

**FIT FOR THE FRONTIER:
EUROPEAN UNDERSTANDINGS
OF THE TIBETAN ENVIRONMENT
IN THE COLONIAL ERA**

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Among possible approaches to the Asian environment is a consideration of its medical aspects. The Himalayas, for example, may be seen as a distinct medical environment in that the mountain zone is associated with particular medical conditions. It is, for instance, naturally at the centre of any history of altitude medicine. Everest and a host of other peaks have attracted climbers since the nineteenth century, and popular knowledge of altitude sickness and understandings of the Himalayan environment owes a great deal to the publicity the climbers attracted. In this article I discuss European understandings of the Himalayan environment during the first half of the twentieth century, when Tibet functioned as an independent state in the heart of the Himalayan mountain chain. I seek to raise a number of themes rather than present any conclusions, in order to indicate some wider socio-historical contexts to the study of high-altitude medicine in this specific environment.

On the northern side of the Himalayan watershed, Tibet, now divided among the Tibetan Autonomous Region of the Peoples' Republic of China and several other Chinese provinces, has an average elevation of over 4500m.

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Thus it is, or was, the highest country in the world and its peaks were naturally the focus for the relatively new sport of mountaineering. But while the mountaineers' encounters with the Tibetan environment involved an intensive period of several months' immersion, there was also a body of Europeans living in Tibet during the first half of the twentieth century; the diplomatic representatives of the British imperial Government of India, and their staff. From the time of the Francis Younghusband mission in 1903-04, which invaded Tibet and forced the isolationist Lhasa Government to allow trade and diplomatic intercourse with British India, British representatives were stationed at Yatung, close to the Sikkimese frontier, and at the main post at Gyantse, 200km south-west of the Tibetan capital of Lhasa. They were accompanied by one or two British Indian Army officers and 50 Indian soldiers, along with a medical officer and transport and communications personnel. After 1936 there was also a British mission in Lhasa with accompanying medical officer, although there were no military forces at that mission.

While this article largely relies on the reports of these diplomats and their staff, it will also take into account the wider body of European experiences of the Tibetan environment in the medical context. While Tibet was popularly termed 'The Forbidden Land', both the British presence and the mystical allure of Tibet in the popular imagination meant that it attracted numerous travellers, whose accounts contributed to the understanding of that environment.

Indigenous Environmental Understandings

We may begin by noting indigenous understandings of the Himalayan environment. In a history of altitude medicine, Michael Ward states that the first documented case of altitude sickness comes from the Karakorums, with Chinese sources dating to 37-32 BCE describing the route from Yarkand to Afghanistan as passing the aptly named 'Great Headache' and 'Little Headache' mountains. There is also the account of the well known Chinese Buddhist traveller Fa-Hsien, who took the western route to India in 399-414 CE. He describes a death from what was probably high-altitude pulmonary oedema.² In contrast, Tibetan sources are notoriously reticent about their landscape and the difficult journeys undertaken through it.

Traditional Tibetan literature is overwhelmingly religious, with a genre known as *gnam tar* (religious biographies) describing the lives of historical figures who often travelled vast distances across the Himalayas. But they are not concerned with the worldly landscape, and journeys between sacred sites that must have involved enormous difficulties are rarely if ever described in these accounts. The concept of the landscape as beautiful, or at least

² Michael Ward, 'Mountain Medicine and Physiology: A Short History', *The Alpine Journal*, 95 (1990/91), 191-92.

uplifting, exists in the form of traditional poetics, but there is little concept of danger (of medical, or indeed any particular worldly environment), although many mountains were seen as playing host to powerful territorial deities. There are many variations to this belief system, which is today expressed in a Buddhist context, but the common model is of a tribe dwelling at the foot of a mountain whose origin myths are associated with the mountain deity, with that deity envisaged as the other worldly protector of that tribe.

Within a wider context of cultural survival, modern Tibetan discourse presents an environmental consciousness as characteristic of pre-communist Tibetan society. Thus we read of how Tibetans lived in harmony with their environment. But this is a pious fiction, critiqued most notably by Toni Huber, who has demonstrated how Tibetan ideas of the environment were shaped by a variety of influences, the common features of which were that the phenomenal world was perceived as shaped by a host of spirit powers organised into a ritual cosmos, with ritual specialists interceding with those powers.³ Sacred places, such as the wide spectrum of mountain peaks that were among the most sacred of these sites, were and are seen by Tibetans as sites of both physical and spiritual healing. Thus they are a major source of medicinal herbs and other natural substances deriving from the physical environment, which is understood to be innately spiritually empowered. The sacred landscape itself is a healer.

But while there are few records of environmentally associated conditions such as altitude sickness in Tibetan sources, Tibetans, however well acclimatised they were to their environment, were a mobile people. Their east-west travels across the mountains, or southward travel over the Himalayan watershed to India, invariably involved climbs beyond those to which individual bodies were accustomed. Thus they too suffered altitude sickness, which they understood to derive from poisonous vapours, known to them as *la-drak*: ‘The Poison of the Pass’, or the ‘exhalations of mischievous Gods’.⁴ Remedies for this suffering existed in the indigenous pharmacopeias. Kate Teltscher states that the ‘traditional remedy for the poisonous mountain vapours was to chew garlic and face backwards on one’s mount, away from the wind’.⁵ The remedy used by the seventeenth century Jesuit Benedict Goes while crossing the Pamirs—garlic, onion, or dried apples—eaten, or ‘in the case of the garlic applied to the mouths of the animals’,⁶ may also be an indigenous palliative. There were also local remedies against snow

³ See Toni Huber, ‘Green Tibetans: A Brief Social History’, in Ernst Steinkellner (ed.) *Tibetan Studies, Proceedings of the 7th seminar of the International Association for Tibetan Studies*, Wien, 1997; also see Toni Huber and Poul Pedersen, ‘Meteorological Knowledge and Environmental Ideas in Traditional and Modern Societies: The Case of Tibet’, *Journal of the Royal Anthropological Institute* (JRAI), 3, 3 (1997), 577-97.

⁴ Michael Ward, ‘Mountain Medicine’, 191-98.

⁵ Kate Teltscher, ‘The High Road to China: George Bogle, the Panchen Lama and the First British Expedition to Tibet’, London, 2006, manuscript copy, 218.

⁶ Derek Waller, *The Pundits: British Exploration of Tibet and Central Asia*, Lexington (Kentucky), 1990, 74-75.

blindness, most commonly the use of some type of wool or cloth covering the eyes as much as was practical without preventing vision. These preventatives are still in common use today.

As noted, accounts of Tibetans suffering altitude sickness are extremely uncommon. Far more common are references to the problem of the cold, and an Italian physician who visited Gyantse in the 1940s records that he saw 'some old beggars who bore the marks of frost on their limbs and had lost some knuckles'.⁷ This suggests that class was a factor in suffering, with the aristocracy and trading classes properly clothed and equipped to handle the conditions while the poorly equipped lowest classes were liable to suffer from them.

The understanding that the mountain heights brought sickness due to 'poisons' of some kind was also common among pre-modern Europeans who conjectured that there were poisonous weeds growing on the passes. The existence in the Himalayas of aconite, a weed that can be fatal to grazing animals, may have contributed to this belief, which persisted into the modern period. The Indian traveller Swami Pranavananda notes its persistence in his 1949 guide-book of the pilgrimage to Mount Kailas, and recommends, incidentally, that those suffering from nose-bleeds in the rarefied air, 'sprinkle cold water on the nose and drink a cup of cold water'.⁸ Yet there does seem to have been an indigenous understanding of the involvement of breathing in regard to altitude, with additional holes being made in the nostrils of horses traversing high passes in order to assist their breathing. A variety of breathing techniques, which we might broadly categorise as yogic, were also used by religious practitioners in their travels among the mountains, the effect of which was to enhance their ability to cope with the mountain environment.

Recognition of the indigenous people's greater ability to cope with the high altitude environment raised the question of whether the European body could similarly adjust to the environment. While there were early fears that such adjustments implied degeneration,⁹ by the late nineteenth century medical and scientific advances as well as empirical evidence gave the imperial officers posted on the Himalayan frontiers [the 'frontiersmen'] confidence that they too could adjust to the Himalayan environment. That belief also reflected the confidence of late Victorian empire, when it seemed to many of its agents that European dominance was ordained not only, or even necessarily, by inherent racial superiority both physical and moral, but also by scientific and technical supremacy. After the carnage of World War One, the racial and moral supremacy of Europeans was no longer a dominant belief, but the claims to scientific and technical supremacy increasingly underpinned the moral order of South Asian imperialism. In the Himalayan

⁷ R. Moise, quoted in appendix in Giuseppe Tucci, *To Lhasa and Beyond*, New York, 1987, 218.

⁸ Swami Pranavananda, *Kailas-Manasarovar*, Calcutta, 1949, 198.

⁹ On which, see Mark Harrison, *Climates and Constitutions: Health, Race, Environment and British Imperialism in India 1600-1850*, New Delhi, 1999.

context, it was those qualities that were seen as bringing ‘progress’ to the local communities and peoples. Yet even in that ‘scientific’ era, the belief in European ability to adjust to local climates reflected earlier beliefs in, for example, the growth of educational facilities for European children in hill-stations, rather than on the Indian plains.

European Encounters with the Himalayan Environment

In the late eighteenth century, when East India Company (EIC) emissaries first visited Tibet, European understanding of altitude sickness was still primarily environmentally based, although experiments were then being carried out in Europe concerning the density of air. Samuel Turner, for example, travelling to Tibet in the 1780s, did not linger on the passes, believing that noxious vapours from the Indian plains were swept up to these mountain heights by climatic activity (he also attributed the endemic goitre to these vapours).¹⁰ But science was beginning to find new explanations for the suffering associated with altitude, not least because the Survey of India had begun mapping the Himalayan heights. By 1862, three mountains over 6000m had been climbed, with an unnamed ‘native surveyor’ reaching a then record altitude of 7025m in 1860.

By the late nineteenth century it had been established in scientific circles that atmospheric pressure from the weight of air was less at altitude than at sea-level, meaning less oxygen reaching the lungs the higher the ascent. The first British mountain-scientist to write extensively on this problem was Tom Longstaff, one of the pioneers of Himalayan climbing, who climbed the Gurhla Mandhata peak in western Tibet around 1905. The discovery that there was an increase in red blood cells at altitude led to an understanding of acclimatisation, an issue we will return to.¹¹

Firstly, however, it is important to locate this Himalayan environment not only in the scientific but also in the imagined context, for Tibet became a location for Western fantasies of place, what we might call the construction of Tibet as Shangri-La. Just as traditional Indic society drew a fundamental distinction between the ‘wild’ and the ‘tame’, so too had mountains and other remote and unpopulated environments traditionally been seen as hostile and dangerous in European culture. That perspective began to change in the eighteenth and nineteenth centuries with the development of an appreciation of the aesthetic qualities of the wild, which led to new, more positive ways of seeing that landscape.¹²

Peter Bishop has demonstrated how in the Tibetan context, the Enlightenment milieu was associated with the construction of mountain

¹⁰ Peter Bishop, *The Myth of Shangri-la: Tibet, Travel Writing and the Western Creation of Sacred Landscape*, London, 1989, 46-47.

¹¹ Ward, ‘Mountain Medicine’, 192-93.

¹² See Marjory Hope Nicolson, *Mountain Gloom and Mountain Glory: The Development of the Aesthetics of the Infinite*, reprint, Seattle and London, 1997 [1959].

heights as pure and of mountain life as one of idyllic simplicity.¹³ At a time of increasing industrialisation, there was a growing idealisation of a pre-modern lifestyle, and a perceptual transformation of remote localities such as the Himalayas from wild and inhospitable places into sites of pre-industrial simplicity and higher truths. Out of this understanding developed many other spiritual associations, such as that of the Theosophist Madame Blavatsky's 'Tibetan Mahatmas' and the wider belief in the Tibetans' mastery of higher powers.

This understanding of the Himalayas as a place of spiritual and physical purity (which is both an indigenous and a European construct) has never disappeared. Andre Guibaut in his 1947 work *Tibetan Venture* thus expresses a common view that 'Perhaps it is actually due to this high altitude, that I feel a great peace of mind steal over me, a kind of sublime detachment, based on forgetfulness which comes very near to bliss'.¹⁴ We think also of mountaineers, such as Mallory with the metaphysical implications to his apparently flippant 'Because it's there' comment, or Frank Smythe with his series of Antoine de Saint-Exupéry type meditations on the spirit of mountains.

Accentuating this understanding of the Indo-Tibetan Himalayas in the imperial context was its status as a frontier. While there was an alternative discourse of degeneration as characteristic of frontiers, the concept of 'the frontier' in British India implied a healthy location both physically and morally. These understandings were shaped by Frederick Jackson Turner's 1891 thesis on America's western frontier, and by a heroic mythology of empire. Both discourses privileged the frontier as a location where individual initiative and character were more important than bureaucratic rules and regulations. In addition, in this construction, not only were the local people superior to their equivalents on the Indian plains, but so too were the imperial frontiersmen superior to their more bureaucratically inclined colleagues in the urban centres of India.¹⁵

Several hundred British officials visited Tibet in the 1904-47 period and around 120 were posted in Tibet for two-year terms.¹⁶ These frontiersmen generally believed that the frontiers of India were a zone requiring particular personal qualities from those who served there. There were specific refinements of this understanding in regard to Tibet, with a distinction drawn between the type of person best suited for service in India and those best suited for service in Tibet. Administration in India was associated with bureaucracy; location and logistics dictated that service on the frontier had a tradition of freedom of action. As Sir Charles Bell (the most influential of the officers to serve there), wrote, 'A man, efficient in administrative work in India . . . is not always the best for Tibet'. Tibetan

¹³ Bishop, *Myth*, passim.

¹⁴ Andre Guibaut, *Tibetan Venture; in the Country of the Ngolo-Setas*, London, 1948, 157.

¹⁵ See Alex McKay, *Tibet and the British Raj: The Frontier Cadre 1904-1947*, Richmond (London), 1997, chapter 13.

¹⁶ For a list of these officials, see McKay, *Tibet*, 235-37.

frontiersmen could not, he stated, be bound by ‘rules and regulations framed to meet . . . Indian conditions’.¹⁷

The concept of the frontier as a zone that both required and brought out particular qualities in the officers that served there reflected earlier notions of environmental determinism. The rise of the north European colonial powers was in part attributed to the effects of a cool climate, which was seen as stimulating physical and mental activity, in contrast to the enervating effects of a hot climate that was associated with a lack of endeavour and tendency to physical degeneracy and even immorality.

This belief in the physical and moral superiority of races inhabiting the cooler regions naturally embraced those who dwelt in the mountains. ‘At home’ it was applied to highland Scots at the expense of their lowland countrymen, and in the colonial setting of South Asia it was applied to the peoples of the Himalayas, who were seen as physically and morally superior to those of the Indian plains. That the Himalayan peoples were primarily Buddhist was a factor here; there were no caste restrictions on their intermingling with the British, and, perhaps paradoxically, the imperial officers admired the more egalitarian society of Himalayan Buddhism in contrast to the complexities of Hindu society and the *purdah* of South Asian Islamic culture.

The imperial belief in the superiority of the mountain peoples was reflected in the colonial construction of ‘martial races’, of whom Nepal’s Gurkhas were the most famous manifestation. In recruiting for the imperial armies, candidates from the plains—Bengalis, Biharis and so on—were seen as less ‘manly’ than those from the rugged mountainous areas—Gurkhas, Marathas, and Sikhs. While the Bhutanese lived up to the expected martial character of mountain peoples in the Anglo-Bhutanese war of 1845-46, these categories might have been challenged by the encounter with Tibetans and Sikkimese, who seemed resolutely unmilitary. But the overwhelmingly Buddhist character of their culture and civilisation, and records of the Tibetans’ military prowess in the eighth to ninth centuries before Buddhism had fully taken hold there, enabled the British to attribute their apparent lack of martial qualities to their religion.

If by the late nineteenth century the mountain heights of the Himalayas had come to be seen as sublime, paradoxically this mountain idyll held particular dangers. Aside from the ubiquitous ‘slimy slug-like . . . hideous’ leeches,¹⁸ the Himalayas were home to ‘tigers, leopards and bears . . . very numerous and exceedingly destructive’.¹⁹ There were floods, landslides, and earthquakes such as that in Kangra in 1905 (which destroyed the small McLeod Gang hill station and nearby cantonment), while soldiers needed

¹⁷ Charles Bell, *The History of Tibet*, London, 1992, 259; also, see A. J. Hopkinson, ‘Report on Tibet August 1945—August 1948’, Hopkinson papers, Oriental and India Office Collection (OIOC), British Library, MSS Eur D998-39.

¹⁸ F. Spencer Chapman, *Lhasa The Holy City*, Delhi, 1992, 18.

¹⁹ William Dollard, *General and Medical Topography of Kalee Kemaon and Shore Valley, with Sketches of the Cantonment*, [possibly London], 1840, 37.

bamboo huts, not tents, to cope with an annual rainfall of 762 centimetres in Sikkim.²⁰ On the Younghusband mission in which 161 members were killed or wounded in action, there were 202 deaths (almost entirely among the local porters), certified as 'due to climate'. Nineteen deaths were directly attributable to altitude.²¹

Despite these dangers, the mountains became what Bishop terms 'the imagined location of idealised communities',²² and in nineteenth-century British India this took concrete shape in the establishment of hill stations in the Himalayan foothills.²³ These were sites of medical, as well as political intervention, where Europeans could recover from the illnesses of the Indian plains and their children might grow up in what was seen as a healthy environment. But Tibet, beyond the reach of British colonial authority, took on a series of imaginal associations under diverse influences, and the 1903-04 invasion of Tibet by British forces under Colonel Francis Younghusband failed to end the mystique of the so-called 'Forbidden Land'. This was largely because the British Government promptly ordered the Government of India to withdraw their forces from Lhasa, basing themselves at Gyantse to the south of the capital, and the British subsequently maintained the isolation of Tibet by the permit system. Anyone wishing to travel to Tibet from British India required firstly a permit from the imperial government to enter Sikkim, then another permit to travel as far as Gyantse. To travel on to Lhasa required the permission of the Tibetan government, which rejected any application the British did not actively support. In practice this meant that with a handful of exceptions, the only people to travel extensively in Tibet were those approved of by the imperial government.

Younghusband, whose armed mission to Lhasa had created the British presence there, developed spiritual inclinations. Indeed, he devoted the last stages of his life to spiritualism, and he ensured an often explicit understanding of the spiritual aspects of this location and time. In the final pages of his account of the mission to Lhasa, entitled *India and Tibet*, he attributes the source of British 'forward' policy in Tibet, not to individual, geo-political or economic causes, but to a 'great world-force, energising through Nature'. Younghusband explains that this world-force guided the affairs of men, and had guided the British to Tibet. Characteristically, he concluded that this spiritual force would be best served in the Tibetan sphere by a British agent in Lhasa!²⁴

²⁰ A. R. Alridge, 'With the Thibet Mission Force' in *Journal of the Royal Army Medical Corps* (JRAMC), 3, 1904, 272.

²¹ Lt-Colonel Patrick Hehir, 'Prevention of Disease and Inefficiency with special reference to India', *Frontier Warfare*, Allahabad, 1911, 616-17.

²² Bishop, *Myth*, 48.

²³ On which, see Dane Kennedy, *The Magic Mountains: Hill Stations and the British Raj*, Berkeley, 1996; Harrison, *Climates and Constitutions*, 124-32, 139-50.

²⁴ Francis Younghusband, *India and Tibet*, Oxford, 1985, 434-38.

Acclimatisation

Let us turn to environment on the commonest route from India to Tibet. The journey from the Indian plains to central Tibet took the traveller through a distinct series of environmental and medical zones that imposed a clinical frontier of disease. Approaching the Himalayas from the south, the traveller passed through the ‘fever-ridden terrai’, where malaria and kala-azar were endemic. As the Himalayas were ascended, the risk of these fevers diminished with the increased altitude; malaria was not found above 1500m, and kala-azar also reached only into the foothills. In general, the increasing cold and reduced population meant that many of the epidemic and bacteriological infections common on the Indian plains were absent from the mountains. But new diseases appeared in the hills, goitre, for example, was endemic in many of the mountain valleys of the Himalayas, and tuberculosis became increasingly common. Then above 3000m travellers were liable to be afflicted by altitude sickness, snow-blindness, and severe sunburn. Thus a correlation between disease and location was demonstrated, which was increasingly shown to be consequent on a variety of dietary, economic and social conditions, as well as climatic and ecological factors.

Once in Tibet the environment seemed even more extreme. The high altitude and the bitterly cold winters took their toll of European visitors. An American traveller who died of pneumonia at Gyantse shortly after a British post was opened there in 1904 was only the first of a number of Europeans to perish there.²⁵ While the natural environment seemed pristine, Phari, the first town on the Tibetan plateau en route to Gyantse and Lhasa, stunned European travellers with its streets ‘so choked with the accumulated garbage of centuries that they are many feet higher than formerly’ and it was invariably described in such terms as the ‘filthiest town in the world’.²⁶ Even Lhasa, the Tibetan capital, was subject to extremes of temperature within a range from minus 15–26 degrees Celsius.

Yet what is notable is that that the British archival sources rarely mention altitude, even in the medical context. This was probably due to the fact that colonial officials generally travelled slowly and in stages. En route to Tibet the usual route via Sikkim involved a stay at the British Residency in Gangtok—situated at 1767m. A series of marches then followed to the frontier post at Gnatong, 3842m above sea level. Travellers would then cross the Nathu La or Jelep La passes (Tibetan: ‘la’ = ‘pass’), both of which were around 4390m, and descend to Yatung in the Chumbi valley, around 2990m. That journey was made in a single day, thus obeying the modern dictum ‘climb high, sleep low’. The 280km journey from Yatung to Gyantse which

²⁵ Alex McKay, ‘The Establishment of the British Trade Agencies in Tibet 1904-1909: A Survey’, *Journal of the Royal Asiatic Society*, 3, 2, 3 (1992), 408.

²⁶ Chapman, *Lhasa*, 34; also see, for example, Lowell Thomas jr., *Out of this World: Across the Himalayas to Forbidden Tibet*, New York, 1950, 92.

crossed several more passes over 4200m, was usually done in eleven marches (although it could be done in five or even three if necessary).

British officials rode horses rather than walking, so less exertion was required, and they were well equipped with food, clothing including snow goggles, and basic accommodation in official rest-houses at night. Altitude problems were thus reduced, and personnel who then resided in Gyantse (at a height of just over 4000m), were thus usually fully acclimatised when they arrived. This understanding of human acclimatisation developed into a scientific fact during the early twentieth century, but it was firstly something that was both empirically understood and encouraged by logistics, and by socio-cultural aspects of the pace of empire and the presentation of authority in the wider context of the ritual state.

Captain John Noel, official photographer on the 1922 and 1924 Everest expeditions, travelled to within 60km of Everest in 1913. In his 1927 work, *Through Tibet to Everest*, after a discussion on the adaptation to altitude of various animals, birds and insects, he records that:

I make particular mention of these . . . observations, because they lead to one important theory vital in the study of Mount Everest—the theory of adaptation and acclimatisation. If animals, birds, and insects can adapt themselves, so can human beings . . . The Tibetans . . . have become inured to the conditions and immune to the effects of the rarefied air. This ability of life to adapt itself to circumstances becomes the basic principle in planning the conquest of Everest'.²⁷

Noel made other observations in regard to the effects of altitude that are now well-known to us. 'Depression', he observed, 'is one of the subtle ways by which the mountain fights us . . . she makes us sick, tired, listless, quarrelsome . . . and disinclined mentally to continue the fight. She exhausts our mind', he continued, 'quite as much as she exhausts our body'.²⁸ He also noted, however, solutions that most Europeans today would conclude have not stood the test of time. He describes how the Everest pioneer George Finch, 'told me that cigarette smoking added greatly to his comfort . . . after smoking and inhaling he discovered that it took his mind off the question of breathing and made the act altogether an involuntary process'.²⁹ That understanding was certainly shared by the expeditions Sherpas.³⁰ Noel had brought 20,000 cigarettes for his own photographic porters and they smoked them all. Heavy smoking continues to be characteristic of many of the

²⁷ John Noel, *Through Tibet to Everest*, London, 1927, 238-39.

²⁸ *Ibid.*, 167. Altitude sickness presents in various forms and ranges from mild to severe; High Altitude Pulmonary Oedema (HAPE) and High Altitude Cerebral Oedema (HACE), are potentially fatal forms.

²⁹ *Ibid.*, 172.

³⁰ Not all porters were Sherpas, although they were often referred to as such, and not all were from high-altitude regions. On later expeditions distinctions were made between 'high' and 'low' altitude porters, with the latter discharged on reaching high altitudes.

Himalaya's indigenous peoples at high altitude today (although long discouraged by Buddhist authorities and less common among Buddhist groups), but the issue seems to have remained unexplored by science.

Everest legend George Mallory was said by Noel to have:

A secret of his own . . . of deep breathing in conjunction with his gait and upward swing while climbing. It is said that he could pass the air deeper through his lungs, and get more oxygen out of it, than others know how to. But he would never tell us his method of breathing. It was his secret.³¹

Yet we may suspect that Mallory's 'secret' may be one known to indigenous practitioners of yogic breathing. Indeed we might go further in suggesting that many yogic practices, such as *tumo*, or 'heat yoga' (a practice designed to raise the body temperature through meditation), were originally developed by the religious renunciates who travelled through the Himalayas as a means of coping with their extreme environment.

But to return to the British: if they did exert themselves they were quickly reminded of the altitude. Frank Ludlow, headmaster of the English school that existed in Gyantse from 1923 to 1926, introduced football to his pupils, but though he was a keen player, he generally refereed, finding that due to the altitude, 'I couldn't run more than twenty yards without getting hopelessly out of breath'.³² The altitude there could still cause the British more serious problems. In 1929 the new representative in Gyantse, a large overweight man, had to return to India after two months having failed to acclimatise. Stricter medical examinations (the details of which I have not located), were then introduced for those posted to Tibet, but in the 1940 a new representative fell ill at Gangtok and his replacement also suffered badly at altitude and had to return to India. Military personnel also suffered, with an Escort Commander, Lieutenant Warren, dying of pneumonia at Yatung in 1939.

We have focused here on the central region of Tibet, but there were also more dangerous and higher routes travelled by British officials, particularly en route to the isolated diplomatic outpost at Gartok in western Tibet, near to the Kailas peak. One of Sir Edward Wakefield's Gurkha escorts, for example, died crossing the 5916m Bodpo La when Wakefield travelled there on inspection duty in 1929.³³ But these remote journeys seem to confirm the evidence that while British casualties from cold and altitude were generally light because they were well-clothed and equipped, and riding rather than walking or carrying loads, the indigenous employees (who were assumed to have a natural acclimatisation to these dangers), were in fact most at risk. It took time to recognise that acclimatisation actually increases the risk of frostbite because blood thickened by increased amounts of red

³¹ Ibid, 183.

³² 'Ludlow Tibet Diary 1923-26, Entry', Papers of Frank Ludlow, OIOC, MSS Eur D979.

³³ 'Report of E. W. Wakefield', OIOC, L/P&S/12/4163.

corpuscles cannot easily pass through blood vessels constricted by cold.

While it appears, therefore, that at least the non-elite classes of local populations would have suffered altitude sickness, the records of the medical dispensaries, which the British maintained in Yatung, Gyantse and later in Lhasa, indicate that Tibetan patients did not resort to them for that condition.³⁴ Thus while there are many representations of Tibet in the British imperial archives, the dangers of altitude form only an implicit part of a general understanding of a particularly remote outpost of the British Indian empire. This may partly reflect the nature of the sources. British medical personnel in Tibet provided very little information on medical conditions there other than statistical records of consultations at the dispensaries. Their record keeping was basic in the extreme and while they did file annual reports, these were only 1-2 pages in length and largely statistical. While there were occasional more lengthy reports filed by officers on missions to Lhasa, none of these concerned environmental issues. Yet if the medical officers themselves were a mixed bunch, they included a number of excellent physicians and were overall probably a more dedicated and motivated group than the majority of their contemporaries in India. So it is difficult to explain why apparently none of them undertook any research into conditions in Tibet or even published any accounts of their time there.

It was an Italian naval doctor, Regolo Moise, who produced the only systematic survey of medical conditions in colonial-era Tibet. Moise travelled to Gyantse in the late 1940s, and drew on discussions with, and the records of, the British imperial physicians. His main observations on the medical environment concern the cold, but he considered the major problem to arise from the environment as being snow and sun ophthalmia ('snow blindness') concluding that; 'The large incidence of cataract and of eyelid conjunctivitis is certainly connected with the action of ultra-violet rays'.³⁵

British personnel travelling to Tibet were well-aware of the problems of snow-blindness and were issued with snow goggles. It was therefore, not altitude or sun ophthalmia that was their primary medical concern in regard to environmental medicine, but cold. A surveyor, Captain Harman, froze to death in 1881 on the Sikkim-Tibet frontier,³⁶ and the cold was associated with an increased risk of pneumonia, which killed a number of the Indian escort troops and several Europeans travelling in Tibet. Personnel at the Gyantse post were thus issued with special warm clothing, while the military guards did only 45-minute spells and there was liberal use of rum as an antidote to cold. The usual regulations over bathing were also relaxed.

³⁴ The reports of the British medical officers preserved in the India Office Library usually refer to the numbers of Tibetan patients suffering particular conditions. Altitude sickness is not mentioned in any of the reports I have sighted.

³⁵ Moise, 223.

³⁶ L. A. Waddell, *Among the Himalayas*, London, 1899, 224.

The Mountaineers

The British diplomatic presence in Tibet was crucial to British efforts to conquer Mount Everest. Under the terms of treaties signed between British India and Tibet, European travellers required Tibetan Government permission to travel in areas off the main trade route via Yatung to Gyantse, or to Gartok from Almora. It was, therefore, the British representatives in Tibet who obtained that permission from the Tibetan government, and the granting of that permission reflected the state of Anglo-Tibetan relations. Charles Bell, a particularly skilful diplomat, was largely responsible for establishing good relations between the two powers after the hostilities of the Younghusband mission. He travelled to Lhasa at the invitation of the Dalai Lama in 1920-21, the first British officer to do so since the Younghusband mission. His mission ensured Anglo-Tibetan relations were on a sound and amiable footing, and just before his return to India, Bell was rewarded by the Tibetans with the requested permission for an Everest expedition through Tibetan territory. When Anglo-Tibetan relations deteriorated in the mid-1920s after Bell's retirement, no Everest permits were granted to the British. When relations improved again in the 1930s, with the British supplying Tibet with arms and financial assistance in the form of cheap silver, the Tibetans responded by again permitting mountaineering expeditions on their territory.

Ironically, it was Younghusband who was largely responsible for the Everest expeditions; Mallory famously described the mountaineering project as 'a fraud from beginning to end, invented by the wild enthusiasm of one man, Younghusband'.³⁷ At the instigation of Younghusband and others, the Royal Geographical Society wrote to the Secretary of State for India in December 1918 seeking permission for an Everest expedition, and when Noel outlined his plan to climb the mountain in a speech to the RGS in March 1919, Younghusband, Lord Curzon and other such Anglo-Indian notaries were among the audience.

Noel was a strong proponent of the use of oxygen in climbing and Alexander Kellas, who became a member of the first Everest expedition of 1921, had already published on the subject and experimented with a number of devices that might deliver oxygen to mountaineers. But the weight of these early devices, and a lingering sense that bottled oxygen removed the sporting element from mountaineering meant that the 1922 and 1924 expeditions were the only ones to use oxygen until the successful post-war climb under Lord Hunt. In the interim Alpine-style attempts were more popular, following the famed climber H. W. Tilman's dictum that, 'any expedition that couldn't be organised on the back of an envelope [is] over-organised'.³⁸ But there was a continuous build-up of insights into altitude problems by successive Everest Expeditions, and following the report of Dr Griffith Pugh of the Medical Research Council in 1952, oxygen was again

³⁷ Walt Unsworth, *Everest*, London, 1981, 43.

³⁸ *Ibid*, 213.

used—this time successfully—by Hillary and Tenzing to climb the mountain in 1953. The first ascent without oxygen was not until the climb by Habeler and Messner in 1978.³⁹

The British were not the only nation with interests in the Tibetan environment. Soviet Russian scientists sought to explore the high-altitude agriculture of Tibet in the late 1920s, and to exchange plants and seeds with the Tibetan authorities, although politics and financial difficulties prevented any fulfillment of these plans.⁴⁰ Another foreign medical initiative around this time that was apparently stillborn was a plan by the monks of St Bernard (famous for their dogs) to establish a hospice for Himalayan travellers; the relevant file in the National Archives of India is unfortunately closed.⁴¹

Conclusions

We may conclude that the Tibetan environment was understood by Europeans in the colonial period as a specific, even unique one, which imposed particular demands that could only be met by a certain type of person. Only those who were fit and who possessed particular qualities of initiative and independence, as well as the diplomatically necessary tact and cultural sensitivity, could prosper there. The pristine environment was also perceived, however, as a healthy one, which produced a physically and morally superior type of indigenous person. That construction was measured against the peoples of the Indian plains, with the Tibetans regarded as superior.

Snow-blindness and conditions arising from the extreme cold, not altitude, were seen by European medical officers as the greatest health dangers. That understanding appears to have derived firstly from the British habit of travelling slowly in short stages, with built-in periods and places of acclimatisation, and secondly from the recognition that acclimatisation to altitude was possible and perhaps even limitless. British imperial officials saw themselves as capable of adapting to the environment, not in the manner of mountaineers with specific short-term goals, but as frontiersmen whose lives, or at least substantial amounts of their careers, would be spent in such conditions. Officials and mountaineers shared an interest in the growth of scientific knowledge of altitude issues, but the pragmatic concerns of the officials were with glare and cold, and they were usually equipped with the means to deal with these factors.

European understandings of the Tibetan environment were also affected by a perceived association with spiritual matters. That association also existed in both Indic and Tibetan culture, and, while there are earlier manifestations of such beliefs in European culture (for instance, the writings

³⁹ Ward, 'Mountain Medicine', 191-98.

⁴⁰ On which see Alex Andreyev, *Soviet Russia and Tibet*, Leiden, 2003, 332-33.

⁴¹ The existence of the report is recorded in the 1932 Foreign Department Index at the National Archives of India (New Delhi), F.No.407-X Secret.

of Marco Polo), it emerged strongly in late eighteenth century Romantic conceptions of the mountains, when landscapes once seen as hostile increasingly came to be viewed as inherently pure and thus aesthetically pleasing and attractive—conceptions that were applied in the imperial context to the Himalayas. Younghusband's particular spiritual beliefs ensured that it was acceptable to openly articulate these ideas in the Tibetan frontier context, with the result that a group of officials who were overwhelmingly pragmatic empiricists, nonetheless left a body of writing that devotes more attention to the spiritual than the medical aspects of the Himalayan environment. The contemporary scientific discourse of empire, the results of geological surveys and such-like, thus leave very little impact on these constructions, although they were within a wider body of colonial knowledge.