



Mid-latitude Slope Deposits (Cover beds), edited by Arno Kleber & Birgit Terhorst, 2013. Developments in Sedimentology 66. Elsevier (order through: <http://store.elsevier.com/product.jsp?isbn=9780444531186>). 302 pages. Hardback: price EUR 140.00, ISBN 978-0-444-53118-6; e-book: price EUR 70.00.

The ubiquity of hill slopes and the unrelenting action of gravity make products of weathering move downslope. It is therefore astonishing that the interest in slope deposits is only marginal. Many sedimentology textbooks do not even pay attention to slope environments at all, and during geological mapping these deposits are often approached as a nuisance which hampers access to the 'really interesting stuff' hidden below them. Yet, slope deposits are worth closer scrutiny for several reasons. With respect to economics-related aspects, they support soils and influence their properties; they may become unstable and pose hazard to humans and infrastructure; their properties may become a key controlling factor of linear erosion; and they control the rate and pattern of movement of shallow groundwater. At many locations they are at least partly relict and, as such, they are potentially paleoenvironmental archives. The book under review provides convincing evidence how interesting slope deposits and their depositional environments are; it can only be hoped that their book will play an important role in bringing back in focus this somewhat neglected topic.

The reader should, however, before reading the main chapters, carefully read the introductory chapter, so as to realize the limitations of the volume. First, the book is essentially a summary of work carried out in Germany (although several chapters contain attempts to use the framework developed in Germany to explain the origin of slope deposits elsewhere), with little cross-referencing to data and concepts developed in other regions. Second, the coverage is effectively restricted to deposits originating from rather slow downslope movement, with solifluction as the main formative process, with an admixture of eolian material. Hill-slope deposits arising from wash or more sudden events such as landsliding, debris flows or rockfall are not considered in detail. Thus, the title is a bit misleading and announces more than we actually get. 'Periglacial hill-slope deposits in mountains and uplands of Germany' might have been a more appropriate title.

The book's scientific content is divided into seven main chapters. It begins with a lengthy treatment of hill-slope deposits (cover beds) in Central Europe (nearly one third of the main body of text), followed by an examination of the influence of cover beds on soils, and then on slope hydrology. Chapter five deals with geotechnical properties of cover beds, illustrated by two case studies. The next chapter is an attempt to transfer the concept of cover beds to other lowland (Russia), upland (Turkey, U.S.A.) and mountain terrains (European Alps, U.S.A.) in the mid-latitude belt. Chapter seven introduces the complex subject of dating cover beds, again using two case studies, one from southern Germany and the other from the western United States. A few pages of conclusions, including identification of research targets for the future, close the main body of the volume, which is then followed by an extensive, 37-page bibliography. Color versions of the figures can be viewed on the publisher's webpage, as a certainly not ideal compensation for the fact that the figures in the book are printed in black and white only.

After having read the book, my main impression is that it is not about hill-slope deposits as such, but rather about one particular model of their occurrence and origin, developed and apparently widely accepted in Germany. In essence, hill-slope deposits are stacked successions

of three layers, termed 'basal layer', 'intermediate layer' and 'upper layer', all of which are products of downslope transport of weathering products under periglacial conditions. Although the editors admit in the Conclusions that “every new area under study delivers individual characteristics”, the primacy of the model is apparent throughout the book. This observation is reinforced by the fact that no alternative hypotheses or scenarios of the origin of stacked hill-slope deposits are discussed, and it is in this context that the restriction to German literature only adversely impacts on the strength of the argument. For example, a long tradition exists in Great Britain of investigating periglacial hill-slope (head) deposits, neatly summarized by Ballantyne & Harris (1994), but none of the relevant publications are cited. Likewise, very little French research is referred to. It is even more disappointing to see that no attempt was made to look beyond the eastern border of Germany and to make use of Polish and Czech literature, in which a wide range of works focused on periglacial slope deposits can be found (in English, so no language barrier exists), focused on the same 'subdued mountains of Central Europe' which are covered in Chapter 2.

A confrontation of ideas would have been particularly useful since models of slope successions, advocated by, among others, Alfred Jahn, seem to differ from the model heavily promoted in the book under review. Thus, while I am well aware of the wealth of information and inspiration in the volume, my general recommendation to researchers of hill-slope deposits in the subdued mountains of Central Europe (and beyond as well) is to record cover-bed characteristics first, and only subsequently, using extreme caution, check if the described successions fit the model promoted in the book.

Taken all together, the book is a good reading and it was an appropriate decision to include it into the series 'Developments in Sedimentology'. It gives the reader a unique insight into the output of a big research school that flourishes in Germany, and that is not easy to access otherwise. As said before, the book will be a source of inspiration and it will serve as useful reference material for the international readership. However, it is not the balanced coverage of hill-slope deposits in the mid-latitudes that I hoped for, and the readers should bear this in mind; otherwise they may be trapped by the 'three-layer model' if they do not pay due attention to other models.

Reference

Ballantyne, C.K., Harris, C., 1994, The Periglaciation of Great Britain. Cambridge University Press (Cambridge), 330 pp.

Piotr Migon
University of Wrocław
Wrocław
Poland
e-mail: piotr.migon@uni.wroc.pl