

**SCIENCE ON THE ROOF OF THE WORLD: EMPIRE AND THE REMAKING OF THE HIMALAYA by
Lachlan Fleetwood (Cambridge University Press, 2022) | Review: The Alpine Journal, Vol. 126
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Conducting science in the nineteenth century was truly hard work, especially in rugged mountain environments such as the Himalaya. For Europeans this vast region of mountains was a 'blank space' on the map, but it was by no means an invisible space. In particular, for the British East India Company (EIC), looking up from the lowland plains of India, it appeared to be a very visible and formidable barrier. An unacceptable geographical lacuna, the Himalaya presented itself as both a troublesome and a challenging prospect to the military minds who staffed the Great Trigonometrical Survey of India, the men tasked with measuring and mapping the entire subcontinent. It was both a physical and a political frontier demarcating the northern limits of the EIC's imperial vision. Psychologically tainted with the ever-impending threat of Russian military encroachment which might descend otherwise unseen from the north. For the indigenous communities who had long lived in the region, of course, this space was far from being a blank. It was home. A place they knew and understood well. Consequently, in order to comprehend and quantify this region as a globally comparable space, European explorers realised they would need to utilise indigenous networks in strenuous efforts to measure these mountains and fit them into the hierarchical purview of western science. A fact which many of these heroically self-styled individuals subsequently downplayed.

At the start of the nineteenth century, as Lachlan Fleetwood shows in *Science on the Roof of the World*, contrary to our present-day perception, the Himalaya stood in the shadow of the Andes. Alexander von Humboldt's famous scientific explorations, particularly his ascent of Chimborazo in 1802, occluded the true stature of the Himalaya. It was not until 1856 that Mount Everest was found to be the world's highest peak. However, this book is not about the contest for achieving summit records. As Fleetwood says, '*mountaineering as a sporting pursuit, shorn of scientific pretensions, was still decades away from reaching the Himalaya when this study takes its leave*' (p.15). Instead, this book is more intimately concerned with the ways in which a new concept of a 'vertical globe' was first mapped out. The guiding tenets of this project were very much rooted in, and facilitated by, imperialism. As such, it was a project which only really became feasible as a result of the Anglo-Gurkha War of 1814-1816 which gave the British greater access to the region.

The recent 'spatial turn' in historiography has prompted historians of empire to utilise geographical features such as oceans, islands, rivers, and, in this particular case, mountains to examine previously unseen '*transnational, transimperial and translocal stories*' (p.23).

Simultaneously, seeking to find and amplify the role of indigenous and subaltern voices who played a crucial part in assisting or resisting such efforts to broaden the horizons of western imperialist interests in frontier zones is also an important part of such histories. Hence, contemporary historians such as Fleetwood are increasingly drawing upon the more expansive scholarly resources of a transdisciplinary toolkit to re-write the history of exploration. For instance, utilising the allied perspectives of anthropologists, historical geographers and historians of science, to better inform their enquiries, reassessing primary source materials, and thereby shaping new and transformative histories of empire. In this respect, Fleetwood builds upon the previous work of exemplary scholars in this field, such as David Arnold, Christopher Bayly, Felix Driver, and Sujit Sivasundaram.

Over the course of six fascinating and richly detailed chapters, Fleetwood contends that scale was a key criterion in assessing the nineteenth-century scientific engagement with the Himalaya. As already noted, it was also one of the main reasons why the region's pre-eminence remained comparatively unrecognised for such a long time. While efforts to know and understand the region were initially overshadowed by the likes of the Andes and the Alps, the most useful and familiar comparisons to hand at the time (such as Mont Blanc and Snowdon), were simply dwarfed by both the conceptual and the physical reality of the Himalaya. As a vast and culturally diverse region the Himalaya was a space over which it has always been difficult to exert imperial or state power, something which has been a substantial focus of recent scholarly interest since the publication of James C. Scott's *The Art of Not Being Governed* (Yale University Press, 2009). In terms of both culture and climate, this vast region is a multi-layered zone of both mutually distinct and interdependent frontiers. And, as the first two chapters of *Science on the Roof of the World* demonstrate, this is why the Himalaya has always managed to resist easy quantification. Many of the scientific instruments available during the early decades of the nineteenth century were simply not robust enough or sufficiently calibrated to contend with the intense rigors of the region. It was these difficulties which scientifically-minded travellers set out to overcome, aided by parties of locals who acted as guides, porters, and collectors, but whose names were all too often left unacknowledged in the official records of such expeditions.

The central portion of the book (chapters three, four and five) examine the medical topographies as well as the materiality of mountain environments. Looking in depth at early understandings of altitude sickness and the different physiological ways in which mountain environments adversely affected the human body in terms of the physical and mental capacities of explorers to observe and record their findings under extreme conditions. This neatly flows into an examination of social hierarchies and the role of labour, as well as the ways in which material specimens, such as fossils and plants, were moved from the uplands down to the lowlands. Such

material was circulated, used and interpreted in a variety of ways; valued either as medicinal or ritual objects by indigenes, or as purely scientific or commodifiable specimens by western scientists; for instance, informing geological interpretations of mountain formation, or providing the seeds for distribution to a network of botanical gardens across the British Empire. Here Fleetwood gives a special focus to the lesser-known and somewhat neglected gardens located in the Himalayan foothills where such specimens were first sent in order to be commercially developed by indigenous staff. As Fleetwood discovers, these persons could be highly skilled and knowledgeable men who were already in post at these institutions and whose roles had been retained and continued from previous ruling hierarchies, thereby giving us a tantalising glimpse into the continuities and cross-overs involved in such processes of knowledge exchange between indigenes and imperialists.

The book concludes with a sixth chapter which very neatly surveys and sums up the highly detailed findings already outlined in the preceding chapters, reflecting upon the 'vertical limits' which mountain environments imposed upon the creation of various 'imagined geographies,' utilising Peter Bishop's *The Myth of Shangri-La* (Athlone Press, 1989) as a notable datum peg for previous cultural-scientific interpretations of the Himalaya. However, rather than being a region set wholly apart, Fleetwood demonstrates that the lowlands and the uplands were simultaneously both separated and conjoined in the contemporary colonial consciousness of British-India. Thereby showing that while the mountain regions of the Himalaya ultimately remained marginal and peripheral spaces to the British Empire as a whole, they were nevertheless still intimately tied to, and thus in many respects helped to define, the imperialist appropriation of the Indian subcontinent. In essence, science was undoubtedly a tool of empire, but the Himalaya was the pre-eminent region which pushed the limits and defined the boundaries of both.

Science on the Roof of the World is a meticulously well-crafted scholarly monograph which has been very deftly derived from Lachlan Fleetwood's PhD thesis. Examining and reflecting upon a good range of scientific and geographical traditions as they were first practiced in the Himalaya, Fleetwood writes in an admirably lucid and engaging manner which gives depth whilst remaining accessible. As such, *Science on the Roof of the World* should appeal equally to academics as well as to informed lay-readers who are interested in the history and exploration of mountain environments alike. This book is an excellent and fascinating addition to the growing literature on early scientific and imperialist engagements with the Himalaya, one which views the region from the twin perspectives of both the local and the global, and one that shows the many ways in which each is intimately interlinked with the other.

Tim Chamberlain