
Preface

With the exception of the work carried out by a handful of early explorers, intensive geological investigations in Nepal began only in 1951, exactly 100 years after the establishment of the Geological Survey of India. But, soon after, the geological literature on Nepal began to grow exponentially, and presently the number of publications has become too numerous, and the information is scattered worldwide through various books, periodicals, and unpublished reports in more than seven languages. Therefore, it is desirable to gather, amidst many details, the important geological knowledge of the Nepal Himalaya and to go through the prevailing concepts, behind the formation and development of this towering mountain range of the world.

This book has ensued from my research into the existing geological literature as well as its developmental trend in the Himalaya. While preparing the book, I have also drawn on my own geological investigations over the length and breadth of Nepal as well as its surrounding regions. Consequently, I felt it necessary to preface this book also with a few words on the epistemic aspect of geological research in the Himalaya. Geological investigation in the Himalaya, not unlike in any other part of the earth's crust, has to deal primarily with information gathering, based on some conceptual connotations. Indeed, to trace even a simple geological contact, some theoretical background is necessary. However, one of the distinctive attributes of Himalayan geology is the proliferation of views on various geological phenomena, operating in this majestic mountain realm. The geological literature of the Himalaya is beset with the origin, evolution, and demise of such diverse concepts and ideas. At first glance, the geological literature of the Himalaya may seem to be overwhelmed with such conundrums or contradictions and the science of geology in a state of disorder. However, a deeper insight into the subject matter may bring out an order out of the chaos. These theoretical discourses were so vital that they provided ample impetus to carry out intensive research in this classic collided orogen. As a result, albeit gradually, a clearer and more beautiful geological picture of the whole Himalayan Range has come into sight.

The centrally located Nepal Himalaya is expediently circumstanced for the study of Himalayan geology with its diverse dimensions. It is in the Nepal Himalaya, where most theories and concepts have flourished in the past 60 years of time. Though it is a relatively short interval, if we take into account the last 200 years of intense and exhaustive investigation of the Himalaya by a gamut of researchers from various countries of the world, the outcomes have proved to be astonishingly fruitful in their application to the whole Himalayan Range and also beyond its borders.

Geologists do not spend whole of their life in theoretical discourses alone, but they do produce a range of geological maps, immensely useful to the governmental as well as private organisations in their endeavour to develop construction material- or mineral-based industries, hydropower projects, or road networks, to extract groundwater, and ameliorate land with irrigation facilities. Such scrupulously drawn maps are also inevitable for petroleum exploration, urban planning, natural hazards assessment, and environmental protection. Therefore, many detailed geological maps of some particular areas are included in this book. Since more than two-thirds of the total area of Nepal is hitherto unmapped on a large scale, there remains much research work to be carried out in the future. In fact, one of the root causes of many

contradictory opinions on various geological processes is the state of poor geological mapping. Ironically, some earlier maps portray the field reality more accurately and vividly than those heavily laden with specific theoretical conjectures.

It is endeavoured to bring together, through this book, the geology of the whole Himalayan Range of Nepal, i.e., from the graceful grasslands of the Ganga basin on the south to the towering Tethyan zone on the north. Though many writers have chosen to discuss the geology of the Himalaya from south to north, this book is arranged somewhat differently. It is because, the limits of various broad geological divisions are not always distinct, and it is desirable to follow the geological convention of dealing with the oldest units first. Hence, after giving introduction to the Himalaya and neighboring regions, the book describes the oldest sequence of the Lesser Himalaya, and it is followed by the Higher Himalaya, Tethys Himalaya, Siwaliks, and the youngest Terai and intermontane basins.

It is my belief that without a comprehensive look at the various Himalayan terranes, it is practically impossible to grasp fully the process, operating behind the formation and development of the spectacular Himalaya. However, it is not intended merely to document all the scientific ontology, but an attempt is made to reveal a sound basis to the prevailing concepts. It is anticipated that the book will help the reader to move forward from a cognitive approach to a constructive one with the praxis of linking a variety of knowledge, including the earlier inferences or views and contemporary theories or models, where the intent of both the past and present researchers is more or less the same, but their investigation process can be different.

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Megh Raj Dhital

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Dhital, M.R.

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