



Landslides - types, mechanisms and modelling, edited by John J. Clague & Douglas Stead, 2012. Cambridge University Press, Cambridge, Great Britain (order through www.cambridge.org/uk/bookshop). Hardcover, 434 pp. Price US\$ 150.00. ISBN 978-1107002067.

In 2008, a rockslide on the 'Sea-to Sky' Highway (Highway 99), connecting Whistler and Vancouver, closed my way back to Vancouver, forcing my husband and I to take an alternative route adding ~400 km. That in itself was already a good reason to read this book, but I am already interested in the evolution of landslides under different climatic conditions.

It is well known that landslides can occur anywhere, and they range from microscopic rock fragmentation to giant submarine slope failures triggered by earthquakes, rainstorms, snowmelt, slope undercutting and many other factors. The book under review, which contains 32 contributions in 3 main parts, deal with many of these aspects.

Landslide types and mechanisms are dealt with in the first part, which gives a classification of landslides, an overview of landslide hazards and risk in the context of natural processes (the contributions by Korup, and by Clague & Roberts), as well as an overview of landslides triggered by various causes, ranging from seismics (Hovius & Meunier), to large-scale instabilities on stratovolcanoes (Waythomas), to rock avalanches (Davies & McSaveney; Hermanns & Longva). Debris flows, their characteristics and risk are discussed by Jakob & Holm, and by Torrance. The latter author describes 'quick clay', which behaves as a liquid when its structure breaks down. 'Quick clays' are mostly remnants of Pleistocene glacial deposits and can occasionally reach thicknesses up to 20 m. Submarine slides (*e.g.* simple slumps, retrogressive slumps, large and complex landslides, blocky disaggregated landslides, and transitional forms) are discussed by Piper *et al.* Some landslides have been responsible for tsunamis, like in Norway (Bornhold & Thomas). A general overview of landslides in cold, temperate and tropical mountains in the context of paleoclimate changes is presented by Huggel *et al.* The last contribution in this first part of the book, authored by Fell *et al.*, should, in my opinion, have been the book's opening chapter, because it deals with bedrock influence on the mechanisms of landslides, which is a fundamental issue.

The second part of the book deals with numerical modeling of slope failure (Stead & Coggan; McDougall *et al.*) and with methods of landslide risk reduction and mitigation, like with InSAR, LIDAR, mapping techniques, methods of assessing the stability of slopes, and monitoring techniques (Petley; Griffiths & Whitworth; Jibson; Eberhardt; Bromhead *et al.*; Frattini *et al.*). Agliardi *et al.* describe "sackung", a not so obvious type of landslide. It is caused by large mass movements in a high-relief valley such as present-day glacial valleys, and is called in short as DSGSDs (deep-seated gravitational slope deformations). Picarelli *et al.* discuss the role of groundwater in slope stability.

Various kinds of landslides are discussed in the third part of the book. The examples come from different regions worldwide: Switzerland (Jaboyedoff *et al.*; Loew *et al.*), Canada (Froese *et al.*; Kalenchuk *et al.*), Norway (Blikra), Italy (Fasani *et al.*; Ghirotti), Hong Kong (Hencher & Malone) and China (Chigira *et al.*). Landslides from other bodies of the Solar system (Mars, Venus and a moon of Jupiter) are dealt with by Bulmer. The geological setting, monitoring methods, landslide triggers and an evolutionary model of the landslide are presented in each of these contributions.

This book belongs without any doubt in the libraries of all libraries of geology and geomorphology departments. Individual researchers dealing with landslides may want to have a private copy. The book would - in my opinion - have been more valuable, however, if the editors had included contributions about the rheology of landslides and about fluid mechanics; perhaps a suggestion for the next edition. I want also to emphasize here that the book is not a guide for people who map landslides:

they will not find detailed methods for the purpose. The book rather provides general information about various kinds of landslides. In summary, this book is interesting, but not for all geologists.

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