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Editorial

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This special issue contains papers presented at the conference 'The Meuse Valley: 15,000 years of (A)biotic Landscape Development and Human Impact'. The conference was part of the annual meeting (Palynologendagen) of the Palynologische Kring (Dutch Palynological Society) held on 9 and 10 October 2014 at the Castle De Berckt in Baarlo (province of Limburg).

The papers presented here all have as their subject the Meuse valley in the Dutch province of Limburg, and a great variety of topics are addressed. They range from the long-term relationships between landscape (e.g. fluvial systems), climate and vegetation to human occupation and policy and present-day spatial planning.

The paper by Kasse et al. discusses the development of the Roer River, a tributary of the Meuse, during the Late Pleniglacial, Late Glacial and the Early Holocene. The authors base their results on geomorphological and sedimentological analyses combined with pollen analyses, while optical luminiscence-dating results provide a chronostratigraphic framework. One of the conclusions is that the main forcing factors for fluvial system change in the Roer River valley are climate- and vegetation change, and the downstream base-level control by the Meuse.

The second paper, by Hoek et al., describes the development of the Late Glacial and Early Holocene river terraces and vegetation in the northern Meuse valley, based on a detailed digital elevation model, and a compilation of >50 palynological records, dated by *c.* 35 radiocarbon dates. They conclude that the major trends in vegetation development are similar in timing and composition to that of the general development in the Netherlands during the Late Glacial and Early Holocene.

Bos and Van Geel reconstruct the palaeoenvironment during the Early Holocene around Haelen, in the middle Meuse valley. The Haelen record shows that the Late Glacial/Early Holocene transition is characterised by a period of abrupt warming and expansion of birch forests, known as the Friesland Phase. This is followed by two short climatic oscillations, the dry and continental Rammelbeek Phase and the wetter Late Preboreal. Despite the absence of archaeological remains, the record suggests that fires occurred during the Preboreal, and that trampled areas and disturbed grounds were present, possibly indicating the presence of Early Mesolithic people in the area. Furthermore, the consumption of Nymphaeaceae seeds and tubers by Early Mesolithic people is suggested. However, archaeological evidence for Early Mesolithic people exploring this part of the Dutch Meuse valley only exists from the Boreal onwards.

The paper of Zuidhoff and Bos reports on sediment and vegetation change during the Holocene in relation to the human occupation history at a buried Meuse terrace near the village of Lomm. In comparison to other Dutch areas, forests in this area slowly became more open, but remained relatively dense, due to human activities from the Late Bronze Age until the Roman period. Within the Lomm area, however, there was a large difference in composition, distribution and openness of the vegetation. This spatial variation started during the Late Bronze Age, with people starting to use the higher areas for different kind of activities (i.e. habitation, agriculture and livestock herding). As a result, the northern part of the study area became very open during the Early Roman period, while in the lower-situated areas of the southern part (i.e. residual channels, lower floodplain), forest remained present until the early Middle Ages. Due to large-scale deforestation in the area and hinterland, the largest increase in sedimentation occurred after the Middle Ages.

Bakels contributes to this special issue with two papers that discuss different time periods and areas in the Meuse River valley. In Bakels' first paper, a pollen diagram of an abandoned branch infill of the small river Vlootbeek, a tributary of the Meuse, is discussed. The Vlootbeek sediments reflect a long-term development of vegetation from the Allerød to the Middle Ages. However, two hiatuses are present in the upper part of the sediment record. Furthermore, the continuous presence of *Pinus* in the landscape and the high percentages of *Tilia* pollen in the Middle Holocene are discussed. The former is explained by the

general occurrence of a sandy, gravelly subsoil in the Vlootbeek valley. The latter is interpreted as a result of the short distance between the location of the core and the plateau on which *Tilia* will have been the dominant tree. Anthropogenic influence in the area is apparent from the Early Neolithic Linearbandkeramik Culture onwards.

In the second paper of Bakels, the vegetation history of the area around the confluence of the rivers Meuse and Swalm during the Middle Ages is discussed. The pollen diagrams of Swalmen and Syperhof together cover the entire Middle Ages. The medieval landscape starts with a relatively open forest in which some agriculture-related activity occurred. The Swalmen diagram reveals large-scale deforestation phases starting with the construction of a nobleman's homestead around 950. The Syperhof diagram corresponds to a period during which the forest partially returned as an effect of the Black Death in 1349, after a long period of anthropogenic stress. Both diagrams, furthermore, provide evidence of the start of buckwheat growing. In the Syperhof diagram the buckwheat growing was dated exceptionally early, i.e. 1029–1221.

Isarin et al. discuss the construction of a geomorphogenetic map of the Dutch Meuse River valley, commissioned by the Cultural Heritage Agency of the Netherlands (RCE), located between Mook in the north and Eijsden in the south. The map includes the Holocene floodplain and the early Late Glacial (partly) and Younger Dryas river terraces of the Meuse. The geomorphogenetic map formed the basis for a set of archaeological predictive maps of the Meuse valley. In combination, the maps contribute significantly to a better understanding of landscape processes (fluvial and aeolian geomorphology and the impact of man on river behaviour) and the relationship between landscape evolution and human habitation and land-use. The article also gives a brief introduction to how the maps may be used in practice.

Rensink's paper gives an overview of archaeological heritage management in the Meuse River valley since 1995. The archaeological field research conducted in the context of a large infrastructural project ('De Maaswerken') in the Meuse valley differs from regular, site-based investigations in terms of the landscape archaeology perspective on which it was based. The archaeological data were integrated with physical geographical, ecological and historical geographical research, focusing on the long-term relationships and interactions between humans and the biotic and abiotic landscape. The paper also addresses the relationship between landscape evolution, taphonomic processes and characteristics of the archaeological record.

This special issue stresses the importance of close cooperation between scientists from different disciplines. Large-scale archaeological excavations both focusing on the archaeology and landscape have generated many new insights into the geological, fluvial and vegetation development of the Meuse river valley and its tributaries and into the way man used (specific sections of) the Meuse valley through time. We hope that this special issue can help to promote cooperation between Quaternary scientists, palynologists and archaeologists in future projects.

Finally, we sincerely thank the *Netherlands Journal of Geosciences* for facilitating the publication of the papers in this special issue, the authors for their interesting contributions and the many reviewers for their peer reviews.