

Preface

Everybody knows about landforms. They are ubiquitous “beings” which cover the world, even within the landscapes modified by man. We all live in a world made of landforms. Sometimes, they seem to us perennial from the dawns of history as effigies of an eternal world, but other times they look so fresh and young, mobilizing sediments, with versatile configurations. The past and the present come together into the same landform; the evolution and the landscape metamorphosis proceed gradually but the rhythm of change is very different, often incredibly slow surviving to our lives or even to existence of mankind while here and there a “whole” world vanish in a few minutes. All these perceptions that senses bring to us define our imagination and finally build our perspective about the world. Happily the man travels all over wondering how the Earth and landforms exist!

This book tries to present the beautiful and awe-inspiring range of landscape features from the glaciers and their action upon high massifs to coastal dunes or subaqueous landforms of the shoreface. This volume is about the diverse landforms of a country where various environments adjoin. Nevertheless, the laws which govern the way which landforms evolve are the same world-wide, but the infinite influences of the modelling agents create always individual features which remain unique as the human face. Moreover, large-scale landscapes as the Danube Delta or Retezat Massif could look very different from any other delta or mountain so that the understanding of their evolution more than applying general geomorphological principles requires site-specific processes research or even to conceive new research methods.

This volume contains a series of new studies grouped in eight parts mainly depending on the geographical environment.

Part I resumes the most recent knowledge and interpretations of the Romanian Carpathians formation and explains the presence of the large morpho-structural units (Mațenco), whereas their sub-aerial shaping can be more readily understood following the reconstructions of climate conditions (Perșoiu) and vegetation distribution in the last 15,000 years (Feurdean and Tanțău) covering the geographical area of Romania.

Part II brings the newest data and interpretations in the field of glacial and periglacial modelling of the Romanian Carpathians, from the history of deglaciation in the Carpathians (Popescu et al.) to the distribution and characteristics of mountain permafrost (Popescu et al.), the review of knowledge on periglacial processes and deposits (Onaca et al.), thermal weathering of mountain rock slopes (Vasile and Vespremeanu-Stroe) and the morphometrical analysis of glacial cirques (Mîndrescu and Evans). The complex evaluation of glacial and periglacial geomorphosites (Comănescu and Nedelea) closes the part dedicated to mountain geomorphology in this volume.

Part III is dedicated to mass movement processes, with the main focus on landslides. The Romanian contributions to the systematic of mass movements is critically reviewed (Micu), completed by detailed approaches and high-technology inventory and informatics processing of landslides for two different geographical areas (the Moldavian Plateau—Mărgărint and Niculiță; and the Curvature Subcarpathians—Micu) and for debris flow activity in mountain areas (Pop et al.).

Part IV, dealing with soil erosion, combines the researches of agronomists on sheet and rill erosion (monitored for 12 years on experimental plots—Popa) with the ones of geomorphologists in gully erosion rates' assessments (Rădoane and Rădoane) and with the progresses made in the mathematical modelling of soil erosion (Patriche). The applications are set in one of the most highly degraded regions of Romania—the Moldavian Plateau.

Part V (Rivers) discusses fluvial landforms and processes in relation to the time required for essential changes to take place: longitudinal profiles which modify their shape during millions of years with implications in relief evolution (Rădoane et al.); rivers behaviour and the formation of sedimentary complexes of floodplains during the transition from Pleniglacial to Late Glacial (Perșoiu et al.); Holocene fluvial activity highlighting the large floods and their implications in the sedimentary architecture and the formation of river terraces (Perșoiu and Rădoane); adaptation of riverbeds' shape (planform and cross-section) to climate changes and human interventions during the last 150, 100 and 50 years (Rădoane et al.).

Part VI deals with the evolution and present dynamics of the Danube Delta and the Romanian Black Sea coast. A new vision on the formation and the evolution of the Danube Delta is presented, in the light of the newest data gathered by the authors (Vespremeanu-Stroe et al.). Distinct sections are dedicated to coastline evolution during the last 150 years (Vespremeanu-Stroe et al.), cliffs retreat on the southern Romanian coast (Constantinescu) and medium-term (decadal) morphodynamics of the coastal foredunes (Preoteasa and Vespremeanu-Stroe) and deltaic shoreface (Tătui and Vespremeanu-Stroe).

Part VII presents the problem of sediment route in various geomorphologic systems. The succession of erosion–transport–sedimentation geomorphological processes is the key for understanding of sediment transport from the source area (Dumitriu et al.) towards riverbeds (Rădoane et al.). Loess accumulation in the Romanian Plain and Dobrogea (Timar-Gabor et al.) and of fine sediments in small mountain lakes (Mîndrescu et al.) have been used to refine high-resolution

chronologies and to reconstruct palaeoenvironment conditions at the time of these sediments deposition.

Part VIII (Geomorphologic hazards) closes the volume discussing those climatic, hydrologic and geomorphologic processes capable of generating geomorphologic hazards and disasters: snow avalanches—Voiculescu; mass movements—Micu et al.; river floods—Grecu et al.; coastal storms—Zăinescu and Vespremeanu-Stroe. These analyses prove and highlight the necessity of estimating, on a solid basis, the risk associated with these processes, in the benefit of land administration.

Finally, we hope that geoscientists, specialists in environmental planning, practitioners in water and land-use, territorial unit administrators as well as academics will find this volume valuable concerning the landform dynamics and evolution and necessary for future prediction of landscape changes.

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