

The following points exemplify my observations:

(i) Chapter 7, part I on ion exchange chromatography (two pages, pp. 25–26) does not even find a mention of DEAE or CM-cellulose.

(ii) Chapter 8, part I, (pp. 27–30) entitled, ‘Gel-filtration chromatography’ does not talk about size exclusion chromatography or any of the matrix used in gel filtration chromatography. Surprisingly, the chapter describes polyacrylamide gel electrophoresis (PAGE) and SDS-PAGE, and does not even mention Sephadex or Biogel.

(iii) In the chapter entitled ‘Amplification and sequencing of nucleic acids’ (chapter 29, part I), shockingly, the nucleic acid sequencing part has been described and completed in just one sentence: ‘As the function of nucleic acid is determined by the sequences of the bases within the molecule, the sequencing plays an important role in nucleic acid analysis’ (p. 127). Surprisingly, no additional information is provided, neither the principles are described nor any protocols given.

(iv) Chapter 5 on enzymes protocol describes estimation of ~15 random plant enzymes, without assigning any reason for their selection. Between these, the assay procedure for salivary amylase has included plant enzymes, again without any mention of the utility of this enzyme. In the same chapter, the method for assay and purification of alcohol dehydrogenase has been described without providing any *raison d’être*.

(v) The author has not kept track of the changes/modifications that have been introduced in recent times in several procedures. For example, CTAB (cetyltrimethyl ammonium bromide, also known as hexadecyltrimethylammonium bromide) which is most commonly used for plant genomic DNA isolation for the last 25 years, does not find a mention. Similarly, the procedure using Trizol, which is common for the extraction of plant RNA, is also not described.

(vi) In the chapter on amino acids and proteins, suddenly a part appears on casein content of milk and describes gravimetric estimation of casein (p. 245). This part is followed by ammonium sulphate fractionation of proteins (p. 246), without any mention of how much ammonium sulphate has to be added to achieve the desired saturation or the most

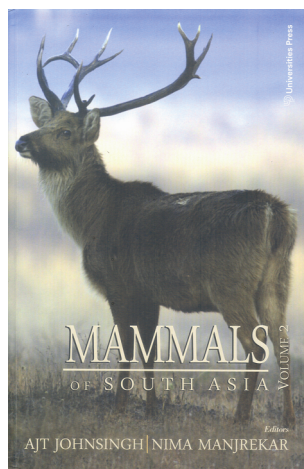
common ammonium sulphate saturation table/chart.

The lack of professionalism from the author and the publisher is also reflected by the fact that figures in the books are not numbered and most of the figures have been provided without any proper caption or legend.

Overall to me the book appears to be a random collection of a few assorted techniques, which the author might have used or would have become familiar with during his scientifically active years. Some of the information provided on classical techniques are too sketchy. Since the book completely overlooks all modern techniques, it would not be useful in any way to the modern-day students and researchers.

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Mammals of South Asia, Volume II. A. J. T. Johnsingh and Nima Manjrekar (eds). Universities Press (India) Private Limited, 3-6-747/1/A & 3-6-754/1, Himayatnagar, Hyderabad 500 029. 2015. lxxv + 739 pages. Price: Rs 1750.

South Asia comprising of India, Sri Lanka, Bangladesh, Pakistan, Nepal, Bhutan, Afghanistan and Myanmar, has a wide array of habitats. As a result, diverse groups of mammals inhabit the region. Globally, this region has the highest human densities and its natural areas are under constant threat, making it

one of most important regions for biodiversity conservation. The last two decades have witnessed numerous studies on ecology and conservation, especially on charismatic large mammals. With the advancement of research techniques and robust analytical methods, scientific studies on several elusive species have been made possible. Information from these studies has been summarized and presented in *Mammals of South Asia (Volumes I and II)*, edited by A. J. T. Johnsingh and Nima Manjrekar, two of India’s well-known wildlife biologists. While the first volume was released in 2013, the second volume was brought out in April 2015. This review is on Volume II of the book which deals with five orders – Cetacea (dolphins and whales), Proboscidea (elephants), Perissodactyla (equids, rhinoceros and tapirs), Artiodactyla (pigs, deer, chevrotains and bovids), Rodentia (squirrels, porcupine and muroid rodents), and a separate chapter on lesser known mammals. There is also a chapter on diseases and parasites affecting mammals. Beautiful colour pictures, contributed by several wildlife photographers and field biologists are provided in three sections that follow the sequence of chapters in the volume.

At the outset, the superb cover photograph of the majestic barasingha aptly represents major contents of this volume. The book begins with a Foreword by the eminent biologist George B. Schaller, followed by an Introduction written by Johnsingh and P. O. Nameer, describing evolutionary history of mammals, delineating various mammalian orders, which are mainly confined to the region, and their zoogeography. What follows is a marvelous compendium of information put together by several experts. All of the chapters follow similar format with minor variations depending on the available information, and conclude with a



Grizzled giant squirrel (*Ratufa macroura dandolena*) feeding on the tender leaves of *Ficus glomerata*, Sri Lanka.

section on conservation and threats for the species. Recent changes in taxonomy and nomenclature have been followed throughout the book. The volume begins with a chapter on marine mammals, which despite being general, provides comprehensive information on taxonomy, evolutionary history, distribution, behaviour and conservation issues concerning marine mammals in the region. The following chapter on Ganges river dolphin is also equally comprehensive and provides detailed up-to-date information on the species biology and conservation status. However, these chapters bring to the fore the fact that marine mammals of South Asia are poorly studied and information on many of these species and their conservation status is at best sparse. However, a small section on Irrawady dolphin, if not a separate chapter, should have been included, given that some information is available on their distribution and conservation status. The only member of the Proboscidea in South Asia, the Asian elephant, has always captivated human imagination and is a dominant motif in folklore and culture. It is also perhaps one of the best studied large mammals. Similarly, another awe-inspiring mega-herbivore is the greater one-horned rhinoceros. These species have separate chapters to themselves, which describe their evolution, distribution, ecology, behaviour and conservation. Other Perissodactyls covered in detail are the pygmy hog and wild ass. Though both species of wild ass, the *kiang* and *khur* are covered in the same chapter, the chapter is structured in a manner that renders species-wise information easily accessible. The chapter on the rare pygmy hog based on long-term study and conservation efforts, gives a detailed account of its ecology, behaviour and conservation assessment. The Chevrotains have been covered in a separate chapter that presents recent information on taxonomy and distribution of the five Tragulids that occur in South Asia. Although little is known about these secretive animals, fair amount of information has been provided on their ecology and threats facing them. There are chapters devoted to each of the cervids and bovine species. Some of these chapters, e.g. on chital and Nilgiri tahr provide valuable insight into behavioural aspects of these species. There are separate chap-

ters on many of the elusive species, despite the fact that little is known about their ecology, e.g. goral, serow, takin, which is commendable. Nonetheless, these chapters give an in-depth account of the species concerned. Order Rodentia is the most speciose group of mammals globally consisting of nearly 2200 species. South Asia is home to about 163 species of rodents. They are economically important as they cause great amount of damage annually to crops and granaries. Yet, we know very little about their ecology and distribution. Three of the species have chapters to themselves – the Indian giant squirrel, grizzled giant squirrel and the Indian crested porcupine. Each of them gives detailed species account. In addition, there are two separate chapters covering muroid rodents and scuirids each. These chapters provide an excellent overview of the group in general and are supplemented with monochrome and colour photographs of these interesting animals. The chapter on little-known mammals (aptly entitled) is perhaps what most readers are waiting for. This chapter appropriately includes orders Pholidota and Lagomorpha, two of the least known groups and also some of the highly endangered mammals which have been extirpated in the recent past from many parts of their original distributional range, e.g. Javan and Sumatran rhinoceros and the Malayan sun bear. Also included are the wild pig and some of the macaques such as the pig-tailed macaque, long-tailed macaque and the stump-tailed macaque. These species perhaps deserved a full chapter to themselves, given the availability of recent information on them. The final chapter on diseases and parasites of wild mammals presents a general overview of various aspects such as role of parasites in regulation of host population, host competition and co-existence, regulation of prey–predator dynamics, and also an account of diseases affecting wild population.

Several authors have contributed to the volume resulting in variation in the style of writing. Despite this, all of the chapters are highly readable. However, the book is not without flaws. The Introduction is almost identical with some changes or updates in the text and tables. There is no mention of these changes made to inform the readers either in the

beginning of the Introduction or in the Preface. A separate introduction to this volume would perhaps have been appropriate. Secondly, in the chapter on the grizzled giant squirrel (p. 511), the authors mention ‘...only in the Shenbathopu area (to the east of Alagarkoil valley) had the squirrels moved from the forests to the orchards’. The grizzled giant squirrel also occurs in orchards near Saptur and the authors go on to mention that ‘the canopy continuity between the orchards and the forests here should be cut’, which is a bizarre solution that is proposed for the problem of squirrels spilling out of the forests into the orchards causing damage to crops.

Apart from these minor flaws, the book is an indispensable source of information on South Asian mammals not only for amateur naturalists and students of wildlife biology, but also for conservationists and park managers throughout Asia. Many of the species described in this volume are highly endangered and face serious threats such as habitat loss, habitat fragmentation and severe hunting pressure. Several of the species are also poorly studied owing to their rarity, elusive habits and/or because they occur in inaccessible areas. Basic information on species description, distribution and natural history of such species is crucial if any serious research efforts have to be undertaken. Though there are field guides on Indian mammals, *Mammals of South Asia (Volumes I and II)* are definitely significant in terms of wide coverage of species and the information they contain. With superb colour photographs and beautiful illustrations, this volume combines the ease and usability of a field guide with information from major research findings, all in a readily accessible format.

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