



Western Ghats: Biodiversity, People, Conservation. R. J. Ranjit Daniels and Jayashree Vencatesan. Rupa & Co, 7/16, Ansari Road, Daryaganj, New Delhi 110 002. 2008. 148 pp. Price: Rs 495.

The Western Ghats, a series of hill ranges along the west coast of southern India, has fascinated and attracted people for centuries. The resource richness of the region, with variety and abundance of flora and fauna had attracted people a long time ago, and they became the permanent settlers of the Ghats, i.e. the indigenous tribal groups. Due to high rainfall, the region attracted tea and coffee planters, and later, civil engineers to build dams for power generation and irrigation. Tropical rainforests on the western slopes and in the valleys, grasslands and sholas on the ridge, and deciduous forests in the relatively rain-shadow areas on the eastern slopes attracted naturalists for watching the abundant biodiversity. For forestry and wildlife scientists, the Ghats is a natural laboratory. The scenic beauty attracted nature lovers and trekkers. A book loaded with factual information on the Western Ghats, yet concise and easily readable, would therefore be of interest to a wide range of people, and the book under review has met this long-felt requirement.

The book has been divided into six chapters. The authors first present a brief geological history of the breaking away of peninsular India from Gondwanaland and its movement towards and collision with mainland Asia. There is a lucid description about the formation of the Ghats and the mingling of Eurasian and Gondwanaland biodiversity resulting in the present-day biological richness. A small section describes the geography of the region, with major features of the landscape.

A large chapter describes the diversity of flora and fauna in the Western Ghats. One half of this chapter deals with various taxa and the other half illustrates the living biological communities. The style of writing, on the one hand, is transparent with common names of many of the common species for a lay reader, and on the other hand, the authors use taxonomic names for a more scientifically oriented researcher. While appearing to be only narrative in nature, the authors have adroitly inserted modern synthesis about ecological patterns (pp. 75–76) that appeals to a common reader and an ecologist as well!

A short chapter illustrates the archaeology and anthropology of the region. The first settlers in the Ghats were hunter-gatherers, with their activities limited to small areas of occupancy. The ecology of the region started altering later when the people indulged in shifting cultivation through slash and burn methods. The hill regions were also affected by the activities of the chiefdoms in the adjoining plains. The changing cultural landscape has been beautifully chronicled from the Sangam literature to the documentations of the British period. However, a brief description of the present distribution and socio-cultural and economic activities of the ethnic groups in the region, for example, the tribes at different elevations in the Nilgiris and the Nilambur Hills, would have added significantly to the understanding of the resource partitioning among human groups.

The chapter on 'Human activity and ecological change' brings out the major conservation concerns in the Western Ghats. The chapter starts with some ecological concepts concerning ecosystem flips and slowly slips into a literary presentation of the altered landscape. Subtitles such as 'Gardens that spread', 'Muddy waters', 'Thorns and vermins', and 'Cattle that devour' illustrate the problems caused by the extensive tea and coffee plantations, construction of dams and submersion of valley forests, overgrazing by the domestic cattle and its competition with the wild herbivorous mammals, and the resulting human-wildlife conflict. Large settlements of people have not only increased the demand for the few remaining forest resources, but have also resulted in illegal activities such as smuggling and poaching. We feel that a major conservation concern throughout the Western Ghats today is forest frag-

mentation of two types: one of the type caused by tea gardens, where forest fragments are surrounded by a treeless landscape hindering the free movement of animals, and the second where there are seemingly large and contiguous patches of rainforests, but the same are being fragmented from within by the establishment of villages and cultivation of cash crops in the valleys and the lower slopes. The contiguity of the forest remains only through narrow alleys. However, the authors have made only a passing remark to this important management and conservation challenge in the Western Ghats.

The last chapter entitled 'Looking ahead', on the one hand presents a scary scenario if the destructive activities continue to persist, but on the other hand, also promises hope for the conservation of this fragile region, if serious and committed efforts are made by a cross-section of people, including the ethnic groups, recent settlers from the plains, the scientific community, the Forest and Revenue Departments, development planners and politicians. The authors indicate that a large variety of life forms still remains to be described in the Western Ghats, but they also caution the biologists against indiscriminate 'specimen collections'.

Although several areas in the Western Ghats have been notified as 'Protected Areas', many sensitive regions are still considered as 'Reserved Forests' where the protection levels are not up to the mark. An important issue, which the authors have totally avoided perhaps because of its sensitive nature, is the rehabilitation of the ethnic groups and other settlers outside the few remaining regions designated for wildlife protection. The suggested Western Ghats Conservation Planning and Development Board could take up the issue of rehabilitation to the full satisfaction of the people to be rehabilitated away from their present forest dwellings.

The authors have provided important data of general nature in the form of tables. The inset of beautiful pictures on all pages adds to the aesthetic quality of the book. Cautiously avoiding a technical science journal style of referencing in the text that makes a lay reader uncomfortable, a comprehensive list of the literature on the Western Ghats has been provided at the end. For being a storehouse of information on the Western Ghats, the folklorist style in which the information

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has been presented and the easily affordable price, this book belongs on the shelves of all those who have interest not only in the Western Ghats, but in any of the wonders of nature.

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Biodiversity of Ranthambhore Tiger Reserve, Rajasthan. V. Singh and A. K. Shrivastava. Scientific Publishers (India), Jodhpur. 2007. 415 pp. Price: Rs 2750.

This is an excellent compilation on the Ranthambhor Tiger Reserve, covering detailed floral and faunal diversity with exhaustive literature review. The book deals with 539 species of higher plants and 361 vertebrate animal species along with detailed information of topography, geology, climatic conditions, soil and water, which are also important to determine the composition of floral and faunal diversity and socio-economic aspects of inhabitants.

The Ranthambhore National Park sustains a healthy tiger population and populations of other threatened taxa like panther, marsh crocodiles, hyena, wolf, caracal, jungle cat, sloth bears, sambar, etc. and avian fauna and other wildlife, besides rich plant diversity. In fact, it is a gene-pool for posterity and an ecological island of the Indo-Malayan realm. The biodiversity of such a globally known Tiger Reserve has not been studied so far in detail. As such, the authorities involved in the conservation of the Reserve

and the tigers in particular, have failed to formulate strategies in a scientific way due to lack of data. Keeping the above in view, the present study was undertaken.

One of the major contributions of this book is that for the first time, detailed taxonomic information of floral and faunal (vertebrates) diversity has been documented systematically, which has filled the vital gap in the available ecological information for the Reserve. Factors posing a threat to biodiversity have been discussed and threatened taxa have been identified and classified according to the IUCN criteria. The authors have also assessed the biosperspective value for the Reserve and documented the existing interaction between flora and fauna with their interdependency. They have supplemented the book with appropriate figures, photographs, tables, charts, maps, etc. For easy determination of taxa, keys have been provided from family to species level. The faunal wealth of the Reserve has been documented with help from the Zoological Survey of India, Jodhpur, published literature and forest authorities and officials of the Reserve. About 361 species belonging to 261 genera under 94 families (vertebrates) have been enumerated. The fauna has been classified up to infra-specific level. Valid zoological names have been adopted and their local and/or English names have been provided. Besides identification of threatened fauna and their categorization according to the IUCN criteria, the factors responsible for threat have also been identified and discussed. The authors have scientifically illustrated the flow of energy in the Reserve, which will play a vital role in the study of migration or depletion of fauna from the Reserve. The nomenclature has been updated along with important synonyms relevant to the flora of India and Rajasthan. Each species is described with diagnostic description based on the authors' observations covering phenological and ecological data. Local as well as botanical names provided in the book make it for useful a grass root-level worker, wildlife manager as well as expert ecologists and biologists.

One of the authors, V. Singh has served the Botanical Survey of India, Jodhpur for 32 years in different capacities. He is a noted taxonomist and has published many books and monographs, which are recognized world over. The other author, A. K. Shrivastava is a young field scien-

tist involved in herbal formulation with SRISTI, Ahmedabad.

This is for the first time that a book comes out with details of biodiversity of the Ranthambhore Tiger Reserve and has documented all the biotic and abiotic components which are vital and also gives an in-depth understanding of the ecological importance in tiger conservation.

The book is highly recommended for policy makers, environmentalists, wildlife managers, botanists and researchers of biology, socio-economic and wildlife sciences. Being well written and easily readable, the book should also appeal to naturalists, ecotourists and lay readers.

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Visualizing the Structure of Science. B. Vargas-Quesada and F. de Moya-Anegón. Springer-Verlag, Berlin. 2007. 312 pp. Price: US\$ 139.00.

Visualization of information in the field of documentation was suggested over 60 years ago by Vannevar Bush in his famous essay 'As we may think', in *The Atlantic Monthly*, and put into practice by Eugene Garfield in his 1964 essay on the use of citation data in writing the history of science. Since then it has been used to 'uncover' and divulge the essence and structure of science. Henry Small, a colleague of Garfield at the Institute for Scientific Information, and Belver Griffith, Drexel University, wrote two seminal papers on the structure of scientific literature in 1974, based on cocitation analysis by Small. A decade later Small and Garfield published another seminal paper on the 'Geography of science' and 'Disciplinary and national mapping'. Garfield was among the earliest to recognize the value of mapping in tracing the evolution of interdisciplinary areas of research, such as bioinformatics and nanotechnology. He talked about 'research fronts' (resulting from information fluxes among disciplines) as distinct from disciplines, and used metaphorical