

Chapter 3

Differences of Degree: Representations of India in British Medical Topography, 1820–c.1870

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Some men's characters resemble well-wooded and watered mountains, others a thin and waterless soil, others plains or dry bare earth. Climates differ and cause differences in character; the greater the variations in climate, so much the greater will be differences in character.¹

After several decades of scholarship on science and empire, it is now largely accepted that disciplines such as medicine and geography played a crucial role in imperial expansion. On a purely technical level these disciplines were important “tools of empire”, enabling colonizers to map their new domains and to exploit more effectively their human and material resources.² But following the work of Michel Foucault³ and Edward Said,⁴ historians have become more sensitive to the *ideological* dimensions of colonial science; not least its role in naturalizing distinctions between rulers and ruled. Such issues form part of a more general interest—typified by the work of the Subaltern Studies school of South Asian historians—in how the

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¹ Hippocratic Corpus, *On Airs, Waters, and Places*, 13.

² The classic exposition of this view is Daniel R Headrick, *The Tools of Empire: Technology and European Imperialism in the Nineteenth Century*, Oxford, Oxford University Press, 1981. See also the essays in David Arnold (ed.), *Imperial Medicine in Indigenous Societies*, Manchester, Manchester University Press, 1988; and Roy MacLeod and Milton Lewis (eds), *Disease, Medicine and Empire: Perspectives on Western Medicine and the Experience of European Expansion*, London, Routledge, 1988.

³ See especially, Michel Foucault, *Power/Knowledge: Selected Interviews and Other Writings 1972–1977*, ed. Colin Gordon, London, Harvester Press, 1980, in which Foucault expounds his views on the “governmental” role of both geography and medicine. Foucault’s insights have illuminated recent studies of medicine in its colonial context, for example: Megan Vaughan, *Curing Their Ills: Colonial Power and African Illness*, Cambridge, Polity Press, 1991; David Arnold, *Colonizing the Body: State Medicine and Epidemic Disease in Nineteenth-Century India*, Berkeley, Los Angeles and London, University of California Press, 1993. Foucault’s work has also been influential among historians of colonial geography, such as Anne Godlewska and Neil Smith (eds), *Geography and Empire*, Oxford, Blackwell, 1994; see also Timothy Mitchell, *Colonising Egypt*, Berkeley, Los Angeles, Oxford, University of California Press, 1991.

⁴ Edward Said, *Orientalism*, New York, Random House, 1978; idem, *Culture and Imperialism*, London, Chatto and Windus, 1993. Of the works indebted to Said, the most relevant here are Ronald Inden, *Imagining India*, Oxford, Blackwell, 1990; C A Breckenridge and P van der Veer, *Orientalism and the Postcolonial Predicament: Perspectives on South Asia*, Philadelphia, University of Pennsylvania Press, 1993, especially chapters 1 and 8.

British came to “know” India and to appropriate its culture for the purposes of command.⁵

Embracing military, commercial and ethnographic concerns, medical topography was one of the largest scientific enterprises in British India during the first half of the nineteenth century. It therefore provides an ideal case study in which to test some of the claims made about colonial science and the “Orientalist” project more generally—a project which has been characterized as essentially exploitative and hegemonic. “Orientalist” knowledge, according to Said, is hegemonic in two senses: in asserting “European superiority over Oriental backwardness”, and in the Gramscian sense of providing an ideological justification for the metropolitan (as well as the colonial) order.⁶ The oppositional pairing of East and West leads, according to Said, to an objectification of the Orient as *fundamentally* irrational, sensual and despotic; and to the West as dynamic, rational, and industrious.⁷ In this chapter I will argue that the picture of Western knowledge that emerges from this critique of Orientalism is greatly oversimplified. Like many older depictions of “colonial science”,⁸ it has given insufficient weight to the *variety* of intellectual currents emanating from the European metropole and to the dynamic (and sometimes oppositional) culture of Europeans overseas. It also ignores important changes in European perceptions of the “Orient” over time; and, ironically, in this regard, is reminiscent of the static view of the East which Said ascribes to Europeans. The notion of hegemony, too, is problematic. Said and others are undoubtedly correct to state that the relationship of Europeans to the “Orient” was always one of relative superiority, but the concept of hegemony is insufficiently flexible to allow for cultural *interaction* and the often profound reconfiguration of European ideas which occurred as a result of encounters with its “Other”. Colonial knowledge was constructed dialogically as well as dialectically, and Indians were far from passive objects of imperial power.⁹

⁵ With the exception of David Arnold’s study, cited above, the most relevant work is Bernard S Cohn, ‘The Command of Language and the Language of Command’, in R Guha (ed.), *Subaltern Studies IV*, New Delhi, Oxford University Press, 1985, pp. 276–329.

⁶ Said, *Orientalism*, op. cit., note 4 above, pp. 7–8.

⁷ *Ibid.*, p. 28.

⁸ For many years the paradigmatic study was George Basalla’s, ‘The Spread of Western Science’, *Science*, 1967, 156: 611–22, which characterized colonial science as intellectually dependent on the colonial metropole. Most scholars now, to differing degrees, acknowledge the dynamic role of scientists in the colonies themselves. See Roy M MacLeod, ‘On Visiting the “Moving Metropolis”: Reflections on the Architecture of Imperial Science’, *Historical Records of Australian Science*, 1982, 5 (3): 1–16; Ian Inkster, ‘Scientific Enterprise and the “Colonial Model”: Observations on Australian Experience in National Context’, *Social Studies of Science*, 1985, 15: 677–704; N Reingold and M Rothenberg (eds), *Scientific Colonialism: A Cross-Cultural Comparison*, Washington, DC, Smithsonian Institution Press, 1987; R MacLeod and P Rehbock (eds), *Nature in Its Greatest Extent: Western Science in the Pacific*, Honolulu, University of Hawaii Press, 1988; R W Home (ed.), *Australian Science in the Making*, Cambridge, Cambridge University Press, 1988; Richard H Grove, *Green Imperialism: Colonial Expansion, Tropical Island Edens and the Origins of Environmentalism, 1600–1860*, Cambridge, Cambridge University Press, 1995; Deepak Kumar, *Science and the Raj, 1857–1905*, New Delhi, Oxford University Press, 1995.

⁹ There exists a growing body of scholarship which stresses the interplay between Europeans and Indians in the formation of knowledge and institutions in colonial India. See, for example, C A Bayly, *Indian Society and the Making of the British Empire*, Cambridge, Cambridge University Press, 1988; Rosalind O’Hanlon, ‘Cultures of Rule, Communities of Resistance: Gender, Discourse and Tradition in Recent South Asian Historiographies’, *Social Analysis*, 1989, 25: 94–114; E Irschick, *Dialogue and History:*

Scientific ways of thinking, and the technologies which flowed from them, were, as Said and others have claimed, among the more significant markers of difference between European and Oriental civilizations.¹⁰ But we should note that confident expressions of European superiority often masked a sense of insecurity: a duality which has so far received very little attention in critiques of Orientalism. Medical topography, while affirming European dominance in medicine, agriculture and trade, was one of the clearest illustrations of the vulnerability of the British in India. Indeed, the division of India into medico-geographic zones was a consequence of an imperial crisis: the First Burma War of 1824–6 and the simultaneous mutiny of the Bengal Army at Barrackpore. The importance of these incidents in bringing about a shift from “caste”-based to “racial” classification has already been documented in respect of the armed forces,¹¹ but they had an equally important effect upon medicine, and its rendering of differences between Indians and Europeans. The decimation of the British and Indian force by disease during the so-called Arakan Expedition established the limits of British power on the subcontinent and led to urgent requests for the identification of healthy and unhealthy zones. From this sprang a more ambitious project which established complex linkages between health, environment and culture; a topography which was not so much medical as moral, political and aesthetic.

This study of medical topography also calls into question Said’s claim that “Western” knowledge of the “Orient” was rigidly dichotomized, a claim echoed by David Arnold in his recent study of colonial medicine in India—*Colonizing the Body*. Indians, according to Arnold, were subjected to the “assertive universalising of Western materialism and science”¹² which portrayed India and its inhabitants as pathogenic and degenerate. But Western medical representations of India were far more complex than this description of colonial medicine suggests. Although Europeans visiting the subcontinent were greatly impressed and, sometimes, overwhelmed by the extent of India’s “difference”, these differences were often thought to be of *degree* rather than of kind. Images of Britain *and* India were sufficiently nuanced to permit analogies between the two. As the work of Tom Nairn and Linda Colley demonstrates, ethnographic classifications in British India were comparable to, and

Constructing South Asia, 1795–1895, Berkeley, California University Press, 1994. The “ambivalence” in relationships between colonizers and colonized is also considered in Homi K Bhaba, ‘Signs Taken for Wonders: Questions of Ambivalence and Authority under a Tree Outside Delhi, May 1817’, *Critical Inquiry*, 1985, 12 (1): 144–65.

¹⁰ For example, Michael Adas, *Machines as the Measure of Men: Science, Technology, and Ideologies of Western Dominance*, Ithaca and London, Cornell University Press, 1989.

¹¹ Douglas M Peers, ‘“The Habitual Nobility of Being”: British Officers and the Social Construction of the Bengal Army in the Early Nineteenth Century’, *Modern Asian Studies*, 1991, 25 (3): 545–69. The ethnicity of sepoys recruited to the armies of the EIC is further considered in idem, *Between Mars and Mammon: Colonial Armies and the Garrison State in India, 1819–1835*, London and New York, I B Tauris, 1995, pp. 44–72; Dirk H A Kolff, *Naukar, Rajput and Sepoy: The Evolution of the Military Labour Market in Hindustan, 1450–1850*, Cambridge, Cambridge University Press, 1990. For recruitment after the demise of the Company, see David E Omissi, *The Sepoy and the Raj: The Indian Army, 1860–1940*, Basingstoke, Macmillan, 1994.

¹² Arnold, op. cit., note 3 above, p. 283.

often overlapped with, the construction of identities in Britain itself.¹³ Rather than being wholly Other, Britain and India were often depicted as being at different stages on a linear course of civilization. Ideas of difference and of progress, as Thomas Metcalf has noted, sat uneasily together and such tensions were never fully resolved.¹⁴ Moreover, universal principles—the “Platonic” essences which Edward Said and Ronald Inden see as characteristic of Western depictions of the East—were tempered by a worldly pragmatism. For example, the environmental determinism which flourished in eighteenth- and nineteenth-century India was seldom followed to its logical conclusion, since to do so would have been to place untenable restrictions on imperial influence and power.¹⁵

Medical topography—or the systematic recording of all factors affecting health in a particular locality—stemmed from a growing consciousness in European medicine of the role of the environment in the causation of disease. Having found Hippocratic and other writings on endemic diseases and humoral pathology to be of little use when accounting for *epidemic* (or “unpredictable”) diseases, such as the plague which had recently ravaged London, and being equally dissatisfied with theories of contagion, physicians like Thomas Sydenham began to revive interest in parts of the Hippocratic corpus which considered the influence upon health of *Airs, Waters and Places*. During the eighteenth century, such ideas became very influential in Britain, Continental Europe and North America, where they were associated, variously, with the rise of preventive medicine and medical statistics.¹⁶ But while there was growing interest in the relationship between health and environment,¹⁷ few British works on the subject referred to themselves explicitly as “medical topographies”. For much of the eighteenth century, the running was made by Continental physicians, who subjected numerous towns and localities to medical scrutiny.¹⁸ In Britain there was no comparable endeavour until after 1800, when a new and powerful impetus was provided by the expansion and consolidation of colonial rule in India. Medical topography developed as part of a more general attempt to map India and its

¹³ Tom Nairn, *The Break-Up of Britain: Crisis and Neo-Nationalism*, London, New Left Books, 1981; idem, *The Enchanted Glass: Britain and its Monarchy*, London, Radius, 1988; Linda Colley, *Britons: Forging the Nation 1707–1837*, London, Pimlico, 1992. See also, Arthur S Williamson, ‘Scots, Indians and Empire: The Scottish Politics of Civilization, 1519–1609’, *Past and Present*, 1996, 150 (1): 46–83.

¹⁴ Thomas R Metcalf, *Ideologies of the Raj*, Cambridge, Cambridge University Press, 1994.

¹⁵ The limitations of a purely textual analysis have been pointed out in O’Hanlon, op. cit., note 9 above; R O’Hanlon and David Washbrook, ‘Histories in Transition: Approaches to the Study of Colonialism and Culture in India’, *History Workshop Journal*, 1991, 32: 110–28; John M Mackenzie, ‘Edward Said and the Historians’, *Nineteenth Century Contexts*, 1994, 18: 9–26.

¹⁶ L J Jordanova, ‘Earth Science and Environmental Medicine: the Synthesis of the late Enlightenment’, in L J Jordanova and R Porter (eds), *Images of the Earth: Essays in the History of the Environmental Sciences*, Chalfont St Giles, British Society for the History of Science, 1979, pp. 119–46; J C Riley, ‘The medicine of the environment in eighteenth-century Germany’, *Clio Medica*, 1983, 18: 167–78; idem, *The Eighteenth-Century Campaign to Avoid Disease*, New York, St Martin’s Press, 1987.

¹⁷ See Riley, *Eighteenth-Century Campaign*, note 16 above; Clarence Glacken, *Traces on the Rhodian Shore: Nature and Culture in Western Thought to the End of the Eighteenth Century*, Berkeley, University of California Press, 1967 [5th ed., 1990], pp. 601–5.

¹⁸ Caroline Hannaway, ‘Environment and Miasmata’, in W F Bynum and R Porter (eds), *Companion Encyclopedia of the History of Medicine*, 2 vols, London and New York, Routledge, 1993, vol. 2, pp. 292–308.

resources, which had its origins in the military-cartographic surveys of the late-eighteenth century.¹⁹

A further stimulus to medical topography may have been the revival of interest in Hellenistic culture which took place in Britain during the early nineteenth century, one manifestation of which was a growing interest in Greek conceptions of history, which embraced topography and ethnography as well as political and military events.²⁰ It is possible that this discussion over the nature of “history”—a term which the Greeks used to describe all forms of critical inquiry—had some impact upon medicine, which began to take a distinctly “natural historical” turn. Other aspects of the Hellenistic revival, such as the question of democracy versus despotism, were also reflected in medical writings, including those on British India.

Medical topography emerged in British India during the 1820s but rested upon a tradition of writing on medicine and environment which stretched back to the seventeenth century. British medical men increasingly drew distinctions between areas of the subcontinent deemed harmful to Europeans and those in which they seemed to flourish. There was nothing novel or unusual about this, since similar distinctions were made between the supposedly healthy and unhealthy regions of temperate latitudes, but there was a growing feeling that there was something distinctive about India that demanded a reappraisal of European medical knowledge.²¹ Drawing on the writings of their Portuguese and Dutch predecessors—and, to some extent, on indigenous medical traditions—the British began gradually to adapt their medical practice to the peculiarities of the subcontinent. However, it was generally acknowledged that differences between Europe and India were of *degree* rather than of kind, and that Europeans would gradually adapt—intellectually and physically—to the Indian environment. From the first publication of James Lind’s *Essay on the Diseases Incidental to Europeans in Hot Climates* in 1768 through to James Johnson’s equally influential *Influence of Tropical Climates . . . On European Constitutions* in 1813, there was an underlying optimism about European acclimatization in the tropics and the possibility of colonization. The potential dangers of India’s climate were acknowledged but it was thought that these would be mitigated by length of residence and a temperate lifestyle. Those who adhered to a bodily regimen appropriate for life in the tropics had no reason to fear sickness any more than those who remained at home.²²

¹⁹ See Kumar, *op. cit.*, note 8 above, pp. 32–72; Marika Vicziany, ‘Imperialism, Botany and Statistics in early Nineteenth-Century India: The Surveys of Francis Buchanan (1772–1829)’, *Modern Asian Studies*, 1986, 20: 625–60; Nicholas B Dirks, ‘Colonial Histories and Native Informants: Biography of an Archive’, in Breckenridge and van der Veer (eds), *op. cit.*, note 4 above, pp. 279–313.

²⁰ Richard Jenkyns, *The Victorians and Ancient Greece*, Cambridge, MA., Harvard University Press, 1980, pp. 163–4; Frank Turner, *The Greek Heritage in Victorian Britain*, New Haven, CT., Yale University Press, 1981.

²¹ Mark Harrison, ‘Tropical Medicine in Nineteenth-Century India’, *British Journal for the History of Science*, 1992, 25: 299–318; M N Pearson, ‘The Thin End of the Wedge. Medical Relativities as a Paradigm of Early Modern Indian-European Relations’, *Modern Asian Studies*, 1995, 29 (1): 141–70; Richard Grove, ‘Indigenous Knowledge and the Significance of South West India for Portuguese and Dutch Constructions of Tropical Nature’, *Modern Asian Studies*, 1996, 30 (1): 121–44.

²² Mark Harrison, ‘“The Tender Frame of Man”: Disease, Climate, and Racial Difference in India and the West Indies, 1760–1860’, *Bulletin of the History of Medicine*, 1996, 70: 68–93; *idem*, *Climates and Constitutions: Health, Race, Environment and British Imperialism in India 1600–1850*, New Delhi, Oxford

Thus, while India was already loosely differentiated into healthy and unhealthy zones—the former comprising coastal areas and temperate highlands—climate did not appear to present an insuperable barrier to the East India Company's ambitions. These were, in any case, commercial rather than territorial until after the battle of Plassey in 1757 and Clive's assumption of the *diwan*—the right to collect land revenues—in Bengal in 1765. But even with the expansion and consolidation of colonial rule in the next few decades, the constraints to British power were military rather than medical, in the form of continual challenges from the Marathas and Tipu Sultan of Mysore. Disease did impinge upon the effectiveness of British troops during these campaigns but never so disastrously as during the First Burma War of 1824–6. This war, which culminated in the British acquisition of the Arakan and Tenasserim provinces, was subsequently represented as a triumph of British arms; an important landmark in the consolidation of British rule.²³ But this was no clear and resounding victory: Company troops, who had initially been sent out to hold British protectorates in the north-east of India, and to perform a display of arms at Rangoon, became embroiled in a bloody war of two years' duration against the newly-established and equally expansionist kingdom of Burma.²⁴ It has been argued that the war and the mutiny which occurred at Barrackpore in 1824 heightened doubts about the loyalty of Bengali troops, hastening the transformation of an army modelled on lines of caste to one based primarily on race. It was increasingly thought that the poor performance of the Bengal Army—which might well have been attributed to deteriorating conditions and the failure of supplies—was due to the inherent inferiority of “native” troops. Lord William Bentinck, who was shortly to become Governor-General of India, was not untypical in thinking that there was a “want of physical strength and of moral energy in the sepoy [Indian soldier]”.²⁵

While the war cannot, in itself, explain the “racial turn” in Anglo-Indian culture, it was undeniably an important factor and provided valuable ammunition to those inclined to think of Indians as divided on lines of race. Belief in fundamental physical differences between Europeans and Indians, and among “Asiatics” themselves, also stemmed from the growing—though by no means universal—conviction that each “race” was uniquely fitted to a particular environment. This was not a new idea, having been very much to the fore in the debate between monogenists and polygenists over the abolition of the slave trade; between those who believed Man was descended

University Press, 1999. On human acclimatization generally, see David N Livingstone, ‘Human Acclimatization: Perspectives on a Contested Field of Inquiry in Science, Medicine and Geography’, *History of Science*, 1982, 25: 359–94; idem, ‘Tropical Climate and Moral Hygiene: The Anatomy of a Victorian Debate’, *British Journal for the History of Science*, 1999, 32: 93–111. See also the references in note 89 below.

²³ See, for example, A C Lyall, *The Rise and Expansion of the British Dominion in India*, London, John Murray, 1920, pp. 304–9.

²⁴ Douglas M Peers, ‘War and Public Finance in Early Nineteenth-Century British India: The First Burma War’, *International History Review*, 1989, 11 (4): 628–47.

²⁵ Quoted in Peers, “The Habitual Nobility . . .”, note 11 above, p. 560.

Representations of India in British Medical Topography, 1820–c.1870

from several sources or from a single progenitor.²⁶ References to the uniqueness of different Indian “races” occur infrequently before the Burma War but afterwards became more common as a result of the high mortality and morbidity suffered in Burma by both British and Indian troops. The belief grew that the climate of the densely-forested hill tracts of Burma and north-eastern India were inimical to all but their aboriginal inhabitants.

Climatic determinism did not, then, diminish at the end of the eighteenth century,²⁷ but flourished amidst the insecurity and recrimination that followed the conflict in Burma. Indeed, the war was probably *the* most important stimulus to the topographical enterprise which came to dominate Anglo-Indian medicine in the years ahead. It was an exercise in which climate was commonly identified as the most important determinant, not only of health, but of commercial and agricultural prosperity, as well as moral and physical characteristics. The fundamental importance of the Burma War in the growth of medical topography in British India is illustrated by A MacDougall’s medical topography of Chittagong, a paper which appeared in the first volume of the *Transactions of the Calcutta Medical and Physical Society* in 1825.²⁸ MacDougall attributed the very high levels of sickness among Indian troops stationed there to “the influence of climate on men debilitated by previous residence in the district, and from the want of the usual and natural food of the sepoys, *Otlah* [sic], for which they substitute rice, often not of the highest quality”.²⁹ There was nothing new in this formulation of the relationship between climate, diet, and health, but the detailed attention given to the environs of Chittagong, and the fact that the term “topography” was used in the title of the paper are significant.

More interesting, perhaps, is J Grierson’s medical topography of the Arakan, a paper read at the Medical and Physical Society in March 1825. Here, Grierson made clear links, not only between climate and disease, but between climate, health and human character. According to Grierson, sepoys raised in Upper Bengal were of little use in the dense jungles of Burma, and suffered even in the relative humidity of Lower Bengal, where most were usually stationed. By the same token, tribes indigenous to Arakan had become inured to the climate and were largely immune to its harmful effects. But life in such a climate had taken its toll: the country was in a “semi-barbarous” state and its inhabitants, like the Magh tribe, were “addicted

²⁶ The monogenist and polygenist positions are expounded respectively in John Hunter, *Inaugural Disputation on the Varieties of Man*, inaugural lecture to the Fellows of the Royal Society, Edinburgh, Balfour and Smellie, 1775; and Edward Long, *History of Jamaica*, London, T Lowndes, 1774. On the debate more generally, see Philip Curtin, *The Image of Africa: British Ideas and Action, 1780–1850*, Madison, University of Wisconsin Press, 1964, chapters 2 and 3; George W Stocking, Jr., ‘Scotland as a Model of Mankind: Lord Kames’ Philosophical View of Civilization’, in T H H Thoresen (ed.), *Toward a Science of Man: Essays in the History of Anthropology*, The Hague, Mouton, 1975, pp. 65–89.

²⁷ Metcalf, *op. cit.*, note 14 above, p. 9.

²⁸ A MacDougall, ‘Medical Sketch of the Topography of the South-Eastern Part of the Chittagong District and of the Sickness which has Lately Prevalled to a Serious Extent among the Troops Serving Therein’, *Transactions of the Calcutta Medical and Physical Society*, 6 March 1824 (1825), 1: 190–8.

²⁹ *Ibid.*, p. 194.

to personal filthiness and indolence”.³⁰ These sentiments were echoed by W Stevenson in his topography of Arakan, which described the local inhabitants as “filthy and indolent”.³¹ Like Grierson, Stevenson and subsequent writers also referred to the adverse effect of the climates of Lower Bengal and of Arakan upon “up-country” sepoys.³²

By the 1830s, it was fashionable to explain all manner of attributes, physical and otherwise, with the influence of climate. The high levels of sickness experienced by troops entering the Northern Circars in the Madras Presidency, when putting down a rebellion in 1834, led to the area being designated “unhealthy” for both Indians and Europeans. Assistant-Surgeon Wright of the 8th Regt. Madras Native Infantry observed that “[t]he original inhabitants of the hills are a diminutive race, with shaggy hair and stunted growth, and bear evidence as to the ungeniality of their natural climate”. It came as no surprise to Wright—given the weakness induced by long residence in the Circars—that the rebellion had been staged by *recent* arrivals of the Ooria “caste”³³. These men were equally uncivilized but, coming from the base of the hills and the valleys, were “brave” and “well-formed”.³⁴ These observations led Wright, like so many of his contemporaries, to the conclusion that each “race” could prosper only in a climate to which it had become habituated through birth or long residence. “It is . . . a strange anomaly”, he recorded, “that the hill inhabitants, when removed to any distance from the spot in which they have been born and acclimated, become subject to attacks of fever—although formerly exempt. They seem perfectly aware of this . . . they only levy black mail in the villages, in their immediate vicinity, and seldom venture into the plains”.³⁵

On other occasions European medical men actually conferred with tribal peoples in an attempt to discover the principal causes of ill health in their locality.³⁶ The indigenous inhabitants of forests sometimes attributed the incidence of fever—like Europeans—to the rapid decay of vegetation occurring in jungles and on the banks of rivers.³⁷ Such beliefs also had a foundation in the medical texts of ancient India, which were being translated by “Orientalist” surgeons such as George Playfair, J F

³⁰ J Grierson, ‘On the Endemic Fever of Arracan, with a Sketch of the Medical Topography of that Country’, *Transactions of the Calcutta Medical and Physical Society*, 5 March 1825 (1826), 2: 201–19, p. 201. An exception to the general characterization of the hill tribes of Arakan is to be found in ‘Extracts and Remarks from the Official Correspondence of the Superintending Medical Officer, etc., of the Madras Troops, which Served Against the Burmese, During the War of 1824–5–6’, *Madras Quarterly Medical Journal*, 1826, 2: 201–19, p. 212.

³¹ W Stevenson, ‘Remarks on the Sickness which Prevailed among the European Troops in Arracan, in 1825, and on the Medical Topography of that Country’, *Transactions of the Calcutta Medical and Physical Society*, 5 August 1825, 3: 87–127, p. 96.

³² *Ibid.*, p. 94.

³³ Wright appears to be using the term “caste” much as later writers used the word “race”, to designate a people with distinctive physical and moral, as well as social attributes.

³⁴ Asst.-Surg. Wright, ‘On the Disease locally designated Hill Fever’, *India Journal of Medical Science*, 1 October 1834, 10: 359–62, p. 360.

³⁵ *Ibid.*, p. 360.

³⁶ See T Waller, ‘A Letter on the Fever which Prevailed at Bankote in the S. Concan in 1841’, *Transactions of the Medical and Physical Society of Bombay*, 1842, 5: 103–5, p. 105.

³⁷ A Gibson, ‘A General Sketch of the Province of Guzerat from Deesa to Damaun’, *Transactions of the Medical and Physical Society of Bombay*, 1838, 1: 1–74, p. 40.

Royle and H H Wilson.³⁸ It was now known that Indian authorities, such as Charaka and Susruta, attributed some diseases to unseasonal weather or noxious vapours emanating from jungles and swampy low-lying areas.³⁹ There were also parallels in Indian texts (contemporary as well as ancient) of Classical discourses on climate and human character.⁴⁰ Thus, indigenous knowledge may have reinforced European ideas about the dangers of particular localities and the peculiarities of racial immunity; ideas which originated in those parts of the Hippocratic corpus concerning *Airs, Waters, and Places*. Anglo-Indian practitioners shared, with Hippocrates, the tendency to make general statements about differences between Europeans and “Asiatics” which they attributed to climate, among other factors, but were also, like Hippocrates, of the opinion that “Asiatics differ[ed] greatly among themselves”.⁴¹

Growing consciousness of the physical limitations of British power, following the war in Burma, made the identification of “healthy” areas more urgent than ever. The surgeon T Jackson, writing in 1824 on the medical topography of Meerut, in the Himalayan foothills, concluded that it “would be a desirable place of residence for those old Indians [i.e. Anglo-Indians], who in their habits and constitution, by long residence, have become naturalized to this country, and estranged from their own”.⁴² This is an interesting remark in more ways than one, since it is clear that Jackson still felt that some degree of acclimatization was possible for Europeans, even though medical opinion in India and the West Indies was beginning to doubt the adaptability of European bodies. Indeed, for Jackson, Britons long resident in India clearly had as much, if not more, in common with the subcontinent than their native land; a significant blurring of the boundary between European “Self” and Indian “Other”.

Dane Kennedy has recently argued that the identification of healthy areas for the retirement or refuge of Europeans was accompanied by an idealization of the tribes which inhabited those areas, on much the same principles as the Magh and other hill tribes were vilified.⁴³ A classic example is D S Young’s medical topography of the Nilgiri Hills, which made great claims for the “tonic” effect of their climate on Europeans, and which identified the hills as an ideal site for colonization or the seasoning of troops;⁴⁴ a belief still widely held by many Anglo-Indian practitioners

³⁸ George Playfair, *Taleef Shereef, or Indian Materia Medica*, Calcutta, Baptist Mission Press, 1832; J F Royle, *An Essay on the Antiquity of Hindu Medicine*, London, W H Allen and J Churchill, 1837; H H Wilson, ‘Kushta, or Leprosy; as known to the Hindus’, *Transactions of the Calcutta Medical and Physical Society*, 3 May 1823 (1825), 1: 1–44.

³⁹ Thomas A Wise, *Review of the History of Medicine Among Asiatic Nations*, London, J Churchill, 1867, vol. 2, pp. 27, 32, 37, 80.

⁴⁰ See, for example, *The Travels of Mizra Abu Talibkhan* (1810), discussed in Tapan Raychaudri, ‘Europe in India’s Xenology: the Nineteenth-Century Record’, *Past and Present*, 1992, 137: 156–82, pp. 159–60.

⁴¹ Hippocratic Corpus, *On Airs, Waters, and Places*, 12–16.

⁴² T Jackson, ‘General and Medical Topography of Meerut’, *Transactions of the Calcutta Medical and Physical Society*, 4 September (1824), 1: 292–8, p. 298.

⁴³ Dane Kennedy, ‘Guardians of Edenic Sanctuaries: Paharis, Lepchas, and Todas in the British Mind’, *South Asia*, 1991, 14: 118–40, p. 77.

⁴⁴ D S Young, ‘An Account of the General and Medical Topography of the Neelgerries’, *Transactions of the Calcutta Medical and Physical Society*, 7 July (1827), 4: 36–78.

despite the more pessimistic voices of James Johnson and some other surgeons.⁴⁵ Young's basic premise was that a climate favourable to Europeans must be capable of producing a people of comparable stature:

The Todwurs [or "Todas"—a tribe indigenous to the Nilgiris] are tall, robust, and well proportioned. They wear no turban: their hair is so thick . . . that they require no other covering, and with their fine bushy beards and Roman noses, they have quite a venerable, heroic appearance. Many have I seen who might have sat to Leonardo da Vinci, when he drew his celebrated picture of the "Last Supper", without diminishing the effect of that sublime production.

He concluded that "the Todwurs could not have maintained their pristine vigor [*sic*] and present high place in the scale of the animal creation, without the aid of a climate not only congenial to human existence, but such as to uphold it for ages without deterioration".⁴⁶ The assumption of European superiority is implicit throughout but, again, the boundaries are blurred. The Nilgiris possess a climate not only conducive to health but to industry and civilization; a potential which, according to Young, was "great and inexhaustible".⁴⁷ Not unlike the more temperate parts of Europe, perhaps.

A number of similar reports followed in quick succession, all pin-pointing potential sites for colonization, sanatoria and the acclimatization of troops: Evans on the hill climate of Tirhoot, in Bihar; Brander on the medical topography of Puri—untypical in that it was not a hill station; Mouat on the climate of Bangalore—"the Montpellier of Madras".⁴⁸ This preoccupation with climate was common throughout India, although it was initially most evident in Calcutta, where medical topographies were extensively discussed by the Medical and Physical Society from the 1820s. But medical men in the other presidencies soon followed suit. Indeed, it was the *primary* objective of the Bombay Medical and Physical Society, established in 1838, "to propose a system . . . calculated to convey trustworthy knowledge of all the more marked qualities of climate, in relation to the causes, and phenomena of disease".⁴⁹ According to the Society's first secretary, and the editor of its *Transactions*, Charles Morehead, the individual in India was at the mercy of "external" forces far more than in temperate climates; morbid anatomy was therefore far less important in India than medical topography.⁵⁰ The importance attached to topography is illustrated by the fact that the very first article published in the *Transactions* was a medical topography of Gujarat. However, as if to contradict Morehead, its author insisted

⁴⁵ See, for example, George Ballingall, *Practical Observations on Fever, Dysentery, and Liver Complaints as They occur amongst the European Troops in India*, Edinburgh, David Brown and A Constable, 1818, pp. 2–3.

⁴⁶ Young, *op. cit.*, note 44 above, p. 53.

⁴⁷ *Ibid.*, p. 66.

⁴⁸ J Evans, 'Observations on the Medical Topography of Tirhoot', *Transactions of the Calcutta Medical and Physical Society*, 5 January 1828, 4: 241–6; J M Brander, 'On the Climate, etc., of Pooree', *ibid.*, 6 September, 1828, 4: 377–84; J Mouat, 'On the Climate of Bangalore, and the Prevalence of Hepatitis at that Station', *Transactions of the Calcutta Medical and Physical Society*, 5 November 1831 (1833), 6: 1–32.

⁴⁹ Charles Morehead, 'Preface', *Transactions of the Medical and Physical Society of Bombay*, 1838, 1: i.

⁵⁰ *Ibid.*, ix.

that over-indulgence in food and alcohol were often more potent in the production of disease than climate. He also attributed the “laxity” of the Brahmin caste to “their sedentary habits and the nature of their diet” rather than to climate alone.⁵¹ The following article—a medical topography of the Mahabaleshwar Hills by John Murray—was more typical in its emphasis on the effects of climate on the human constitution, particularly the “sanitative” influence of the hills, which he recommended for the convalescent. But even Murray acknowledged the limitations of such resorts: hill climates tended to aggravate liver complaints, while persons of “spare habit” and “phlegmatic temperament” were likely to benefit more than the “sanguine and plethoric”.⁵²

During the middle of the 1830s medical topography received another spur, this time from Calcutta, which was facing sanitary problems akin to those of ports and new industrial towns in Britain. The initiative was taken by James Ranald Martin, the Presidency Surgeon of Bengal and the most renowned medical practitioner in the city.⁵³ Martin called upon the Governor-General, Lord Auckland, to give his official blessing to the enterprise of medical topography, drawing attention to the many sanitary evils in Calcutta and the great savings in lives and money that would accrue if such dangers were identified. Martin had served in the Burma War and claimed that the absence of medical topographical reports had effectively destroyed the British-led force in Arakan. His appeal was endorsed by government and a call to all medical practitioners to compile topographical reports was made through the *Transactions* of the Medical and Physical Society.⁵⁴ The appeal spawned a new wave of reports, many of which were more concerned with the *man-made* dangers of India than those of its natural environment; a significant change of emphasis, to which we shall return in a moment.

The sense of vulnerability which underlay early attempts at sanitary reform became increasingly apparent in the literature on colonization. Medical topographies written during the 1840s and 1850s tended to be more sceptical about the potential of hill stations than those of the 1830s, reflecting growing pessimism about acclimatization to tropical climates.⁵⁵ In his book *The Government of India* (1833), Sir John Malcolm, who had been resident in India for forty years, concluded that the offspring of white settlers could never be the equal of army recruits raised in Britain. He believed that the climate of India and “connexion with low ignorant women” would make settlers degenerate within a few generations. He also feared that they would eventually throw off the imperial yoke, much as British and Spanish colonists had done in the Americas.⁵⁶ The Company surgeon James Johnson had expressed similar fears about degeneracy as early as 1813, and such opinions were aired with increasing frequency

⁵¹ Gibson, *op. cit.*, note 37 above, pp. 37 and 61.

⁵² J Murray, ‘Observations on the Climate of the Mahabuleshwar Hills’, *Transactions of the Medical and Physical Society of Bombay*, 1838, 1: 79–154, pp. 116–17, 139. See also A Gibson, ‘A Few Remarks on the Vegetation, the People, and Diseases of the Deccan’, *Transactions of the Medical and Physical Society of Bombay*, 1839, 2: 200–11, p. 211.

⁵³ Obituary of James Ranald Martin, *Medical Times and Gazette*, 5 December 1874, 2: 647–8.

⁵⁴ Editorial, *Transactions of the Calcutta Medical and Physical Society*, 1 October 1837, 3: 646.

⁵⁵ Harrison, “‘The Tender Frame of Man’”, and *Climates and Constitutions*, note 22 above.

⁵⁶ Sir John Malcolm, *The Government of India*, London, John Murray, 1833.

in the years ahead.⁵⁷ Arthur S Thomson, an Assistant-Surgeon in the 14th Light Dragoons, was one such, pointing out that “[t]he races of men in India which now boast of Dutch and Portuguese descent, are both mentally and physically degenerate, and they present a good example of the injurious effect of climate on the descendants of Europeans in India”. He also claimed that “the French settlement at Pondicherry and the Danish settlement at Tranqbar, are both in a state which can give no favourable example of the advantage of colonization of Europeans in India”.⁵⁸ Like Johnson and some earlier writers,⁵⁹ Thomson believed that Man was “only born to flourish in climates, analogous to that under which his race exists, and that any great change is injurious to the increase and to the mental and physical development of man”.⁶⁰ I have argued elsewhere that the increasing pessimism about acclimatization evident in Anglo-Indian medical texts from the 1820s was due not only to persistently high mortality among Europeans but to a hardening of racial boundaries that accompanied the consolidation of British power in India.⁶¹ This account of Anglo-Indian medicine is supported to some extent by this study of medical topography but also stands in need of qualification in view of what follows.

Writers like Thomson did not necessarily rule out all colonization but some Anglo-Indians were keenly aware of the physical boundaries to their existence in India. It was soon realized that hill stations were not the idyllic refuge some supposed them to be: the intensity of the sun’s rays increased with altitude and with it the risk of sun-burn; moreover, the harmful effects of exposure to the sun were thought all the greater because the “tropical sun is more injurious than that of sun beyond the tropics”.⁶² Such observations led James Murray to conclude that “the hill climates of India are very inferior to corresponding climates in the temperate zone. During the summer months, exposure to the direct influence of the noon-day sun is both unpleasant and prejudicial, while, at all seasons, prolonged exercise during the day in the open air—that great instrument of health—must necessarily be very limited”.⁶³ The thinner air of hill climates was thought to impair the health of those with chest complaints, nor did those with rheumatism, dysentery and “cerebral affections” stand to gain from removal to the hills; many hill stations were also notorious for

⁵⁷ James Johnson, *The Influence of Tropical Climates, More Especially of the Climate of India, On European Constitutions; The Principal Effects and Diseases thereby induced, their Prevention or Removal, and the Means of Preserving Health in Hot Climates, Rendered Obvious to Europeans of Every Capacity*, 2nd ed., London, J Callow, 1815, pp. 1–4.

⁵⁸ Arthur S Thomson, ‘Could the Natives of a Temperate Climate Colonize and Increase in a Tropical Country and Vice Versa’, *Transactions of the Medical and Physical Society of Bombay*, 1843, 6: 112–38, pp. 114–15.

⁵⁹ See, for example, Henry Marshall, ‘Observations on the Influence of a Tropical Climate upon the Constitution and Health of Natives of Great Britain’, *India Journal of Medical Science*, 1 January 1836, 1: 25–8, on p. 26: “the indigenous races of tropical climates, as well as the indigenous races of temperate climates, seem to be peculiarly fitted by nature for inhabiting and peopling the respective portions of the globe which they occupy”. Marshall was undecided on the question of seasoning.

⁶⁰ Thomson, *op. cit.*, note 58 above, p. 137.

⁶¹ Harrison, “‘The Tender Frame of Man’”, and *Climates and Constitutions*, note 22 above.

⁶² James Murray, ‘Practical Observations on the nature and Effects of the Hill Climates of India’, *Transactions of the Medical and Physical Society of Bombay*, 1844, 7: 79–154, p. 6.

⁶³ *Ibid.*, p. 6.

the prevalence of dysentery. According to Murray, frequent change of climate was beneficial only to those who enjoyed robust health to begin with.⁶⁴

But though many medical men were increasingly sceptical about the value of hill stations, the enterprise of medical topography showed no sign of flagging. It was still necessary to establish the relationship between various local factors and the incidence of disease, as well as to establish an area's commercial and botanical potential. Moreover, in the late 1850s and 1860s, a renewed sense of crisis gave an additional boost to medical topography, reawakening the desire to identify areas relatively favourable to Europeans. This impetus was provided by the Mutiny/Rebellion of 1857–8, during which the effectiveness of the British force had been seriously undermined by disease. Some medical men, like the army surgeon Julius Jeffreys, speculated that the rebellion was deliberately timed to coincide with the hot season, when Europeans were at their most vulnerable. He called for a general improvement in the living conditions of soldiers in India, including the relocation of cantonments to healthy areas.⁶⁵ Such precautions seemed all the more important since, following 1857, the proportion of British to Indian troops had been increased to 3 to 1. In the words of W C Roe, Assistant-Surgeon to the 89th Foot (a British regiment):

The great influx of European troops to this country during the Mutiny . . . and the probability that a large proportion of them will be retained for a considerable length of time, renders it a question of vital importance how they are to be maintained in a state of the greatest efficiency. That the climate of India is prejudicial to the constitutions of Europeans, and also that Europeans, when debilitated by the diseases and excessive heats of the plains, do, in most instances, derive very considerable benefit from residing at hill stations are facts that are well known and incontrovertible. I think the hill stations should be largely taken advantage of, and that all the troops not actually required on the plains should be located on the hills; in fact that the hill stations should be, not only sanatoria, but also large military depots, where recruits, lately arrived from England, would become acclimatised, and where the old soldier suffering from the effects of forced marches and harrowing duties, would find a resting-place that would soon restore its constitution to its former vigour.⁶⁶

This was also the view of the Royal Commission established to investigate the sanitary state of the army in India. The Commission recommended that cantonments should be situated in accordance with the topographic principles laid down by one of its members, James Ranald Martin—who was now president of the new India Office Medical Board in London. Martin advocated that British troops should be sent in rotation to hill stations above 5,000 feet. But since this might possibly weaken the response to any future rebellion, the number of those garrisoned in the hills was to be limited to no more than one-third of the British force at any one time.

⁶⁴ *Ibid.*, p. 24.

⁶⁵ Julius Jeffreys, *The British Army in India: Its Preservation by an Appropriate Clothing, Housing, Locating, Recreative Employment, and Hopeful Encouragement of the Troops*, London, Longman, Brown, Green and Roberts, 1858, p. 14.

⁶⁶ W C Roe, 'Annual Report of the Sanitarium, Mount Aboo, for the Year ending March 31st, 1859', *Transactions of the Medical and Physical Society of Bombay*, 1859, 2nd ser., 5: 222–9, p. 226.

Nevertheless, this was a substantial number, and necessitated the building of railways to facilitate transportation to and from the plains.⁶⁷

Some medical men were more sceptical. F S Arnott, a surgeon with the 1st Bombay Fusiliers, had warned only four years before that the “expectations entertained in some quarters regarding them [hill stations] may not be fully realised”.⁶⁸ And, in the very year of the rebellion, Charles Morehead had concluded that “the soldier in this [Bombay] Presidency has not as yet derived much benefit from the Deccan hill climates”.⁶⁹ In 1859 the subject was also a matter for debate at a meeting of the Bombay Medical and Physical Society, but the majority position seems to have been in favour of hill stations and the possibility of acclimatization. Dr Peet, for example, asserted that “[r]aces undoubtedly do become acclimatised, of which there are examples in the Parsee and Musalman communities of this country, and it is fair to suppose that a process of acclimatization exists during the lifetime of an individual”. Even Morehead, who had not yet observed any general transformation in the troops under his medical charge in Pune, admitted the possibility of European adaptation to the tropics.⁷⁰ In the wake of the Mutiny, acclimatization had become for many an article of faith.

In a similar response to that which followed the First Burma War, the Mutiny gave rise to a series of up-beat reports on the salubrity of various hill stations. Alexander Grant’s medical topography of Murree compared the station’s climate to that of “the most favoured portions of Europe” and shared the view, attributed to a Dr MacBeth, that it was, “the most eligible situation in India, for the formation of a large and permanent sanitary depot”.⁷¹ Similarly John M’Clelland, writing on the medical topography of the North West Provinces, distinguished between the “fatal” climates of Lucknow and Cawnpore [locations closely identified with the Mutiny] and the more congenial ones of Fyzabad and the country beyond the Gogra.⁷² John Chesson displayed even greater enthusiasm for the climate of Panchgunny in the Mahableshwar Hills; a locale where “waxy faces, swollen abdomens, and enlarged spleens, are unknown”, where the “melody of joy and mirth are heard in every dwelling, the old feel young, and the young feel ‘on springs’”.⁷³

Having grown out of the First Burma War, the enterprise of medical topography was sustained by the increasingly urgent—though, for some, illusory—search for

⁶⁷ Mark Harrison, *Public Health in British India: Anglo-Indian Preventive Medicine*, Cambridge, Cambridge University Press, 1994, p. 61.

⁶⁸ F S Arnott, ‘Report on the Health of the 1st Bombay European Regiment (Fusiliers), from 1st April 1846 to 31st March 1854’, *Transactions of the Medical and Physical Society of Bombay*, 1854–5, 2nd ser., 2: 102–211, p. 115.

⁶⁹ Charles Morehead, ‘Report on the Sanitaria of the Poona Division of the Bombay Army’, *Transactions of the Medical and Physical Society of Bombay*, 1857–8, 2nd ser., 4: 193–207, p. 197.

⁷⁰ ‘Proceedings of the Monthly Meeting held 2nd July 1859’, reported in *Transactions of the Medical and Physical Society of Bombay*, 1859, 2nd ser., 5: vii–xi, p. ix.

⁷¹ Alexander Grant, ‘The Convalescent Depot at Murree; its Topography and Medical History’, pp. 1–2, from an unpublished collection of essays by Grant, c. 1858, RAMC Collection, Wellcome Library, London.

⁷² John M’Clelland, *Sketch of the Medical Topography or Climate and Soils of Bengal and the North West Provinces*, London, John Churchill, 1859, p. iv.

⁷³ John Chesson, *Second Report on the Hill-Station of Panchgunny, nr. Mahableshwar*, Bombay, Alliance Press, 1862, p. 1.

areas congenial to Europeans; a search which was conducted with renewed vigour after the uprising of 1857. Medical topography was a project born of crisis, demonstrating that feelings of vulnerability and superiority were two sides of the same imperial coin. However, those engaged in mapping India did not necessarily draw rigid distinctions between Europe and its Indian “Other”. Anglo-Indian medical topography was sufficiently nuanced to permit analogies between the more salubrious parts of India and those of the temperate homelands. The projection of moral and other characteristics upon the peoples inhabiting these different climatic zones also followed basic axioms that lay deep in European thought. The idea that “unhealthy” climates produced unwholesome races was an ancient one, evinced not only by Hippocrates, but in the work of Strabo and later authorities. Moreover, such ideas had been given new life in the eighteenth century in the political philosophy of Montesquieu, for example, and the natural philosophy of writers like Buffon.⁷⁴ Indeed, the ethnology of Britain’s “internal empire” was often indistinguishable from that of the British in India, where certain indigenous races were ascribed characteristics similar to Europeans. The same was true, of course, of the Indian landscape, which was understood in terms of analogies with Europe.⁷⁵ It is also important to bear in mind that this topography was seen as unstable. The editor of the *India Journal of Medical Science* wrote in 1835 that “[i]t is well known to the [Anglo-] Indian practitioner, that stations for many years deemed healthy, for Europeans and Indian troops; all at once, as it were, and without obvious causes, assume a totally contrary character”.⁷⁶ The rigid and simplistic dichotomies which Said and some historians of India have claimed to find in “Orientalist” texts are rarely to be found in Anglo-Indian medical topographies.

If the British had taken a rigidly dichotomized view of East and West, portraying the former as essentially backward (a land dominated by imagination rather than reason) and the latter as inherently dynamic, it would have been difficult to allow for the possibility of progress in Indian society; or, at least, except under the continual guidance of the West. Such a possibility, however, was widely entertained and, while European images of India were formed so as to demonstrate the superiority of the West, and to vindicate colonial rule, the willing participation of the Indians was seen as essential to their “improvement”. Permeating medical topography—which was nothing if not a discourse on the possibilities and potential of Indian lands—was the notion of a “Revival of the East”. A revival initiated and guided by Europeans to be sure, but one in which Indians played an active and essential part. H H Goodeve, professor of medicine at the newly-established Calcutta Medical College, was not untypical among European medical men in believing that “the day will indeed come when the long lost reputation of the East shall once more be established, and her wisdom and learning shed their light on the earth”.⁷⁷ Science and medicine

⁷⁴ Glacken, *op. cit.*, note 17 above, pp. 518–20.

⁷⁵ See for example, M A Laird (ed.), *Bishop Heber in Northern India. Selections from Heber's Journal*, Cambridge, Cambridge University Press, 1971, p. 203. Heber thought the Himalayan foothills near Kumaon reminiscent of Clwyd.

⁷⁶ Editorial, *India Journal of Medical Science*, 1 March 1835, 2: p. 121.

⁷⁷ H H Goodeve, ‘A Sketch of the Progress of European Medicine in the East’, *Quarterly Journal of Calcutta Medical and Physical Society*, 1 April (1837), 2: 124–56, p. 156.

were, for the moment, flourishing in the West, but they were not the exclusive property of any one nation or civilization. “Science is of no country”, insisted the editor of the *Quarterly Journal of the Calcutta Medical and Physical Society*, and “Science is of no rank”. And, while Indians had far more to learn from Europeans than *vice versa*, it was advised that “Europeans [became] better acquainted with the opinions and talents of the native practitioners, and more conversant with Native medical practice.”⁷⁸

Medical topographies reflected this ambivalence towards Indian culture, being highly critical of the backwardness of India’s healing and mechanical arts but admitting the possibility of progress, and even of Europeans learning from indigenous practices. But in some works, such as James Ranald Martin’s *Medical Topography of Calcutta*, the contradiction between environmental determinism and the rhetoric of progress was never fully resolved. Martin was heavily influenced by James Mill’s *History of India* and his philosophy of Utilitarianism, which had been put into practice in India between 1828 and 1835 under the reforming Governor-General, Lord William Bentinck.⁷⁹ Like Mill, Martin thought “Oriental despotism” inimical to progress and looked forward to the day when “the improved results of European knowledge and example [were] diffused among the natives”.⁸⁰ Yet, at other times, he appears to be suggesting that certain “races” were *incapable* of improvement, and that vast tracts of India were effectively imprisoned by their climate. He contrasted the moral and physical laxity of urban Bengalis—which he attributed to their long exposure to Calcutta’s humid climate—to that of the more robust up-country sepoy and the natives of Burma, whose fighting qualities had won the admiration of the British. “While in Ava”, wrote Martin, “I was forcibly struck with the superior style of buildings amongst the natives, which . . . constitute the best habitations for the poor I have ever seen in any country”.⁸¹ Such progress, according to Martin, was determined by climate; it being “the axiom of medical topography that a squalid-looking population invariably characterizes an unhealthy country”.⁸² It was climate which enabled “the Hindoo to live heedless and slothful” and which forced “the native of Holland to be careful, laborious and attentive to excess”.⁸³

The soporific effects of India’s climate continued to be invoked as a justification for British rule right up to independence, although, by that time, chiefly by lay writers rather than medical men.⁸⁴ But Martin’s crusade against the sanitary evils of Calcutta marked the beginning of a trend in which human agency was increasingly

⁷⁸ Editorial, *ibid.*, 1 August 1834, 2: 317.

⁷⁹ Martin’s rather extreme Anglican and Utilitarian views, of course, represented only one strand of Anglo-Indian thought, albeit that which was in the ascendant under Bentinck. Others—such as the “Orientalists” who favoured imparting western knowledge through vernacular languages—took a far more favourable opinion of Indian cultures. Such differences of opinion persisted throughout the nineteenth century. See Eric Stokes, *The English Utilitarians and India*, Oxford, Clarendon Press, 1959; Clive Dewey, *Anglo-Indian Attitudes: The Mind of the Indian Civil Service*, London, Hambledon Press, 1993.

⁸⁰ James Ranald Martin, *Notes on the Medical Topography of Calcutta*, Calcutta, G H Huttman, 1837, pp. 43 and 59–60.

⁸¹ *Ibid.*, p. 16.

⁸² *Ibid.*, p. 45.

⁸³ *Ibid.*, p. 43.

⁸⁴ Mark Harrison, ‘The Legacy of Colonial Medicine’, *Seminar*, 1995, 428: 36–9.

seen as important in matters of health. With the growth of India's ports, and of new manufacturing towns like Ahmedabad, medical men came increasingly to regard the sanitary problems facing India as man-made rather than "natural": the result of rapid urbanization or, as Martin continually stressed, the "insanitary" habits of Indians themselves. The novelty of this "sanitary" critique of Indian culture cannot be overstated for, up until the 1830s, the vast majority of references to Indian hygienic practices had been favourable, and were even recommended for Europeans.⁸⁵ But, increasingly, the lack of any collective sense of hygiene in Indian culture—of *public health*—was seen as evidence of backwardness and superstition. "Were I to mention all the customs of the Hindoos that are injurious to health", declared Martin, "I should write a respectably sized book".⁸⁶ Such sentiments were echoed on innumerable occasions in medical topographies and sanitary reports during the nineteenth century. Sanitation was inseparable from progress and civilization and constituted an essential part of Britain's historic mission in India. It is difficult to understand how such a vision of progress could have been sustained if, as is sometimes claimed, Europeans viewed Indians as intrinsically and irredeemably Other.

In 1859, following the Report of the Royal Commission on the Sanitary State of the Army in India, very few members of the Anglo-Indian medical profession would have entertained the notion, expressed by R H A Hunter in 1835, that "[i]n this country, so far as our own observation has extended, there is no great fear of the production of miasmata from the crowding together of human bodies".⁸⁷ The emphasis was very much on sanitation and intervention in the lives of the Indian people through sanitary legislation, vaccination against smallpox and education in public health. Indeed, given that mass education programmes in hygiene began in rural areas of India as early as 1870, it is interesting to speculate whether the peasantry of India was regarded as any less educable than that of the United Kingdom. The Indian Medical Service officer H A D Phillips pointed out in 1888 that "[e]ven at the present day there are villages in England where sanitary arrangements shock the tourist, and sanitary education no more advanced than in a Bengal village".⁸⁸ As this more interventionist sanitary perspective came to dominate Anglo-Indian medicine, so the influence attributed to the environment began to wane, and with it the *raison d'être* of the traditional topographical report.⁸⁹ By the 1880s the enterprise of medical topography—which had itself become steadily more "sanitary" in emphasis—had been largely superseded by the reports compiled by municipal health officers and sanitary commissioners. Though often overwhelmed by the immensity of the task confronting them, medical and district officers (some Indians among

⁸⁵ Harrison, "'The Tender Frame of Man'", note 22 above.

⁸⁶ Martin, *op. cit.*, note 80 above, p. 51.

⁸⁷ R H A Hunter, 'Report on the Cholera, Particularly as it Occurred in the Right Wing of the Queen's Royals, in the Town Barracks of Bombay, in August 1833', *India Journal of Medical Science*, 1 May 1835, 2: 169–73, p. 173.

⁸⁸ H A D Phillips, 'Cheap Village Sanitation', off-print from the *Calcutta Review*, 1888: 1–21, Crawford Collection, Wellcome Library, London.

⁸⁹ See Dane Kennedy, 'The Perils of the Midday Sun: Climatic Anxieties in the Colonial Tropics', in J M MacKenzie (ed.), *Imperialism and the Natural World*, Manchester, Manchester University Press, 1990, pp. 118–40; Warwick Anderson, 'Immunities of Empire: Race, Disease, and the New Tropical Medicine, 1900–1920', *Bulletin of the History of Medicine*, 1996, 70: 94–118.

them) believed at least in the possibility of sanitary progress through legislation and education.⁹⁰ There was little sign in these utopian visions of sanitary progress, of the Orient as an “ideal and unchanging abstraction”,⁹¹ or of a vision of India which removed from its inhabitants the capacity to rule themselves.⁹² Indeed, the rhetoric of progress—first expressed as a critique of Indian society in the medical topographies of the 1830s—was, by the 1870s, being turned against the British, in criticisms of colonial sanitary policy made by Indian doctors and politicians.⁹³

In this study of medical topography I have argued that European knowledge of India was more complex than is suggested by Edward Said and other critics of Orientalism. Ironically, the view of European knowledge advanced in these critiques is every bit as essentialist as the knowledge which they so expertly deconstruct. Orientalist scholars did, as Ronald Inden has claimed, imagine an India “kept eternally ancient by various Essences attributed to it”,⁹⁴ but such views, as Thomas Metcalf has pointed out, sat alongside those which allowed for India’s progress and “civilization”; processes in which Indians were seen as active agents rather than passive recipients of Western knowledge. Comparatively few Europeans saw India as imprisoned forever by its past, its climate, or the “racial” attributes of its inhabitants. Indeed, the idea of “race”, though increasingly apparent from the 1820s, was seldom clearly defined and was usually a socio-cultural as much as a physical category. Beneath the meta-language of race—a language relatively detached from the day-to-day experiences of colonial doctors and administrators—lay a racial discourse which was sometimes contradictory in that it allowed for comparisons as well as contrasts to be made between Europeans and “Asiatics”. In acknowledging the diversity of racial characteristics within these more general classifications, Anglo-Indian medicine was true to its Hippocratic roots.

The instability and complexity of medical discourses on race and environment in India meant that boundaries between Western “Selves” and Indian “Others” were sometimes fluid—even after the Mutiny—as the persistence of acclimatization theory shows. Representations of India and its inhabitants also differed significantly over time. The idea that India was epidemiologically unique steadily diminished, and the sanitary discourse which had come to dominate by 1870 saw India as confronting essentially the same problems as the colonial metropole, and advocated similar—if not identical—solutions. The critique of Orientalism has paid insufficient attention to the changing nature of imperial discourses and to the pervading sense of insecurity which underlay Europe’s thirst for knowledge of the East. Such knowledge was undeniably acquired for the purposes of command but it reflected profound feelings of vulnerability as well as European cultural superiority. The case of medical topography illustrates this very clearly: it was an enterprise which emerged from—and was sustained by—crises in imperial rule. Nor should we underestimate the extent

⁹⁰ Mark Harrison, ‘Towards a Sanitary Utopia? Professional Visions and Public Health in India, 1880–1914’, *South Asia Research*, 1990, 10 (1): 19–41.

⁹¹ Said, *Orientalism*, op. cit., note 4 above, p. 8.

⁹² Inden, op. cit., note 4 above, pp. 1–3.

⁹³ Harrison, op. cit., note 67 above, pp. 189–90.

⁹⁴ Inden, op. cit., note 4 above, p. 1.

Representations of India in British Medical Topography, 1820–c.1870

to which such knowledge was dependent on the agency of Indians themselves. Thus, Indian perceptions of the subcontinent and its medical dangers served to underpin many of the distinctions being made by the British in their medical topographies. While asserting its superiority over indigenous forms of knowledge, Western medicine in British India was never entirely independent of them.