

In Memoriam: Matthias Kuhle

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Matthias Kuhle, an internationally renowned physical geographer and highly respected geomorphologist, died tragically on the 25th of April, 2015. He was in the Manaslu Himalaya, close to the epicentre of April 2015 Nepal earthquake at Magnitude 7.8, and was fatally injured.



Matthias Kuhle

Matthias Kuhle was born on the 20th of April 1948 in Berlin. He enrolled at the Freie Universitaet Berlin in German philology,

geography and philosophy, completing his studies in 1972 with a thesis in philosophy. During his geographical training he leapt at the chance to participate in a three-month-long expedition to the Central Sahara. This initial exposure helped shape his future career in research based on field work, and wide travels through uniquely challenging environments. In particular, his geomorphological research involved high mountain regions and wide-ranging efforts to reconstruct Quaternary glaciations. His doctoral thesis was based on nine months of fieldwork in the South-East-Iranian Kuh-i-Jupar Massif. He was awarded the doctorate in 1975 at the Georg August University in Goettingen. Thereafter, he conducted months-long research expeditions to the Aconcagua massif in the Andes, to Spitsbergen, and to Greenland. During this research he also turned his attention to periglacial landforms. At the age of 32, he completed his post-doctoral research with a monograph on the geomorphology of the high mountain ranges of Dhaulagiri and the Annapurna Himalaya (Nepal), and was awarded the habilitation degree in geography. Since 1983 he served as a professor in the Institute of Geography

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at the University of Goettingen. For a quarter century, and to his untimely death, he was the director of the section devoted to High Mountain Geomorphology.

From the outset, his research in high Asian mountains was focused on the glacial-morphology of the higher elevations. Beginning with fieldwork in the Himalayas in 1976-77, Matthias Kuhle began to propose a new theory to describe and explain the Quaternary glaciation process in the Himalaya and on the Tibetan Plateau. His theories were imaginative and provocative; they stimulated significant debate among colleagues and have contributed to enhanced research efforts since. In essence, for the Himalaya he envisaged a substantially greater extent of valley glaciation than it was previously assumed. His publications are filled with detailed, if sometimes controversial evidence and sites to support this view. He was one of the pioneers of glaciological and other cryosphere research in the least-visited parts of the Tibetan Plateau. During expeditions in 1981 and 1984 to northern and southern Tibet, he identified geomorphological traces of past glaciations at comparatively low altitudes. In due course, he became convinced that, at maximum glaciation, the Tibetan Plateau must have been entirely covered by an inland ice sheet of about 2.4 million km² in size. He pieced together a wide array of evidence and sites in support of his relief-specific model to explain the onset and trigger of the Pleistocene ice ages. He saw the interplay of tectonic uplift, the increase of albedo at the glacier surface located in subtropical latitudes, and supportive climatic feed backs, as leading to an epoch of global cooling.

For more than 30 years, Matthias Kuhle continued his research efforts, and amassed further empirical evidence for his ice age theory. He explored numerous valleys of the Himalaya and adjoining mountain regions on foot, and in no less than 50 research expeditions. His fieldwork was shared with Chinese counterparts and scientists, including exploration of such logistically difficult and rarely visited areas as the Shaksgam valley, on the K2-North side, and to Mt. Namjagbarwa at the huge, horseshoe-shaped bend of the Yarlung Zangbo River. His ideas stimulated controversial debates, but his ambition was always to produce more evidence based on sound scientific models. When, during the 1998 International Symposium

on the Qinghai-Tibetan Plateau in Xining, the organisers of the Chinese Academy of Sciences acknowledged his theories, he remained modest. In appreciating their recognition he merely asked for further empirical endeavours to broaden the scientific basis for a better understanding of the past glaciations of the Tibetan Plateau. In acknowledgement of his contributions to glacial research in China he was awarded the title 'Guest Professor' from Lanzhou University in 2000. Without doubt, he was one of the leading authorities on geomorphology and glaciology of this high mountain region. His studies have not only enriched and stimulated geographic sciences at national and international level, but also have inspired initiatives in other research fields dealing with the Tibetan Inland Ice Sheet. These have helped promote sustained development of several research centres in China devoted to glaciation on the Tibetan Plateau and the adjacent regions.

Matthias Kuhle's publication record contains more than 240 publications. A centrepiece of his work comprises three monographs and seven extensive volumes entitled 'Tibet and High Asia', which were published in 'GeoJournal'. A comprehensive list of all publications is accessible under the link <http://www.uni-goettingen.de/en/publications-since-1974/409946.html>. In addition he documented his expeditions and their results in several films which gained recognition. He was the editor of the book series 'Geography International' and a member of the editorial board of the 'Journal of Mountain Science'. He had published six articles in 'Journal of Mountain Science' during 2004-2014 (The list of the published articles in Journal of Mountain Science



Matthias Kuhle in the Himalayas (1982)

can be found at the end of this paper). His field results are kept in Goettingen. Matthias Kuhle leaves behind a unique pictorial archive containing tens of thousands of black-and-white and colour images as well as panoramic photographs providing detailed references to his findings. The University of Goettingen has announced that the images will be digitized and made accessible for the academic and interested public.

Matthias Kuhle was an enthusiastic lecturer who fascinated audiences by his rhetorical brilliance and impressive illustrations of high mountain areas. At the same time he had much wider interests in mountain research, including traffic and settlement geography, and never gave up his interest in philosophical questions. He worked on epistemological topics and jointly published with his wife Sabine in the renowned philosophical journal of the Kant studies. Matthias Kuhle brought a critical and challenging mindset to his work; he was always keen on discussions and

positioned himself clearly in his views and research orientation. Besides the technical geographical knowledge he consistently passed on some kind of 'life wisdom' to his students and other scholars. Anyone who was with him in the field could attest to his passion for geomorphology and unforgettable experiences in high mountain landscapes.

Matthias Kuhle lost his life in one of his favourite places of the Himalaya, the BuriGandaki valley. This tragic accident happened on the way back from the Tsum valley, during a student field trip. He was surprised by a rock fall triggered by the earthquake. All students have safely returned home.

As a discipline, Geography loses in Matthias Kuhle one of the most experienced geomorphologists and, last but not least, a charismatic scientist.

Matthias is survived by his wife Sabine, his four children and two grandchildren.

List of articles published by Matthias Kuhle in *Journal of Mountain Science* between 2004-2014

1. Matthias Kuhle (2004) The pleistocene glaciation in the Karakoram-mountains: reconstruction of past glacier extensions and ice thicknesses. *Journal of Mountain Science* 1(1): 3-17. DOI: 10.1007/BF02919355.
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6. Kuhle M (2014) The glacial (MIS 3-2) outlet glacier of the Marsyandi Nadi-icestream-network with its Ngadi Khola tributary glacier (Manaslu- and Lamjung Himalaya): The reconstructed lowering of the Marsyandi Nadi ice stream tongue down in to the southern Himalaya foreland. *Journal of Mountain Science* 11(1): 236-287. DOI: 10.1007/s11629-013-2820-4