

BOOK-REVIEW

Introduction to Geomorphology

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This is the most comprehensive, simply written, well illustrated introduction to modern geomorphology for the use of university students in India. The rivers and glaciers, deserts, seacoasts, limestone caverns - all these, and the associated features, with an emphasis on the tropics, are described concisely and illustrated with photographs and drawings. The index entries make information easy to find. It is a book for all those initiated in landscape studies.

Landforms and the processes that made them have more than purely scientific and esthetic significance. In many ways, what happens on and within the earth's crust continuously affects human beings and, indeed, all other living things. Earthquakes and landslides, advances of glaciers and flooding by rivers, gullying in fields and erosion of beaches, subsidence of land and eruptions of volcanoes - these are but a few of the processes that create landforms. With the understanding of the underlying processes we can appreciate them, somewhat control them or, at least, learn to live with them.

The book is an introduction to landforms in India. There are illustrations and descriptions of features, processes and their application, with many examples from localities in India. Features shown and

described are those most likely to be seen by even a casual observer. It is an informal guide in the field and a classroom companion telling in a simple language how landforms originate and evolve.

It is to be noted that the text on geomorphology includes basic information for students with no background in geology and who intend to use the knowledge in another field such as ecology or waste management, however, it elaborates more advanced concepts for students at the senior level. It lucidly explains such aspects as weathering, fluvial processes, the topographic expression of strata, quaternary climatic changes and the ice ages, and dating geomorphic and sedimentary features. It focuses on the interpretation and understanding of geomorphic processes and examines how these processes affect the origins and development of landforms.

The book reaches beyond the study of surface processes, it contains discussions on the evolution of landforms and interpretation of their origin and reflects the increasing relevance of geomorphology to environmental problems and the additional emphasis placed on more applied aspects of the field.

The concepts of weathering and soil formation, hillslope stability and failure are written very well and satisfy

the needs of students. It introduces and reviews the science of geomorphology, explaining what it is, how it works, brings to light the recent advances that have caused a renewed interest in the field, which includes data from a variety of disciplines, including geodesy, seismology, and Quaternary climate change.

Providing fundamental discussion of rocks and minerals, regolith properties and chemistry, hydrological inputs, this book considers many landscape situations and features, whilst linking process to position, geochemistry and time. Presenting information from an Indian perspective, it provides new insights into the subject, which are developed away from the yoke of traditional ideas and concepts. It presents a new approach to the problems of

understanding regolith geology and landscapes. All the chapters present views on landscapes and their evolution, the nature of minerals, the behavior of water at a landscape level and the exploration of water behavior at various scales.

A special mention must be made of the chapter that discusses the relationship between geomorphic processes and sediments. Various techniques that are available for examining surface and subsurface deposits, methods for observing and dating sediments are described at length. Discussion on the application of geomorphology in various situations such as urban flooding, effect of large dams, coastal erosion, and the role of geomorphology in environmental management in general is the most useful section of the book.

Volcanism and earthquakes

are not discussed in a conventional manner. They are referred in the context of plate tectonics and as natural hazards. A major part of the book is devoted to the discussion of fluvial processes and the associated landforms. The discussion on glacial and coastal processes and landforms is sometimes abrupt and does not give a complete picture of the landforms created by these processes in India. This, however, does not detract from the value of the book, which is a good summary, a source, and a general reference not only for students but also for working professionals in mineral exploration, environmental sciences, geomorphology, and related fields.

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