lycodon laoensis*, *Lycodon capucinus*, *Eryx whitakeri* – my single claim to immortality!) and several errors. Since 1990, the three Indian cobras have been given full species status. *Vipera russellii* is now *Daboia russellii* and several pit vipers have been renamed.

In Chapter 12, besides wrong statements like "cobra venom is the most potent venom known", it is stated that Russell's vipers cause more deaths than cobras "due to its unflinching fatal bites". A humorous choice of words but untrue; cobras, just by being so common, almost certainly cause more bites, and deaths, than any other Indian snake.

The checklist of the snakes of the northeast in Chapter 14, by R. Mathew, omits *Naja kaouthia* (monocellate cobra). I didn't go through the list carefully but no doubt several more are missing.

Chapter 15 by S.K. Talukdar is on the

ecology and conservation of snakes. He put me off immediately by calling snakes "repulsive creatures" in the first paragraph. Repulsive authors is more like it! And moreover he tries to credit me for more than I deserve – I seem to have "recorded" a 33 foot long reticulated python in the Nicobar Islands! Having not set foot on the islands, I wonder how I was bestowed the honour of "recording" this mythical creature. Then he says that this python is "the most threatened amongst the Indian serpents" which is way off the mark.

The meaty, fairly current stuff comes from the highly respected American snakebite and venom expert, Sherman Minton. Although it is only 4 pages long, Chapter 17 deals with the relationships of Asian venomous snakes as evidenced by comparing proteins in snake blood serum. We're so used to looking at snakes as evidenced by comparing proteins in snake blood serum. We're so used to looking at snakes and aligning them by their external characteristics that the results of this kind of study (and DNA comparisons) are sometimes a jolt. Dr. Minton moves on to a generalized discussion of snakebite in Chapter 18. Though brief, it brings us up to date and discusses some of the obsolete (and sometimes dangerous) first aid measures. In Chapter 19, Dr. Minton lists the species of snakes generally considered to be non-venomous but which actually have toxic saliva and can cause serious bites. Several of them have relatives here in India and he cautions that we should be careful with snakes like the checkered keelback, olive keelback and some of the cat snakes. Chapter 20, also by Dr. Minton introduces the venom detection test using ELISA which is available in American and Australian hospitals and can be used to confirm envenomation (useful when the snake is not seen or symptoms are slight). This system is not in use in India but it would be very helpful. Chapter 21 is on rattlesnakes. Though interesting, why is it in this book on Indian snakes?

Chapter 22 is a lengthy discourse by

Australian snakebite authority Dr. Straun Sutherland. The only problem is, it's about the treatment of bites by Australian snakes! Useful for the Indian tourist planning to visit Australia, I suppose.

By this time the reviewer is very weary with this tome and sure enough my apprehensions are justified. Here's a quote from Chapter 23 by N.P. and S.C. Misra: "the tapering part of the body (of a snake) has greater capacity of movement has been called tail". And how about this howler: "these sea snakes cause more deaths in America than any other variety... Most of the snakes in sea non-poisonous. Various types of rattlesnakes belong to this variety," (Phew! And omigod!) In fact, dear reader, only one species of seasnake occasionally ventures as far as Central America (*Pelamis platurus*). All seasnakes are highly venomous and rattlesnakes are certainly not related to seasnakes!

Chapter 25 is engagingly titled 'Snakebite Disease in Jammu' by R.N. Bhatt. I won't comment on the minor blunders but just read this one for flavour: "one strong lucky man gave history that a large cobra, which he had brought along after killing it, had pursued the person from his own compound to a nearby house." And the author ends with this advice: "People living in tents must built (*sic*) snake trenches around the

tents which prevent snakes from crossing over sharp stones." Make of it what you will.

Chapter 26 has this advice, "even a thin layer of clothing may afford great protection" from snakebite – don't ever try it! Chapter 27 by I. Jena and A.P. Dash is on snakebite in Orissa and is not a re-hash but quite an interesting, brief analysis of the situation in that very snakey state. Deaths by cobra and krait are high and it could partly be because the antivenom used there is made from snake venoms from other parts of the country — venoms in the same species can differ that much!

Readers may think this review is a bit hard on the Editor and some authors. I think that it is a crime to produce such books in the name of Indian science and to shamelessly publish decades old facts as if they were current. This is especially dangerous when publishing first aid measures for snakebite that are obsolete. In scientific circles abroad, this book will make us a laughing stock and anyone overseas paying US\$ 95 for it (that's Rs. 4,000!) would certainly not trust scientific publications from India anymore. If there is no law already against producing such low-grade work, the Indian scientific community should make one!

■ ROMULUS WHITAKER

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Whitaker, Romulus. 1999. "Snakes in India." *The journal of the Bombay Natural History Society* 96, 460–462.

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