

BOOK REVIEWS

health and economic viewpoints. Protozoans, helminthes and other parasitic animals are responsible for large-scale morbidity among humans, pet animals and edible animals like fishes. Houseflies, mosquitoes and other insects spread serious epidemic diseases killing thousands of people every year. House dust mites are responsible for causing severe asthma in susceptible persons. Pest insects destroy agricultural and fruit crops, and stored food materials worth billions of rupees. Ecological services like pollination, seed dispersal, nutrient recycling, maintenance of soil productivity are rendered by insects, birds, earthworms and other animals. Beneficial insects, birds, snakes and other predatory animals keep a check on many potential pests, including rodents. Carrion-feeding animals help in keeping our environment healthy and clean. Lobsters, prawns, fishes, mussels, etc. are an important source of highly nutritious protein-rich food to man.

These are just a few examples to highlight the important role of fauna in ecology and economy of a region.

Fortunately, there has been an increased awareness about environmental problems and biodiversity issues in recent years. Maharashtra, the third largest state in India, and having an area of a little over 3 lakh sq. km, approximately 20% of which is under forest cover and 58% under agriculture, has 6 national parks and 35 wildlife sanctuaries. It has several important habitats sheltering rich biodiversity, including coral reefs, mangrove ecosystems, sacred groves, etc. The Western Ghats, Deccan Plateau and coastal areas of Maharashtra have their own characteristic flora and fauna with many endemic species facing threat of extinction.

Although not yet fully explored, the fauna of Maharashtra has attracted attention from several researchers, but the faunal information is widely scattered and in many cases not easily accessible to young researchers. It is against this backdrop that we must welcome the first ever consolidated account of *Fauna of Maharashtra: Parts I and II*, published by the Director, Zoological Survey of India (ZSI), Kolkata with contributions on different animal groups by various scientists and experts from ZSI and other institutions.

An excellent overview by Anil Mahabhal and R. M. Sharma (both senior scientists of ZSI) at the beginning of Part I,

offers a concise account of biogeographical details and faunal characteristics of various regions of Maharashtra. Altogether 5640 species of animals spread over 2733 genera have been listed together in this two-volume set.

Part I, devoted to vertebrates with separate chapters on Mammalia, Aves, Reptilia, Amphibia and fishes (both freshwater and marine), each contributed by two or more experts, gives a detailed account of various species with their IUCN status, distribution, endemism, etc. Taxonomic keys are provided for species identification. In the chapter on fishes, fishery information is also provided. Detailed bibliography given at the end of each chapter will help researchers in seeking more information. Beautiful maps, colourful photographs of representative animals appearing in Part I help in better understanding of the faunal characteristics in relation to ecology.

Part II dealing with invertebrates includes chapters on free-living and parasitic protozoans, freshwater sponges, molluscs, freshwater prawns, crabs, barnacles, wood borers, various insect groups and other arthropods like arachnids and chilopods. In many instances, line diagrams of invertebrates have been included to highlight their structural details. Large groups like protozoans and insects have occupied more space in comparison to smaller groups like sponges and arachnids. It is for the first time that information about fauna of Maharashtra has been compiled in two volumes and this should provide a ready source of information to all academicians and researchers working in various fields.

As rightly emphasized in the overview '...This is not the final account of total biodiversity of Maharashtra state'.

Many important animal groups like earthworms, leeches, helminthes, marine sponges, cephalopods, coelenterates, etc. known to occur in Maharashtra and documented in the literature elsewhere have been left out, perhaps for being included in future publications. Although nicely printed and neatly bound, the price of the two volumes, a little over Rs 4000, is beyond the reach of many researchers and students. Many more colourful photographs of rich fauna could have enhanced its utility. It is also felt necessary that a consolidated list of endangered animals with their photographs could have helped the professionals and

amateurs in conservation efforts. It is suggested that ZSI should undertake to publish the fauna information in Hindi and regional languages as well.

Even a cursory glance through the two volumes readily reveals the painstaking efforts of Mahabhal and Sharma, who working as project coordinators have contacted the widely scattered zoologists working in different institutes and laboratories and persuaded them to contribute on the specialized groups of animals for ensuring that the information is up-to-date, authoritative and reliable. Being an important source of highly reliable and authentic information, the book is recommended for students, academicians and researchers working in pure and applied sciences, agriculture, health, environmental and allied fields.

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Indian Pandanaceae – an Overview.

Altafhusain Nadaf and Rahul Zanan. Springer (India) Pvt. Ltd. 7th Floor, Vijaya Building, 17, Barakhamba Road, New Delhi 110 001. 2012. 163 pp. Price: €83.29. ISBN 978-81-322-0752-8.

This book provides information on Indian taxa belonging to Pandanaceae with respect to taxonomy, phylogenetic relationship and conservation status. Pandanaceae is known to India by economically important species *Pandanus odorifer*, used in the production of 'kewda' perfumes, in flavouring a variety

of food products and in traditional medicine. Another species, *Pandanus amaryllifolius* is also known as a spice. The authors present the first complete overview of Indian screwpines more than 300 years after the first *Pandanus* species was recorded by van Rheedee from the Malabar region. The authors have visited the whole subcontinent to collect, study and understand the species in the field. In this book they present the Indian screwpines in unparalleled clarity and detail, dealing with their history, economic importance, molecular phylogenetics and conservation, as well as their taxonomy. Their extensive survey led to the discovery of three new species of genus *Pandanus* (*P. palakkadensis*, *P. mangalorensis* and *P. martinianus*). In the taxonomic revision, the authors have merged synonymous species and confirmed 16 *Pandanus* and 2 *Benstonea*

species from India. The key based on morphological and micro-morphological characters is provided for identification of a particular species. Morphological and chloroplast DNA-based phylogenetic analysis among the taxa is informative to determine taxonomic status of a particular species. For the first time, interrelationship among the Indian *Pandanus* species at infrageneric level has been covered in this book.

Based on detailed field survey, conservation status of each species was determined using IUCN Red List categories and criteria (2001). The study revealed that six species fall under threatened categories and are at the risk of extinction. In addition, ethnobotanical, economic and medicinal uses of these taxa are incorporated, which will be useful in drug discovery and for herbal medicine industry.

Let me end by saying that reading this book has been an enjoyable experience for me. It has excellent photographs and illustrations of plant species. It is indeed a difficult task to cover such enormous topic in a single book; the authors have carried out a fine survey of India (excluding Andaman and Nicobar islands) and managed to do so remarkably well. I am convinced that this book will serve people with a broad spectrum of interests and it will stimulate future research and interest in the economically important Pandanaceae family in India.

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