

Valley was declared as a National Park.

The articles in the first part repetitively state the above-mentioned history of events during the period of struggle. But as the editors have mentioned in the preface, the context of the theme of individual articles would have been lost if this repetitive information was edited. Hence, as the name of the book suggests the first part gives justice to the whispers of the common people who voiced against the destruction of the Silent Valley forest.

It is interesting to know when the Silent Valley came into limelight as a heritage of tropical rain forest for the modern world. According to various articles in the book, in the early seventies inventories were done for the study of the lion-tailed macaque, the endangered primate which followed a series of inventories on birds, plants and other animals in the area. Two major works on the fauna and flora in 1977 probably proved the Silent Valley to be a treasure trove of the tropical rain forest ecosystem. Most of the articles on the flora and fauna are mainly of checklist nature; a few of them are on ecology and biogeography of the organisms. Hence, for taxonomists the book is a treasure of various details of the tropical forest species like orchids. Many articles on natural history try to emphasize the similarity between the Silent Valley biota and the Sri Lankan forest biota. Dominance of Orchidaceae family in the Silent Valley and in Sri Lanka is one of the examples. Excellent treatment of family Orchidaceae in the Silent Valley is given in the book with a description of 54 genera and photographs of several orchids including *Ipsea malabarica* which was recorded after 130 years in 1982. It would have been useful for the students to have a key for such rare descriptions of the family Orchidaceae. Interestingly, Silent Valley is ranked low in terms of wild relatives of cultivated plants in the area compared to the other parts of the Western Ghats like Pulney hills, Agasthyamalai ranges, Coorg, etc. Species of family Araceae are economically exploited all over the world. But inventories are done rarely specifically for the species of this family. The account on family Araceae describes 9 genera with 21 species along with a genera level key.

There is a record of 315 species of animals, of which 28 species are new additions, 8 are new records for India while 37 species are new records for the Western Ghats. With all these efforts scientists have claimed the unexplored potential of the Silent Valley for a large number of insect species. The ecological study on the lion-tailed macaques and Nilgiri langurs about the choice for food-plants shows the web of life in the tropical forests and the bleak future of these interlinked species due to habitat destruction.

In a nutshell, the book is everything about the Silent Valley. It forms a good documentation of its history as well as its flora and fauna. In India, such kind of documentation for a national park is rare. The Kerala State Forest Department has shown a progressive attitude by bringing out this book.

A major lacuna in this book is that none of the articles, especially in the first section, analyses or compares the situation in the 1980s and in the present after 21 years, when the book was published. The obvious curiosity of any layman to find out what were the circumstances which forced the government to bow down to the people's opinion is not even partially fulfilled. The merits of campaign lie with the literacy and progressive attitude of the people of Kerala. The Silent Valley people had fought against the interests of Government of India. But imagine a situation when there are more than one party having vested interests in the benefits of a project. It is beyond the scope of this book.

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**Dynamic Himalaya.** K. S. Valdiya. Universities Press (India) Limited, 3-5-819, Hyderguda, Hyderabad 500 029, 1998. 178 pp. Price: Rs 160.

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The Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore, publishes Educational Monographs, which address the needs of students at the graduate and post-graduate levels,

and the general research community. The book under review is a recent addition in the series. Perhaps there could not have been a better choice of author and the subject to make the present monograph very attractive, exceedingly interesting and quite useful for students and teachers and also all other interested readers. This small book (178 pp.) embodies a scientific synthesis anchored in an exceedingly large volume of work, quite a significant part of which is based on the author's own extensive studies made during the last four decades. For the understanding of general readers who may not have a strong background knowledge of the subject, the author portrayed a quite simplified picture of the evolutionary history of the colossus called the Himalaya. In doing so he did not seem to have compromised with the scientific truths in any significant way. However, in process of simplifying facts mainly for the sake of the general readers, some broad generalizations have been made, which may not be outside the scope of critical scrutiny.

The Himalaya, the highest mountain on the land, is also the most conspicuous geomorphic feature on the surface of the earth. Appearing as chains of arcuate ranges, the Himalaya not only defines the geographic boundary of the Indian subcontinent, but it has also contributed a huge bulk of sediments in building up the largest flood plain on its lap. This great fertile flood plain was destined to become the cradle for human evolution, and a very congenial setting for the growth and development of one of the oldest civilizations in the world. Besides forming a geographical barrier, the Himalaya greatly influenced the atmospheric circulation of the Asian continent. It not only protects the subcontinent from the cold northerly blasts, but is also responsible for the monsoon climate typical of the region.

In tracing the evolutionary history of the mountain, the author emphasized Purana (= Early to Late Proterozoic) antiquity of the Himalayan sedimentation. In the time-scale showing evolutionary history of the Himalaya, the date of the start of sedimentation is indicated at 2050 Ma (Ma, million year age before present). The cessation of sedimentation by around Ordovician has been related to the Pan-African diastrophism. The next phase of sedimentation report-

edly began around 290 Ma, with rifting and volcanicity.

Some readers having penchant for accuracy may find it difficult to link the Purana and Palaeozoic sedimentation and volcanicity with Himalayan evolution. Firstly, the new ideas on the early Proterozoic–Mesoproterozoic crustal evolution that emerged during the nineties of the last century virtually centre on the conception of a pre-Gondwana Rodinia supercontinent having a continent–ocean framework totally different from the Jurassic–Tertiary setting. Secondly, the difficulty in relating the youngest Proterozoic and the possible early Palaeozoic sedimentary basins' evolution in the north-western and northern parts of the Indian shield to the Himalayan cycle is the fact that the contemporary sediments occurring outside the Himalayan domain were not affected by the tertiary diastrophism. The sediments that occur as outcrops and sub-crops in the Punjab and Marwar Plains are the case in point. We cannot relate any Purana and Palaeozoic sedimentation and volcanicity with Himalayan cycle simply because of their involvement in the Himalayan orogeny. Furthermore, the intrusions of essentially anorogenic early Palaeozoic granitic masses observed in the sub-Himalayan and 'Tethyan' zones are not typical only of the Himalayan domain, but have been recorded over a very large area virtually covering the peripheral region of the Indian continental block (Roy, A. B., *Gondwana Res.*, 1999, 2, 193–198).

The precursor history of the Himalayan orogeny might have started with the Gondwana rifting and Permian volcanicity simultaneous with the opening of the embryonic 'Tethys'. But then the real stage of the truly Himalayan cycle

was set with the Jurassic break-up of the Gondwana supercontinent and initiation of the 7000 km lonely journey of the Indian crustal block to the northern domain. With beautiful and highly instructive illustrations, the author related the fascinating story of how the Indian continental block left the 'Gondwana homeland' and started moving northward along with Madagascar, Seychelles and Sri Lanka. Large contributions of volcanic lava flows were added to the Indian shield, while it passed over three fiery fountains of the mantle hot spots, Kerguelen, Crozet and Reunion, in succession. The smaller crustal blocks of Madagascar, Seychelles and Sri Lanka parted company of the Indian crustal block in succession.

The northern margin of the Indian shield, which remained passive till Jurassic, changed into a 'leading edge' with the onset of its northward journey. As the Tethys Sea between the Indian continental block and the Eurasian continent began to shrink to smaller sizes, chains of volcanic island arcs and seamounts appeared close to the active margin (leading edge) of the Indian continental block. A significant biological development that took place in the north-western part of the Indian shield is the sudden colonization of some vertebrate animals and frogs, which were originally residents of Mongolia, China, Siberia and Central Asia. The event, particularly the migration of frogs which are highly allergic to saline seawater, is a testimony to the establishment of land bridges across the remnant of the Tethys prior to the tectonic paroxysm of the continental collision.

In the subsequent chapter, the book describes the minutes of events that followed the collision and welding of the Indian crustal block with Eurasia.

One spectacular effect of the collision on the geomorphology of the Indian shield is the complete reversal of drainage in the northern part. The Himalayan front was then undergoing one of the most violent tectonic movements. The extreme violence led to new creations, firstly in the form of extensive fluvial deposits (the Siwalik sediments) in the foreland areas, and finally the filling up of the great depression that was created in the northern part of the Indian shield due to its 'ducking' under the Himalaya. By this time the Himalaya had become a snow-covered 'abode of Gods'. Virtually coinciding with these final tectonic activities in the Himalayan–Indian terrance, man appeared on earth perhaps to see nature's new creation. The author completes his story by suggesting how the continued dynamism of the Himalayan evolution is intermittently shaking the Indian shield, generally considered as a stable continental block.

Because of its small size, and highly erudite illustrations with pleasantly coloured photographs, the book makes reading aesthetically and scientifically a very enjoyable experience. Of course the most satisfying aspect of the book is its crisp appearance and a quite low and affordable price-tag. Written in a very simple manner, the book sets a classic example how science (in this case the Earth Science) can be popularized without compromising on scientific facts. I am sure that this book is going to decorate the shelves of many individuals and institutions.

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