

**Biodiversity of Sikkim: Exploring and Conserving a Global Hotspot.** M. L. Arrawatia and Sandeep Tambe (eds). Information and Public Relations Department, Government of Sikkim, Gangtok. 2011. 544 pp. Price: Rs 2000.

Biodiversity is the very basis of human survival and economic well-being, and provides to humankind enormous direct economic benefits, an array of indirect essential services through natural ecosystems, and plays a prominent role in modulating ecosystem function and stability. Biodiversity, however, is not uniformly distributed on the earth and shows prominent latitudinal and altitudinal gradients. The 34 terrestrial biodiversity hotspots cover only 2.3% of the earth's land surface, have lost 70% or more of their primary vegetation, but contain over 50% of the world's plant species and 42% of vertebrate species as endemic. They also contain 75% of the most threatened mammals, birds and amphibians and 50% of the plants. Many of the species which have remained undiscovered are likely to be found in the hotspots. Therefore, documenting the biodiversity of hotspots and devising appropriate management strategies is crucial. The Himalayan region is one of the global terrestrial biodiversity hotspots and since Sikkim is located within this hotspot, the present book contributes to the understanding and status of such a hotspot.

Sikkim, the twenty-second state of the Indian Union and a member of the North Eastern Council of India, is situated between Nepal in the west, China in the north and east, Bhutan in the southeast and the Indian state of West Bengal in the south. With an area of 7096 sq. km

comprising 0.22% of the total geographical area of India, Sikkim lies between 27°04'46"–28°07'48"N lat. and 88°00'58"–88°55'25"E long. The altitudinal gradient which ranges from tropical (300 m amsl) to the peak of Mount Khangchendzonga (8598 m amsl) with two major river systems, namely Teesta and Rangeet, has enriched the state with enormous diversity at gene, species and ecosystem levels. This book is a multi-disciplinary collection of articles which extensively cover the biodiversity elements of the state. It clearly depicts the remarkably high species richness in Sikkim, where as many as 165 plant species have been named after the state.

The book has 28 chapters contributed by experts recognized in their own field, and indeed makes a substantial contribution to filling the knowledge gap in this relatively poorly studied Himalayan state. The contents have been organized well in tackling the rich biodiversity of the state, covering an array of biological diversity which broadly covers floral diversity, faunal diversity and management practices adopted by the state. The book also includes a regional initiative facilitated by the International Centre for Integrated Mountain Development. Each of the sections brings a comprehensive historical perspective with impressive review work on specific topics. The coverage of articles ranges from research in specific localities such as protected areas to overview of diversity at the state level. The book is enriched by an impressive collection of checklists of species and, in many cases, the localities and distributional range of species. The illustrations are beautiful and add immensely to the quality of the book.

With a logical sequence, the first article sets the context, rationalizing Sikkim as a part of the Himalayan biodiversity hotspot. The article also reflects its rich biodiversity with citations of some of the eminent works done by scholars in Sikkim. The succeeding articles cover diverse fields of flora starting from lichens to flowering plants and orchids as well as non-timber forest products to vegetation and community ecology. Likewise, documentation on faunal diversity is equally comprehensive, covering insects, fishes, herpetofauna, avifauna and mammals. Some articles also bring out the ecological perspective of flagship species such as red panda (also the state animal of Sikkim), agro-

biodiversity and the traditional knowledge practices in Sikkim. Some of the articles showcase the conservation measures taken by the Government of Sikkim, highlighting, particularly the leadership role played by the state to promote conservation in the mountain areas. Some innovative examples are cited on ongoing and future perspectives in forest management, concept on green governance, use of evolving tools such as global information system and remote sensing in conservation and management planning.

The book beautifully brings out the status of biodiversity in Sikkim and reflects an impressive collection of species-level information on flowering plants (4458 species), orchids (717 species) and so on. The studies on birds and butterflies elicit analytical results on the distribution pattern along the altitudinal gradients. They also signal the declining trend of species compared to the list available from the past. Nevertheless,



Mt Siniolchu (6888 m) situated near the green lake in North Sikkim, has been described as the most beautiful snow mountain in the world.



Chinese Pangolin, a nocturnal animal is rare to observe in day time.

some of the figures cited are still impressive in terms of richness. It is said that more than 30% of the flowering plants recorded from the entire country is found in Sikkim and 40% of the total avifauna of the country uses Sikkim as its habitat. Although entomology, in general, is a relatively ignored field, as many as 5892 species of insects have been recorded from Sikkim. The information given in this book indeed comprises a significant source for researchers, managers, conservation specialists and policy makers at large. The multi-taxa information presented is important since the focus of conservation biologists is not primarily on the persistence of a single species, but on all forms of extant life.

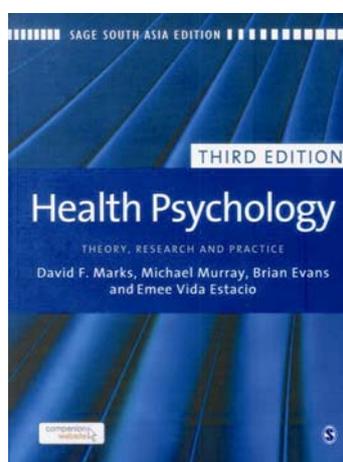
The book with an impressive coverage of information in one compact form could, however, be better presented for future use as a source material. It is really surprising not to see references listed either as part of each article or in a consolidated form at the end of the book. Thus the value of the book as a scientific source has been diminished by omission of the reference section. Further, the book is not user-friendly due to its form and size. It is too bulky, heavy (about 3 kg in weight) to carry around and difficult to read. It also seems that the sequence of articles and presentation were not adequately planned. There is an issue of repetition on describing Sikkim in almost all the articles. This has resulted in substantial duplication of information. Likewise, there is an issue of consistency in quality and content of the articles. Some of the articles are more systematically presented with good science, while the others are generic. In addition, there is no consistency in the coverage of in-depth studies to represent the entire state; articles have either considered one or two protected areas, or have covered a few focus species or a group of species. Effectiveness of various protected areas in encompassing and maintaining biodiversity has not been discussed. The book thus may be only a source of preliminary, though important, information for policy inputs; more comprehensive research and management plans for managing protected areas, forests and other resources of the state will be required.

The book has an enormous amount of data on biodiversity of the state which could lead to developing a comprehensive database having information on spe-

cies distribution, locality, status and uses. Nevertheless, as a whole, the book makes a good attempt to reconcile diverse and scattered biodiversity-related scientific information together and I am sure that, for those interested in conducting research in this state on conservation, this volume is a 'one-stop shop' and is worth purchasing for the library shelf.

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**Health Psychology: Theory, Research and Practice.** David F. Marks, Michael Murray, Brian Evans and Emeé Vida Estacio. SAGE Publications India Pvt Ltd, B1/I-1, Mohan Cooperative Industrial Area, Mathura Road, New Delhi 110 044. 2011. xv + 597 pp. Price: Rs 595.

This book has all the components that are required to gain knowledge, to learn and to carry out research in specific areas that have hitherto not been explored in depth in the field of health psychology. It caters well to the needs of students of health psychology at the undergraduate and postgraduate levels, academicians, researchers, paramedical personnel as well as medical professionals. Keeping the requirements of diverse stakeholders in mind, the authors have sequenced each chapter in a scientific manner. This makes the content more valid and reliable, and gives ample scope for further research, especially with inputs on the particular domain discussed, at the end of each chapter.

The entire content is presented in four parts, covering the major psychological issues in healthcare. The first three chapters under Part 1 give a good introduction to the subject and its place within the global, political and social contexts. This helps readers to go through the content keeping the demography of the place in mind, while understanding the causes and effects of ill-health of the population under discussion. It is interesting to read the outcome of the Whitehall studies, in which it has been stated that a combination of high demand and low control contributes to ill-health; control is less when a worker is lower in the hierarchy, and therefore such a worker is unable to respond effectively if demands are increased. The effect of work stress on mental and physical health is explained with other supportive research. It has been noted that racial discrimination, ethnocentrism, differences in socio-economic status, behavioural, personality and cultural differences are the reasons for poor health in minority ethnic groups. This provides a clear message on the possible policies to be adopted for improving the health gradients of socially and economically weaker sections of the society.

It is true that socio-economic status and wealth are strongly related to health, illness and mortality. In the third chapter, the authors give psychosocial explanations for these social variations. Through the next chapter on culture and health we understand that the end result has a connection to each of the practices discussed under the Chinese, Taoist, Buddhist and Indian philosophies of health. The dominance of the biomedical perspective is also discussed in a section on alternative medicine. It is interesting to know that complementary and alternative medicines are gaining popularity and respectability in the Western healthcare system. The authors have discussed the different health practices in different countries. This would help medical practitioners adapt suitable intervention strategies for patients from diverse cultural and ethnic backgrounds. The following chapter on research methods is sure to cater to the needs of research scholars, academicians and students.

Part 2 of the book is useful for all, irrespective of their profession, including the common man who is interested in learning about health. It presents authentic information arising out of research