

BOOK REVIEW

LANDSCAPES AND LANDFORMS OF INDIA, Vishwas S.Kale, Editor, Published by Springer, 2014. Pages: 271. Price: Rs. 8254.00.

Different landforms of the surface of the earth not only help us to understand the materials and processes responsible for their (landforms') origin but also help us to reconstruct the history and evolution of the surface of the earth. This comprehensive account of 'Landscapes and Landforms of India' dealing with large geomorphic provinces covering the entire country, is only one of its kind presenting an almost complete picture depicting and describing the landscapes and landforms penned by a group of 31 earth scientists from India and abroad and is so well brought out through 27 contributions by the efforts of the Editor (Vishwas S. Kale) of this volume under World Geomorphological Landscapes series with Piotr Migon of Wroclaw, Poland as the series editor. There are two approaches to study an object—observe the large object first and then to go after its smaller details or go after small parts (of a large object) first and then next to the whole object. Especially in the earth science it will do a lot good if earth scientists know in some detail, first, the larger regions and provinces in general and then to work out their smaller details with the full knowledge of the form, materials and processes of the larger province. So, this book fulfils an urgent need for a 'synoptic view' of India in terms of landscapes and landforms of larger geomorphic provinces.

Basically the configuration of the earth's surface is the result of earth-building processes generated by endogenic forces within the earth's interior. Quite rightly the first article in the very first part of the book lays out the geological and tectonic framework of India providing a context to geomorphic development. This initial surface undergoes changes essentially because of erosion; and, erosion starts after the surface had been acted upon by various weathering processes influenced by climates of the past and the present. Of course,

deposition which follows erosion, also brings in changes on the surface of the earth affected by several geomorphic agents – wind, water, glaciers, marine currents, waves etc., – which in turn are related to climate. The editor has thoughtfully placed a paper on the past and present climates of India as the second paper in the first part. The first part of the book is logically concluded by an article by the editor himself on the macro-scale geomorphic history and landscapes of the three large physiographic divisions—the Indian Peninsula, the Himalaya mountains and the Indus-Ganga-Brahmaputra plains of India. With the background thus set in the first part, the book with 'lavishly' adorned photos and maps offers five papers on the meso-scale geomorphology of India's major geomorphic provinces—the mountains, the plains, the peninsular plateaus, the Thar desert and the coastline in the second part.

If the first part can be called a skeletal framework, the second part of the book puts flesh into it and the third part infuses blood into the book. The third part containing eighteen papers deals with relatively micro-scale landscapes and some large important landforms from different geomorphic provinces. The papers in this part include landscapes and landforms of high-altitude cold desert, Siachen glacier, the valley of Kashmir, the *duns* in the Himalayan frontal zone, the Chambal badlands, the Kosi megafan, landforms of Sikkim-Darjeeling Himalaya, the braided Brahmaputra river in Assam, the Meghalaya plateau, the Sunderbans and Bengal delta, limestone caves within Eastern Ghats, granite landforms in Indian cratons, the Andaman Archipelago, Teri red sands along southern coastal Tamil Nadu, the laterite capped Panchgani table land in Deccan traps, the Lonar crater, the great Rann of Kachchh and the Sambhar lake. With these papers, the picture becomes clear and complete.

The geodiversity of our country is no less unique than our 'unity in diversity'. In the fourth part of the book, Vishwas Kale has come up with a such an article on Indian 'geodiversity', the spectacular 'geomorphosites' and venerable 'geoheritage sites' showing up their potential for geo-tourism by showcasing not only sites like Ajanta caves excavated in basalts of Deccan traps, the monolithic temples and associated features of Mahabalipuram in Tamil Nadu carved in massive charnockites and several historical monuments carved in granites at Hampi, but also the breathtaking views of glacier capped hills, Western Ghat (*Sahyadri*) escarpments, waterfalls, mighty rivers etc., which when viewed one can get to listen and see the 'sermons in stones and books in the running brooks.' It is first of such a kind of article on India in any book or journal. There have been contributions on most of these landforms in sketches or in detail in different publications within India, but unfortunately these have not been within the reach of the Western earth scientists. A very notable feature of the present volume is that in a number of articles quantification of the periods of evolution of the surface features has been attempted, using modern available techniques.

The book published under the patronage of International Association of Geomorphologists (IAG) is an invaluable gift to the geoscientific community of India in particular and to the world in general. The editor has done a meticulous job of selecting geoscientists who are eminent in their own fields and well versed with landscapes and landforms about which they have written in their respective article.

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